



EcoPeace Middle East Environmental - Jordan

# REQUEST FOR PROPOSAL (RFP)

Construction of a Constructed Wetland in [Jordan EcoPark](#)

**Project location:**

The construction will be located in Sheikh Hussein area in the north of the Jordan Valley within the boundaries of the Sharhabiel Bin Hassnah EcoPark.

**Project Reference:**

3389 BMZ & Global Water Challenge



EcoPeace Middle East Environmental - Jordan

## **EcoPeace Middle East Environmental – Jordan**

**Wishes to procure a contractor for the construction of a constructed wetland (Green Filter) and the upgrade and maintenance the current sewage network in the Jordan EcoPark. (Sharhabiel Bin Hassnah EcoPark (SHE Park)).**

Duration: 2 Months.

Start date: Feb 1<sup>st</sup>, 2020.

End date: March 31<sup>st</sup>, 2020.

**The bids must be sealed and submitted to:**

EcoPeace Middle East Environmental – Jordan, Amman office.

Al- Sina'a St, 35B second floor.

**Attention:** Procurement Manager (Ms. Nour Abu Laban).

**Tel:** +962-6-5866602/3

**Fax:** +962-6-5866604

**P.O. Box 840252, Amman 11181 Jordan**

**E-mails** : [Nour@EcoPeaceME.org](mailto:Nour@EcoPeaceME.org)

: [Eshak@EcoPeaceME.org](mailto:Eshak@EcoPeaceME.org)

**Website** : [www.ecopeaceme.org](http://www.ecopeaceme.org)

# 1. Project Overview

As part of our ongoing projects in the Jordan Valley, EcoPeace ME will require a contractor to construct a decentralized wastewater treatment plant in the Jordan EcoPark, **32°31'29.0"N 35°37'14.5"E (Jordan EcoPark Coordinates)**. This decentralized WWTP will be in the form of a constructed wetland (green filter). The EcoPark is located approximately 10 km north of the Sheikh Hussein border crossing in the Jordan Valley, its address is Sheikh Hussein, Tabaqet Fahl, Al Aghwar al Shamaliyah, Irbid. The EcoPark's facilities include a dining area, a kitchen, public bathrooms, ecological cabins with attached bathrooms for overnight lodging and a picnicking area.

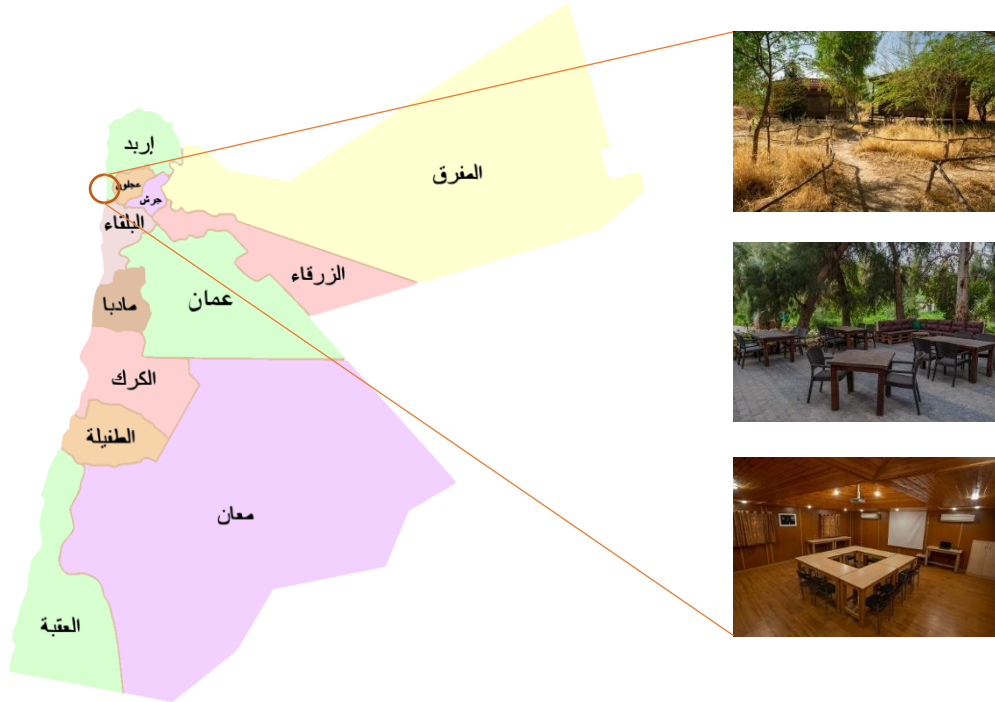
One of the biggest problems facing the Jordan Valley is the lack of wastewater infrastructure. The vast majority of the people living in the area are forced to dig unsanitary cesspits where their sewage is stored until they pay a tanker truck to empty it. These cesspits are a threat to health and safety as well as the environment due to the fact that the sewage stored in them percolates into the groundwater and they overflow when it rains.

It is our goal as an environmental organization to raise awareness about and provide solutions for water and environmental issues in the Jordan Valley. Constructed wetlands represent a low cost, decentralized form of wastewater treatment that can be applied to many communities in the Jordan Valley.

The constructed wetland will be placed within the boundaries of the park's protected area. It will treat all of the wastewater produced in the EcoPark while acting as a proof of concept for low cost, decentralized wastewater treatment for the Jordan Valley's residents and decision makers. Furthermore, it will help improve the ecological restoration of the EcoPark's protected area.

The constructed wetland to be built is a horizontal - subsurface flow wetland. It's two main components are a primary (or pretreatment) unit and a secondary treatment unit. The pretreatment unit is an underground reinforced concrete septic tank composed of 4 chambers, and a removable lid for each chamber. The secondary treatment unit is made up of three aboveground trapezoidal channels filled with tuff rock.

Students, decisions makers and members of the local community will be guided on tours that include the constructed wetland as part of our educational programs. By showing them the constructed wetland, we aim to create a better understand of the nature of wastewater and how it can be reused beneficially. We plan to follow up with the members of the communities of the Jordan Valley to look for opportunities where constructed wetlands of a larger scale can be built to treat certain neighborhoods; wastewater. It is essential that the constructed wetland in the EcoPark is built to the highest possible standards due to its function as a proof of concept and educational site.



## 2. Terms of Reference

- The bid must include separate financial and technical offers. The offers must be submitted as a hard copy and a soft copy on a CD or flash drive in the form of a PDF.
- The reference “3389 BMZ & Global Water Challenge” must be shown on your Technical and financial offers.
- Bids **must** be submitted by 12:00 on Sunday, January 26<sup>th</sup>, 2020 at the latest. There will be no public opening of the tenders. Proposals received after the stipulated date and time will be invalidated.
- Bids must be submitted in a securely sealed envelope to the only authorized person at EcoPeace ME, **Ms. Nour Abu Laban**.
- Bids will only be accepted in Jordanian Dinars. Bids submitted in any other currency will be invalidated.
- Inquires should be sent via Email to “ [Eshak@EcoPeaceME.org](mailto:Eshak@EcoPeaceME.org) ”.
- A mandatory field visit to the Ecological Park in coordination with EcoPeace in order to be eligible to submit your technical and financial proposals.
- The bill of quantities include, but are not limited to, the supply of materials, and the construction of the constructed wetland and any other works (electrical, mechanical or civil) that guarantee the success implementation of the project based on good practice and based on the regulations of the Ministry of Water and Irrigation (MWI) and the Ministry of the Environment in Jordan.
- The bid price must include all the necessary work to prepare the site for construction.
- The bidder must provide all the technical specifications for the materials to be used in construction with their data sheets and their reference if any.
- The specifications in the bid must be clear and must include a bill of quantities.
- The bidder must include the unit price and quantity of the materials along with the matching design and as built drawings if needed.
- The bidder must attach documented proof that he is both financially and technically capable of implementing the project. These documents include but not limited to:
  - o Proof that the bidder has successfully completed at least two projects related to the treatment of domestic sewage using constructed wetlands and the company profile.
  - o The legal license from the relevant authorities and the commercial registration for the bidder issued by the authorities in Jordan and the name of the main partner and partners of the bidder.
  - o Litigation history over the last three years.
  - o The bidder’s commercial registration and a valid professional practice license, the name of the main partner and / or partners of the bidder must be attached. Also, the

bidder must specify their address, mailbox number, fax and phone number, area identification, postal code, e-mail and any other information about the bidder's identity.

- The bidder's staff are qualified to manage the project professionally.
- The contractor's project manager chosen for this project must have, at minimum, three years of experience in the design, supply, construction and operating of similar constructed wetlands projects.
- The resumes of all the bidder's staff related to implementing the project must be attached.
- The tax identification number must be mentioned and a valid income tax certificate of acquittance must be attached.
- The awarded bidder is prohibited to contract the tender to any other bidder under the penalty of nullifying the contract. EcoPeace has the right to pursue legal action to recover all it's rights which include fines. The awarded bidder will be held completely responsible for the actions of any of the sub-contractors.
- The bidder shall submit the following bank guarantees:
  - A bid bond valid for a period of 60 days from the date of submitting the tender or a duly certified check from one of the licensed banks operating in the Kingdom of Jordan worth (5%) of the total bid. The certified check must have the description of: "EcoPeace Middle East Environmental Jordan – for the tender number 3389 BMZ & Global Water Challenge" .
  - Performance bond or duly certified check for (10%) of the bid value upon awarding. Using the following description "EcoPeace Middle East Environmental Jordan – for the tender number 3389 BMZ & Global Water Challenge" on certified check.
- The contractor must supply and install warning panels and signs on site during the project implementation stages and after operation and take all measures related to public safety.
- The contractor must supply, install, and operate the entire system within a period not exceeding (70) calendar days from the date signing the contract with EcoPeace.
- A fine of 50 dinars For each delay day, provided that the total fines do not exceed (10%) of the bid value.
- The attached engineering drawings are:
  1. Desander and Primary settling tank.
  2. General – Channels.
  3. Channels.
  4. Channels transversal details.
  5. Green Well.
  6. Other Wells.

### 3. Purpose of the RFP

This Request for Proposal (RFP) intends to identify a contractor that will construct the wastewater treatment plant, and do maintenance works for the old sanitary network and install outdoor toilets in the Sharhabiel Bin Hassnah EcoPark.

### 4. Description of Required Deliverables

#### a. General:

- The required capacity of the decentralized treatment plant is 10 cubic meters per day.
- The detailed engineering drawings of the primary treatment unit and the constructed wetland are attached in this tendering document.
- The constructed wetland to be built is a horizontal - subsurface flow wetland. Changing and adding improvements to the existing design is encouraged, but the design concept must not be changed from horizontal - subsurface flow type of constructed wetlands.
- The bidder must provide a landscape design of the surrounding of the treatment plant including an observation platform (viewing platform) for the park's visitors viewing the constructed wetland.
- The treatment plant need to be fenced in with galvanized iron chain link fencing.
- The sewage network at the EcoPark might undergo through maintenance based on technical inspection to the site visit.
- Installing 4 public toilets.

#### b. The Pretreatment Settling Tank:

**The pretreatment setting tank (primary unit) is an under-ground septic tank with four chambers. The unit is made up of a total of 4 chambers which include a de-sander and 3 settling tanks. The pretreatment unit will remove oils and suspended solids from the wastewater.**

- The tank's original design used brick and mortar as the structural material for the walls. The bidder must change the tank's design for it to be constructed completely out of reinforced concrete. **The bidder must not, under any circumstances, change the internal dimensions for the desander and settling tanks without proof of improved function.** (The bidder shall submit his detailed design parameters and material used.)
- The concrete used must be Type II (Sulfate-resisting concrete) and contain admixture to make the concrete waterproof such as (40N/mm<sup>2</sup> concrete microsilica ). Every batch of the

concrete must come with a certificate to prove its quality. EcoPeace reserves the right to further test the concrete at our own cost to deem if the concrete is satisfactory.

- The inner walls of the tank must be coated with a non-poisonous epoxy coat as well as plastered to prevent any leakage from the tank.
- The outer walls of the tank must be insulated, both horizontally and vertically, with insulating layers to prevent any leakage of water. Water stops must be placed during construction to prevent water leakage.
- None of the plumbing fixtures or pipes must leak whatsoever.
- The top cover of the pretreatment unit's compartments must be fitted with 5 manhole lids mad of cast iron with the proper thickness ( minimum 1/8" thick caliber 11) for each lid to prevent warping, rusting, and corrosion. These lids which allow us to monitor and maintain each chamber of the primary settling treatment unit and the water inlet.
- The Stair for the desander chamber must be made of galvanized iron.

#### **c. The Constructed Wetland Channels:**

**The channels are where the secondary treatment takes place. The sewage will slowly flow through the tuff rock, allowing bacteria to grow and consume the harmful organic materials in the wastewater.**

- The walls of the channels of the constructed wetland will be built out of a layer of geotextile and a layer of geomembrane. The geotextile will be in contact with the soil while the geomembrane will cover the geotextile.
- The Non Woven HDPE geotextile must be of a thickness of minimum 1.3 mm.
- The geomembrane must be made of HDPE with a minumum thickness of 1 mm.
- The aggregate used to fill the channels must be tuff rocks with an effective diameter from 30 mm to 60 mm.

#### **d. Divider Boxes:**

**The divider boxes act as small diversion weirs. They split the flow of the wastewater so that it is appropriately divided between the channels.**

- The boxes must be constructed out of reinforced concrete.
- The concrete used must be Type II (Sulfate-resisting concrete) and contain admixture to make the concrete waterproof such as (40N/mm<sup>2</sup> concrete microsilica ). Every batch of



concrete must come with a certificate to prove its quality. EcoPeace reserves the right to further test the concrete at our own cost to deem if the concrete is satisfactory.

- The inner walls of the boxes must be coated with a non-poisonous epoxy coat as well as plastered to prevent any leakage from the tank.
- The outer walls of the boxes must be insulated, both horizontally and vertically, with insulating layers to prevent any leakage of water.

#### **e. Sidewalk:**

**The sidewalk will serve the dual purpose of increasing the stability of the geotextile channels and as a surface for tour participants to walk on during any season when they are learning about the constructed wetland.**

- Each channel will have its own sidewalk. The sidewalk surrounding the channel must be made of plain concrete with a compressive strength of 15 MPa and with a width of 1 meter and a thickness of 10 cm.
- A layer base course of 1 meter width must be placed around the sidewalks.

#### **f. Pipes:**

- The piping must be PVC.
- The bidder must determine the diameter and length of the pipes after the site visit.
- A pipeline will be crossing underneath a road. The contractor is required to maintain the road after the installation.

#### **g. Discharge Pond**

- A square discharge pond 3x3 meters with maximum depth of 30 mm made of a layer of Geotextile and covered by a layer of the Geomembrane (the same as the material used for the channels).
- A water meter should be placed at the inlet of the discharge pond in order to measure the treated wastewater.

#### **h. The Out-door Toilets:**

- Four out-door toilets with sinks to be installed and connected to the pretreatment unit.
- The toilets design should be cost-effective.
- Two toilets will be for men and two toilets will be for women.

- A four cubic meter plastic water tank should be installed for male toilets and a four cubic meter plastic water tank should be installed for female toilets.

## 5. Dimensions of the Treatment Units

### A. Desander

Parameter	Value	Unit
Design		
Length	3.8	m
Width	1.5	m
Depth (2-5m)	1.5	m
Volume	8.4	m <sup>3</sup>
Length: Width: 2.5:1 - 5:1	2.5	-
Width: Depth: 1:1 - 5:1	1.0	-
Retention time > 1 hour	20.1	Hour
Surface for construction		
Area of bottom plates	5.6	m <sup>2</sup>
Area of rooftop plates	5.6	m <sup>2</sup>
Area of walls	15.8	m <sup>2</sup>

B. Settling Tank

Parameter	Value	Unit
Design		
Depth (2-5m)	1.5	m
Width	1.1	m
Length	3.2	m
Volume	5.0	m <sup>3</sup>
Retention time > 1 hour	12.0	h
Length: Width: 1.5:1 - 15:1	3.0	-
Surface for construction		
Area of bottom plates	3.4	m <sup>2</sup>
Area of rooftop plates	3.4	m <sup>2</sup>
N° internal longitudinal walls	1.0	-
N° Internal transversal walls	4.0	-
Area of walls	23.8	m <sup>2</sup>

C. The Channels of the Green Filter

Green Filter (Secondary treatment)		
Parameter		Unit
	Sub - Superficial	
Discharge	10	m <sup>3</sup> /day
	0,12	L/sec
Organic Load	1,125	Kg/d
Organic Loading rate	60	Kg/d*Ha
Hydraulic Loading rate	537	m <sup>3</sup> /day*Ha
Canal Width	5	m
Canal Depth	1	m

Calculated Canals total Length	38	m
Canal's Total Volume	188	m3
Canal's Effective Storage Volume	84	m3
Hydraulic Retention Time	8	days
Canals Superficial Area	188	m2
Total Project Area	396	m2

## 6. Desired Qualifications, Specialized Knowledge or Experience

The Bidder must be classified as a First or Second grades (A, or B grades) as per the Ministry of Public Works and Housing of Jordan, that are specialized in Water and Wastewater.

## 7. Construction Standards, Installation, Maintenance, Defect Liability Period, Training and Completion.

The Jordanian standards and specifications shall apply to the entire project (from the installation stage to the defect liability period).

- Maintains available at the site at all time the following documentation:
  - o Weekly work progress reports.
  - o Accident and incident reports.
- Propose to EcoPeace measures to be taken if the work progress is behind schedule.
- Ensure quality control of the works according to Jordanian Standards.
- A bimonthly progress meeting is required.
- Submit to EcoPeace a **Monthly Project Reports** including narrative, financial and photographic reporting within 15 working days of the following month.
- Advise EcoPeace on any potential risks to the respect of the project timeline, project budget and quality of the works.
- Ensure that appropriate safety measures are taken on site to minimize the risk of accident to the workers and the public.
- Ensure measures to be taken to ensure proper storage and security of its material and equipment.

- Organize testing of the treatment plant operation and provide EcoPeace with the testing report.
- Facilitate the hand over of the completed facilities to EcoPeace.
- Provide EcoPeace with a final project narrative, financial and photographic report within 15 days of the date of the Substantial Completion.
- Review system warranty and hand over all related documents to EcoPeace within 30 days of Substantial Completion of the works.
- Carry out an inspection at the end 12-months Defect Liability period and submit a defect liability inspection report to EcoPeace within 30 days of the date of inspection.
- During the 12-months Defects Liability period intervene as required.
- Providing EcoPeace with the coordinates of the civil works including underground pipes.
- The bidder must conduct on-site training for individuals chosen by EcoPeace on the best practices to operate and maintain the constructed wetland.

## 8. Technical Proposal

- A. The envelope shall be marked **Technical Proposal**. The Bidder must provide sufficient information in the proposal to demonstrate compliance with the requirement set out in each section of this Request for Proposal.
- B. The technical proposal must include but is not limited to:
  - Compliance sheet.
  - The proposed enhancements on the attached designs, the system components, construction drawings, and technical analysis.
  - Bill of Quantities.
  - Background on how the system works.
  - Methodology cover all the deliverables.
  - All proposed assumptions and specifications.
  - Work plan and schedule of activities.
- C. The technical proposal validity should be 60 days

## 9. Financial proposal

- A. The second envelope shall be marked **Financial Proposal**. The bidder must provide sufficient information in the proposal to demonstrate compliance with the requirements set out of this Request for Proposal.
- B. The financial proposal must include but not limited to:
  - The financial offer.
  - The additional services proposed by the bidder.
- C. The bid bond should be submitted in a separate envelope from the financial proposal.
- D. The financial proposal's validity should be 60 days.

## 10. Payment Terms and Conditions

- A. Advance payment of 40% of contract sum upon signing the contract.
- B. Second payment of 30% after completion of the construction.
- C. Third and final payment of 30% after Substantial Completion of the works, testing the systems and training the cadets.

## 11. Terms and Conditions

This RFP and any responses hereto shall be the property of EcoPeace Middle East Environmental – Jordan. In submitting a proposal, the bidder acknowledges that EcoPeace reserves the right to accept any proposal, in whole or in part; or, to reject any or all proposals. EcoPeace also reserves the right to negotiate with the Bidders. EcoPeace shall not be held responsible for any cost incurred by the Bidder in preparing the response to this Request for Proposal. The Bidder agrees to be bound by the decision of EcoPeace as to whether her/his proposal meets the requirements stated in this Request for Proposal, EcoPeace is not obliged to provide any explanation regarding the bidding process results to any of the bidders.

EcoPeace reserves the right to:

- visit and inspect the bidder's office and premises;

- contact any/all referees provided;
- request additional supporting or supplementary information;
- arrange interviews with the proposed project team/consultants;

## 12. Additional Information

### A. Additional Services Proposed by the bidder

Additional Services Proposed by the bidder	Description	Price in JOD

### B. Evaluation of proposal

Following the closure of the RFP, proposals will be evaluated by the project committee at EcoPeace to assess the proposal's merits. The evaluation will be restricted to the contents of the proposals and the reference checks, and due to the nature of work, there will be no public opening of the proposals. A total possible value of 70 points is allocated to the Technical proposal. Receiving 50 points or higher will be considered technically responsive and the financial proposal will be opened.

The total number of points allocated for the Financial Proposal is 30, and the maximum number of points will be allocated to the lowest price proposal that is opened and compared among those bidders which obtain the threshold of 50 points in the evaluation of the Technical Proposals. All other Price Proposals shall receive points in inverse proportion to the lowest price. EcoPeace Middle East Environmental – Jordan will not be held responsible for any duties, taxes or other levies including Value Added Tax for which the Firm may be liable in the course of the contract. All duties, taxes, or other levies must be included in the in the fees as shown in the Financial Proposal. The cost of all items in the Financial Proposal shall be calculated and shown in Jordanian Dinars.

**Proposal evaluation scoring matrix**

A.	Quality and extent of information provided by the proposal	5
B.	Installations Capacities	5
C.	Experience of the team	10
D.	Performance guarantee	10
E.	Conceptual design of the toilets, footprint and quality of components	10
F.	Discharge pond, landscape and the monitoring platform design	10
G.	Post installation services	10
H.	Project timeline	10
I.	Price	20
J.	Net present value of system	10

$$P_t = 0.05A + 0.05B + 0.1C + 0.1D + 0.1E + 0.1F + 0.1G + 0.1H$$

$$P_c = 0.2I + 0.1J$$

$$P_e = P_t + P_c \text{ (100\%)}$$

**C. Changes/Alterations or inquiries**

All requests for changes or alterations to the Request for Proposal or requests for clarifications must be submitted in writing by e-mail. Information provided verbally will not be considered a fundamental change and will not alter this Request for Proposal. Inquiries received less than four (4) working days prior to the Proposal closing date cannot be guaranteed any response. All inquiries and answers will be provided to all invitees in writing through the email [Eshak@EcoPeaceME.org](mailto:Eshak@EcoPeaceME.org).