



Govt. of West Bengal
Irrigation & Waterways Directorate
Office of the Executive Engineer
Burdwan Investigation & Planning Division
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NATIONAL COMPETITIVE BIDDING

Corrigendum -II

Annexure-1

Selection of Consulting Services for
**WATER AVAILABILITY STUDY IN THE DISTRICTS OF PURULIA, BANKURA AND JHARGRAM IN WEST BENGAL UNDER
NATIONAL HYDROLOGY PROJECT**
(RFP No. WBIW/NHP/RFP-03/2020-21)

Sl. No.	Reference/Clause No. of Bid Document	As per bid document	Now to be read as
1	Page 29, Key Experts' qualifications	a) Team Leader & Water Resources Expert:- Having M.E./M.Tech in Hydrology/Hydraulics/Water Resources with minimum 20 years' experience	a) Team Leader & Water Resources/ Surface Water Expert:- Having M.E./M.Tech in Hydrology/Hydraulics/Water Resources with minimum 10 (ten) years' experience

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	and competence for the Assignment:	<p>including at least one project as TL/DTL[12]</p> <p>b) Surface Water expert/Hydrologist:- Having M.E./M.Tech Hydrology/Hydraulics/Water Resources having experience in Hydrology/Hydraulics field with minimum 10 years [5]</p> <p>c) Ground Water Expert:- Having M.E./M.Tech/M Sc in Hydrology/Geology/Hydro-geology with specialisation and experience in Ground Water for minimum 10 years. [5]</p> <p>d) RS &GIS Expert:- Having M.Tech./ M.Sc. in Geoinformatics /Geology/Geography having Remote Sensing & GIS application as major with minimum 05 yrs experience[3]</p> <p>e) [Environmental Expert]:- Having Post Graduate in Environmental Engineering/ Science/Management with expertise and experience in Environmental Impact Analysis for minimum 10 years [3]</p> <p>f) Agriculture Expert :- Having Post Graduate degree in Agriculture sciences/ Agronomy / engineering/ management with experience of minimum 10 years [2]</p>	<p>including at least one project as TL/DTL[12]</p> <p>b) Ground Water Expert / Hydro-geologist:- Having M.E./M.Tech /M Sc in Hydrology/Geology/Hydro-geology with specialisation and experience in groundwater for minimum 5 years. [6]</p> <p>c) IT Expert/ Database specialist/ Programmer:- Having Graduation in Engineering in Computer Science/ IT/ MCA or equivalent with minimum 5 (five) years' experience [4]</p> <p>d) Environmental & Social Expert: -Having Post Graduation in Environmental/Social Science/ Engineering/Management or relevant degree with minimum experience of 5 (five) years [4]</p> <p>e) Agriculture Expert :- Having Post Graduate degree in Agriculture sciences/ Agronomy / engineering/ management with experience of minimum 5 years [4]</p>
2	Page 67, C. Objectives of the Assignment	New Inclusion	5) Development of a software solution that allows display of analysis results, creates annual water accounting report with updated data, provides scope for scenario analysis and generates report of each analysis including tables and graphs
3	Page 69, D. Scope of	New Inclusion	5) Development of a software toolkit with Graphic User Interface based dashboard

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	Services Sl. No. 5		<p>a) It should have the capability to provide monthly water availability and water budget estimates, and develop the series of virgin flows</p> <p>b) The calculations should be based on observed station data, and take care of known abstractions to develop virgin flows</p> <p>c) It should be able to incorporate the recent change of land use/ land cover, urbanisation, industrialisation etc. to provide updated estimates of availability and demand</p> <p>d) The dashboard should be able to display the status of water availability and demand after 5/10/20/30 years</p> <p>e) The toolkit should be able to provide results in the form of data, charts and graph, and prepare reports of analysis</p> <p>f) It should provide options for scenario analysis</p>																
4	Page 70 detailed steps	New Inclusion	(xiii) Develop a software toolkit with dashboard to enable update water availability and demand at future dates, and carry out scenario analysis. Further details are provided in Annexure																
5	Page 70 E. Tasks	The key task in this consultancy assignment is to prepare a study report for providing a sustainable solution...	The key task in this consultancy assignment is to prepare a study report and a user-friendly Software Toolkit with Graphic User Interface Based dashboard for providing a sustainable solution...																
6	Page 71 F. Expected Deliverables	<table border="1"> <thead> <tr> <th>S. No</th> <th>Deliverable</th> <th>Description</th> <th>Time Line</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Inception report</td> <td>The Inception report should describe the methodology and the workflow with fortnightly</td> <td>T + 1 month</td> </tr> </tbody> </table>	S. No	Deliverable	Description	Time Line	1	Inception report	The Inception report should describe the methodology and the workflow with fortnightly	T + 1 month	<table border="1"> <thead> <tr> <th>S. No</th> <th>Deliverable</th> <th>Description</th> <th>Time Line</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Inception report</td> <td>The Inception report should describe the methodology and the workflow with fortnightly schedule of work plan</td> <td>T + 1 month</td> </tr> </tbody> </table>	S. No	Deliverable	Description	Time Line	1	Inception report	The Inception report should describe the methodology and the workflow with fortnightly schedule of work plan	T + 1 month
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			<p>schedule of work plan for implementation in the form of a Gantt Chart. Within first one month after mobilization, the successful consultant needs to submit the inception report where in the approach, micro level activities with detailed work plan and timeline needs to be submitted. The report needs to substantiate the data requirement, highlighting the necessary site visits to the project districts</p>		<p>for implementation in the form of a Gantt Chart. Within first one month after mobilization, the successful consultant needs to submit the inception report where in the approach, micro level activities with detailed work plan and timeline needs to be submitted. The report needs to substantiate the data requirement, highlighting the necessary site visits to the project districts</p>
		2	<p>The monthly progress reports, to be submitted positively by the 5th of the next month, should clearly indicate achievements, works proposed to be taken up, bottlenecks in carrying out the work and the solution approaches planned to complete the project within the stipulated timeline and also present a comparison of progress with the timeline presented in the inception report. The format may be finalized in discussion with Irrigation Department.</p>	2	<p>Monthly progress reports</p> <p>The brief monthly progress reports, to be submitted positively by the 5th of the next month, should clearly indicate achievements, works proposed to be taken up, bottlenecks in carrying out the work and the solution approaches planned to complete the project within the stipulated timeline and also present a comparison of progress with the timeline presented in the inception report. The format may be finalized in discussion with Irrigation Department.</p>
		3	<p>Data compila</p> <p>It should include description of all data used / planned to be</p>	3	<p>Data compilati on report</p> <p>It should include description of all data used / planned to be used in the assignment, along with a review of data availability and data quality. In addition, all the soft copies of the data and data products, metadata records with detail datum, re-projections, re-sampling algorithms, processing steps, field records and any other pertinent information</p>

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		<p>tion report</p>	<p>used in the assignment, along with a review of data availability and data quality. In addition, all the soft copies of the data and data products, metadata records with detail datum, re-projections, re-sampling algorithms, processing steps, field records and any other pertinent information collected are to be submitted.</p> <p>It is also required to submit the time series data, shape-files, raster files, features, layers and all other files related to the geo-databases as applicable, in soft copy format. The data shall be compiled in proper RDBMS. Data collected at later stage should also be shared from time to time.</p>	s	<p>collected are to be submitted. It is also required to submit the time series data, shape-files, raster files, features, layers and all other files related to the geo-databases as applicable, in soft copy format. The data shall be compiled in proper RDBMS. Data collected at later stage should also be shared from time to time.</p>
		4	<p>The presentation should include district wise assessment of water resources potential and demand and potential locations for harnessing. Situation analysis highlighting present and projected future scenario with associated issues and challenges in the water sector in the proposed</p>	T+9 months	<p>4</p> <p>Demonstration of sustainable ways for meeting the water demand using the Software Toolkit with Dashboard based on Graphic User Interface</p> <p>The software should be fully operational at the time of demonstration. The procedure for updating the inputs to prepare monthly water accounting results should also be demonstrated. The demonstration should include district wise assessment of water resources potential and demand and potential locations for harnessing. Situation analysis highlighting present and projected future scenario with associated issues and challenges in the water sector in the proposed three districts should be included. Suitable suggestive measures for improvement of water availability for water deficit blocks within the district should also be a part. User Manual for the software toolkit should also be prepared.</p> <p>T+8 months</p>
					<p>Draft Feasibility Study</p> <p>The draft report for each district should document the water availability and demand scenario along-with GIS</p> <p>T + 10 months</p>

Sl. No.	Reference/Clause No. of Bid Document	As per bid document		Now to be read as			
			three districts. Suitable suggestive measures for improvement of water availability for water deficit blocks within the district.		Report (one for each district)	mapping of water resources. Ground water or improvement requirement proposal capable of increasing ground water potential need to be provided. It should include the locations (based on feasibility level ground survey) as well as the designs, drawings and estimates (feasibility level) for all the measures of harnessing surface and ground water resources to meet the demand in a sustainable manner. It should also indicate about the environmental and social impacts of implementation.	
		Draft Feasibility Study Report (one for each district)	The draft report for each district should document the water availability and demand scenario along-with GIS mapping of water resources. Ground water or improvement requirement proposal capable of increasing ground water potential need to be provided. It should include the locations (based on feasibility level ground survey) as well as the designs, drawings and estimates (feasibility level) for all the measures of harnessing surface and ground water resources to meet the demand in a sustainable manner. It should also indicate about the environmental and social impacts of implementation.	T + 13 months	6 Final Feasibility Study Report (one for each district)	The final report should cover all tasks described in the ToR and address all the observations of the client on draft report.	T+ 12 months
		6 Final Feasibility Study Report (one for each)	The final report should cover all tasks described in the ToR and address all the observations of the client on draft report.	T+15 months			

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7	Page 72, G. Responsibility of the Consultant	(i) Conduct and complete the consultancy and prepare the Feasibility Study Report as per the agreed ToR and scope of the consultancy.	(i) Conduct and complete the consultancy and prepare the Software Toolkit and the Feasibility Study Report as per the agreed ToR and scope of the consultancy.																																																																																								
8	Page 74, L. Tentative Team Composition	<table border="1"> <thead> <tr> <th>S. No.</th> <th>Position</th> <th>No.</th> <th>Involvement in person-months</th> </tr> </thead> <tbody> <tr> <td></td> <td>Key Experts (to be evaluated during evaluation)</td> <td></td> <td></td> </tr> <tr> <td>1</td> <td>Team Leader &Water Resources/ Surface Water Expert</td> <td>1</td> <td>4</td> </tr> <tr> <td>2</td> <td>Ground Water Expert / Hydro-geologist</td> <td>1</td> <td>2</td> </tr> <tr> <td>3</td> <td>Surface Water Expert /Hydrologist</td> <td>1</td> <td>6</td> </tr> <tr> <td>4</td> <td>GIS & RS Expert</td> <td>1</td> <td>2</td> </tr> <tr> <td>5</td> <td>Environmental Expert</td> <td>1</td> <td>2</td> </tr> <tr> <td>6</td> <td>Agricultural Expert</td> <td>1</td> <td>2</td> </tr> <tr> <td></td> <td>Non-Key Experts</td> <td></td> <td></td> </tr> <tr> <td>7</td> <td>Senior Engineers</td> <td>3</td> <td>3x12</td> </tr> <tr> <td>8</td> <td>Technical Support Staff</td> <td>1</td> <td>14</td> </tr> <tr> <td>9</td> <td>Other Support Staff</td> <td>2</td> <td>2x14</td> </tr> </tbody> </table>	S. No.	Position	No.	Involvement in person-months		Key Experts (to be evaluated during evaluation)			1	Team Leader &Water Resources/ Surface Water Expert	1	4	2	Ground Water Expert / Hydro-geologist	1	2	3	Surface Water Expert /Hydrologist	1	6	4	GIS & RS Expert	1	2	5	Environmental Expert	1	2	6	Agricultural Expert	1	2		Non-Key Experts			7	Senior Engineers	3	3x12	8	Technical Support Staff	1	14	9	Other Support Staff	2	2x14	<table border="1"> <thead> <tr> <th>S. No.</th> <th>Position</th> <th>No.</th> <th>Involvement in person-months</th> </tr> </thead> <tbody> <tr> <td></td> <td>Key Experts (to be evaluated during evaluation)</td> <td></td> <td></td> </tr> <tr> <td>K-1</td> <td>Team Leader &Water Resource/ Surface Water Expert</td> <td>1</td> <td>5</td> </tr> <tr> <td>K-2</td> <td>Ground Water Expert / Hydro-geologist</td> <td>1</td> <td>2</td> </tr> <tr> <td>K-3</td> <td>IT Expert/ Database specialist/ Programmer</td> <td>1</td> <td>4</td> </tr> <tr> <td>K-4</td> <td>Social and Environmental Expert</td> <td>1</td> <td>2</td> </tr> <tr> <td>K-5</td> <td>Agricultural Expert</td> <td>1</td> <td>2</td> </tr> <tr> <td></td> <td>Non-Key Experts</td> <td></td> <td></td> </tr> <tr> <td>NK-1</td> <td>Technical Support Staff</td> <td>1</td> <td>12</td> </tr> <tr> <td>NK-2</td> <td>Other Support Staff</td> <td>2</td> <td>2x12</td> </tr> </tbody> </table>	S. No.	Position	No.	Involvement in person-months		Key Experts (to be evaluated during evaluation)			K-1	Team Leader &Water Resource/ Surface Water Expert	1	5	K-2	Ground Water Expert / Hydro-geologist	1	2	K-3	IT Expert/ Database specialist/ Programmer	1	4	K-4	Social and Environmental Expert	1	2	K-5	Agricultural Expert	1	2		Non-Key Experts			NK-1	Technical Support Staff	1	12	NK-2	Other Support Staff	2	2x12
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		Water Resources Expert (National)	<p>Resources Engineering</p> <ul style="list-style-type: none"> • A minimum of 15 years' working experience in the field of water resources • Extensive experience in assessment of water availability and water requirement • Experience in planning of water resources structures • Should have experience as DTL / TL in at least one previous assignment 	Water Resources/ Surface Water Expert (National)	<ul style="list-style-type: none"> • A minimum of 10 (ten) years' working experience in the field of water resources • Extensive experience in assessment of water availability and water requirement • Experience in planning of water resources structures • Should have experience as DTL / TL in at least one previous assignment
		Ground Water Expert /Hydrogeologist (National)	<p>1</p> <ul style="list-style-type: none"> • M.Tech/M.E./M.Sc. with a specialization in groundwater from Engineering or Geology or other related Departments • A minimum 10 years of working experience in the field of Ground Water Estimation • Experience in assessment of groundwater potential, ground water use, sustainable yield. • Experience in planning Groundwater Extraction Projects 	Ground Water Expert /Hydrogeologist (National)	<p>1</p> <ul style="list-style-type: none"> • M.Tech/M.E./M.Sc. with a specialization in groundwater from Engineering or Geology or other related Departments • A minimum 5 (five) years of working experience in the field of Ground Water Estimation • Experience in assessment of groundwater potential, ground water use, sustainable yield. • Experience in planning Groundwater Extraction Projects
		Surface Water Expert/	<p>1</p> <ul style="list-style-type: none"> • M. Tech/ M.E. in Hydrology/ Hydraulic or Water Resources/ Environmental 	IT Expert/ Database specialist/ Programmer (national)	<p>1</p> <ul style="list-style-type: none"> • Graduate in Engineering in Computer Science/IT/MCA or equivalent • A minimum 5 (year) year of working experience in data base applications for Database management;

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		Hydrologist (National)		<p>Engineering</p> <ul style="list-style-type: none"> • A minimum of 10 years' working experience in the field of water resources • Experience in estimation of yield and water demand • Experience in rainfall-runoff modelling including model calibration and validation • Experience in planning of water resources structures would be an advantage 			<ul style="list-style-type: none"> • Extensive experience in scripting using cutting edge software development tools
		GIS and RS Expert (National)	1	<ul style="list-style-type: none"> • M.Sc/ M.Tech in Geoinformatics/ GIS and Remote Sensing/ Geography/ Geology or related field • A minimum of 5 years' working experience • Extensive knowledge in GIS customization, preparation and integration of GIS datasets 	Environmental & Social Expert (National)	1	<ul style="list-style-type: none"> • Post Graduate degree in Environmental/Social Science/Engineering/Management or relevant degree having experience of 5 (five) years in ESIA studies and implementation of ESMP • Experience in external funded projects will be an advantage
		Environmental Expert (National)	1	<ul style="list-style-type: none"> • Post Graduate degree in Environmental Science/Engineering/Management or relevant degree having experience of 10 years in EIA studies and implementation of EMP • Experience in external funded projects guidelines 	Agricultural Expert (National)	1	<ul style="list-style-type: none"> • Post Graduate degree in Agricultural Science/Engineering/Management or relevant degree having experience of 5 (five) years • Experience in external funded projects guidelines will be an added advantage
					Technical Support Staff (National)	1	<ul style="list-style-type: none"> • Diploma in Civil Engineering discipline with a minimum of 2 years' working experience • Proficiency in use of Auto Cad, Microsoft Office Products - Excel, Access, Word and PowerPoint • Experience in site activities, data collection and compilation and report preparation would be preferred • Readiness to carry out field data

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				will be essential			collection activity
		Agricultural Expert (National)	1	<ul style="list-style-type: none"> • Post Graduate degree in Agricultural Science/Engineering/Management or relevant degree having experience of 10 years • Experience in external funded projects guidelines will be an added advantage 	Other Support Staff (National)	2	<ul style="list-style-type: none"> • Graduate in any discipline with a minimum of 2 years' working experience • Extensive experience in use of Microsoft Office products like Word, Excel and PowerPoint
		Senior Engineers (National)	3	<ul style="list-style-type: none"> • Graduate in Civil Engineering discipline with a minimum of 5 years' working experience • Proficiency in use of Microsoft Office Products - Excel, Access, Word and PowerPoint • Experience in site activities, data collection and compilation and report preparation would be preferred • Readiness to carry out field data collection activity 			
		Technical Support Staff (National)	1	<ul style="list-style-type: none"> • Diploma in Civil Engineering discipline with a minimum of 2 years' working experience • Proficiency in use of Auto 			

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			Cad, Microsoft Office Products - Excel, Access, Word and PowerPoint <ul style="list-style-type: none"> • Experience in site activities, data collection and compilation and report preparation would be preferred • Readiness to carry out field data collection activity 	
		Other Support Staff (National)	2 <ul style="list-style-type: none"> • Graduate in any discipline with a minimum of 2 years' working experience • Extensive experience in use of Microsoft Office products like Word, Excel and PowerPoint 	
10	Page 77, N. Duration of Assignment	Total anticipated duration of the project is 15(fifteen) months.		Total anticipated duration of the project is 12 (twelve) months.
11	Page 77, 0. Terms of Engagement	The consultancy agreement for preparation of a Study Report to develop sustainable surface water and ground water potential mapping....		The consultancy agreement for development of a software toolkit with dashboard based on Graphic User Interface and preparation of a Study Report to develop sustainable surface water and ground water potential mapping....

Sd/-
 Executive Engineer
 Burdwan Investigation & Planning Division
 Purta Bhawan, 3rd Floor, Burdwan