

OVERBERG WATER BOARD Corporate

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RFP OW-004 2025/26

SUPPLY, DELIVER AND INSTALLATION OF A SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM FOR OVERBERG WATER (OWB) IN THE WESTERN CAPE.

CLARIFICATION QUESTIONS:

- 1) Turn On/Off Control for Pumps for 1.1 Abstraction works, 3.1 High Lift Pump Station, and 4.1 Booster Pump Stations
 - a) The technical specification details a very specific compact "intelligent logic module" or compact PLC, not an RTU. Given the project's strong emphasis on remote telemetry requirements, is the requirement for the compact PLC to perform location automation and integrate to the existing telemetry?

No, it will not be connected to the existing PLC or telemetry

- b) The BOQ quantities for these items match the number of pumps at each pump station. Could you please confirm if the requirement is for one control module (PLC) per individual pump, or one scalable PLC per station capable of controlling all pumps at that location?

There is one control unit per pump station but many pumps in one pumpstation. The unit must be able to add other pump at a later date if required.

- c) May OWB provide a preliminary or typical I/O list for a typical pump station? This is crucial for providing a suitable control system for automation.

The item to be connected to the telemetry are the ones listed in the document. The number of pumps and flowmeters are listed in the document.

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- d) The control system needs to interface with the pump motor starters for start/stop functionality. Is the bidder for this project responsible for any physical wiring modifications or installation of required components inside the existing Motor Control Centre (MCC) panels to facilitate this control, or will this interface be provided by OWB's electrical contractors?

The bidder for this project responsible.

- e) May bidders assume a functional telemetry system at the abstraction works, high lift pumps, booster pump stations and reservoirs?

The bidder must assume that the old telemetry will be disconnected once the new telemetry is in place. No reliance must be placed on the existing telemetry.

- 2) Pumpset monitoring system 1.2 Abstraction pumps, 3.2 High Lift Pumps, 4,2 Booster pumps

- a) The BOQ specifies a quantity of one or two "Pump set monitor" units per station, whereas there are multiple pumps at these stations. Does one monitoring system unit monitor a single pump, or is one unit expected to monitor all pumps at the station (e.g., all 3 pumps at the High Lift station)? Please clarify the required architecture.

One unit is expected to monitor all pumps at the station

- b) The specification requires monitoring of vibration and temperature. Does the scope of work expect the supply and installation of new sensors for each pump, or does it assume that these sensors already exist and only require connection to the new monitoring system?

OWB expects the supply and installation of new sensors for each pump. The service provider should assume a totally new installation.

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- c) The abstraction works is detailed as follows, "Pump Monitoring: Temperature, vibration, current, and voltage sensors to monitor motor and bearing condition, detect power issues, and enable preventive maintenance." Further, the High Lift pump station requirement states that, *"It must continuously records pump operating data, including motor temperature, vibration levels, phase current, and insulation resistance"*

Yes. The service provider must supply a unit that can perform these functions or supply sensor that have these capabilities.

- d) Technical Specification states the system "must be compatible with pumps used by Overberg. To ensure full compatibility and select the appropriate monitoring system and sensors, could OWB please provide a list of the existing pumps to be monitored at each station, including their make, model, motor size (kW), and type (submersible/dry-installed)?"

Information included at end of document.

- 3) Flow meters at 1.3 Abstraction works, 3.3 High Lift Pump Station, 4.3 Booster Pump Station, 5.1 Reservoir outflow, 6.1 Rising main pipeline, 7.1 Gravity main pipeline

- a) To avoid any misunderstanding of the scope, please confirm that Items 1.3, 3.3, 4.3, 5.1, 6.1, and 7.1 all require the supply and installation of complete, new flow meters. Item 8.1 is strictly for the retrofitting of a transmitter/sensor kit onto existing client meters

Yes

- b) We have noted that the quantity of flow meters in items 1.3, 3.3, and 4.3 is identical to the quantity of pumps in items 1.1, 3.1, and 4.1 respectively. Could you please confirm that the intended design requires one dedicated flow meter to be installed for each individual pump?

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Yes

Pump Station	Scheme	No. of Pumps to be Controlled	No. of Flow Meters
1. Abstraction Works	Ruensveld West	2	2
	Ruensveld East	2	2
	Duivenhoks	2	2
3. High Lift Pumps	Ruensveld West	3	3
	Ruensveld East	3	3
	Duivenhoks	3	3
4. Booster Pumps	Ruensveld West	3	3
	Ruensveld East	0	0
	Duivenhoks	4	4

- c) There is a major contradiction in the tender document. BOQ items 6.1 and 7.1 are explicitly described as "Ultrasonic Flow Meters". However, the detailed technical specification for these exact same items describes a "Battery Powered Electromagnetic Flow Meter". Could you please provide a definitive clarification on which technology is required for the Rising and Gravity Main pipelines?

OWB is not particular with regard to ultrasonic or magflow. If the flowmeter can communicate with the telemetry continuously, is accurate and satisfies the requirements, OWB will be happy.

- d) The flow meter information presents the following challenges:

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- i) The RFP requires the supply and installation of a large number of flow meters for the Abstraction Works (Item 1.3) , High Lift Pump Stations (Item 3.3) , Booster Pump Stations (Item 4.3) , Rising Main (Item 6.1) , and Gravity Main pipelines (Item 7.1). The table on page 94 of the RFP provides a list of pipe diameters for various reservoirs; however, this information is presented without context for the specific flow meter applications and quantities listed in the BOQ. We are unable to determine the quantity of meters required for each specific pipe size.

Each reservoir has one flow meter for incoming flow. The pipe diameter is for the inlet pipe.

- ii) The BOQ provides only a single line item for each category of flow meter (e.g., Item 7.1 groups all 67 flow meters for the Gravity Main under one item). As the cost of a flow meter is critically dependent on its size, it is not possible for bidders to provide a single, accurate unit price that can cover a wide and undefined range of meter diameters (e.g., from 50mm to 400mm). This structure prevents a fair and transparent comparison between bidders.

For the purposes of this tender let us use 250 mm internal diameter (about +-290 mm outside diameter)

- iii) To accurately estimate installation costs (including labor, materials, and potential civil works), the approximate locations for the new meter installations are required, particularly for the 67 meters on the Gravity Main Pipeline (Item 7.1) and the 4 meters on the Rising Main Pipeline (Item 6.1).

The service provider can budget 1456 km for each plant. This is the distance from the plant to the locations on the pipeline where the meters must be installed.

To resolve these ambiguities, we formally request the following:

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- Detailed Schedule of Flow Meters Could OWB please provide a comprehensive schedule for all flow meters listed under BOQ items 1.3, 3.3, 4.3, 5.1, 6.1, and 7.1? This schedule should detail the required pipe size (diameter in mm), the quantity of meters required for that specific size, and the general location or application (e.g., Reservoir R4 outflow, Gravity Main branch to Napier, etc.).
- Request 2: Restructuring of the Bill of Quantities In light of the significant cost variance between different meter sizes, we kindly request that OWB consider issuing an addendum that restructures the BOQ. The BOQ should be amended to include separate line items for each required flow meter size (e.g., "Flow Meter, DN100", "Flow Meter, DN150", "Flow Meter, DN250", etc.), with the corresponding quantity for each. This will allow all bidders to price accurately and ensure a fair and equitable tender evaluation.

4) SCADA

- a) Our understanding of the intended architecture is that the main SCADA Server will be installed at the Head Office in Somerset West, and the three Operator Workstations will be distributed to the satellite scheme offices, with one in Caledon, one in Swellendam, and one in Heidelberg.
 - i) Could you please confirm if this understanding of the server and workstation locations is correct?

The SCADA server will be at 7 new cross street in Caledon and the three Operator Workstations will be distributed to the satellite scheme offices, with one in Caledon, one in Swellendam, and one in Heidelberg.

- ii) Could you confirm there will be no servers at the workstations or plants?

Yes, there will be no servers at the workstations.

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- iii) Is there a pre-existing and operational Network with sufficient bandwidth and reliability connecting the Head Office in Somerset West with each of the three scheme plants in Caledon, Swellendam, and Heidelberg?

No.

- iv) Is there an existing telemetry system that connects the control room and the plant sites?

The existing telemetry systems are three stand alone systems at each plant. There is no central control room.

- v) How many SCADA web access clients do you need?

12

- vi) Which type of licenses does OWB prefer, between perpetual and subscription licenses?

Perpetual would be best

Licensing & IO

- Does Overberg Water Board prefer perpetual licensing or subscription-based licensing?
Perpetual Licensing
- Is annual vendor support required as part of the licensing, and if so, what level (standard or 24/7)?
Yes, during working hours on working days, so 8/5
- Please confirm the estimated number of IO (tags) expected at each site.
Only the devices which have been mentioned on the tender document and what the supplier will require for the SCADA to function properly
- The RFP mentions unlimited clients and tags — is this strictly required, or can a more accurate expected estimate be provided for sizing?
OWB wants to be able to add more meters and pumpsets at a later date at no additional cost at the existing schemes. New scheme will be dealt with separately

Architecture

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-
- Will the Somerset West office function as a control centre (with control and command capability), or is it intended for monitoring only?
The office in Caledon will function as a backup control centre (with control and command capability). It will work for viewing purposes unless there is a problem or an emergency at one of the plants. There is no SCADA at Somerset West
 - Please confirm the number of operator/client workstations required at each site and centrally.
One per Scheme (three in total)
 - How many engineering / configuration workstations are planned for system development and maintenance?
I don't understand this question
 - Will the central control room server act as the primary communication hub for all remote Water Treatment Plant PLCs and their instruments—serving data directly to various clients?
Yes
 - Will each Water Treatment Plant maintain its own local tag server and then relay data to the central control room?
All information must reside in the main server room in Caledon
 -

Network & Connectivity

- How are the various sites connected to the central SCADA server ?
OWB does not dictate how this must be done. As long as it works and is not analogue
- Is there currently a 5G network to each site, or planned?
It is not likely that there is 5G in all the areas where OWB works
- Is telemetry communication currently used between remote sites and the central control room?
No, the current telemetry is three stand alone systems and the information is housed in desktops at each site.

Training & Support

- Please confirm the expected number of users who will need training

27 personnel at three different sites. They cannot all come to one site for the training. It must be three separate training times.

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Ruensveld West Pumpstation 1

Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
RW 1	AFP1526 M 300/4-43	98 l/s@ 18.12m	111 l/s@ 26.00m	Submersible 1526	34.1 kW	Raw water
RW 2	AFP1526 M 300/4-43	98 l/s@ 18.12m	111 l/s@ 26.00m	Submersible 1526	34.1 kW	Raw water

Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
RW 4	KSB WKLn 100/1	30.56 l/s @110m	30 l/s @ 110m	GEC	75 kW	High lift to PS3
RW 5	KSB WKLn 150/4	75.00 l/s @110 m	75 l/s @ 110m	GEC	132 kW	High lift to PS3
RW 6	KSB WKLn 150/4	75.00 l/s @110 m	75 l/s @ 110m	GEC	132 kW	High lift to PS3

Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
RW 7	KSB WKLn 150/4	75.00 l/s @110 m	75 l/s @ 110m	GEC	132 kW	High lift to R1
RW 8	KSB WKLn 150/4	75.00 l/s @110 m	75 l/s @ 110m	GEC	132 kW	High lift to R1

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RW 9	KSB WKLn 150/4	75.00 l/s @110 m	75 l/s @ 110m	GEC	132 kW	High lift to R1
Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
RW 1	KSB WKLn 80/10	98 l/s@ 18.12m	111 l/s@ 26.00m	GEC	37 kW	Pump to R3
RW 2	KSB WKLn 80/10	98 l/s@ 18.12m	111 l/s@ 26.00m	GEC	37 kW	Pump to R3

Ruensveld East Pumpstations

Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
RE 1	Flygt BS 2201 HT 3- 243	50 l/s@ 37m	57 l/s@ 30m	Flygt Submersible 2201	37 kW	Raw water
RE 2	Flygt BS 2201 HT 3- 243	50 l/s@ 37m	57 l/s@ 30m	Flygt Submersible 2201	37 kW	Raw water

Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
RE 3	Vogel Lowara 125/4	40 l/s @ 330m	34.7 l/s @ 300m	WEG	315 kW	Pump to R1

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RE 4	Vogel 125/7	40 l/s @ 330m	27.8 l/s @ 300m	WEG	275 kW	Pump to R1
RE 5	Vogel Lowara 125/4	40 l/s @ 330m	34.7 l/s @ 300m	WEG	315 kW	Pump to R1

Duivenhoks Pumpstation

Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
DH 1	Wilo T12	50 l/s@ 15.00m	50 l/s@ 19.12m	Submersible	14.0 kW	Raw water
DH 2	Flyth 1335	32 l/s @25.00m	32 l/s@25.00m	Submersible	13,5 kW	Raw water

Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
DH 3	KSB WKLn 100/8	33,6 l/s @128 m	119,5 m	WEG	75 kW	Pump to R8
DH 4	KSB WKLn 100/6	32,8 l/s @ 128 m	119,5 m	WEG	75 kW	Pump to R8
DH 5	KSB WKLn 100/6	39,4 l/s @128 m	119,5 m	WEG	110 kW	Pump to R8

Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
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DH 5	KSB WKLX 50/3	12 l/s @ 88 m	67,5 m	Siemens	18.5 kW	Pump to R8
DH 6	KSB WKLX 50/3	12 l/s @ 88 m	67,5 m	Siemens	18.5 kW	Pump to R8
Pump number	Type of Pump	Service height	Actual height	Motor	kW	PURPOSE
DH 6	KSB WKLX 50/4	7 l/s @ 88 m	93.75 m	Siemens	15 kW	Pump to R2
DH 7	KSB WKLX 50/4	7 l/s @ 88 m	93.75 m	Siemens	15 kW	Pump to R2

5 Can you please send us the following information

Drawings

Cable routes

Flow meter Specs

Flow rate meter Specs

The are no drawings available for the plants. A non compulsory site visit was allowed for this reason. For prospective suppliers to determine the best routes and positions for the infrastructure they will be supplying. The flow meter specs are in the tender document. They have been numbered the same way the BoQ is number for corelation.

Maximum Flow rates per scheme

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436	Ruensveld west
227	Ruensveld East
159	Duivenhoks

6 On Form K, it is stated that bidders must have in their fulltime of employment a project manager/ Team lead and an electrician. Can bidders submit the other key personnels required in the tender that are not in the full time of employment, provided that they submit a memorandum of agreement that states that the key personnel is aware that their documents are being submitted and will be available during the execution of the works.

For other key personnel it is fine, as long as they submit the documents of other key personnel before closing of tender.

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