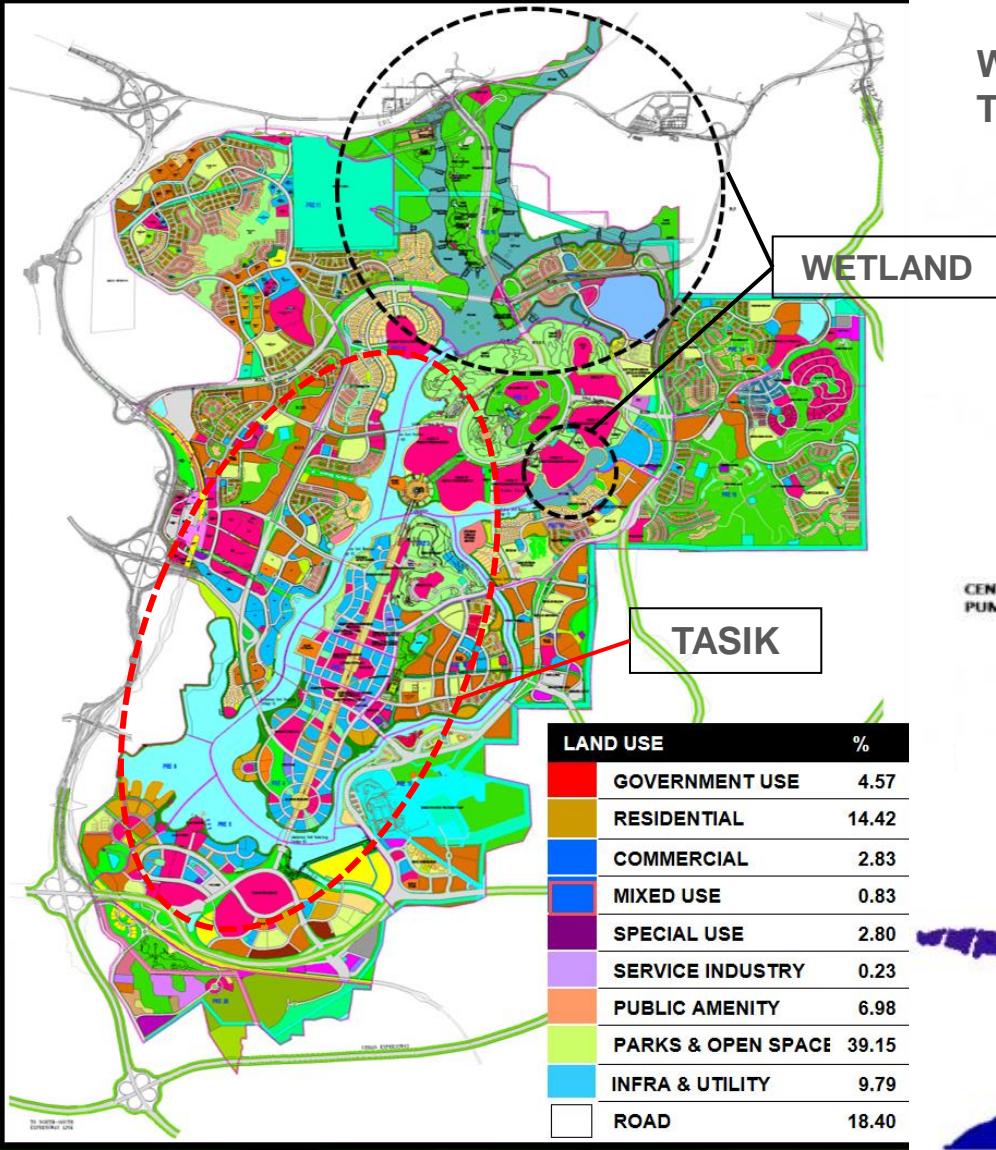


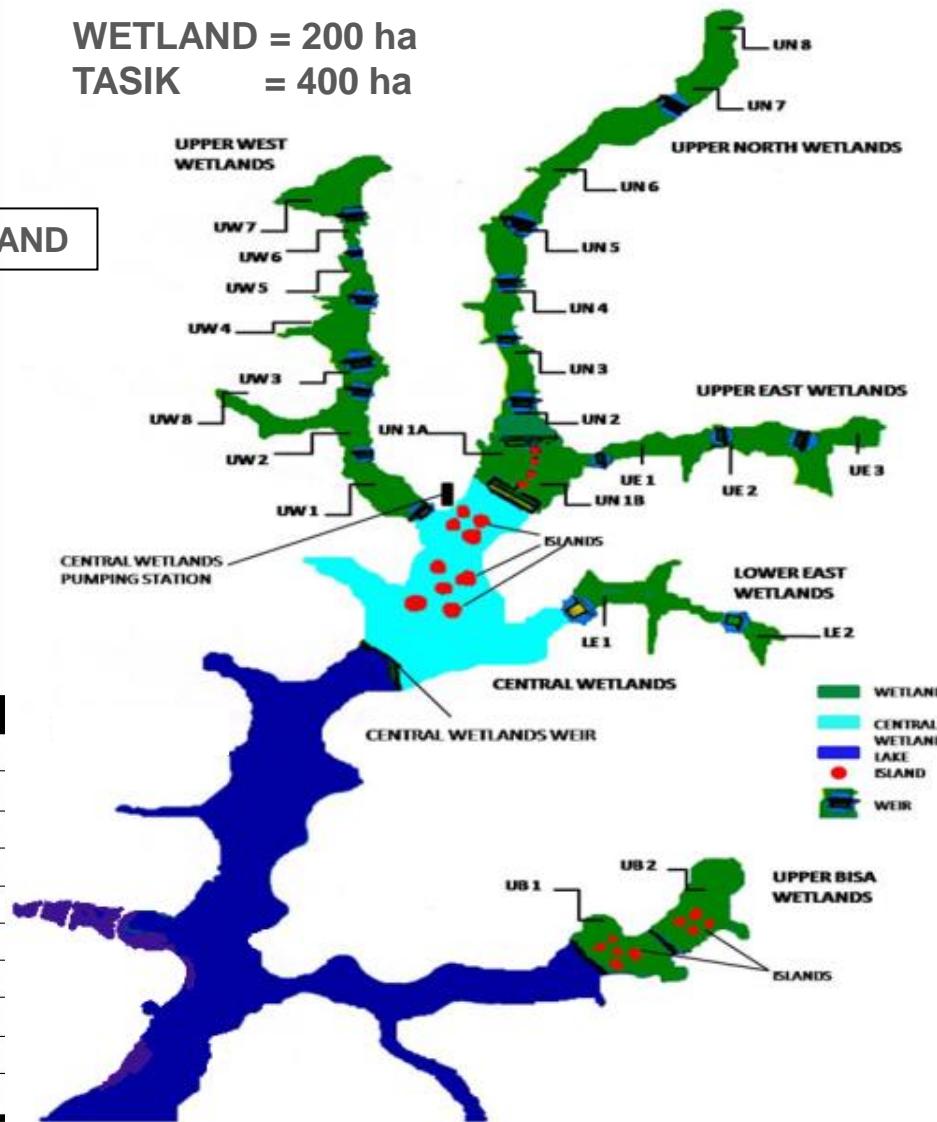


**PERKHIDMATAN PEMANTAUAN
KUALITI AIR DAN BIOLOGI
TASIK DAN WETLAND PUTRAJAYA
(NO. TENDER : PPj/T/JR/34/2020)**

PELAN LOKASI TAPAK (TASIK DAN WETLAND PUTRAJAYA)



WETLAND = 200 ha
TASIK = 400 ha



RINGKASAN SKOP KERJA

- Preliminaries
- Water Quality Physicochemical Monitoring
- Biological Assessment
- Putrajaya Lake and Wetland Ecosystem Services

Kesemua Bill of Quantities (BQ) perlu dibaca bersekali dengan :

- ✓ Scope of Services & Level of Services (Part 2 -Section A)
- ✓ Job Description (Part 2 -Section B)
- ✓ Method Statement (Part 2, Section C)
- ✓ List of Drawing and Drawing (Part 2 -Section D & E)

RINGKASAN SKOP KERJA

- Preliminaries
- Fee premium for Performance Bond
- Contract document
- Personnel (*refer Part 2, Section B: Job Descriptions for details*)
The contractor shall supply personnel as specified below;
 - Project Manager (Limnologist / Ecologist) - One (1) personnel (full time)
 - Supervisor (Technical Assistant - One (1) personnel (full time)
 - Sampling Team (Technician) - Three (3) personnel (full time)

Please refer page BQ 1.2 for details

RINGKASAN SKOP KERJA

- Preliminaries (cont.)
- PLWMOS (Putrajaya Lake & Wetland Monitoring and Operation System)
 - Entering and upload data and all reports every two months into the database system and will be verified by P.R/P.R's Representative.
- Comprehensive Report (once in 3 years)
 - To prepare and submit a comprehensive and integrated report by the relevant experts that includes all activities and summary of data collected in the contract scope of work (Water Quality Physicochemical Monitoring, Biological Assessment, Investigative Sampling for incident cases etc). The report shall include the recorded video of the contract output (minimum 5 minutes)

Please refer page BQ 1.3 for details

RINGKASAN SKOP KERJA

- Water Quality Physicochemical Monitoring
(for duration of 3 years)

1. Lake & Wetland Physicochemical Monitoring

Sampling and Monitoring Frequency :

- Daily Monitoring ✓
- Monthly ✓
- Twice a year ✓
- Yearly ✓
- All report must include appropriate recommendations from relevant experts

Reports Submission:

Please refer page BQ 2.1 to BQ 2.6 for details

RINGKASAN SKOP KERJA

• Water Quality Physicochemical Monitoring (cont.)

2. **Diurnal Sampling** (24 hours sampling at 4 hours interval)
-two (2) times in 3 years
3. **Hydrogeological / Ground Water Assessment**
-two (2) times a year
4. **Assessing sediments for contamination**
-once (1) a year
5. **Determination of water quality physicochemical and biological (outflow of lake system)**
-once (1) a year

Please refer page BQ 2.2 to BQ 2.6 for details

RINGKASAN SKOP KERJA

• Water Quality Physicochemical Monitoring (cont.)

6. Investigative Sampling

- Persampelan kes-kes pencemaran/kecemasan di tapak dilaksanakan serta-merta setelah insiden dikesan (dalam tempoh 4 jam)
- Kontraktor bertanggungjawab menasihati pihak PPj (mencadangkan) keperluan pemilihan parameter serta lokasi persampelan bersesuaian dengan kes insiden.
- Semua persampelan perlu mendapat persetujuan PPj (secara verbal/sms/aplikasi whatsapp/email dll) sebelum pelaksanaan kerja di tapak.
- Melaporkan progres kerja serta laporan awal (berdasarkan pemerhatian visual, bau dan sebagainya) dalam tempoh 24 jam kepada PPj (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) dan disusuli dengan laporan bertulis.
- Laporan terperinci beserta ulasan/cadangan tindakan lanjutan/penambahbaikan perlu dikemukakan kepada PPj dan bersedia untuk sebarang pembentangan laporan kepada PPj pada bila-bila masa.
- Cadangan penyelesaian masalah dalam tempoh 3 hari (berserta anggaran kos)

• Water Quality Physicochemical Monitoring



Water Quality Monitoring



Hydrogeological / Ground Water Assessment

Assessing sediments for contamination

POLLUTION INCIDENT



RINGKASAN SKOP KERJA

• Biological Assessment

1. **Assessing Exposure of Fish and Bivalve to Chemical**
-once (1) a year
2. **Assessment of Water Borne Pathogen**
- Monthly
- Twice (2) a year (Leptospirosis)
- Reports: Bi-Monthly
3. **Assessment of Phytoplankton & Zooplankton**
- twice (2) a year
4. **Assessment of Macrobenthos**
- twice (2) a year
5. **Assessment of Fish (diversity, abundance & water quality)**
- once (1) a year

Please refer page BQ 3.1 to BQ 3.2 for details

RINGKASAN SKOP KERJA

• Biological Assessment (cont.)

5. Assessment of Insects

- Surveillance & monitoring report:
Six (6) months compilation (min. 60 pieces photos)
- Detail investigation & data analysis report by
Experts: Once (1) a year
- Insects specimen collection and display:
Once (1) a year

Monitoring and Assessment of Mosquito/

- Larvae survey
- Adult survey –CDC-UV Light Trap/BG Sentinel,
Human Baiting
- Oviposit survey – targeted dengue species
Twice (2) a year

Please refer page BQ 3.3 to BQ 3.4 for details

RINGKASAN SKOP KERJA

• Biological Assessment (cont.)

6. **Assessment of Vertebrates (Amphibians, Reptiles, Mammals)**
 - Surveillance & monitoring report:
Six (6) months compilation (min. 40 pieces photos)
 - Detail investigation & data analysis report
by **Experts:** Once (1) a year

7. **Assessment of Avifauna (Birds)**
 - Surveillance & monitoring report:
Six (6) months compilation (min. 100 pieces photos)
 - Detail investigation & data analysis report
by **Experts:** Once (1) times a year

Please refer page BQ 3.4 to BQ 3.5 for details

• Biological Assessment





RINGKASAN SKOP KERJA

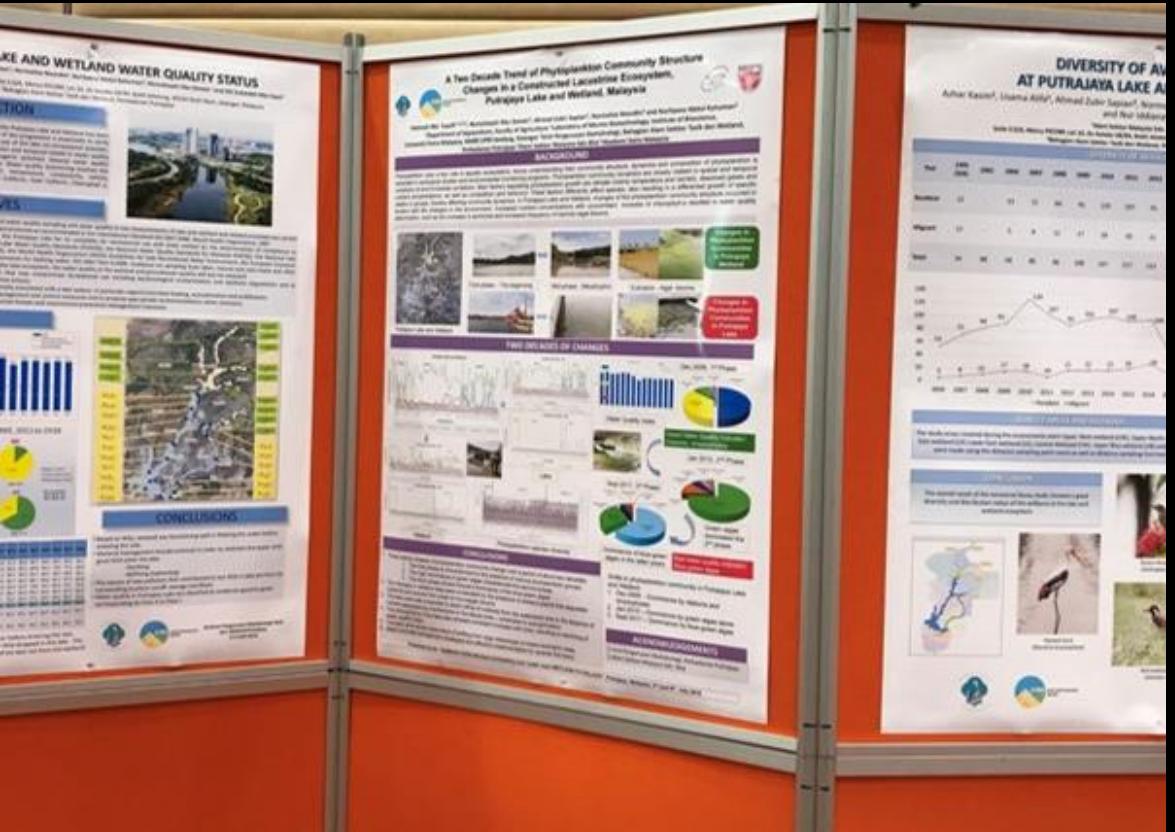
• PUTRAJAYA LAKE AND WETLAND ECOSYSTEM SERVICES

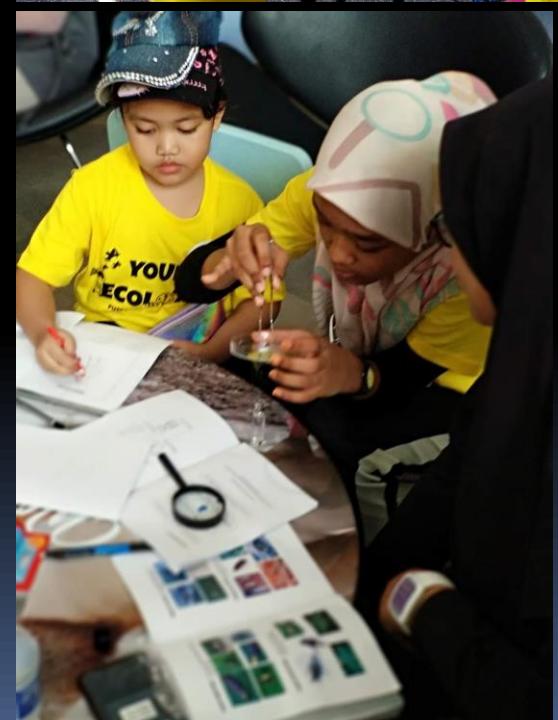
- i) **Economic Assessment of Putrajaya Lake and Wetland (PLW) Ecosystem Goods and Services**
 - Carry out an assessment of a total economic value (TEV) of PLW Ecosystem Goods and Services by applying The Economics of Ecosystem Biodiversity (TEEB)
 - Specific team (experience personnel) to perform the service lead by an **expert** (Environmental and Resources Economic Specialist / Lake Management Plan / Lake Manager)
 - Organize a dissemination workshop on ecosystem services in Putrajaya Lake including preparation of related publication and research paper to be presented.

Please refer Volume 1, Part 2, Section A – Scope of Services item 11.1 for details

- ii) **Publication and Awareness Programme of Putrajaya Lake and Wetland**
 - Conduct activities for 100 participants (7 – 17 years old) including supplying qualified facilitators, planning & preparing program's material & equipment's
 - Prepare & design posters on PLW Habitat/Fauna/Ecosystem/Water quality data (A1 size)

Please refer Volume 1, Part 2, Section A – Scope of Services item 12.1 for details

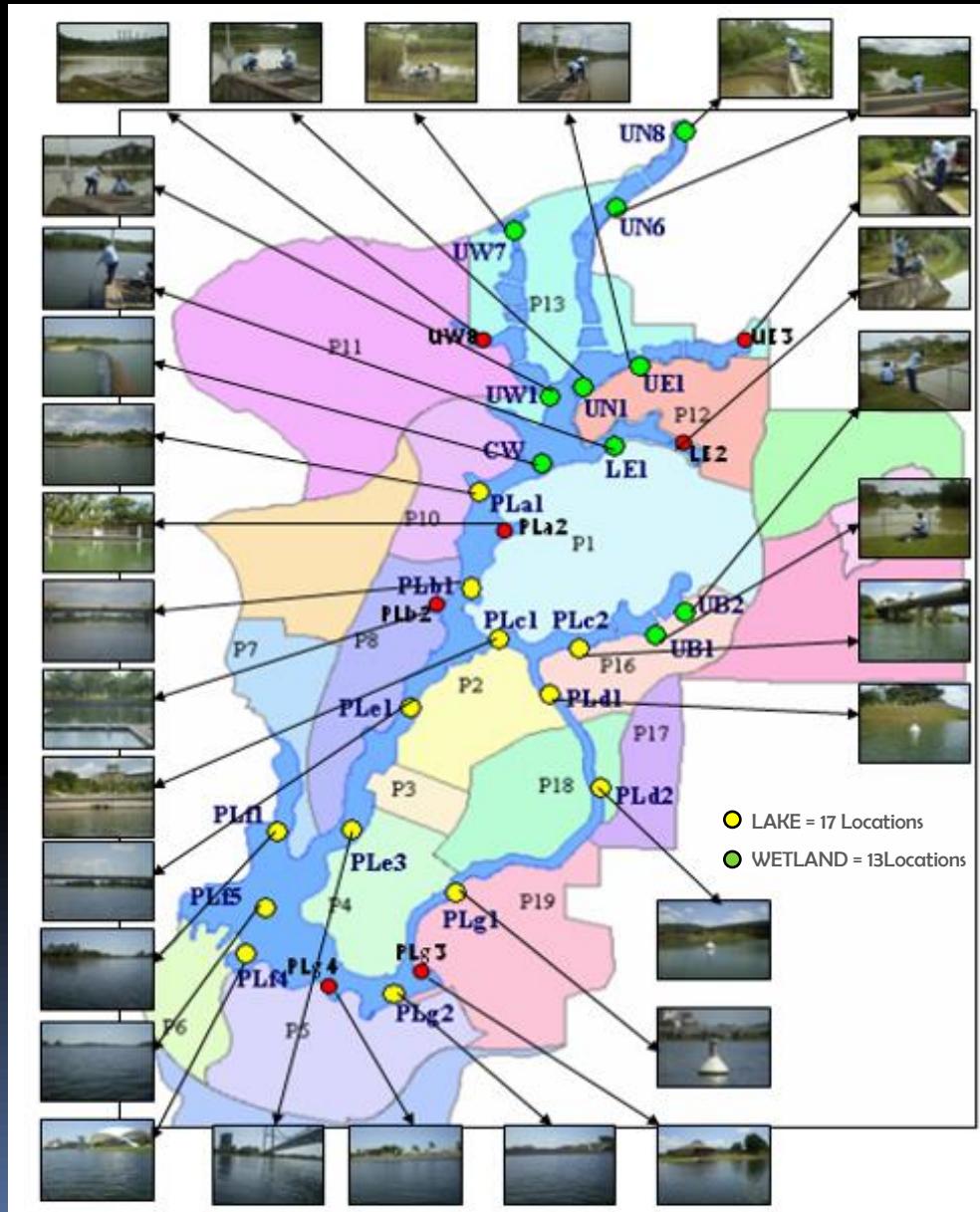




LOKASI KERJA

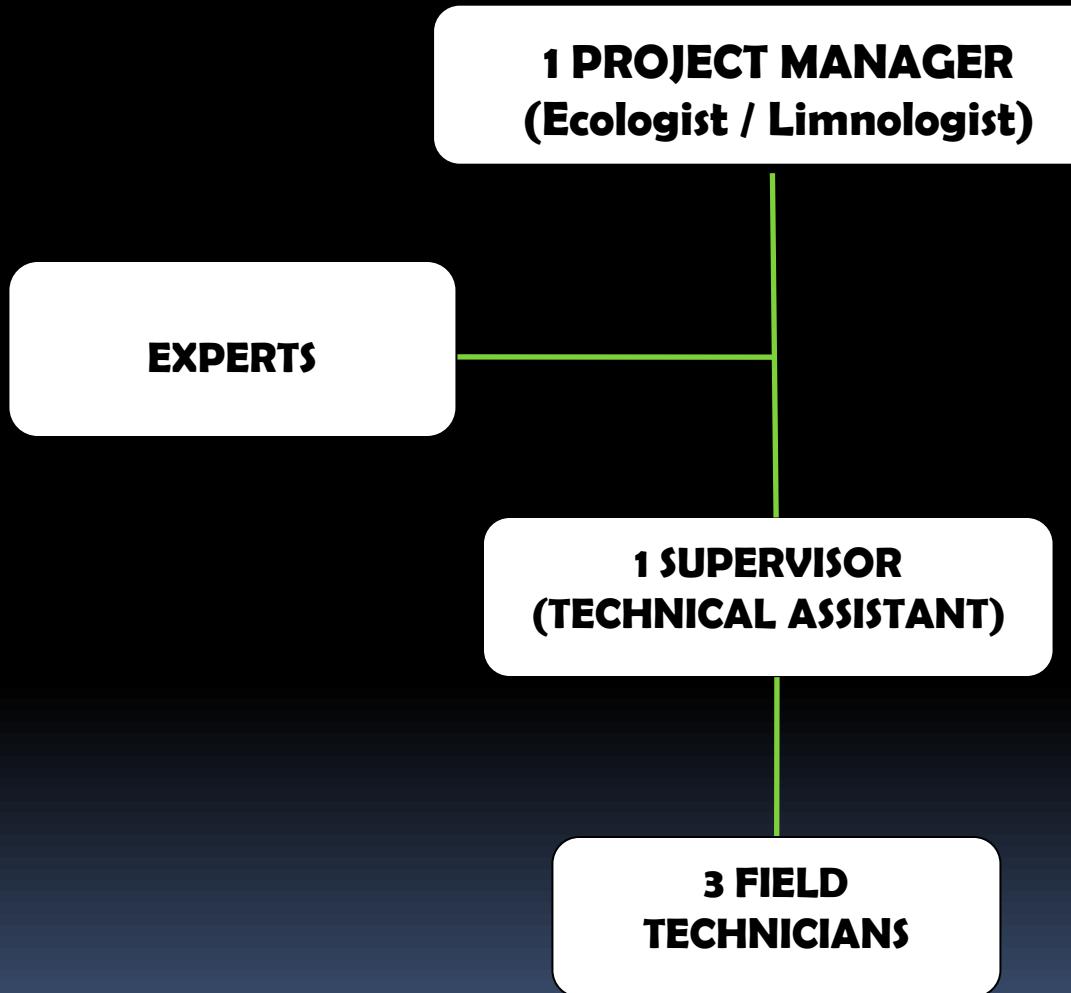
SAMPLING LOCATION FOR WATER QUALITY AND BIOLOGICAL MONITORING

Please refer Part 2, Section D
for details of drawing for each
monitoring/sampling
programme locations



ORGANISATIONAL STRUCTURE OF KEY PERSONNEL

(Minimum Numbers of Manpower)



LIST OF EXPERTS

Menyediakan pakar-pakar bidang berikut dengan pengalaman sekurang-kurangnya 10 tahun:

A. Water Quality Expert

B. Biological Assessment Experts

- Asessment of Phytoplankton & Zooplankton
- Asessment of Macrobenthos
- Asessment of Waterborne Pathogen
- Assessing Exposure of Fish and Bivalve to Chemical

C. Terrestrial Fauna Experts

- Assessment of Avifauna (Birds)
- Assessment of Verterbrates (Amphibians, Reptiles, Mammals)
- Assessment of Insects
- Assessment of Mosquito

The tenderer shall provide Proof Acceptance of Appointment as Expert

OFFICE SPACE AND EQUIPMENTS / MAN POWER

A. Office Space

- To provide office space at the most convenient location (to efficiently perform immediate actions and emergencies) at contractor's own cost.
- To use Perbadanan Putrajaya's lab as satellite office to transit sample/equipments for terrestrial fauna survey, insect sorting, etc.

B. Equipments/ManPower

- To provide boats, transportation, communication tools and other equipments required for monitoring purpose, at contractor's own cost.
- To provide enough sampling team and transportation whenever necessary (ie: Diurnal Sampling, Investigative Sampling, etc), at contractor's own cost.

SERVICE LEVEL AGREEMENT (SLA)

Services Level Agreement (SLA) dan prestasi adalah berdasarkan kepada tahap perkhidmatan dalam tempoh jaminan oleh pihak Petender/ Kontraktor seperti jadual berikut :

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
1.0	PERSONNEL (Full Time)			
1.1	<p>Project Manager - 1 person (Limnologist/ Hydrologist)</p> <p>Pengalaman kerja berkaitan minima 5 tahun dan memperoleh sekurang-kurangnya ijazah atau setaraf dalam bidang Limnologi/Biologi/ Sains Alam Sekitar Mikrobiologi/ Hidrologi/ Kimia/Sains/ Kejuruteraan Persekitaran atau lain-lain bidang setara.</p>	Sepanjang Kontrak	<ul style="list-style-type: none"> • Bertanggungjawab dalam merancang dan menyelia keseluruhan pelaksanaan kerja-kerja Penyelia dan Pasukan Persampelan di tapak dan memastikan kesemua skop dan tahap perkhidmatan yang dinyatakan dalam 'Job Description', Bill of Quantities (BQ) dan SLA dilaksanakan. • Sentiasa 'alert' tentang keadaan di tapak dan maklumkan status terkini isu-isu outstanding di tapak kepada PPj. • Sentiasa bersedia untuk memberi maklum/menerangkan tentang situasi di tapak (pencemaran/abnormal situations) pada bila-bila masa diperlukan oleh PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
1.2	<p>Supervisor - 1 person (Technical Assistant)</p> <p>Pengalaman kerja berkaitan minima 2 tahun dan memperoleh Diploma atau setaraf dalam bidang Alam Sekitar/Sains/Kejuruteraan Awam atau lain-lain bidang setara.</p>	Sepanjang Kontrak	<ul style="list-style-type: none"> Bertanggungjawab menyelia dan mengesahkan pasukan persampelan di tapak mengikut jadual dan lokasi kerja termasuk mematuhi peraturan keselamatan di tapak. Memastikan pelaksanaan keseluruhan skop dan tahap perkhidmatan yang dinyatakan dalam 'Job Description', Bill of Quantities (BQ) dan SLA dilaksanakan, Sentiasa 'alert' tentang keadaan di tapak dan maklumkan status terkini isu-isu outstanding di tapak kepada PPj. Sentiasa bersedia untuk memberi maklum/menerangkan tentang situasi di tapak (pencemaran/abnormal situations) pada bila-bila masa diperlukan oleh PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
1.3	<p>Sampling Team - 3 person (Technician)</p> <p>Pengalaman kerja berkaitan minima 2 tahun dan memperoleh Sijil atau setaraf dalam bidang Alam Sekitar/Sains/Kejuruteraan Awam atau lain-lain bidang setara.</p>	Sepanjang Kontrak	<ul style="list-style-type: none"> Bertanggungjawab memantau kualiti air (visual) dan in-situ (jika terdapat pencemaran/abnormal situations di tapak) setiap hari (Isnin hingga Ahad) termasuk cuti-cuti am dan menjalankan kerja-kerja persampelan secara berjadual atau secara kecemasan (<i>ad hoc</i>) pada bila-bila masa diperlukan oleh PPj dan mematuhi peraturan keselamatan di tapak. Sentiasa ‘alert’ tentang keadaan di tapak dan maklumkan status terkini isu-isu outstanding di tapak kepada PPj. Sentiasa bersedia untuk memberi maklum/menerangkan tentang situasi di tapak (pencemaran/abnormal situations) pada bila-bila masa diperlukan oleh PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
2.0	WATER QUALITY PHYSICOCHEMICAL MONITORING	Setiap bulan	Jadual progam pemantauan/ persampelan fisiokimia bulan akan datang hendaklah dikemukakan kepada PPj selewatnya 1 minggu sebelum berakhirnya bulan semasa.	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00
2.1	<p>Daily Monitoring</p> <p>To monitor the current status of water quality (visual) in lake and wetland.</p> <p>To ensure immediate action to be taken if water pollution occur.</p> <p>To monitor for any suspicious or forbidden activities for PPJ to take action.</p>	Setiap hari	<ul style="list-style-type: none"> • Pemantauan visual kualiti air dijalankan di keseluruhan tasik dan wetland. • Sebarang masalah kualiti air dari segi warna, bau, dan yang berkaitan hendaklah dimaklumkan serta merta (real time) kepada pihak PPj. • Laporan pemantauan harian hendaklah dikemukakan kepada PPj dalam bentuk softcopy selewatnya pukul 10.00 pagi hari berikutnya. • Cadangan keperluan persampelan penyiasatan (dengan merujuk kepada laporan pemantaun harian) hendaklah diajukan dan mendapat ketetapan pihak PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
2.2	<p>Monthly Water Quality Monitoring (Ambient)</p> <p>Parameter :</p> <p>In-situ (Temperature, pH, DO, Ammonium (NH4+), Conductivity, Salinity, Turbidity, Secci Disk Depth), BOD, COD, TSS, Ammoniacal Nitrogen, E.coli, Feacial Coliform, Chlorophyll-a, Total Phosphorus, Total Nitrogen, Total Coliform</p> <p>Area : Lake and wetland</p> <p>To carry out sampling and analysis for the above parameters once a month (including data evaluation) for twelve (12) times in one year at thirty (30) locations. (Lake 17 locations and Wetland 13 location)</p>	1 kali sebulan	<ul style="list-style-type: none"> • Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. • Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. • Data in-situ (raw data) dikemukakan pada hari yang sama persampelan dilakukan. • Ulasan ringkas persampelan hendaklah dikemukakan (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
2.3	<p>Monthly Water Quality Monitoring (inlet)</p> <p>Parameter:</p> <p>In-situ (Temperature, pH, DO, Ammonium (NH4+), Conductivity, Salinity,Turbidity, Secci Disk Depth), BOD, Ammoniacal Nitrogen, E. Coli, Feacial Coliform, Total Phosphorus</p> <p>Area : Area: Lake & Wetland Inlet - entry point from surrounding into the lake and wetland</p> <p>To carry out sampling and analysis for the above parameters once a month (including data evaluation) for twelve (12) times in a year at fifty (50) locations.</p>	1 kali sebulan	<ul style="list-style-type: none"> • Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. • Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. • Data in-situ (raw data) dikemukakan pada hari yang sama persampelan dilakukan. • Ulasan ringkas persampelan hendaklah dikemukakan melalui emel kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
2.4	<p>Yearly Water Quality Monitoring (ambient)</p> <p>Parameter:</p> <p>Total Chlorophyll, Nitrate, Turbidity, Phosphate, Chloride, Colour, Conductivity, Hardness, Alkalinity, Aluminium, Ammonia, Arsenic, Antimony, Barium, Beryllium, Boron, Cadmium, Free Chlorine, Total Chromium, Copper, Cyanide, Flourine, Iron, Lead, Manganese, Mercury, Nickel, Total Phosphorus, Nickel, Total Phosphorus, Silica, Selenium, Silver, Sulphur, Sulphate, Zinc, O&G, Chlorophyll-a, Floatables, Total Coliform, Salmonella, Enterroviruses', Gross Alpha, Gross Beta, Radium 226, Strontium 90, Carbon Chloroform Extract, MBAS/BAS, O&G (mineral), O&G (emulsified edible), PCB, Phenol, Aldrin,/Dieldrin, BHC, Chlordane, t-DDT, Endosulfan, Heptachlor/Epoxyde, Lindane, 2,4-d, 2,4,5-T", 2,4,5-TP', Paraquat', Electrical Conductivity, Floatables, Odour, Taste.</p> <p>Area : Lake and Wetland</p> <p>To carry out sampling and analysis for the above parameters once a year (including data evaluation) at thirty (30) locations.</p>	1 kali setahun	<ul style="list-style-type: none"> • Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. • Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. • Laporan terperinci persampelan tahunan beserta ulasan/ cadangan tindakan lanjutan/ penambahbaikan perlu dikemukakan selewatnya dalam tempoh 60 hari selepas persampelan dijalankan. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
2.5	<p>Diurnal Water Quality Monitoring (ambient)</p> <p>Parameter:</p> <p>In-situ (Temperature, pH, DO, Ammonium (NH4+), Conductivity, Salinity, Turbidity, Secci Disk Depth), Nitrate, Phosphate, Dissolved Phosphate, Chlorophyll-a, Total Phosphorus, Total Nitrogen, Dissolve Organic Carbon, Particulate Organic Carbon</p> <p>a) To carry out sampling and analysis for the above parameters twice (2) in 3 years (including data evaluation) at three (3) locations. Sampling will be conducted at three (3) levels of water depth at four (4) hours interval for twenty-four (24) hours. The sampling date will be determined.</p>	2 kali dalam 3 tahun	<ul style="list-style-type: none"> Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. Ulasan ringkas persampelan hendaklah dikemukakan melalui (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. Laporan <i>Diurnal and Depth Profile of Selected Water Quality Parameters</i> hendaklah dikemukakan selewat-lewatnya 40 hari selepas persampelan dijalankan sebanyak 2 salinan bewarna kepada PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK /TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
	<p>Diurnal Water Quality Monitoring (ambient) continue..</p> <p>Area : Lake & Wetland</p> <p>b) Investigative sampling for BQ 2.2 item 2.4A (4 locations x 3 depths x 4 hours interval for 24 hours)</p>	Mengikut keperluan		
2.6	<p>Water Quality Monitoring (Hydrogeological / Ground Water Assessment)</p> <p>Parameter:</p> <p>In-situ (Temperature, pH, DO, Ammonium (NH4+), Conductivity, Salinity, Turbidity, Secci Disk Depth), TSS & Hardness, BOD, COD, Oil & Grease, Ammonia, Silica, Phenol, Cadmium, Iron, Copper, Maganese, Sulphate, Chloride, Total Phosphate, Arsenic, Boron, Total Chromium, Cynide, Flourine, Mercury, Lead, Nickel and Zinc</p> <p>To carry out sampling and analysis (including data evaluation) twice (2) a year at two (2) locations for one (1) depth water level</p>	Setiap 6 bulan	<ul style="list-style-type: none"> • Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. • Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. • Data in-situ (raw data) dikemukakan pada hari yang sama persampelan dilakukan. • Ulasan ringkas persampelan hendaklah dikemukakan (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. • Laporan <i>Assessment of Hydrogeological/Ground Water</i> hendaklah dikemukakan kepada PPj dalam tempoh 30 hari selepas persampelan dijalankan sebanyak 2 salinan bewarna kepada PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
2.7	<p>Assessing sediments for contamination</p> <p>Parameter:</p> <p>As, Cd, Cu, Cr, Pb, Hg, Ni, Zn, Se, B, Phenol, Total Petroleum Hydrocarbons, t-DDT, Endosulfan, Lindane, Dimethoate, Mancozeb, Deltamethrin, Glyphosate, Gross Alpha, Gross Beta.</p> <p>a) Area :Lake and Wetland</p> <p>To carry out sampling and analysis once (1) a year at nine (9) locations.</p>	1 kali setahun	<ul style="list-style-type: none"> Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. Data in-situ (raw data) dikemukakan pada hari yang sama persampelan dilakukan. Ulasan ringkas persampelan hendaklah dikemukakan melalui (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. Laporan <i>Assessment of Chemical, Microbiological and Radiation Contamination in Water Sediment</i> hendaklah dikemukakan kepada PPj dalam tempoh 30 hari selepas persampelan dijalankan sebanyak 2 salinan bewarna kepada PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
2.8	<p>Determination of Water Quality Physicochemical and Biological (Outflow of Lake System)</p> <p><u>Water - Parameter : In-situ</u> (Temperature, pH, DO, Ammonium (NH4+), Conductivity, Salinity,Turbidity, Secci Disk Depth), BOD, COD, TSS, Ammoniacal Nitrogen, Feecal Coliform, Phytoplankton, Zooplankton, Macrofauna, Nitrate, Phosphate, O & G, Chloride as Cl, Arsenic, Cadmium, Mercury, Phenol, Lead, Nickel, Zink, Chromium, Chlorophyll-a, E-coli, Total Coliform</p> <p>To carry out sampling and analysis for the above parameters Once (1) a year (including data evaluation) at one (1) locations</p>	1 kali setahun	<ul style="list-style-type: none"> • Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. • Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. • Pemerhatian dan ulasan ringkas pemantauan hendaklah dikemukakan melalui (secara verbal telefon/ emel/ sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas pemantauan dijalankan. • Analisa data hendaklah mengambil kira rekod data tahun-tahun terdahulu. • Laporan hendaklah dikemukakan kepada PPj dalam tempoh 30 hari selepas persampelan dijalankan. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
3.0	<p>Water Quality Physicochemical Monitoring (Investigative Sampling)</p> <p>The investigative sampling (including in-situ reading of E.coli, faecal coliform and total coliform for related incidents) will be conducted for impact study of events conducted in/around the lake such as FLORIA, Malaysian Agriculture, Horticulture and Agrotourism Exhibition (MAHA), land development. etc. and incidents of Oil Spill, Algae Bloom, Fish Kill, sewerage leakage, etc. and Blue Green Algae counts for safe water body contact activities and water quality status of selected retention pond(ie: Flamingo pond, Lake Valley, etc.</p>	<p>Setiap masa apabila terdapat insiden pencemaran & keperluan persampelan penyiasatan</p>	<ul style="list-style-type: none"> • Persampelan kes-kes pencemaran/kecemasan di tapak dilaksanakan serta-merta insiden dikesan (dalam tempoh 4 jam) • Kontraktor bertanggungjawab menasihati pihak PPj (mencadangkan) keperluan pemilihan parameter serta lokasi persampelan bersesuaian dengan kes insiden. • Semua persampelan perlu mendapat persetujuan PPj (secara verbal/sms/aplikasi whatsapp/email dll) sebelum pelaksanaan kerja di tapak. • Melaporkan progres kerja serta laporan awal (berdasarkan pemerhatian visual, bau dan sebagainya) dalam tempoh 24 jam kepada PPj (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) dan disusuli dengan laporan bertulis. 	<p>10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00</p>

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
	Water Quality Physicochemical Monitoring (Investigative Sampling) <i>Continued..</i>		<ul style="list-style-type: none"> • Laporan terperinci beserta ulasan/cadangan tindakan lanjutan/penambahbaikan perlu dikemukakan sebanyak 2 salinan berwarna kepada PPj dan bersedia untuk sebarang pembentangan laporan kepada PPj pada bila-bila masa. • Cadangan penyelesaian masalah dalam tempoh 3 hari bekerja (berserta anggaran kos) • Mengemukakan Borang Mohon Pelaksanaan Kerja (BMPK) yang lengkap dalam tempoh 3 hari dari tarikh persampelan penyiasatan dijalankan. • Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. 	

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
3.1	<p>Set A - Parameter : In-situ (Temperature, pH, DO, Ammonium (NH4+), Conductivity, Salinity,Turbidity, Secci Disk Depth)</p> <p>The provisional quantity of the set parameter for initial in-situ testing</p>	Mengikut keperluan	*seperti di atas	*seperti di atas
3.2	<p>Set B - Parameter : Total Phosphorus, Total Nitrogen, E-coli, Total Coliform, Faecal Coliform, Nitrate, Phosphate, Ammoniacal Nitrogen, BOD, COD, TSS</p> <p>The provisional quantity of the set parameters for sewerage leakage/algae bloom/ events conducted in/around the lake/wetland/ponds investigative sampling.</p>	Mengikut keperluan		

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
3.3	Set C - Parameter : Arsenic, Cadmium, Mercury, Nickel, Phenol, Zinc, Pesticides Analysis for water and tissue sample in relation to Fish Kill incident	Mengikut keperluan	*seperti di atas	*seperti di atas
3.4	Set D - Parameter : Oil & Grease The provisional quantity of the set parameters for Oil Spill investigative sampling.	Mengikut keperluan		
3.5	Set E - Parameter : Oil & Grease (TPH fingerprint) The provisional quantity of the set parameters for Oil Spill investigative sampling.	Mengikut keperluan		
3.6	Set F - Parameter : Cadmium, COD, Copper, Lead, Sulphate, Sulphur The provisional quantity of the set parameters for Fire Works Competition investigative sampling.	Mengikut keperluan		

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
3.7	Set G - Parameter : Chlorophyll-a The provisional quantity of the parameters for investigatives sampling.	Mengikut keperluan	*seperti di atas	*seperti di atas
3.8	Set H - Parameter : e-coli (in-situ) The provisional quatity for ecoli in-situ readings in cfu/100 ml.	Mengikut keperluan		
3.9	Report Submission	Mengikut keperluan	<ul style="list-style-type: none"> ● To prepare and submit comprehensive reports (any subsequent report incidents such as algal bloom, oil spillage, fish kills etc) which includes appropriate recommendations from relevant experts. 	

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.0	BIOLOGICAL ASSESSMENT		Jadual progam pemantauan/persampelan biologi bulan akan datang hendaklah dikemukakan kepada PPj selewatnya 1 minggu sebelum berakhirnya bulan semasa.	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00
4.1	<p>Assessing Exposure of Fish and Bivalve To Chemical</p> <p>Parameter: As, Cd, Cu, Cr, Pb, Hg, Ni, Zn, Se, Petrogenic Hydrocarbons, t-DDT, Endosulfan, Lindane, Dimethoate, Mancozeb, Deltamethrin, Glyphosate.</p> <p>Area :Lake and Wetland</p> <p>To carry out sampling and analysis (including data evaluation) one (1) times in a year at eight (8) locations.</p>	1 kali setahun	<ul style="list-style-type: none"> • Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. • Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. • Data in-situ (raw data) dikemukakan pada hari yang sama persampelan dilakukan. • Ulasan ringkas persampelan hendaklah dikemukakan melalui (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. • Laporan <i>Assessing Exposure Of Fish And Bivalve To Chemical</i> hendaklah dikemukakan kepada PPj dalam tempoh 30 hari dari tarikh persampelan sebanyak 2 salinan bewarna kepada PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.2	<p>Assessment of Water Borne Pathogen for Safe Water Recreational Activities</p> <p>Area :Lake and Wetland</p> <p>Parameter :</p> <p>In-situ (Temperature, pH, DO, Ammonium (NH4+), Conductivity, Salinity,Turbidity, Secci Disk Depth), Protozoa (Cryptosporidium, Giardia), Faecal Streptococci / Intestinal enterococci,Shigella sp., Vibrio sp. Aeromonas sp. Salmonella.</p> <p>a)To carry out sampling and analysis for the above parameters once a month (including data evaluation) at five (5) locations</p> <p>b)Investigative sampling for BQ 3.1 item 3.2 A</p>	Setiap 6 bulan Mengikut keperluan	<ul style="list-style-type: none"> Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. Data in-situ (raw data) dikemukakan pada hari yang sama persampelan dilakukan. Ulasan ringkas persampelan hendaklah dikemukakan melalui (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. Analisa data hendaklah merangkumi perbandingan dengan rekod data tahun-tahun terdahulu beserta laporan kualiti air. Laporan <i>Assessment of Water Borne Pathogen</i> hendaklah dikemukakan kepada PPj dalam tempoh 30 hari dari tarikh persampelan sebanyak 2 salinan bewarna kepada PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
	<p>Assessment of Water Borne Pathogen for Safe Water Recreational Activities <i>Continued..</i></p> <p>Parameter : Leptospirosis</p> <p>a)To carry out sampling and analysis for the above parameters twice (2) a year (including data evaluation) at five (5) locations</p> <p>b)Investigative sampling for BQ 3.1 item 3.2 C</p>			
4.3	<p>Assessment of Phytoplankton and Zooplankton</p> <p>Determination of species occurrence, distribution, composition and diversity for water quality indicator and health status.</p> <p>Area :Lake and Wetland</p>	Mengikut keperluan	<ul style="list-style-type: none"> Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. Data in-situ (raw data) dikemukakan pada hari yang sama persampelan dilakukan. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
	<p>Assessment of Phytoplankton and Zooplankton <i>Continued..</i></p> <p>a) To carry out sampling and analysis (including data evaluation) twice (2) a year at ten (10) locations.</p> <p>b) Investigative sampling for Phytoplankton</p>	Setiap 6 bulan Mengikut keperluan	<ul style="list-style-type: none"> Ulasan ringkas persampelan hendaklah dikemukakan melalui (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. Analisa data hendaklah merangkumi perbandingan dengan rekod data tahun-tahun terdahulu beserta laporan kualiti air. Laporan <i>Biological Assessment Of Putrajaya Lake and Wetlands</i> (merangkumi <i>Assessment of Phytoplankton</i> dan <i>Assessment of Macrofauna and Zooplankton</i>) hendaklah dikemukakan kepada PPj dalam tempoh 40 hari dari tarikh persampelan sebanyak 2 salinan bewarna kepada PPj. 	

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.4	<p>Assessment of Macrobenthos</p> <p>Determination of species occurrence, distribution, composition and diversity to develop Lake and Wetland biodiversity profiles.</p> <p>Area :Lake and Wetland</p> <p>To carry out sampling and analysis (including data evaluation) twice (2) a year at ten (10) locations.</p>	Setiap 6 bulan	<ul style="list-style-type: none"> Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. Data in-situ (raw data) dikemukakan pada hari yang sama persampelan dilakukan. Ulasan ringkas persampelan hendaklah dikemukakan melalui (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. Analisa data hendaklah merangkumi perbandingan dengan rekod data tahun-tahun terdahulu beserta laporan kualiti air. Laporan <i>Biological Assessment Of Putrajaya Lake and Wetlands</i> (merangkumi <i>Assessment of Phytoplankton</i> dan <i>Assessment of Macro benthos and Zooplankton</i>) hendaklah dikemukakan kepada PPj dalam tempoh 40 hari dari tarikh persampelan sebanyak 2 salinan bewarna kepada PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.5	<p>Assessment of Fish</p> <p>a) To carry out sampling and determination of occurrence and fish diversity once (1) a year at five (5) locations</p> <p>Water Quality Assessment</p> <p>Parameter : Total Phosphorus, E.coli, Total Coliform, Feacal Coliform, Nitrate, Phosphate, Ammonical Nitrogen, BOD, COD, TSS, Total Nitrogen, Chlorophyll-a, Hardness, Alkalinity, Arsenic, Cadmium, Iron, Lead, Mercury, Chromium, Zinc, F.Streptotococci/l. enterococci. Aeromonas sp, shigella sp, vibrio sp, Salmonella</p>	1 kali setahun	<ul style="list-style-type: none"> Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. Data in-situ (raw data) dikemukakan pada hari yang sama persampelan dilakukan. Ulasan ringkas persampelan hendaklah dikemukakan melalui (secara verbal telefon/emel/sms/aplikasi whatsapp/dll) kepada PPj dalam tempoh 1 hari selepas persampelan dijalankan. Analisa data hendaklah merangkumi perbandingan dengan rekod data tahun-tahun terdahulu beserta laporan kualiti air. Laporan <i>Biological Assessment Of Putrajaya Lake and Wetlands</i> (merangkumi <i>Assessment of Fish</i>) hendaklah dikemukakan kepada PPj dalam tempoh 40 hari dari tarikh persampelan sebanyak 2 salinan bewarna kepada PPj. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.6	<p>Assessment of Insect</p> <p>a) To conduct a continuous surveillance and evaluation of aquatic and terrestrial insects in wetland and lake area. The surveillance aspect is inclusive of species collection, abundance and diversity in relation to surrounding area, habitat, vegetation and overall lake and wetland ecosystem. The species collection shall be displayed complying to the standard arrangement in the proper displaying framed material (to be submitted once a year). The six (6) months compilation of prove data (to include minimum 60 pieces photos) and report should be submitted within thirty (30) days after the assessment. (3 copies of reports inclusive of softcopy photograph. Picture size is minimum 4MB).</p>	Setiap bulan	<ul style="list-style-type: none"> • Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. • Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. • Inventori kehadiran serangga (raw data) hendaklah dikemaskini setiap bulan • Laporan (kompilasi 6 bulan) hendaklah dikemukakan kepada PPj dalam tempoh 30 hari selepas pemantauan bulan semasa dijalankan. • Laporan perlu dikemukakan sebanyak 2 salinan bewarna kepada PPj. • Gambar-gambar fauna yang diambil hendaklah bersaiz sekurang-kurangnya 4 MegaByte (MB) dan salinan berbentuk softcopy (asal) dikemukakan kepada PPj. • Koleksi spesimen serangga hendaklah dihantar dalam bentuk display 2 unit box material yang standard setahun sekali. 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.7	<p>Assessment of Insect <i>Continued..</i></p> <p>Detail investigation of insects performed by expert (a professional in the practice of Arthropodology / Entomology) specializes in scientific study of anthropods / insects. The scope of service is inclusive of surveillance and assessment of the relative abundance and diversity in relation to surrounding area, habitat, vegetation and overall lake and wetland ecosystem.</p> <p>Investigation should include all data and information collected specified in BQ 3.3 item 3.6A.</p>	1 kali setahun	<ul style="list-style-type: none"> <i>The scope of service is inclusive of surveillance and assessment of the relative abundance and diversity in relation to surrounding area, habitat, vegetation and overall lake and wetland ecosystem. Investigation should include all data and information collected specified in BQ 3.3 item 3.6A.</i> <i>The report should be submitted once a year (2 copies of reports inclusive of scanned coloured photograph. Picture size is minimum 4MB). The softcopy document should be submitted in a 1 Terabyte capacity portable / external hard disk. The expert is also responsible to supervise the works carried out in BQ 3.3 item 3.6A and advise PPj in the relevant aspect throughout the contract period.</i> 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.8	<p>Monitoring and Assessment of Mosquito</p> <p>The main objective of this monitoring exercise is to assess and to make sure that Putrajaya Lake and Wetland is not a mosquito breeding area.</p> <p>Larval survey - using Sequential Sampling Sampling Plan</p> <p>a) Area :Lake To carry out sampling and analysis (including data evaluation) twice (2) a year at fifteen (15) locations.</p> <p>b) Area :Wetland To carry out sampling and analysis (including evaluation of data) twice (2) a year at twenty three (23) locations.</p>	Setiap 6 bulan	<ul style="list-style-type: none"> Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. Pemerhatian dan ulasan ringkas pemantauan hendaklah dikemukakan melalui emel kepada PPj dalam tempoh 1 hari selepas pemantauan dijalankan. Analisa data hendaklah mengambil kira rekod data tahun-tahun terdahulu. Laporan <i>Monitoring and Assessment of Mosquito</i> hendaklah dikemukakan kepada PPj dalam tempoh 30 hari selepas persampelan dijalankan. Laporan perlu dikemukakan sebanyak 2 salinan bewarna kepada PPj. <i>To prepare and submit a comprehensive and integrated (with water quality and other relevant parameters) report which includes analysis all data in BQ 3.3 item 3.7A, 3.7B, 3.7C, 3.7D and BQ 3.4 item 3.7E, 3.7F and 3.7G with appropriate recommendations from experts within 30 days after the sampling</i> 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
	<p>Adult survey - using CDC-UV light trap Sampling Plan</p> <p>a) Area : Lake To carry out sampling and analysis (including data evaluation) twice (2) a year at twelve (12) locations for three (3) consecutive nights.</p> <p>b) Area : Wetland To carry out sampling and analysis (including data evaluation) twice (2) a year at four (4) locations for three (3) consecutive night.</p> <p>Adult survey - using Human Baiting</p> <p>To conduct twice a year sampling (including data evaluation) for two (2) consecutive night at eight (8) locations to identify and classify the level of adult mosquito using human baiting. Sampling will be conducted by 2 people.</p>		*seperti di atas	*seperti di atas

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
	<p>Oviposit survey - sampling on targeted dengue species</p> <p>Sampling will be conducted on targeted species of dengue vector at nine (9) locations using artificial ovitrap for control effort through adulticiding treatment.</p> <p>a) Area : Lake To carry out sampling and analysis (including data evaluation) twice (2) a year at eight (8) locations</p> <p>b) Area : Wetland To carry out sampling and analysis (including data evaluation) twice (2) a year at one (1) locations.</p>		*seperti di atas	*seperti di atas

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.9	<p>Assessment of Vertebrates (Amphibians, Reptiles, Mammals)</p> <p>To conduct a continuous surveillance and evaluation of aquatic and terrestrial vertebrates animals (amphibians, reptiles, mammals) in wetland and lake area.</p>	Setiap bulan	<ul style="list-style-type: none"> Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. <i>The surveillance aspect is inclusive of species inventory, abundance and diversity in relation to surrounding area, habitat, vegetation and overall lake and wetland ecosystem. The six (6) months compilation of prove data (to include minimum of 40 pieces of photos) and report should be submitted within thirty (30) days after the assessment. (inclusive of softcopy photograph. Picture size is minimum 4MB).</i> 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

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		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.10	Detail investigation of aquatic and terrestrial vertebrates animals (amphibians, reptiles, mammals) performed by expert (a professional in the practice of Zoology).	1 kali setahun	<ul style="list-style-type: none"> <i>The scope of service is inclusive of surveillance and assessment of the relative abundance and diversity in relation to surrounding area, habitat, vegetation and overall lake and wetland ecosystem. Investigation should include all data and information collected specified in BQ 3.4 item 3.8A.</i> <i>The report should be submitted in once a year. (inclusive of softcopy photograph. Picture size is minimum 4MB). The softcopy document should be submitted in a 1 Terabyte capacity portable / external hard disk. The expert is also responsible to supervise the works carried out in BQ 3.4 item 3.8A and advise PPj in the relevant aspect throughout the contract period</i> 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.11	<p>Assessment of Avifauna (Birds)</p> <p>To conduct a continuous surveillance and evaluation of aquatic and terrestrial avifauna (birds) in wetland and lake area. The surveillance aspect is inclusive of species collection, abundance and diversity in relation to surrounding area, habitat, vegetation and overall lake and wetland ecosystem.</p>	Setiap bulan	<ul style="list-style-type: none"> Borang Memohon Pelaksanaan Kerja (BMPK) hendaklah dikemukakan dan mendapat kelulusan PPj sebelum persampelan dijalankan di tapak. Borang Ulasan Siap Kerja (BUSK) hendaklah dikemukakan dengan kadar segera setelah kerja disiapkan. Inventori kehadiran avifauna (raw data) hendaklah dikemaskini setiap bulan <i>The six (6) months compilation of prove data (to include minimum of 100 pieces photos) and report should be submitted within thirty (30) days after the assessment. (inclusive of softcopy photograph. Picture size is minimum 4MB).</i> 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

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		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
4.12	Detail investigation of aquatic and terrestrial avifauna (birds) performed by expert (a professional in the practice of Ornithology) specializes in scientific study of avifauna (birds).	1 kali setahun	<ul style="list-style-type: none"> <i>The scope of service is inclusive of surveillance and assessment of the relative abundance and diversity in relation to surrounding area, habitat, vegetation and overall lake and wetland ecosystem. Investigation should include all data and information collected specified in BQ 3.5 item 3.9A. The report should be submitted in once a year. (inclusive of softcopy photograph. Picture size is minimum 4MB). The softcopy document should be submitted in a 1 Terabyte capacity portable / external hard disk. The expert is also responsible to supervise the works carried out in BQ 3.5 item 3.9A and advise PPj in the relevant aspect throughout the contract period.</i> 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
5.0	PUTRAJAYA LAKE AND WETLAND ECOSYSTEM SERVICES			
5.1	This task specifies works connected with conducting a total economic value (TEV) of Putrajaya Lake and Wetland Ecosystem Goods and Services by applying The Economics of Ecosystem Biodiversity (TEEB) framework. Methods of various economic valuation of varying techniques to value various lake and ecosystem services should be applied. This includes: market-based approaches, contingent valuation method (CVM), discrete choice experiment (DCE), travel cost method (TCM), hedonic price method, benefit transfer approach (BTA) and other available methods that are appropriate for a particular goods and services. The values estimate from this task should be able to provide significant information for the conservation, recreational and aesthetic beauty of Putrajaya Lake and Wetland ecosystem	1 kali dalam 3 tahun	<ul style="list-style-type: none"> The expert team in this scope is required to prepare a report and present findings to Perbadanan Putrajaya (PPj) and other related government agencies, including policy observations and recommendations. Subsequently, a policy brief should be prepared as an extended executive summary for key decision makers. The service will lead and perform by a team of qualified and experienced experts which consists of at least an Environmental and Resource Economic Specialist who has vast experience in ecosystem valuation and paired and supported by a Lake Management Plan /Lake Manager. Other experts and specialists on certain aspects such as eco-hydrologists, water quality specialists, and others are also will benefit to support the technical modelling and analytical work 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
PUTRAJAYA LAKE AND WETLAND ECOSYSTEM SERVICES (continued)				
	<p>Depending on the method used, primary data required in the study should be collected using face-to-face interviews using a structured questionnaire from a sample of residents in Putrajaya and visitors/tourists. Data from secondary sources will complement the primary data in order to derive the economic value of a particular goods and services. Appropriate econometric model should be used which corresponds to the method used to derive the economic value.</p> <p>Switching to a more applicable price structure as intended by the Perbadanan Putrajaya to adopt Full Cost Recovery (FCR) approach will recover all related costs when ecosystem services related to the city water body is delivered to the consumers. Thus, water related pricing should be structured and reviewed to encourage conservation among consumers and simultaneously signals the possibility of higher water recreational price in the future</p>		<ul style="list-style-type: none"> Carry out an assessment of a total economic value (TEV) of Putrajaya Lake and Wetland Ecosystem Goods and Services by applying The Economics of Ecosystem Biodiversity (TEEB) The work area is situated in the administration of the Federal Territory of Putrajaya. This catchment area is serving The Putrajaya man-made Lake and Wetland of 600 hectares; Implementing the research and analysis to determine the Putrajaya Lake and Wetland Ecosystem Goods and Services by applying The Economics of Ecosystem Biodiversity (TEEB) framework. Preparation and submission of Inception Report; Conduct field and data/information to Putrajaya Lake and Wetland Ecosystem; Design and preparing the necessary suitable questionnaires to get the data for the purpose of assessing the ecosystem services values; Select enumerators and conduct the training to ensure proper implementation of the surveys works and data collection method; 	*seperti di atas

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
PUTRAJAYA LAKE AND WETLAND ECOSYSTEM SERVICES (continued)				
			<ul style="list-style-type: none"> Undertake the necessary surveys on the visitors and communities or respondents which involve directly or indirectly to the use of the Putrajaya Lake and Wetland ecosystem; Analyse all the statistical data in consideration of the best model to enable to do the economic calculation on a number of different ecosystem services of the Putrajaya Lake and Wetland; Submit to Perbadanan Putrajaya, progress report of the study, including data site visits, information and data collected initial implementation of biotechnologies and interim financial report, approved final report (the cost including reports and ammendments after commented by P.R/P.R's representative and payment will be made only after accepted final copy of the report) Applying the Benefit Transfer Approach (BTA) and also Opportunity Cost Approach (DCA) to obtain a better estimates value of the Putrajaya Lake and Wetland; 	*seperti di atas

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
PUTRAJAYA LAKE AND WETLAND ECOSYSTEM SERVICES (continued)				
			<ul style="list-style-type: none"> • Carry out the data final analysis; • Undertake necessary consultation with all involved stakeholders; and • In close collaboration with Perbadanan Putrajaya organize a dissemination workshop on ecosystem services in Putrajaya Lake including preparation of related publication and research paper to be presented. 	*seperti di atas
5.2	PUBLICATION AND AWARENESS PROGRAMME OF PUTRAJAYA LAKE AND WETLAND			
5.2.1	To conduct activities in relation to Putrajaya Lake and Wetland awareness programme/campaign for 100 participants age 7 to 17 years old.	20 kali dalam tempoh kontrak	Scope to include supplying qualified facilitators (10 person /activity), preparing and printing out programmes' materials including basic equipment and tools (minimum 10 pages colour handouts A4 size)(eg: Bird Watching programme, Bioindicator & Water Quality Sampling activities)	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
PUBLICATION AND AWARENESS PROGRAMME OF PUTRAJAYA LAKE AND WETLAND (continued)				
5.2.2	To prepare material and to design posters (A1 size) on Putrajaya Lake and Wetland habitat/ecosystem/water quality data etc (eg poster title: Birds of Putrajaya Lake and Wetland).	20 kali dalam tempoh kontrak	The works will be performed by a graphic designer	*seperti di atas
6.0	PLWMOS (Putrajaya Lake & Wetland Monitoring Operation System)			
6.1	Entering and upload data and all reports every two months into the database system and will be verified by P.R/P.R's Representative.	Setiap 2 bulan	Data-data dan laporan perlu diupload ke dalam PLWMOS secara berkala (setiap dua bulan). Kerja-kerja uploading hendaklah disempurnakan selewatnya satu (1) minggu selepas laporan hardcopy dikemukakan (termasuk ulasan dan penambahbaikan dari PPj).	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

BIL	SKOP PERKHIDMATAN	SERVICE LEVEL AGREEMENT (SLA)		
		KEKERAPAN	TAHAP PERKHIDMATAN / MASA BERTINDAK / TEMPOH PENYIAPAN	PENALTI / DENDA (RM)
7.0	COMPREHENSIVE REPORT			
7.1	To prepare and submit a yearly comprehensive and integrated report by the relevant experts that includes all activities and summary of data collected in the year (Water Quality Physicochemical Monitoring, Biological Assessment, Investigative Sampling)	1 kali dalam tempoh kontrak	<ul style="list-style-type: none"> • The report is expected to elaborate the interrelationship between relevant parameters. • There must also be an analysis of trend between data collected from previous years of monitoring (including development monitoring data and EIA data) • The report shall include the health status of the Putrajaya Lake and Wetland; the processes involve, ecosystem function, ecosystem services and recommend the mitigation actions and/or management measures to be implemented to achieve the management goal • The report shall include the recorded video of executive summary of contract scope/activity • The final report should be submitted for 5 copies (perfect binding). • To prepared and submit the report not later than one (1) month after the end of contract period 	10% daripada nilai keseluruhan perkhidmatan yang berkaitan atau minimum RM100.00

SERVICE LEVEL AGREEMENT (SLA)

1. SLA ini akan dilaksanakan dengan cara-cara berikut :
 - 1.2.1. Setiap aduan ketidakpatuhan akan dilaporkan oleh pihak Perbadanan Putrajaya kepada pihak Petender/Kontraktor menggunakan saluran rasmi samada melalui telefon, fax, email atau pun Perakuan Ketidakpatuhan (NCR).
 - 1.2.2. Tindakan susulan aduan melalui telefon akan dilakukan bagi memastikan pihak Petender/Kontraktor memperolehi aduan dengan kadar segera bagi memenuhi masa bertindak seperti di dalam SLA.

SERVICE LEVEL AGREEMENT (SLA)

2. PENALTI

Pembayaran bagi kerja-kerja perkhidmatan hendaklah sentiasa tertakluk kepada prestasi kerja perkhidmatan yang memuaskan dan mematuhi spesifikasi/Service Level Agreement (SLA) yang ditetapkan. Sekiranya Petender Yang Berjaya gagal, mengabai, melanggar atau meninggalkan daripada melakukan apa-apa tanggungjawab di bawah kontrak ini tanpa menjelaskan kepentingan Perbadanan, Perbadanan berhak untuk;

- 2.1 Memotong apa-apa jumlah yang bersamaan dengan nilai kerja yang tidak dilakukan Petender Yang Berjaya atau kerja yang dilaksanakan Petender Yang Berjaya tidak mematuhi spesifikasi yang ditetapkan di dalam dokumen; dan/atau

- 2.2 Melantik pihak ketiga untuk melaksanakan kerja yang dipertanggungjawabkan dengan kos dan perbelanjaan ditanggung Petender Yang Berjaya; dan/atau

SERVICE LEVEL AGREEMENT (SLA)

- 2.3 Mengenakan penalti berasaskan pada kadar yang dinyatakan di dalam SLA bagi setiap ketidakpatuhan yang dikeluarkan oleh Perbadanan apabila Petender Yang Berjaya gagal mematuhi spesifikasi (SLA) yang ditetapkan.

Dengan syarat bahawa pada perenggan 2.1 dan 2.2, Perbadanan hendaklah dimaklumkan terlebih dahulu kepada Petender Yang Berjaya untuk menyempurnakan perkhidmatan dalam tempoh yang dinyatakan oleh Wakil Perbadanan dan Petender Yang Berjaya telah gagal mematuhi.

SEKIAN
TERIMA KASIH