



**REQUEST FOR PROPOSAL**  
**No. P-134031015-TJ**

## **Removable Elevated-Hinge Wave Machine**

**CLOSING**

October 23, 2020 (5:00 PM, PT)

**ELECTRONIC SUBMITTAL ADDRESS**

[bids@oregonstate.edu](mailto:bids@oregonstate.edu)

## **1.0 GENERAL**

### **1.01 SCHEDULE OF EVENTS**

- Issue Date.....September 09, 2020
- Deadline for Requests for Clarification or Change.....October 02, 2020 (3:00 pm, PT)
- Closing.....October 23, 2020 (3:00 pm, PT)

This Schedule of Events is subject to change. Any changes will be made through the issuance of written Addenda.

### **1.02 PRE-PROPOSAL CONFERENCE**

A Pre-Proposal Conference will not be held.

### **1.03 ISSUING OFFICE**

The Procurement, Contracts and Materials Management (PCMM) department of Oregon State University ("OSU") is the issuing office and is the sole point of contact for this Request for Proposal. Address all concerns or questions regarding this Request for Proposal to the Administrative Contact identified below.

### **1.04 ADMINISTRATIVE CONTACT**

Name: Thomas James  
Title: Purchasing Analyst 3  
Telephone: 541-737-3423  
E-Mail: thomas.james@oregonstate.edu

### **1.05 DEFINITIONS**

As used in this Request for Proposal, the terms set forth below are defined as follows:

- a. "Addenda" means an addition to, deletion from, a material change in, or general interest explanation of the Request for Proposal.
- b. "Closing" means the date and time specified in a Request for Proposal as the deadline for submitting offers.
- c. "Days" means calendar days, including weekdays, weekends, and holidays, unless otherwise specified.
- d. "Exhibits" means those documents which are attached to and incorporated as part of the Request for Proposal.
- e. "Proposal" means a binding offer submitted by an entity in response to a request for proposal issued by the university.
- f. "Proposer" means an entity that submits a response to a request for proposal issued by the university.
- g. "Request for Proposal" (RFP) means a Solicitation Document to obtain written, competitive Proposals to be used as a basis for making an acquisition or entering into a Contract when price will not necessarily be the predominant award criteria.
- h. "Responsible" means when an entity has demonstrated their ability to perform satisfactorily under a contract by meeting the applicable standards of responsibility outlined in OSU Standard 03-015, Sec. 5.16.3.i
- i. "Responsive" means when the solicitation response is substantially compliant in all material respects with the criteria outlined in an Invitation to Bid.
- j. "Sealed" means a solicitation response to a solicitation document that has not been opened by the university or a solicitation response delivered by electronic means that has not been distributed beyond university personnel responsible for receiving the electronically submitted solicitation response.
- k. "Signed" means any mark, word, or symbol that is made or adopted by an entity indicating an intent to be bound.
- l. "Solicitation response" means a binding offer submitted by an entity in response to a solicitation document issued by the university.
- m. "Work" means the furnishing of all materials, equipment, labor, transportation, services, and incidentals necessary to successfully complete any individual item or the entire contract and carrying out and completion of all duties and obligations imposed by the contract.

## **2.0 INTRODUCTION AND BACKGROUND**

## 2.01 INTRODUCTION

Procurement, Contracts and Materials Management is seeking Responsive Responsible Proposers to submit Proposals for a removable elevated-hinge wave machine for Oregon State University's, O.H. Hinsdale Wave Research Laboratory.

## 2.02 BACKGROUND

See Exhibit A.

## 2.03 OREGON STATE UNIVERSITY

Founded in 1868, Oregon State University is a comprehensive, research-extensive, public university located in Corvallis. Oregon State is one of only two American universities to hold the Land Grant, Sea Grant, Space Grant and Sun Grant designations. Oregon State is also the only Oregon institution to have earned both Carnegie Foundation classifications for Highest Research Activity and Community Engagement, a recognition of the depth and quality of its graduate education and research programs.

Through its centers, institutes, Extension offices and Experiment Stations, Oregon State has a presence in all of Oregon's 36 counties, including its main campus in Corvallis, the Hatfield Marine Sciences Center in Newport and OSU-Cascades Campus in Bend. Oregon State offers undergraduate, master's and doctoral degrees through 11 academic colleges, the Honors College, Graduate School and online Ecampus, enrolling more than 31,000 students from every county in Oregon, every state in the country and more than 110 nations.

## **3.0 STATEMENT OF WORK / SAMPLE CONTRACT**

### 3.01 STATEMENT OF WORK/SPECIFICATIONS

Statement of work/product specification for the new wave machine is included as Exhibit A.

### 3.02 SAMPLE TERMS AND CONDITIONS

Standard terms and conditions for purchase of goods is included at Exhibit B. Subject to change as needed.

## **4.0 PROPOSER QUALIFICATIONS**

### 4.01 PREFERRED QUALIFICATIONS

OSU will award points for Proposers able to meet the preferred qualifications below.

- a. Three years' experience designing/building wave machines.
- b. Deep knowledge of wave generation and wave mechanics.
- c. Included equipment warranty of one year. Included equipment warranty of two or more years will receive additional points.
- d. ISO or equivalent/similar certifications.
- e. Proof of Financial stability.
  - o Credit rating/report, number of years in business or similar information demonstrating financial health can be used to meet this qualification.

## **5.0 REQUIRED SUBMITTALS**

### 5.01 QUANTITY OF PROPOSALS

Submit one (1) electronic copy via any of the methods detailed in the section below titled SUBMISSION. Proposals should contain original signatures on any pages where a signature is required (in the case of electronic submissions, either electronic signatures or scans of hand-signed pages should be included). Proposals should contain the submittals listed in this section below.

### 5.02 REQUIRED SUBMITTALS

It is the Proposer's sole responsibility to submit information in fulfillment of the requirements of this Request for Proposal. If submittals are not substantially compliant in all material respects with the criteria outlined in the RFP, it will cause the Proposal to be deemed non-Responsive.

Proposers must submit the following information:

- Proposal/description of how the goods or services offered specifically satisfy the statement of work/specifications described in Exhibit A.
- Include a detailed description of included warranty that lists the length of warranty and what it covers.
- Detailed maintenance information and requirements.
- Detailed information about how the Proposer meets the minimum qualifications described in section 4.
- Detailed information about how the Proposer meets the preferred qualifications described in section 4.
- Complete and itemized "all inclusive" pricing of the goods/services requested. Shipping and any additional charges related to the goods, including importing, etc. must be included.
- Exhibit C: Certifications, fully completed.
- Exhibit D: References, fully completed.

## **6.0 EVALUATION**

### **6.01 EVALUATION**

The stages of review and evaluation are as follows:

a. **Determination of Responsiveness:**

OSU will first review all Proposals to determine Responsiveness. Proposals that do not comply with the instructions, that are materially incomplete, that do not meet the minimum requirements, or that are submitted by Proposers who does not meet minimum qualifications may be deemed non-Responsive. Written notice will be sent to Proposers whose Proposal is deemed non-Responsive identifying the reason. A Proposer has the right to appeal the decision pursuant to OSU Standard 03-015, Sec. 5.20.

b. **First Stage Evaluation:**

Those Proposals determined to be Responsive will be evaluated using the required submittals. Proposals will be scored based on the evaluation criteria listed below. Scores will be used to determine Proposers within a competitive range. The competitive range will be made of Proposers whose individual scores, when viewed together, form a group of the highest ranked Proposers above a natural break in the scores.

OSU reserves the right to ask follow-up questions of Proposers during first stage evaluations. The questions will be for the purpose of clarification of information already contained in submittals and not be an opportunity to submit additional documentation or change existing documentation.

OSU may award after the first stage evaluation to the highest ranked Proposer without moving on to the second stage evaluation. If this option is selected, written notice of intent to award the Contract to the highest ranked Proposer will be provided to all Responsive Proposers, or an award may be made directly without notice of intent in those instances of a single Responsive Proposer.

c. **Second Stage Evaluation:**

If award is not made after the first stage evaluation, OSU may choose any of the following methods in which to proceed:

- i. Issue a written invitation to Proposers within the competitive range requesting an interview, presentation, site visit or any other evaluative method that is relevant to the goods or services solicited in the Request for Proposal. Written invitations will contain the evaluation criteria and scoring that will be used by the evaluation committee.
- ii. Engage in oral or written discussions with and receive best and final Proposals from all Proposers

in the competitive range or all Proposers submitting Responsive Proposals. Discussions may be conducted for the following purposes:

- Informing Proposers of deficiencies in their initial Proposals;
- Notifying Proposers of parts of their Proposals for which OSU would like additional information; or
- Otherwise allowing Proposers to develop revised Proposals that will allow OSU to obtain the best Proposal based on the requirements set forth in this Request for Proposal.

The conditions, terms, or price of the Proposal may be altered or otherwise changed during the course of the discussions provided the changes are within the scope of the Request for Proposal. Best and final Proposals will be scored based on the evaluation criteria listed below.

Points awarded in the first stage evaluation will not be carried to the second stage evaluation. If a second stage evaluation of all Proposers does not produce an award that is in OSU's best interest, OSU may return to the first stage evaluation to advance additional Proposers to a second stage evaluation.

d. Additional Stages of Evaluation:

If after completion of the second stage of evaluation, an award is not made, OSU may add another stage of evaluation using any of the methods outlined in the second stage evaluation above.

## 6.02 EVALUATION CRITERIA

Points will be given in each criteria and a total score will be determined. The maximum points available for each criterion are identified below.

<u>Evaluation Criteria</u>	<u>Points</u>
Proposal relative to the Statement of Work/Specification	40
Proposer's qualifications relative to the requested qualifications	25
<u>Price of the goods or services</u>	<u>35</u>
<b>Total</b>	<b>100</b>

### Pricing Calculation:

The Proposal that contains the lowest price to OSU will receive the maximum number of price points. A Proposal whose price is higher than the lowest submitted price will receive proportionately fewer price points, as demonstrated in the example below.

Proposer A's price is \$450 (the lowest)  
Proposer A is awarded 20 price points (the maximum)

Proposer B's price is \$500  
Proposer B is awarded 18 price points ( $450/500 \times 20$ )

In the event of a discrepancy between unit prices and extended (arithmetically calculated) prices, unit prices will prevail over extended prices.

## 6.03 NEGOTIATIONS

OSU may commence serial negotiations with the highest ranked Proposer or commence simultaneous negotiations with all Responsive Proposers within the competitive range. OSU may negotiate:

- a. The Statement of Work;
- b. The Contract price as it is affected by negotiating the Statement of Work; and
- c. Any other terms and conditions as determined by OSU.

## 6.04 INVESTIGATION OF REFERENCES

OSU reserves the right to investigate and to consider the references and the past performance of any Proposer with respect to such things as its performance or provision of similar goods or services, compliance with

specifications and contractual obligations, and its lawful payment of suppliers, subcontractors, and workers. OSU may postpone the award or execution of the Contract after the announcement of the notice of intent to award in order to complete its investigation.

#### 6.05 CONTRACT AWARD

Contract will be awarded to the Proposer who, in OSU's opinion, meets the requirements and qualifications of the RFP and whose Proposal is in the best interest of OSU. If a successful Contract cannot be completed after award, OSU may conclude contract negotiations, rescind its award to that Proposer, and return to the most recent RFP evaluation stage to negotiate with another Proposer(s) for award.

### **7.0 INSTRUCTIONS TO PROPOSERS**

#### 7.01 APPLICABLE STATUTES AND RULES

This Request for Proposal is subject to the applicable provisions and requirements of the Oregon Revised Statutes, Oregon Administrative Rules, and OSU Policies and Procedures.

#### 7.02 COMMUNICATIONS DURING RFP PROCESS

In order to ensure a fair and competitive environment, direct communication between OSU employees other than the Administrative Contact or other PCMM representative and any party in a position to create an unfair advantage to Proposer or disadvantage to other Proposers with respect to the RFP process or the award of a Contract is strictly prohibited. This restricted period of communication begins on the issue date of the solicitation and for Proposer(s) not selected for award ends with the conclusion of the appeals period identified in OSU Standard 03-015, Sec. 5.20.8(b) and for Proposers(s) selected for award ends with the contract execution. This restriction does not apply to communications to other OSU employees during a Pre-Proposal conference or other situation where the Administrative Contact has expressly authorized direct communications with other staff. A Proposer who intentionally violates this requirement of the RFP process or otherwise deliberately or unintentionally benefits from such a violation by another party may have its Proposal rejected due to failing to comply with all prescribed solicitation procedures. The rules governing rejection of individual solicitation responses and potential appeals of such rejections are at OSU Standard 03-015, Sec. 5.20.

#### 7.03 MANUFACTURER'S NAMES AND APPROVED EQUIVALENTS

Unless qualified by the provision "NO SUBSTITUTE" any manufacturers' names, trade name, brand names, information and/or catalogue numbers listed in a specification are for information and not intended to limit competition. Proposers may offer any brand for which they are an authorized representative, which meets or exceeds the specification for any item(s). If Proposals are based on equivalent products, indicate in the Proposal form the manufacturers' name and number. Proposers shall submit with their Proposal, sketches, and descriptive literature, and/or complete specifications. Reference to literature submitted with a previous Proposal will not satisfy this provision. Proposers shall also explain in detail the reason(s) why the proposed equivalent will meet the specifications and not be considered an exception thereto. Proposals that do not comply with these requirements are subject to rejection. Proposals lacking any written indication of intent to provide an alternate brand will be received and considered in complete compliance with the specification as listed in the RFP.

#### 7.04 REQUESTS FOR CLARIFICATION OR CHANGE

Requests for clarification or change of the Request for Proposal must be in writing and received by the Administrative Contact no later than the Deadline for Request for Clarification or Change as specified in the Schedule of Events. Such requests for clarification or change must include the reason for the Proposer's request. OSU will consider all timely requests and, if acceptable to OSU, amend the Request for Proposal by issuing an Addendum. Envelopes, e-mails or faxes containing requests must be clearly marked as a Request for Clarification or Change and include the RFP Number and Title.

#### 7.05 ADDENDA

Only documents issued as written Addenda by PCMM serve to change the Request for Proposal in any way. No other direction received by the Proposer, written or verbal, serves to change the Request for Proposal. Addenda will be publicized on the OSU procurement website. Proposers are advised to consult the OSU procurement website prior to submitting a Proposal in order to ensure that all relevant Addenda have been incorporated into

the Proposal. Proposers are not required to submit Addenda with their Proposal. However, Proposers are responsible for obtaining and incorporating any changes made by Addenda into their Proposal. Failure to do so may make the Proposal non-Responsive, which in turn may cause the Proposal to be rejected.

#### 7.06 PREPARATION AND SIGNATURE

All Required Submittals must be written or prepared in ink and signed by an authorized representative with authority to bind the Proposer. Signature certifies that the Proposer has read, fully understands, and agrees to be bound by the Request for Proposal and all Exhibits and Addenda to the Request for Proposal.

#### 7.07 PUBLIC RECORD

Upon completion of the Request for Proposal process, information in all Proposals will become subject records under the Oregon Public Records Law. Only those items considered a "trade secret" under ORS 192.501(2), may be exempt from disclosure. If a Proposal contains what the Proposer considers a "trade secret" the Proposer must mark each sheet of information as such. Only bona fide trade secrets may be exempt and only if public interest does not require disclosure.

#### 7.08 SUBMISSION

Proposals must be received in the PCMM office no later than the Closing; it is the Proposer's responsibility to ensure that the Proposal is received prior to the Closing indicated in this RFP, regardless of the method used to submit the Proposal. Proposals may be submitted via the following method(s):

- 1) Electronic copy in PDF format included as attachment(s) in an e-mail sent to [bids@oregonstate.edu](mailto:bids@oregonstate.edu). The e-mail subject line should contain the RFP No. and RFP title. Only those Proposals received at this e-mail address by the Closing will be considered Responsive; do not e-mail a copy of the Proposal to any other e-mail address. Proposals submitted directly to the Administrative Contact e-mail address will NOT be considered Responsive. It is highly recommended that the Proposer confirms receipt of the email with the Administrative Contact noted above or by calling 541-737-4261. The Administrative Contact may open the e-mail to confirm receipt but will NOT verify the integrity of the attachment(s), answer questions related to the content of the Proposal, or address the overall Responsiveness of the Proposal.

All Proposals, including those submitted through electronic methods, must contain written signatures indicating intent to be bound by the offer. If the Proposer submits multiple versions of the Proposal via different methods and does not explicitly direct OSU as to which version to use, OSU will determine which version of the Proposal will be used for evaluation.

#### 7.09 MODIFICATION

Prior to submittal, Proposers should initial modifications or erasures in ink by the person signing the Proposal. After submittal but prior to the Closing, Proposals may be modified by submitting a written notice indicating the modifications and a statement that the modification amends and supersedes the prior Proposal. After the Closing, Proposers may not modify their Proposal.

#### 7.10 WITHDRAWALS

A Proposer may withdraw their Proposal by submitting a written notice to the Administrative Contact identified in this Request for Proposal prior to the Closing. The written notice must be on the Proposer's letterhead and signed by an authorized representative of the Proposer. The Proposer, or authorized representative of the Proposer, may also withdraw their Proposal in person prior to the Closing, upon presentation of appropriate identification and evidence of authority to withdraw the Proposal satisfactory to OSU.

#### 7.11 LATE SUBMITTALS

Proposals and written notices of modification or withdrawal must be received no later than the Closing (in the case of electronic submissions, the time/date stamp of the email received at the PCMM office must be no later than the Closing). OSU may not accept or consider late Proposals, modifications, or withdrawals except as permitted in OSU Standard 03-015, Sec 5.9. Sole responsibility rests with the Proposer to ensure OSU's receipt of its Proposal prior to the Closing. OSU shall not be responsible for any delays or misdeliveries caused by common carriers or by transmission errors, malfunctions, or electronic delays. Any risks associated with physical

delivery or electronic transmission of the Proposal are borne by the Proposer.

#### 7.12 PROPOSAL OPENING

Proposals will be opened immediately following the Closing at the Submittal Location. Proposer may attend the Proposal opening. Only the names of the Proposers submitting Proposals will be announced. No other information regarding the content of the Proposals will be available.

#### 7.13 PROPOSALS ARE OFFERS

The Proposal is the Proposer's offer to enter into a Contract pursuant to the terms and conditions specified in the Request for Proposal, its Exhibits, and Addenda. The offer is binding on the Proposer for one hundred twenty (120) days. OSU's award of the Contract constitutes acceptance of the offer and binds the Proposer. The Proposal must be a complete offer and fully Responsive to the Request for Proposal.

#### 7.14 CONTINGENT PROPOSALS

Proposer shall not make its Proposal contingent upon OSU's acceptance of specifications or contract terms that conflict with or are in addition to those in the Request for Proposal, its Exhibits, or Addenda.

#### 7.15 RIGHT TO REJECT

OSU may reject, in whole or in part, any Proposal not in compliance with the Request for Proposal, Exhibits, or Addenda, if upon OSU's written finding that it is in the public interest to do so. OSU may reject all Proposals for good cause, if upon OSU's written finding that it is in the public interest to do so. Notification of rejection of all Proposals, along with the good cause justification and finding of public interest, will be sent to all who submitted a Proposal.

#### 7.16 AWARDS

OSU reserves the right to make award(s) by individual item, group of items, all or none, or any combination thereof. OSU reserves the right to delete any item from the award when deemed to be in the best interest of OSU.

#### 7.17 LEGAL REVIEW

Prior to execution of any Contract resulting from this Request for Proposal, the Contract may be reviewed by a qualified attorney for OSU pursuant to the applicable Oregon State University Standards, Oregon Revised Statutes and Oregon Administrative Rules. Legal review may result in changes to the terms and conditions specified in the Request for Proposal, Exhibits, and Addenda.

#### 7.18 PROPOSAL RESULTS

A written notice of intent to award will be issued to all Proposers. The Proposal file will be available for Proposer's review during the appeal period at the PCMM Department. Proposers must make an appointment with the Administrative Contact to view the Proposal file. After the appeal period, the file will be available by making a Public Records Request to OSU Office of General Counsel.

#### 7.19 PROPOSAL PREPARATION COST

OSU is not liable for costs incurred by the Proposer during the Request for Proposal process.

#### 7.20 PROPOSAL CANCELLATION

If a Request for Proposal is cancelled prior to the Closing, all Proposals that may have already been received will be returned to the Proposers. If a Request for Proposal is cancelled after the Closing or all Proposals are rejected, the Proposals received will be retained and become part of OSU's permanent Proposal file.

#### 7.21 APPEAL OF CONTRACTOR SELECTION, CONTRACT AWARD

Any Proposer who feels adversely affected or aggrieved may submit an appeal within three (3) business days after OSU issues a notice of intent to award a Contract. The appeal must be clearly identified as an appeal, identify the type and nature of the appeal, and include the Request for Proposal number and title. The rules governing appeals are at OSU Standard 03-015, Sec. 5.20.





**EXHIBIT A**  
**SCOPE OF WORK/SPECIFICATIONS**

## Removable Elevated-hinge Wave Machine for the Large Wave Flume at Hinsdale Wave Research Laboratory, OSU

### Background

The Large Wave Flume (LWF) at Hinsdale Wave Research Laboratory (HWRL), Oregon State University, is currently equipped with a piston-type, dry-back wave generator with a 4.2 m maximum stroke hydraulic actuator assembly. The flume is 104.24 m long, 3.66 m wide, and the sidewalls are 4.57 m high. The existing wavemaker can generate large regular, random and tsunami-like long waves for the purpose of scaled model tests. Currently, the maximum water depth,  $h$ , for generation of regular or random waves is 2.7 m, with a maximum wave height,  $H$ , of 1.7 m in a wave period,  $T$ , range from 4 to 8 s. The maximum depth for tsunami-like waves (solitary waves) in the flume is 2.0 m, with a maximum wave height of 1.4 m.

The performance curves (derived with linear wave theory) of the existing piston-type wave generator at the Large Wave Flume are shown in Figure 1. Where  $H$  is the wave height,  $T$  is the wave period,  $h$  is the water depth and  $S$  is the board stroke.

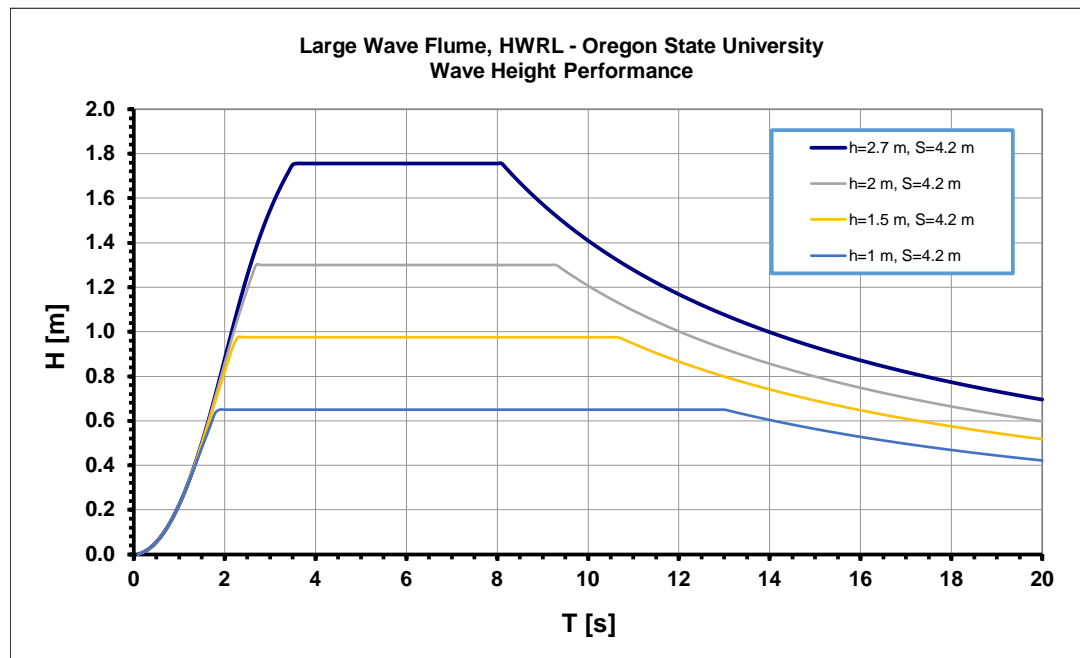


Figure 1. Performance curves for the current piston-type wave generator at the Large Wave Flume

The maximum depth at the flume for wave generation is currently limited by the structural design of the wave machine. However, the flume wall height is capable of handling a maximum depth in excess of 4 m.

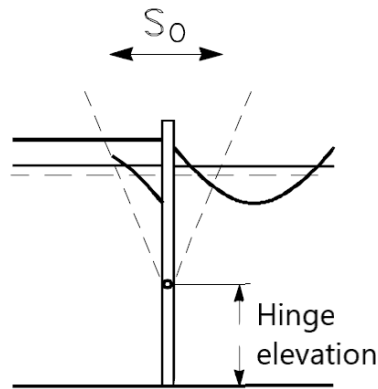
To augment the capabilities of the facility and responding to an increasing demand of deeper experimental conditions (particularly from the wave energy industry), the procurement of a specialized wave machine able to generate high-quality waves in deeper water was deemed necessary

## New wave machine characteristics

As indicated above, the new wave machine should be able to generate high-quality waves in deeper waters, while maintain the operation of the existing wave machine at depths up to 2.7 m to generate large shallow-water waves. The new proposed wave generator should be capable of simulating deep- and intermediate-water waves. The planned water depth during operation of the proposed wave generator is up to **4 meters**. It should be stressed that the existing wave machine is able to withstand the hydrostatic and dynamic pressures for water depths from **2.7 m to 4 m**, as long as is not operating.

Basic specifications for the new wavemaker include the generation of quality<sup>1</sup> waves with heights up to **0.6 m** and a wave period ranging from **0.5 s to 3.0+ s** (depending on the wave height).

The basic solution found by HWRL is a removable, portable, elevated-hinge wave machine (see Figure 2). Given the portability of the solution, the new wave machine can operate at various depths. The most stringent condition is found at the maximum target depth of **4 m**, where the hinge elevation has been estimated at **3.05 m**, the design wave height is **0.6 m** with a period of **1.8 s**. The corresponding stroke ( $S_0$ ) would be **0.73 m** (linear wave theory), equivalent to a flap angle of  $\pm 21^\circ$  requiring a minimum paddle height of **1.5 m**.



*Figure 2. General configuration of an elevated-hinge wave maker*

The flume is fitted with a series of bolt-hole vertical patterns to assemble test specimens, fix instrumentation, as well as to support a movable/adjustable bathymetry made of 20 square concrete slabs. The new elevated-hinge wave machine would be installed and fixed with the existing bolt-hole pattern transferring the forces of the wave machine to the concrete side walls, and its design should be flexible enough to enable repositioning in the flume at **various locations** along its length and at **various heights** (variable hinge height) using this bolt-hole pattern. This includes the possibility of installing the new wave machine in the opposite side of the flume and generate waves towards the existing wavemaker. Figure 3 presents a cross-sectional detail of the Large Wave Flume, depicting the existing piston-type wavemaker, the bays along the flume where the bolt-hole pattern are located, and some sample locations and elevations of the new movable elevated-hinge wavemaker. The flume's bolt-hole pattern is detailed in the 'Additional Information, Specifications, and Figures' portion of this document.

<sup>1</sup> Quality waves are those where its profile is as close as possible to the adequate wave theory used for generation and propagation. Also, no spurious waves are observed, included those coming from the motions and vibrations of the wave paddle, gaps between the paddles and between the paddles and the side walls, or high accelerations on the use of active absorption.

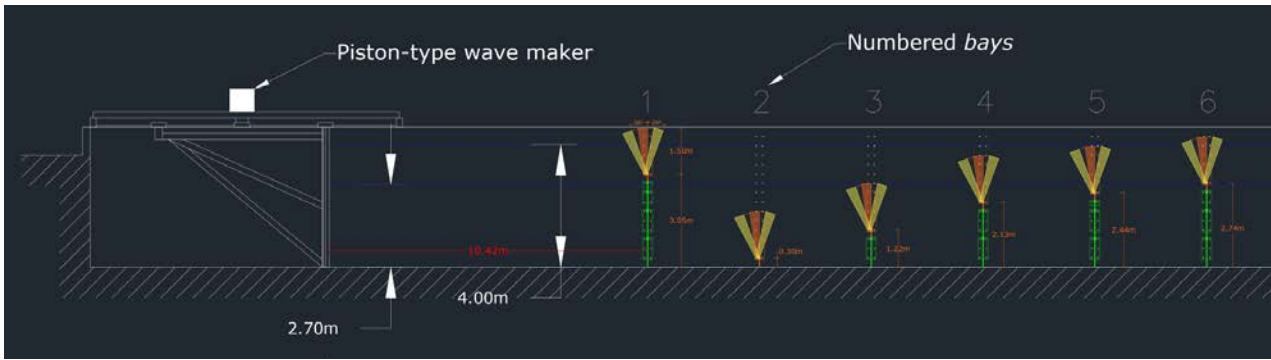


Figure 3. Schematic configuration of the new elevated-hinge wave machine at various locations and elevations along the Large Wave Flume.

As an elevated-hinge system, the new wave machine will include a set of rigid panels to be installed underneath separating physically the zones forward and backwards. The set of panels will allow the placement of the new wave machine at different elevations in steps of **max. 3 feet (0.92 m)**, i.e. the maximum panel height is 3 ft. Figure 4 presents a detailed cross-sectional view of the flume with the new wave machine installed to accommodate for the maximum water depth (4 m). The hinge elevation is at 3.05 m. The panels underneath have varying height (2 x 3ft, 1 x 2ft and 1 x 1ft) so any elevation can be achieved in steps of 1 ft (0.3048 m).

Hinge elevation	Number of panels	Panel height	Depth range
<b>1 ft (0.305 m)</b>	0	-	0.4 – 1.3 m
<b>2 ft (0.610 m)</b>	1	1 ft	0.7 – 1.6 m
<b>3 ft (0.914 m)</b>	1	2 ft	1.0 – 1.9 m
<b>4 ft (1.219 m)</b>	1	3 ft	1.3 – 2.2 m
<b>5 ft (1.524 m)</b>	1	3 ft	1.6 – 2.5 m
	1	1 ft	
<b>6 ft (1.829 m)</b>	1	3 ft	1.9 – 2.8 m
	1	2 ft	
<b>7 ft (2.134 m)</b>	1	3 ft	2.2 – 3.1 m
	1	3 ft	
<b>8 ft (2.439 m)</b>	1	3 ft	2.5 – 3.4 m
	1	3 ft	
	1	1 ft	
<b>9 ft (2.743 m)</b>	1	3 ft	2.8 – 3.7 m
	1	3 ft	
	1	2 ft	
<b>10 ft (3.048 m)</b>	1	3 ft	3.1 – 4.0 m
	1	3 ft	
	1	2 ft	
	1	1 ft	

The new wavemaker may be wet-back or dry-back, depending on the solution proposed by the manufacturers; however, if the new proposed wavemaker is to be wet-back, a removable passive wave absorber on the back of the wavemaker should be included. If the new proposed wavemaker is to be dry-back, the buoyant forces should be considered in the design of the box element containing the wave machine.

In a similar way, the wave machine may be composed by any number of paddle segments to optimize power efficiency (solution open to the manufacturer), but the synchronization of each paddle motion should ensure the generation of long-crested waves perpendicular to the hinge axis of the wavemaker and parallel to the flume. The gap between segments, and between segments and the flume walls, should minimize or eliminate the possibility of flow under, through and/or around the wavemaker.

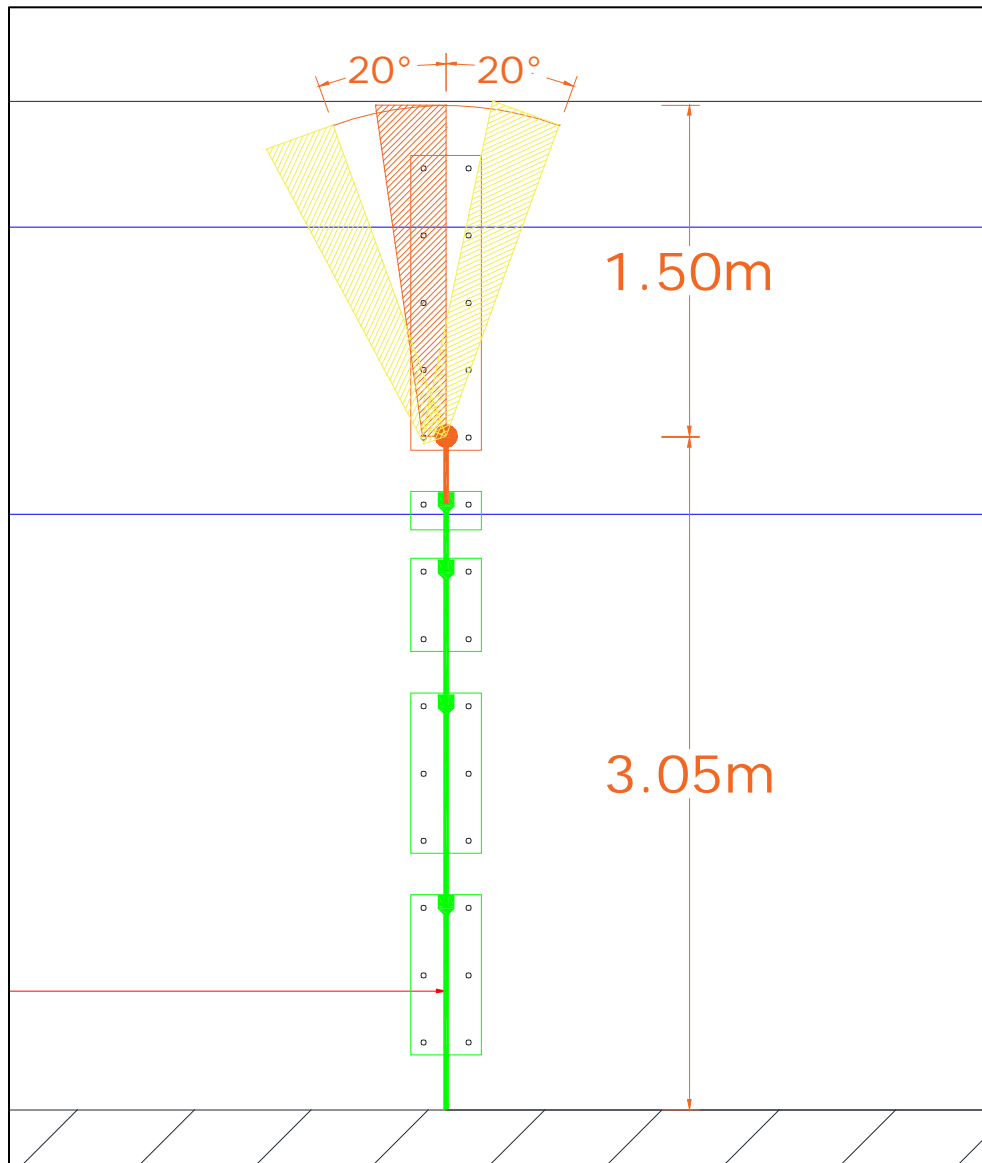


Figure 4. Detail of the preliminary design of the new wave machine for the maximum depth of 4 m. Note the varying dimensions of the panels to accommodate for any elevation.

As indicated, the nominal width of the flume is 3.65 m, but the new wave machine should consider a variability of +/-2 cm in the flume width, particularly at the location of the bolt-hole pairs. Hence, it is considered that the width of the wave machine should be **3.6 m** to account for the width variations along the flume and the lateral motions of the gantry crane. The manufacturer should take into account the gap and include in the design a way to seal or eliminate the flow from one side of the wave machine to the other.

For flexibility and maintenance, the new wave machine will be **electric**. Given the portability and removability, the new wave machine will include an extension cord able to reach any of the four **480V/3 phase** connection plugs found along the side of the flume (see Figure 5). The length of the extension cord

is estimated to be **40 m**. The extension cord should be properly protected against electrical shock in a wet environment (IP67 or better).



*Figure 5. 480V/3 phase plugs located along the side of the flume.*

The new wave machine should follow industry standard practices for noise elimination. All internal cables and cables going to the motor(s) should be shielded. All input power lines should be filtered, and all internal cables should be shielded where possible. Noise generated during operation of the wave machine should be due primarily to the electric motor(s) and water motion in the flume; the design should avoid excessive mechanical noise.

To facilitate the transportation of the proposed wave machine to various locations in the LWF, several forklifts are available at the HWRL. The maximum carrying capacity for the largest forklift available is 5 tons. A gantry crane with a maximum load capacity of 6 tons is available for placing the system components within the flume. Components of the wave machine should fit within the available frame of the gantry crane (see Figure 6).

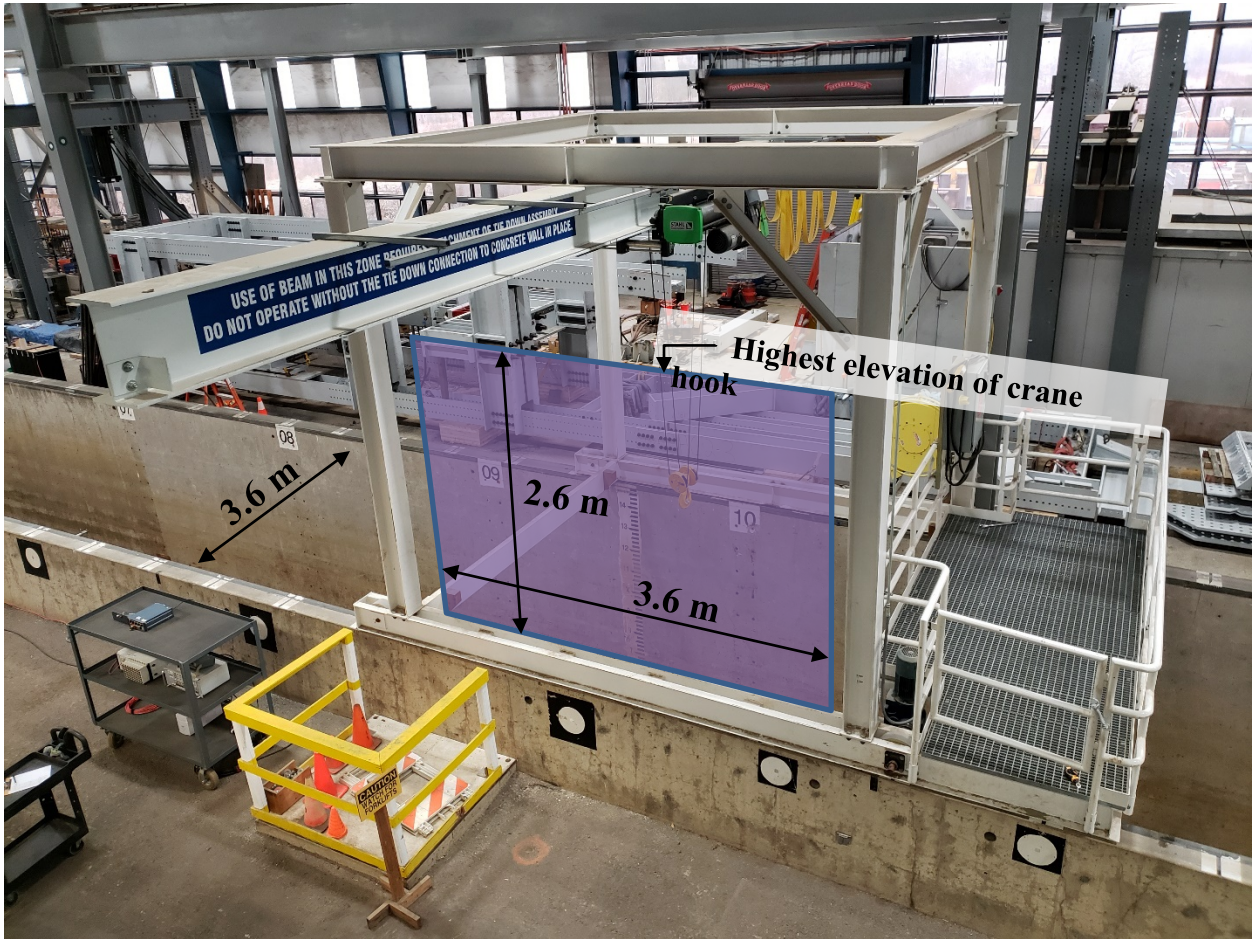


Figure 6. Available clearances of the gantry crane at the Large Wave Flume.

Ideally, the installation or removal of the new wavemaker in the LWF should be possible with a maximum crew of four individuals over a 12-hour time period. Please note that if shipping the new machine from outside of the United States, incoterm for the delivered final product must be DDP United States. For reference, the delivery address will be:

O.H. Hinsdale Wave Research Laboratory at Oregon State University  
 3550 SW Jefferson Way, Corvallis, OR  
 97331  
 United States of America

When not in use, the wavemaker will be stored in a crate supplied by the manufacturer. The storage crate will be located indoors in an area of the HWRL that is not climate controlled. Proper storage of the wavemaker should be outlined by the manufacturer as part of the equipment maintenance documentation. The system will include software for control and generation of regular, irregular, and solitary waves, as well as user defined waves. The wave generation system should include standard wave spectra (Pierson-Moskowitz, Bretschneider, JONSWAP, TMA, Ochi-Hubble) with second order compensation, linear and nonlinear regular waves (e.g. sinusoidal, Stokes  $n^{th}$  –order, cnoidal, Stream Function), user-defined free-surface time series, user-defined position time series, and user-defined wave spectra. Wave generation should also include active wave-absorption compensation. The wave machine controller should include a series of BNC I/O ports for real-time control of the paddle, including output of the position(s) feedback of the paddle(s), free-surface elevation(s) at the paddle(s), force transducer(s) feedback (if applicable), and triggering signal(s), as well as input of the position(s) of the paddle(s), provided by an external wave generation and control system.

## Specifications

<b>Large Wave Flume (Existing Boundary Conditions)</b>	
Width	Nominally 3.65 m +/- 1 cm (11.98 +/- 1/2")
Height	4.57 m (15ft)
Total Length	104.24 m (342ft)
Available Testing Length	87.43 m (286.84 ft)
Planned Water Depth in Operation Mode	≤ 4 m (13.12 ft)
<b>New Wave Generator (minimum compulsory requirements)</b>	
Component Weight Limit	5 US tons (10,000 lb)
Leeside condition	Wet-Back* or Dry-Back
Motion Type	Elevated hinge (Flap)
Design max wave height (H)	0.6 m
Design wave period (T)	1.8 s
Hinge elevation (l)	Variable in accordance to the water depth
Water depth (h)	Variable, 0.4 m to 4 m
Stroke / Angle	At proposer's own discretion
Actuation	Electric
Active Absorption	Yes
Number of Segments	At proposer's own discretion, aiming to minimize power consumption and ensure wave crest alignment
Power supply	Supply of 40 m shielded and protected cables and connectors.
Design lifetime	20 years
Emergency Stop (E-Stop)	Two buttons provided, one at the paddle, and another at the connection point. Generation software should include soft and immediate stopping procedures.
Seals between segments, at edges of flume, and below flap should minimize or eliminate the possibility of flow under and/or around the wavemaker.	
*If the paddle-type of the proposed wavemaker is to be wet-back, the watertight container for the wave machine and a removable passive wave absorber on the back-side of the wavemaker should be included.	
Proposal should include details on power consumption, efficiency and noise levels	
Proposal should include details on the procedures to install, move, fix, remove and store the wave machine.	
<b>New wave generator (options, to be included in the proposal)</b>	
Panels to separate the generation zones	Designed for variable hinge elevations, to accommodate all water depths from 0.4 m to 4 m.
The proposal should include details on the design of the hinge and how can be connected to the splitting panels.	



<b>Preliminary design (by HWRL)</b>	
Hinge elevation	3.05 m
Paddle height	1.5 m
Paddle stroke	0.74 m (at SWL)
Flap angle	+/- 21°
<b>Wave Generation Software (Required)</b>	
Wave Generation Software	Regular, irregular, solitary waves, user defined. 2 <sup>nd</sup> order compensation, generation of nonlinear waves (Stokes, Cnoidal, Stream Function), Active Wave Absorption compensation
Control System	Configurable (access to control parameters)
Documented interface for board motion including active absorption control	I/O ports for external measurements and control, including input for board(s) position and output of position feedback, on-board surface elevation and force transducers (if applicable).

## Additional Information, Specifications, and Figures

### Performance curves

The current wave machine at HWRL is an extremely powerful system, able to generate large waves with periods from 0.8 s to more than 20 s. The peak performance is observed in the range of 3.5 s to 8 s, where the maximum wave height exceeds 1.7 m. This is shown in Figure 1 and presented for comparison purposes in Figure 7, where the maximum wave height is plotted for the existing piston-type wave machine and the new elevated-hinge wave machine. Note that all wave conditions under the curves can be generated by each system. 0.6 m waves can be generated by both systems from water depths ranging from ~1.3 m to 2.7 m. However, the new elevated-hinge system shall be capable of generating waves up to 0.6 m at water depths ranging from 2.7 m to 4 m.

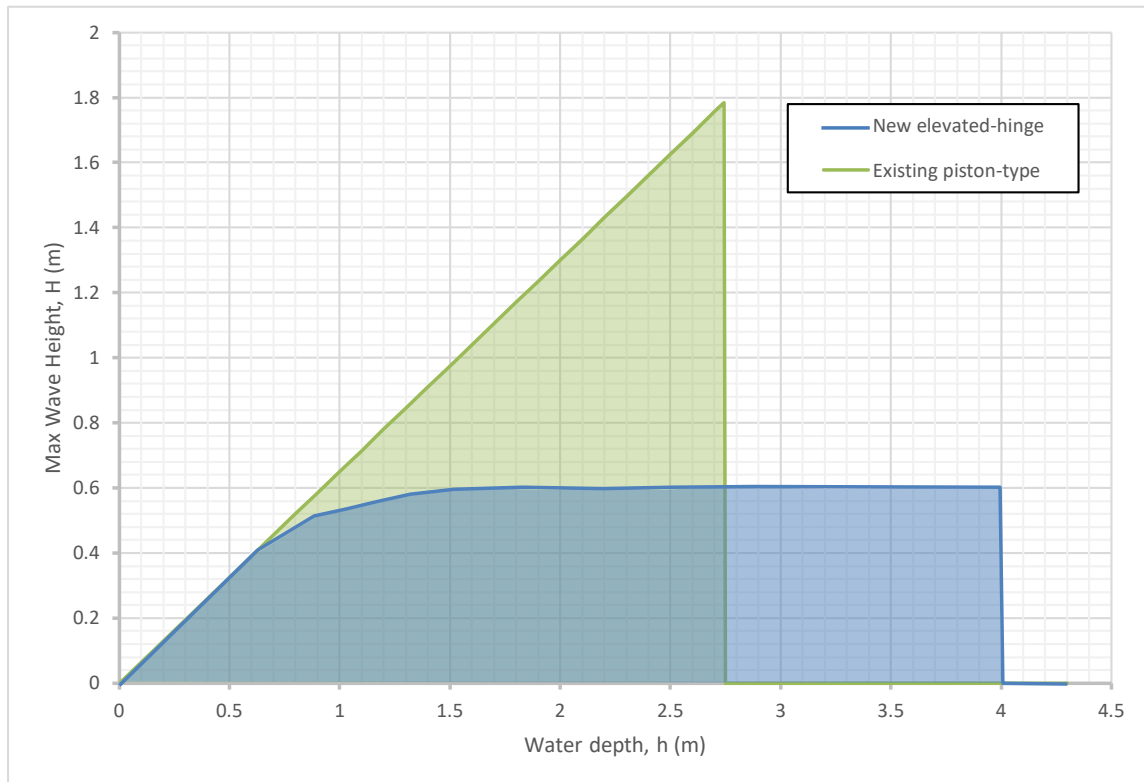


Figure 7. Maximum wave height as a function of the water depth for the current wave machine (green) and the new elevated-hinge wave machine (blue).

Figure 8 presents the performance curves of the new wave machine (solid lines) and the existing wavemaker (dashed lines) for different working depths ( $h=1, 2, 2.7$  and  $4$  m). For comparison purposes, the performance curves are presented in terms of the total elevation of the free surface, expressed as the still water depth plus the wave amplitude ( $h + H/2$ ).

Each plot is comprised by three sections representing the limitation in the generation of waves:

1. **Breaking limit.** This limit is established by the steepness of the waves, and is a natural limit where no smooth continuous wave can physically exceed it. It is observed for short gravity waves (deep water) and is (almost) independent of the wave generation technique (piston or hinged).
2. **Depth limit.** This limit is established by the generation of evanescent modes, which are generated by the inadequate imposed velocity profile of the wave machine. The evanescent modes will decay away of the wave machine but its presence will locally increase the wave height, inducing a premature breaking. The wave theory used for generation introduces different limitations in this zone. Hinged (flap) wave machines typically do not present this limitation since the wave paddle motions are more consistent with the velocity profile of gravity waves at intermediate to deep

water, and due to limitations on the stroke of the machine. The limit presented in Figure 8 corresponds to the simplest linear wave theory.

3. Stroke limit. This is a physical limit imposed by the wave machine. The generation of larger waves would require longer strokes. Again, in the plots shown in Figure 8, the limit has been calculated using linear wave theory (i.e. applying the Biesel Transfer Function).

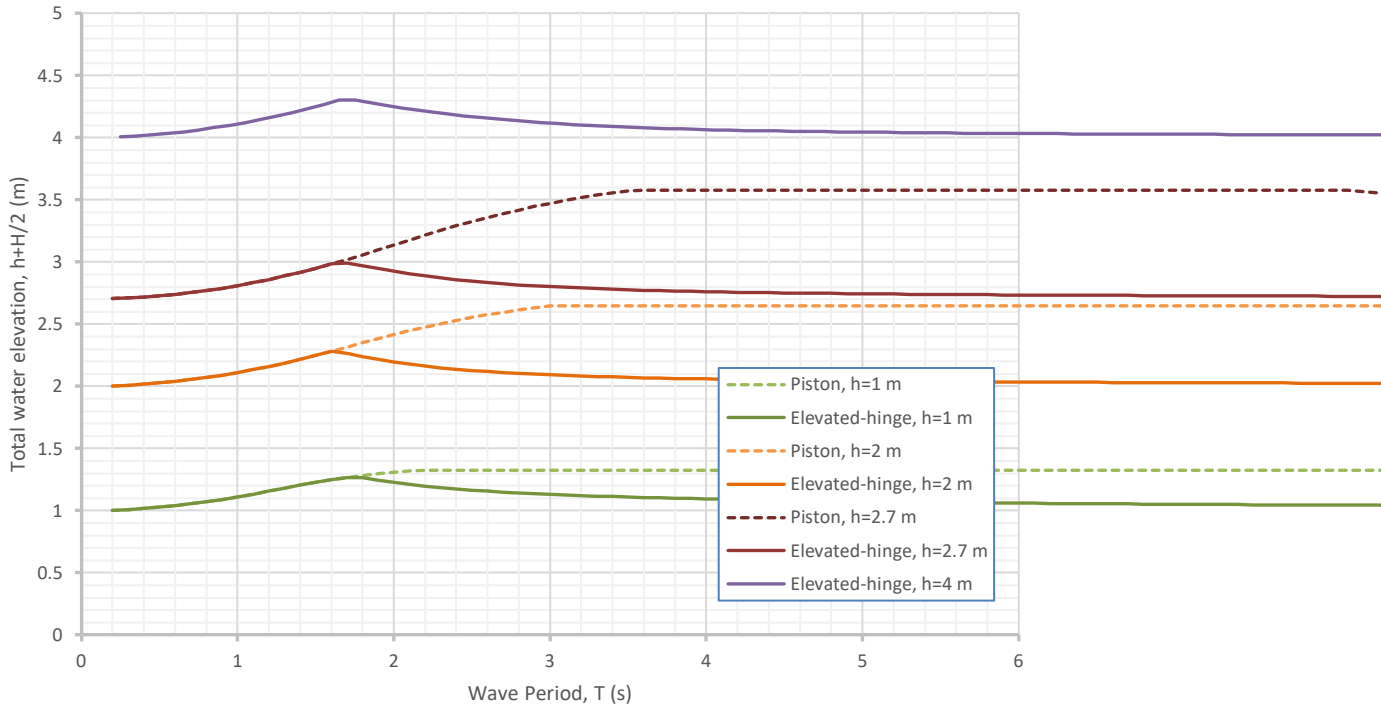


Figure 8. Performance curves of the existing piston-type wave maker (dashed) and the new elevated-hinge wave maker (continuous) for the Large Wave Flume.

### Bolt-hole pattern of the LWF

The bolt hole pattern for the LWF walls is as follows: 12ft cross-shore separation between adjacent pairs of vertical bolt hole stacks, center-to-center of each stack pair. We call each cross-shore location of vertical bolt-hole stack pairs a "bay." The bays are indicated below by numbers 1 through 22 in Figure 9. Bay 1 is 10.42 m from the wave board.

Each vertical bolt hole stack in a pair is separated by 8 inches in the cross-shore, again center-to-center. Each bolt hole in a vertical stack is separated by 12 inches in the vertical, center-to-center. The wall is 15ft high.

The bolt-hole pattern for the LWF floor is as follows: 4 pairs in the floor at each bay. Each horizontal (along-shore running) row of 4 bolt holes per pair is separated by 8 inches in the cross-shore, center-to-center. The alongshore separation between each bolt hole in a horizontal row is 3ft. The flume is approximately 12ft wide. The pattern is offset so that the middle pairs of bolt holes are 1.5ft off the alongshore centerline of the flume. Figure 10 shows sample images of the bolt-hole pattern in the flume.

All inserts are threaded 1in (2.54 cm) UNC (Universal National Coarse); the inserts are stainless steel. We have compatible hardware (bolts, nuts, washers, lock washers). Mount fabricators should set their holes at 1 1/2 inches diameter.

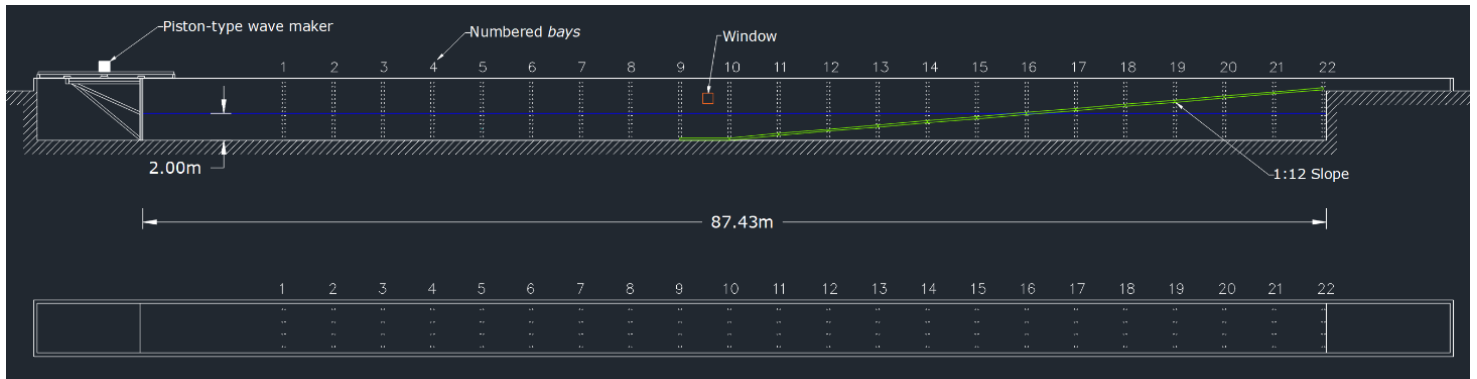


Figure 9. Large Wave Flume side and top views with common water depth and bathymetry configuration. Note the numbered bays 1 to 22 and the bolt-hole pattern.



Figure 10. Sample images of the bolt-hole pattern in the Large Wave Flume.

## Corrosion and durability

The new wave machine should utilize materials able to withstand corrosion and rust for an extended period of time and the system should be designed for a minimum of 20 years lifetime.

## Acceptance criteria

The system delivered at the Hinsdale Wave Research Laboratory will be subject to a series of tests for acceptance, including but not limited to:

1. Assembly and disassembly by HWRL personnel.
2. Calibration of the wave machine and the sensors for paddle position, free surface elevation and force transducers (if any).
3. Installation at a set of preselected locations along the flume and elevations.
4. Seepage among paddles and between paddles and flume walls.
5. Generation of spurious waves, vibration and stability of the system in operation and in stand-by.

6. Generation of regular, irregular and user-defined waves (including the design wave condition of  $H=0.6$  m,  $T=1.8$  s) with the software system provided.
7. Passive absorption of rear waves (for a wet-back system).
8. Generation and control from in-house wave generation system.
9. Active absorption of waves generated by the existing wave machine.
10. Submission of documentation for:
  - a. Installation, removal and storage procedures
  - b. Preventive maintenance for the lifetime of the system
  - c. Long-term maintenance of the system
  - d. Wave generation software and theoretical background
  - e. Configuration of the control system
  - f. Repairs and disassembly of major components
  - g. External connections (board position feedback, free surface elevation at the boards, board position input, force transducers feedback, etc.).

## EXHIBIT B SAMPLE TERMS AND CONDITIONS

These Standard Terms and Conditions for Goods shall govern the purchase by OSU from the Contractor and shall replace and supersede any terms and conditions presented by Contractor or any sales quotations, order acknowledgements, or similar forms unless otherwise specified in the Solicitation Documents or on the face of the Purchase Order issued by OSU.

### 1. DEFINITIONS:

As used in this Contract, the terms set forth below are defined as follows:

- a. "Contract" means only the documents listed below, which, in the event of any conflicts among them, must be interpreted in the following order of precedence:
  - i. The Solicitation Document and its Attachments and Addenda, if any; and
  - ii. The Purchase Order Issued by OSU
- b. "Contractor" means a person or organization with whom OSU has contracted for the provision of goods pursuant to this Contract;
- c. "Contractor Intellectual Property" means any intellectual property owned by Contractor and developed independently from Contractor's performance of this Contract;
- d. "OAR" means the Oregon Administrative Rules;
- e. "ORS" means the Oregon Revised Statutes;
- f. "OSU" means the State of Oregon, acting by and through the State Board of Higher Education, on behalf of Oregon State University.
- g. "Solicitation Document" means the Request for Quotes, Invitation to Bid, Request for Proposals, or any other written document issued by OSU that outlines the required specifications necessary to submit a responsive quote, bid, proposal, or any other response;

### 2. ACCESS TO RECORDS:

Contractor shall maintain books, records, documents, and other evidence and accounting procedures and practices sufficient to reflect properly all costs of whatever nature claimed to have been incurred and anticipated to be incurred in the performance of this Contract. OSU, the Oregon State Board of Higher Education, Oregon Secretary of State, federal government, and their duly authorized representatives shall have access to the books, documents, papers, and records of Contractor which are directly pertinent to this Contract for the purpose of making audit, examination, excerpts, and transcripts. Contractor shall maintain such books and records for OSU's review for at least six years beyond the Term of the Contract unless OSU authorizes a shorter period in writing. Contractor shall promptly remedy any discrepancies involving deviation from the terms of this Contract and shall promptly reimburse OSU for any commitments or expenditures found by OSU to have been in excess of amounts authorized by OSU.

### 3. AFFIRMATIVE ACTION:

Pursuant to OAR 580-061-0030, Contractor certifies that Contractor has not discriminated against Minority, Women or Emerging Small Business Enterprises in obtaining any required subcontracts.

### 4. APPLICABLE LAW; JURISDICTION AND VENUE.

- a. This Contract is governed and shall be construed in accordance with the laws of the State of Oregon, without resort to any other jurisdiction's conflict of law rules or doctrines. Any claim, action, or suit between OSU and Contractor that arises out of or relates to performance of this Contract must be brought and conducted solely and exclusively within the Circuit Court for Marion County, for the State of Oregon.
- b. Notwithstanding the foregoing paragraph, if a claim must be brought in federal forum, it must be brought and adjudicated solely and exclusively in the United States District Court for the District of Oregon. This paragraph applies to a claim brought against OSU only to the extent Congress has validly abrogated OSU's sovereign immunity and is not consent by OSU to be sued in federal court. This paragraph is also not a waiver by OSU of any form of immunity, including without limitation sovereign immunity and immunity based on the Eleventh Amendment to the United States Constitution.
- c. Except as set forth in the paragraph above, the parties consent to in personam jurisdiction in the above courts and waive any objection to venue and any objection that the forum is inconvenient.

### 5. ASSIGNMENT/SUBCONTRACT/SUCCESSORS:

Contractor shall not assign, sell, transfer, or subcontract rights, or delegate responsibilities under this Contract, in whole or in part, without the prior written approval of the OSU Procurement and Contract Services Department, and any attempt by Contractor to assign, sell, transfer, or subcontract rights or delegate responsibilities under this Contract, without first acquiring written approval of the OSU Procurement and Contract Services Department, is void. No such written approval from OSU relieves Contractor of any obligations of this Contract, however, and any assignee, new owner, transferee or subcontractor will be considered an agent of Contractor. Contractor shall remain liable to OSU under the Contract as if no such assignment, sale, transfer, or subcontract had occurred. The provisions of this Contract are binding upon and will inure to the benefit of the parties to the Contract and their respective permitted successors and assigns.

### 6. COMPLIANCE WITH APPLICABLE LAW:

Contractor shall comply with all federal, state and local laws, regulations, executive orders and ordinances applicable to the Contract. Without limiting the generality of the foregoing, Contractor expressly agrees to comply with the following laws, regulations and executive orders to the extent they are applicable to the Contract: (i) Titles VI and VII of the Civil Rights Act of 1964, as amended; (ii) Sections 503 and 504 of the Rehabilitation Act of 1973, as amended; (iii) the Americans with Disabilities Act of 1990, as amended; (iv) Executive Order 11246, as amended; (v) the Health Insurance Portability and Accountability Act of 1996; (vi) the Age Discrimination in Employment Act of 1967, as amended, and the Age Discrimination Act of 1975, as amended; (vii) the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended; (viii) ORS Chapter 659, as amended; (ix) all regulations and administrative rules established pursuant to the foregoing laws; and (x) all other applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations. These laws, regulations and executive orders are incorporated by reference herein to the extent that they are applicable to the Contract and required by law to be so incorporated.

### 7. CONFIDENTIALITY:

This Contract is subject to the limitations and conditions of the Oregon Public Records Law, ORS 192.410-192.505.

### 8. DELIVERY:

All deliveries are F.O.B. destination with all transportation and handling charges paid by the Contractor, unless specified otherwise in the Solicitation Documents or on the face of the Purchase Order issued by OSU. Responsibility and liability for loss or damage remain with the Contractor until final inspection and acceptance, when responsibility passes to OSU except as to latent defects, fraud and Contractor's warranty obligations.

**9. EXPORT CONTROL:**

Contractor acknowledges that OSU has students and faculty who are foreign nationals who may work with the services, product or technology received from Contractor pursuant to this Contract. Contractor represents that it has informed OSU in writing, prior to executing this Contract if it is providing OSU any product or technology subject to the U.S. Export Administration Act of 1979, the Export Administration Regulations and the International Traffic in Arms Regulations, and if so, under what Commerce Control List number(s) or U.S. Munitions List number(s) it is controlled.

**10. FORCE MAJEURE:**

Neither OSU nor Contractor shall be held responsible for delay or default caused by fire, riot, act of nature, terrorist acts, or other acts of political sabotage, or war where such cause was beyond, respectively, OSU's or Contractor's reasonable control. Contractor shall make all reasonable efforts to remove or eliminate such a cause of delay or default and shall, upon cessation of the cause, diligently pursue performance of its obligations under this Contract. However, if a default or delay due to a force majeure event continues for an unreasonable time, as determined by OSU, then OSU is entitled to terminate the Contract.

**11. GOVERNMENT EMPLOYMENT STATUS:**

Contractor certifies that it is not currently employed by the federal government and not an employee of OSU.

**12. INDEMNITY, RESPONSIBILITY FOR DAMAGES:**

- a. Contractor shall be responsible for all damage to property, injury to persons, and loss, expense, inconvenience, and delay which may be caused by, or result from, any willful or negligent act or omission of Contractor, its subcontractors, or employees under this Contract. Contractor shall save, defend, indemnify, and hold harmless OSU, the Oregon State Board of Higher Education, the State of Oregon and their agencies, subdivisions, officers, directors, agents, members, and employees from all claims, suits, and actions resulting from or arising out of the willful or negligent acts or omissions of Contractor or its subcontractors, officers, agents, or employees acting under this Contract.
- b. Without limiting the generality of this section a., Contractor expressly agrees to defend, indemnify, and hold OSU, the Oregon State Board of Higher Education, the State of Oregon and their agencies, subdivisions, officers, directors, agents, members, and employees harmless from any and all claims, suits, actions, losses, liabilities, costs, expenses and damages arising out of or related to any claims that the services or any other tangible or intangible goods delivered to OSU by Contractor that may be the subject of protection under any state or federal intellectual property law or doctrine, or OSU's use thereof infringes any patent, copyright, trade secret, trademark, trade dress, mask work, utility design, or other proprietary right of any third party; provided, that OSU shall provide Contractor with prompt written notice of any infringement claim.
- c. Contractor shall have control of the defense and settlement of any claim that is subject to a. or b.; however, neither Contractor nor any attorney engaged by Contractor shall defend the claim in the name of the State of Oregon or any agency of the State of Oregon, nor purport to act as legal representative of the State of Oregon or any of its agencies, without first receiving from the Oregon Attorney General, in a form and manner determined appropriate by the Attorney General, authority to act as legal counsel for the State of Oregon, nor shall Contractor settle any claim on behalf of the State of Oregon without the approval of the Attorney General. The State of Oregon may, at its election and expense, assume its own defense and settlement in the event that the State of Oregon determines that Contractor is prohibited from defending the State of Oregon, or is not adequately defending the State of Oregon's interests, or that an important governmental principle is at issue and the State of Oregon desires to assume its own defense.

**13. INSPECTIONS:**

Goods furnished under this Contract are subject to inspection and test by OSU at times and places determined by OSU. If OSU finds goods furnished to be incomplete or not in compliance with the Contract, OSU, at its sole discretion, may either reject the goods, require Contractor to correct any defects without charge, or negotiate with Contractor to sell the goods to OSU at a reduced price, whichever OSU deems appropriate under the circumstances. If Contractor is unable or refuses to cure any defects within a time deemed reasonable by OSU, OSU may reject the goods and cancel the Contract in whole or in part. Nothing in this paragraph is to in any way affect or limit OSU's rights as a Buyer, including the rights and remedies relating to rejection under ORS 72.6020 and revocation of acceptance under ORS 72.6080.

**14. INSURANCE:**

Contractor shall secure at its own expense and keep in effect during the term of this Contract general liability or professional liability insurance as deemed applicable by OSU with limits of not less than four million dollars (\$4,000,000) aggregate, unless otherwise specified in writing by OSU. Insurance policies are to be issued by an insurance company authorized to do business in the State of Oregon with a rating of A or better, or as deemed acceptable by OSU. If requested, Contractor shall provide proof of insurance of said insurance policy. If any of the liability insurance is arranged on a "claims made" basis, "tail" coverage will be required at the completion of this Contract for a duration commensurate with the statute of limitations for tort claims in Oregon.

**15. INVOICES:**

Contractor shall send invoices to OSU for goods and services accepted by OSU to OSU's Department at the address specified in the Purchase Order. Contractor shall include in each invoice:

- a. The Purchase Order number;
- b. The quantity of goods ordered, the quantity of goods delivered, the date goods were delivered, the price per unit;
- c. A detailed description of any services performed, the dates services were performed, the rate or rates for services performed, and the total cost of services; and
- d. The total amount due and the payment address.

OSU shall pay Contractor for services performed at the prices and rates specified herein. Contractor shall look solely to OSU for payment of all amounts OSU owes to Contractor. Payment of OSU contracts is normally made within 30-45 days following the date the invoice is received. After 45 days, Contractor may assess overdue account charges up to a maximum of two-thirds of one percent (2/3 of 1%) per month or eight percent (8%) per annum on the outstanding balance (ORS 293.462).

**16. NECESSARY COMPONENTS:**

Unless specified otherwise, Contractor shall include all components, hardware and parts necessary for complete and proper assembly, installation and operation of goods.

**17. NON-COMPLIANCE:**

If any goods or component parts are recalled by a regulatory body or the manufacturer, or discovered by Contractor not to comply with applicable regulatory standards or the Specifications, Contractor shall immediately notify OSU of the recall or non-compliance, and shall provide copies of the recall notice or notice of non-compliance, as applicable, and all other supporting documentation for the recall or non-compliance determination. OSU may elect to (a) reject goods in whole or in part, or (b) revoke its acceptance of goods in whole or in part. If OSU rejects goods or revokes its acceptance of goods, Contractor shall remove the particular goods from OSU's possession at no cost to OSU and shall reimburse OSU for all payments made for those goods.

**18. NOTICE:**

Unless otherwise specified, any notice pursuant to this Contract shall be validly given if in writing and delivered to the other party via e-mail, fax, or by registered or certified mail, postage prepaid, to the respective addressees of Contractor and OSU.

**19. OSU NAME AND TRADEMARK:**

Contractor's shall not use names, marks or trademarks identifying OSU, or any department or office of OSU, or in any other way identify OSU without prior written approval from OSU's Office of University Advancement.

**20. PARKING:**

Contractors doing business on the OSU campus may be required to have a permit to park, if utilizing restricted street parking or parking lots. Contractor parking permits may be picked up from OSU's Office of Transit & Parking Services.

**21. RECYCLABLE PRODUCTS:**

Contractors will use recyclable products to the maximum extent economically feasible in the performance of the Contract.

**22. RETIREMENT SYSTEM STATUS:**

Contractor is not a contributing member of the Public Employees' Retirement System and will be responsible for any federal or state taxes applicable to payment under this Contract. Contractor will not, by virtue of this Contract, be eligible for federal Social Security, employment insurance, workers' compensation or the Public Employees' Retirement System, except as a self-employed individual.

**23. SAFETY AND HEALTH REQUIREMENTS/HAZARD COMMUNICATION:**

goods supplied under this Contract shall comply with all federal Occupational Safety and Health Administration (OSHA) requirements and with all Oregon safety and health requirements, including those of the State of Oregon Workers' Compensation Division. Contractor shall notify OSU prior to using products containing hazardous chemicals to which OSU employees may be exposed. Products containing hazardous chemicals are those products defined by Oregon Administrative Rules, Chapter 437. Upon OSU's request, Contractor shall immediately provide Material Safety Data Sheets, as required by OAR 437-155-025, for the products subject to this provision.

**24. SEVERABILITY:**

The invalidity, illegality or enforceability of any provision of this Contract shall not affect the validity, legality or enforceability of any other provision of this Contract, which shall remain in full force and effect and shall be liberally construed in order to effectuate the purpose and intent of this Contract.

**25. SEXUAL HARASSMENT:**

The State Board of Higher Education has adopted polices applicable to Contractors that prohibit sexual harassment, and Contractor's company and employees are required to adhere to OSU's policy prohibiting sexual harassment in their interactions with members of the OSU community.

**26. STANDARD COMPONENTS:**

Unless specified, Contractor shall provide goods with all components and accessories that the manufacturer lists as "standard" for goods.

**27. SURVIVAL:**

The terms and conditions of this Contract that by their sense and context are intended to survive termination or expiration hereof shall so survive.

**28. TAX COMPLIANCE CERTIFICATION:**

Contractor certifies under penalty of perjury that Contractor is, to the best of the undersigned's knowledge, not in violation of any Oregon Tax Laws. For purposes of this certification, "Oregon Tax Laws" means a state tax imposed by ORS 320.005 to 320.150 and 403.200 to 403.250 and ORS chapters 118, 314, 316, 317, 318, 321 and 323 and the elderly rental assistance program under ORS 310.630 to 310.706 and local taxes administered by the Department of Revenue under ORS 305.620.

**29. TERMINATION:**

This Contract may be terminated at any time by mutual consent of both parties or by OSU upon thirty (30) days' notice in writing and delivered by certified mail or in person to the other party. In addition, OSU may terminate this Contract at any time by written notice to Contractor if (a) Federal or state statutes, regulations or guidelines are modified or interpreted in such a way that the services are no longer allowable or appropriate for purchase under this Contract; (b) any license or certificate required by law or regulation to be held by the Contractor to provide the services required by this Contract is for any reason denied, revoked, or not renewed; or (c) OSU fails to receive sufficient legislative appropriations (or from applicable federal, state, or other sources) to permit OSU, in the exercise of its reasonable administrative discretion, to fulfill its obligations under this Contract, or if the OSU program for which this Contract was executed is abolished. This Contract may also be terminated by OSU for default (including breach of contract) if (a) Contractor fails to timely provide services or materials called for by this Contract; or (b) Contractor fails to perform any of the other provisions of this Contract, or so fails to pursue the work as to endanger performance of this Contract in accordance with its terms and conditions, and after receipt of written notice from OSU, fails to correct such failures within ten (10) days. The rights and remedies of OSU provided in the above clause related to defaults (including breach of contract) by Contractor shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract.

**30. THIRD PARTY BENEFICIARY:**

OSU and Contractor are the only parties to this Contract and are the only parties entitled to enforce its terms. Nothing in this Contract gives, is intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly, or otherwise, to third parties.

**31. WAIVER:**

Failure of OSU to enforce any provision of this Contract will not constitute a waiver or relinquishment by OSU of the right to such performance in the future nor of the right to enforce any other provision of this Contract.

**32. WARRANTIES:**

Unless specified, Contractor shall deliver goods that are new, unused and produced from current production inventory. Contractor shall provide goods manufactured from only those components that the manufacturer offers in the manufacturer's current parts catalogue for goods and carry full manufacturer warranties. Contractor warrants all goods delivered to be free from defects in labor, material, and manufacture and to be in compliance with specifications



in the Solicitation Document. All implied or expressed warranty provisions of the Uniform Commercial Code, at ORS Chapter 72, are incorporated into this Contract. All warranties run to OSU.

**33. WORKERS' COMPENSATION:**

The Contractor, its subcontractors, if any, and all employers providing work, labor or materials under this Contract are subject employers under the Oregon Workers' Compensation law and shall comply with ORS 656.017, which requires them to provide workers' compensation coverage that satisfies Oregon law for all their subject workers, unless such employees are exempt under ORS 656.126.

**34. MERGER:**

THIS CONTRACT CONSTITUTES THE ENTIRE CONTRACT BETWEEN THE PARTIES. THERE ARE NO UNDERSTANDINGS, ORAL OR WRITTEN, NOT SPECIFIED HEREIN REGARDING THIS CONTRACT. NO AMENDMENT, CONSENT, OR WAIVER OF TERMS OF THIS CONTRACT SHALL BIND EITHER PARTY UNLESS IN WRITING AND SIGNED BY ALL PARTIES. ANY SUCH AMENDMENT, CONSENT, OR WAIVER IS EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN.

**FEDERALLY REQUIRED PROVISIONS**

**35. ANTI-KICKBACK ACT (40 U.S.C. 3145).**

Contractor certifies compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each Contractor or Subcontractor must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The Contractor must report all suspected or reported violations to OSU.

**36. BYRD ANTI-LOBBYING AMENDMENT (31 U.S.C. 1352).**

Contractors that apply or bid for a contract of \$100,000 or more, must file the required certification that it will not and has not used Federally appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Contractor must require any subcontractor who applies or bids for subcontract of \$100,000 or more to provide a similar certification to the next higher tier (Contractor or subcontractor as applicable). Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Contractor or subcontractor must forward any disclosures from tier to tier up to OSU.

**37. CLEAN AIR ACT (42 U.S.C. 7401-7671q.) AND THE FEDERAL WATER POLLUTION CONTROL ACT (33 U.S.C. 1251-1387), AS AMENDED.**

If this Contract provides for payments in excess of \$150,000, Contractor must comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

**38. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 3701-3708).**

For all contracts awarded in excess of \$100,000 that involve the employment of mechanics or laborers, the Contractor must comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each Contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

**39. DEBARMENT AND SUSPENSION EXECUTIVE ORDERS 12549 AND 12689.**

A contract award (see 2 CFR 180.220) must not be made to parties listed on the government-wide Excluded Parties List System in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." The Excluded Parties List System in SAM contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. Before a contract award of \$25,000 or more is made, verification is required that the intended awarded party is not on the government-wide exclusions in the SAM. Required verification must be made by checking the SAM Exclusions. Compliance with Subpart C of 2 CFR Part 180 by checking that the intended awarded party is not listed on the SAM Exclusions, before making a contract award, will flow down from tier to tier for contract awards of \$25,000 or more. Contractor must include a term or condition similar to this term, in any subsequent lower tier contract awards of \$25,000 or more. Contractor hereby certifies they are not listed on the government-wide exclusions in the SAM.

**40. ENERGY POLICY AND CONSERVATION ACT.**

Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201).

**41. EQUAL EMPLOYMENT OPPORTUNITY.**

Contractor must comply with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

**42. RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT.**

If this Contract is for the performance of experimental, developmental, or research work, the Federal Government and OSU have rights in any resulting invention in accordance with 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding a\_\_

**EXHIBIT C  
CERTIFICATIONS**

By signature on this certification the undersigned certifies that they are authorized to act on behalf of the Proposer and that under penalty of perjury the undersigned will comply with the following:

**SECTION I. OREGON TAX LAWS**

The undersigned hereby certifies under penalty of perjury that the Proposer, to the best of the undersigned's knowledge, is not in violation of any tax laws described in ORS 305.380(4).

**SECTION II. COMPLIANCE WITH SOLICITATION**

The undersigned agrees and certifies that they:

1. Have read, fully understands and agrees to be bound by the Request for Proposal and all Exhibits and Addenda to the Request for Proposal; and
2. Are an authorized representative of the Proposer, that the information provided is true and accurate, and that providing incorrect or incomplete information may be cause for rejection of the Proposal or Contract termination; and
3. Will furnish the designated item(s) and/or service(s) in accordance with the Request for Proposal and the Contract; and
4. Has provided a correct Federal Employer Identification Number or Social Security Number with the Proposal.

**SECTION III. PERMISSIVE COOPERATIVE PROCUREMENTS**

If Proposer is awarded a contract from this Request for Proposal, Proposer hereby (check one)

- agrees  
 disagrees

to offer the resulting contractual terms and prices to other public institutions.

Authorized Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name (Type or Print): \_\_\_\_\_ Telephone:(\_\_\_\_\_)\_\_\_\_\_

Title: \_\_\_\_\_ Fax:(\_\_\_\_\_)\_\_\_\_\_

FEIN ID# or SSN# (required): \_\_\_\_\_ Email: \_\_\_\_\_

Company: \_\_\_\_\_

Address, City, State, Zip: \_\_\_\_\_

Construction Contractors Board (CCB) License Number (if applicable): \_\_\_\_\_

Business Designation (check one):

- Corporation     Partnership     LLC     Sole Proprietorship     Non-Profit

**EXHIBIT D  
REFERENCES**

**REFERENCE 1**

COMPANY: \_\_\_\_\_ CONTACT NAME: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE NUMBER: \_\_\_\_\_  
CITY, STATE ZIP: \_\_\_\_\_ FAX NUMBER: \_\_\_\_\_  
WEBSITE: \_\_\_\_\_ E-MAIL: \_\_\_\_\_  
GOODS OR SERVICES PROVIDED: \_\_\_\_\_

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**REFERENCE 2**

COMPANY: \_\_\_\_\_ CONTACT NAME: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE NUMBER: \_\_\_\_\_  
CITY, STATE ZIP: \_\_\_\_\_ FAX NUMBER: \_\_\_\_\_  
WEBSITE: \_\_\_\_\_ E-MAIL: \_\_\_\_\_  
GOODS OR SERVICES PROVIDED: \_\_\_\_\_

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**REFERENCE 3**

COMPANY: \_\_\_\_\_ CONTACT NAME: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE NUMBER: \_\_\_\_\_  
CITY, STATE ZIP: \_\_\_\_\_ FAX NUMBER: \_\_\_\_\_  
WEBSITE: \_\_\_\_\_ E-MAIL: \_\_\_\_\_  
GOODS OR SERVICES PROVIDED: \_\_\_\_\_

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