

ADDENDUM No. 1

Skagit County Public Works

August 18, 2021

**Request for Proposals for the
Selection of the Electrical Systems Integrator For
Guemes Island Ferry Replacement Project #ESMVGUE-1**

NOTICE TO VENDORS

We have received the following questions from vendors and our response is listed with each item: See attached Request for Information Questions Log and SES Sketch

END OF ADDENDUM No. 1

RESPONSES ARE DUE BY: Thursday, September 16, 2021, and must be emailed to Jacob Gerlach, Marine Engineer Glosten, at jmgerlach@glosten.com



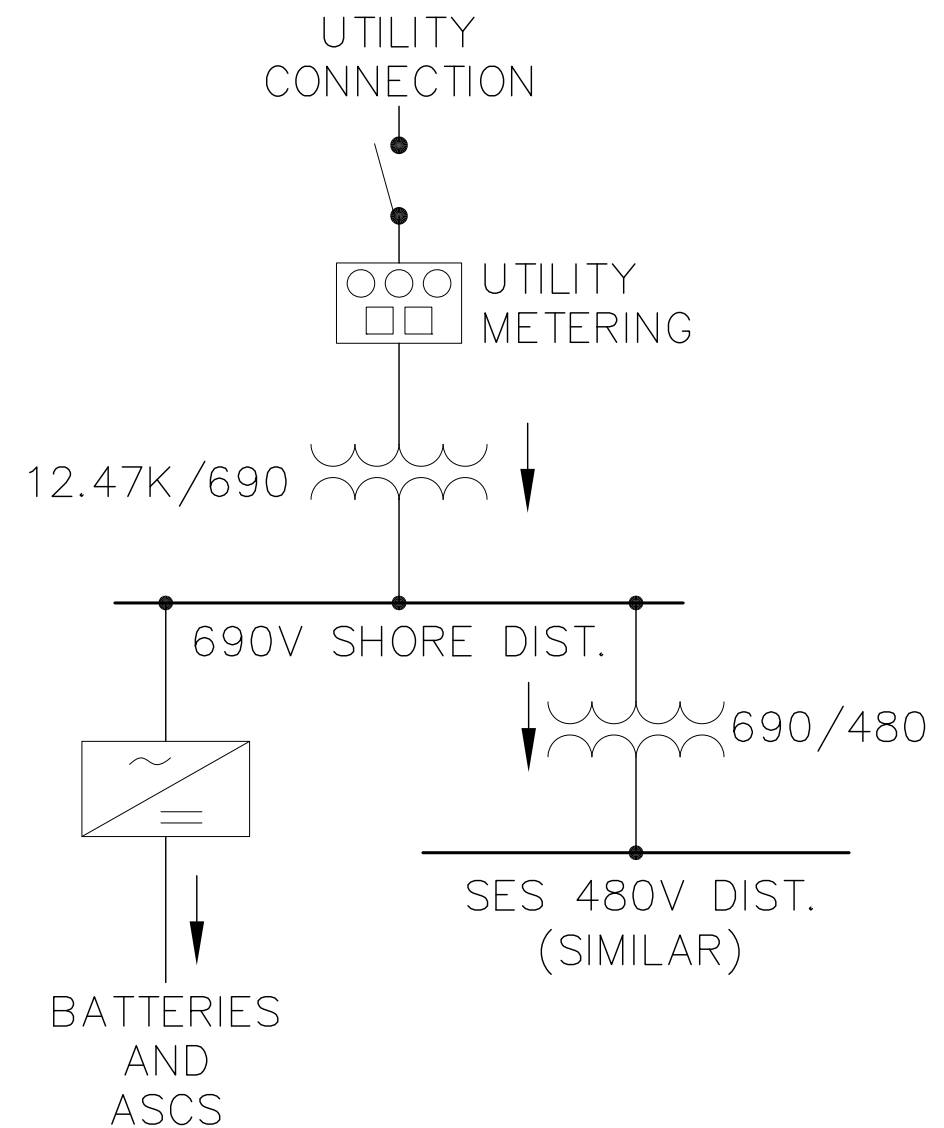
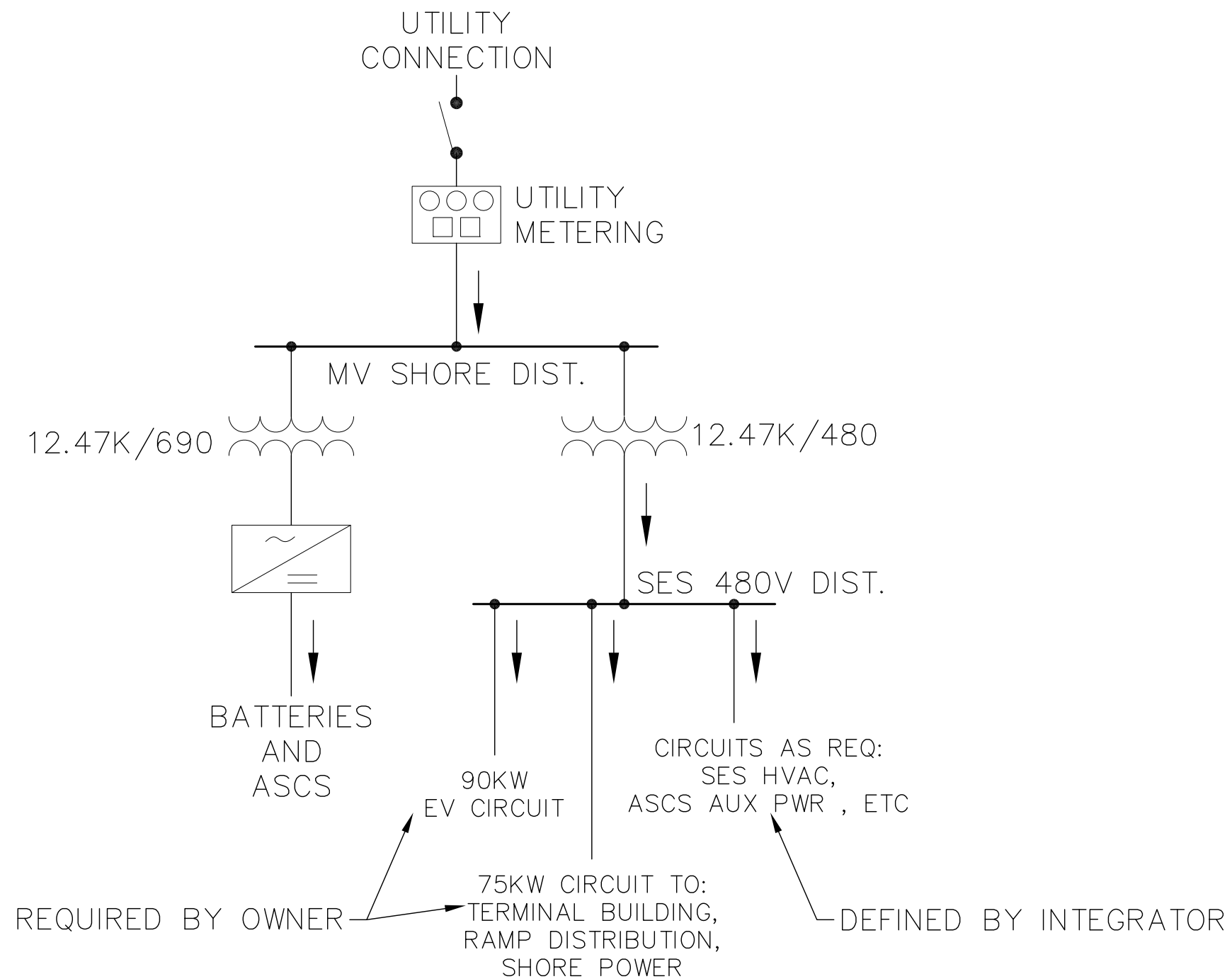
Captain Rachel Rowe,
Ferry Ops Division Manager



Paul A. Randall-Grutter, P.E.
County Engineer

No.	Question	Response
1	When you say a single integrator, could that be a prime with a subcontractor?	Reference to a "single integrator" does not preclude using subcontractors or subsuppliers. The project approach (RFP lines 139-143) should clearly identify the (electrical) prime contractor and any planned delegation of responsibility, especially for the controls, testing, and commissioning activities described in sections 005 and 008.
2	Can we offer our equipment out of our USA offices to comply with the 'Buy American' philosophy?	As noted in Section 000.4.6 of the RFP, supply chain information is an information request only and not an evaluation factor. Integrators may include any relevant information about Buy America compliance in their proposals. Note that FHWA "Buy America" requirements are not the same as FTA Buy America requirements, nor the Buy American requirements that apply to federal government procurement under the FAR's.
3	Is a supercapacitor energy storage system an acceptable alternative to Li-Ion batteries?	A supercapacitor ESS could be submitted for information only as described in Section 002.1.4 (lines 300-305). Proposal evaluation and integrator selection will use the baseline 10-year Li-Ion configuration.
4	In 001.3 Technical proposal, line 169, a single line diagram for the VES and SES are being required for the proposal. It is very hard to determine this without putting this through an electrical study. With a correct one line, we will be able to provide a correct offer to you within the set time line.	It is understood that some electrical studies are required to develop a proposal with a mature design that offers the best value to Skagit County.
5	For our swbs, they all require a back-up 24V supply to keep systems 'alive'. Will we get input into the design of these boards as well?	Glosten will assign 24V circuits as necessary to provide control power to equipment in the integrator's scope. If there are specific integration requirements beyond a number of 24V circuits, these should be identified in the technical proposal.
6	In 001.3 Technical Proposal, line 185, it is asking for a proposed arrangement of SES. Isn't another contractor going to design / build this SES station?	As noted in section 000.4.2, the entire SES house and supporting auxiliaries are in the requested scope of supply. It is understood that the structure and auxiliary equipment may be provided by a subcontractor but should be part of your design and commercial quote.
7	How should SES house layout be determined and auxiliary systems be sized? We usually determine this after contract award where we specifically know the pieces and amount of equipment	We are expecting responses to represent sufficiently mature designs that equipment quantity/ratings and estimated heat loads can be reasonably estimated. This should allow developing an SES layout that includes both electrical equipment and auxiliaries. You are encouraged to include appropriate margins to address design uncertainty where required.
8	The references on 17097.02-300-01 Electrical Power Load Analysis Rev(P0) were not provided	Reference (1) is the one-line referenced in the RFP and provided to proposers. The one-line has a typo in the pdf file name (17097.02-300-0 <u>1</u>) but is properly identified in the title block as 17097.02-300-0 <u>2</u> . References (2), (3), and (4) are superseded by the current RFP and references, but you can still find them on the county website if desired. https://skagitcounty.net/Departments/Rfp/2020FerryRFI.htm
9	There are discrepancies in power ratings between the RFP and EPLA, e.g. in propulsion motor rating (650kw vs 750kw)	Please take note of lines 32-35 in section 000.2 of the RFP, as power estimates have been revised since the one line diagram and EPLA were made: "Where conflicts exist, this [RFP] takes precedence."
10	In the EPLA, 3S is connected 1H, but the single line shows 3S connected to 2H	This is an error on the one-line diagram. It is intended that the all odd-numbered busses and panels are on one side and even on the other. We believe this is an administrative error that does not change the functional requirements or ratings of equipment submitted in response to this RFP. Responses will not be penalized for minor deviations in nomenclature.
11	3H is missing in the EPLA	A dedicated charging bus (3H) may or may not exist - these arrangements are within vendor discretion as described in lines 245-256 of the RFP. If used, it is the integrator's responsibility to determine the rating of this bus based on the connected equipment
12	The SES house is missing in the EPLA	The purpose the EPLA is to determine the required power ratings of shipboard equipment and the energy consumption of the ship's hotel loads. We believe sufficient information to size and quote the SES electrical equipment is available in section 003 of the RFP. The integrator will be responsible for developing any required drawings/circuit lists for the SES based on the requirements of the proposed electrical and auxiliary equipment. Two additional owner-required circuits are specified in section 003.5. See also responses to items 15 and 16 below
13	Has Glosten designed a preliminary version of the ASCS to give us an idea of what it would look like?	The ASCS is in the scope of this RFP, see lines 58-75 and Section 004. Glosten has evaluated products from several companies offering suitable charging systems and expect that one of these will probably be a sub-supplier. We are interested to see what options integrators identify as the best value for Skagit County.

No.	Question	Response
14	What is the expected normal electricity consumption from the utility	Total utility consumption will consist of three main loads: vessel charging, terminal power, and SES auxiliary loads. • Vessel charging power is described in the RFP • Terminal power is clarified in Item 16 below • SES Auxiliary loads should be determined by the integrator It is expected that the shore PMS will optimize battery charging/discharging as described in 005.2 such that the normal utility consumption is relatively constant during vessel operations.
15	What is the max available consumption from the utility?	• PSE has confirmed the ability to supply up to 2MW to the ferry terminal, but only with undesirable upgrades to distribution lines. • It is expected that the peak required for worst-case ferry charging plus terminal and auxiliary loads will be <800kw, and that this would not require utility distribution upgrades. • Note that as described in section 003.3 and 005.2, the shore batteries should be utilized to minimize peak power consumption from the utility in order to minimize demand charges.
16	SES Clarifications from Glosten	On further review, the main transformer rating in the RFP is too high and the RFP does not clearly reflect the SES design flexibility available to integrators. Some notes: • Estimated load for the terminal building and ramp supply (Table 5) is revised from 200kw down to 75kw • There may be one or more main transformers, per integrator discretion. The attached sketch shows two possible arrangements. Other arrangements that meet the functional requirements are also acceptable. • The integrator is responsible for sizing transformers, considering arrangement, loads, power factor, and harmonic distortion. kw ratings provided in the RFP and this addendum are nominal • Attention is drawn to lines 426-435, which give updates to the one-line diagram: the existing terminal distribution will be supplied from the new SES. ASCS aux power will not be taken from existing terminal distribution • RFP Section 003.5 is titled "AC Terminal Distribution" and gives requirements for SES 480V distribution. It includes some descriptive details of infrastructure <u>downstream of the SES that will not be modified by the integrator</u> • 17097.02-300-02, Electrical One Line, shows the 480V "AC Terminal Distribution" swbd in the SES directly feeding the ramp distribution. A single SES circuit will supply existing distribution for the terminal building, ramp, and 480V ferry shore power.
17	Clarify transformer size requirements: • The size of the 3S and 2S supply from grid-converters are not shown on one-line diagram • The 3S/1S transformer is listed as 100kVA, but should be 125kVA based on 150A/480V supply breaker	75kVA of load should be utilized to size the transformers and grid converters. This supersedes the sizes listed in the single line diagram and applies to the 3S and 2S grid converters and transformers, and to the 3S/1S transformer. As noted above in #16, integrators are responsible to increase sizing if required due to harmonic distortion. This sizing is based on preliminary estimates of auxiliary loads; these will be finalized during contract design and sizing modified if necessary.
18	The one-line diagram shows "propulsion auxiliaries" load connected to DC busses with a cloud (TBD with vendor). • Is there any particular description of what type of load here and what load size kVA? • Should we propose VFD's for these loads?	If desired, you may propose to relocate loads such as steering motors, cooling pumps, etc to be supplied by VFD directly from the DC bus. Include VFDs in your scope and commercial quote if this approach is utilized.
19	What is the utility load we should peak shave to? • Should it be a fixed set point, or something that is dynamically calculated with some "smart" logic? • If not a fixed set point, how can we ensure this control results in the defined load cycles?	There is not a fixed peak-shaving setpoint. As described in 005.2, the primary goal of the SES power management system is to minimize utility demand charges. The optimum approach is "smart" logic and communication with the vessel to modify the charging profile based on real-time information about the depth of discharge in the VES batteries. This would normally result in a constant electrical demand from the utility. If advantageous, the smart logic could also remember the highest peak occurring during each billing cycle, and deviate from constant utility demand. This approach is expected to result in battery load cycles similar to (or less severe) than the design cycles indicated in the RFP. Controlling the SES to achieve exactly the cycles in the RFP is not required.



NOTES

1. TWO ACCEPTABLE LAYOUTS ARE SHOWN. OTHERS ARE POSSIBLE.
2. 690V IS TYPICAL BUT NOT REQUIRED.
3. ALL TRANSFORMERS ARE IN THE INTEGRATOR'S SCOPE