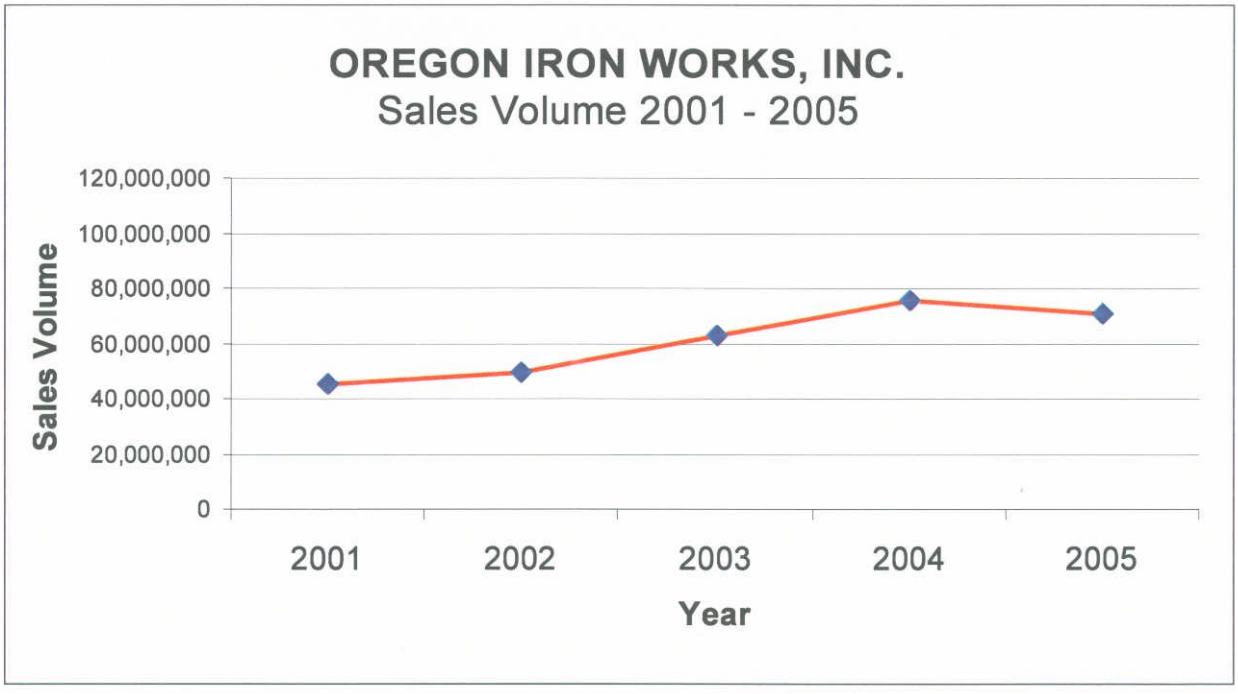
1.0 OREGON IRON WORKS, INC.'S CAPACITY TO PERFORM THE WORK UNDER THIS CONTRACT.

Oregon Iron Works, Inc. has a proven history of both its capacity and capability to perform work on time, under budget and deliver a first class product. OIW easily has the capacity to successfully perform this contract.

1.1 ANNUAL VOLUME FIGURES FOR THE PAST FIVE (5) YEARS.



1.2 OIW'S CAPABILITIES

1.2.1 Facility

Oregon Iron Works, Inc. has a ten mile radius between its two fabrication facilities. This makes for easy transporting of project pieces from one location to another along with easy communication between all employees.

1.2.2 Resources

OIW offers the following advantages pertaining to this contract:

- ☑ Experienced and knowledgeable personnel and subcontractors;
- ☑ Documented History of very high quality federally funded products delivered on time and on budget;
- ☑ Excellent safety record;
- ☑ Committed U.S. work force with stable union relations; and
- ☑ Extensive State-of-the-Art Manufacturing Facilities and Equipment including Computer Controlled Co-Ordinate Measuring System experience and capabilities (laser tracker).

OIW possesses unparalleled fabrication talent, seasoned project management skills, unsurpassed professionalism, all combined with a detailed knowledge of the Portland Streetcar requirements.

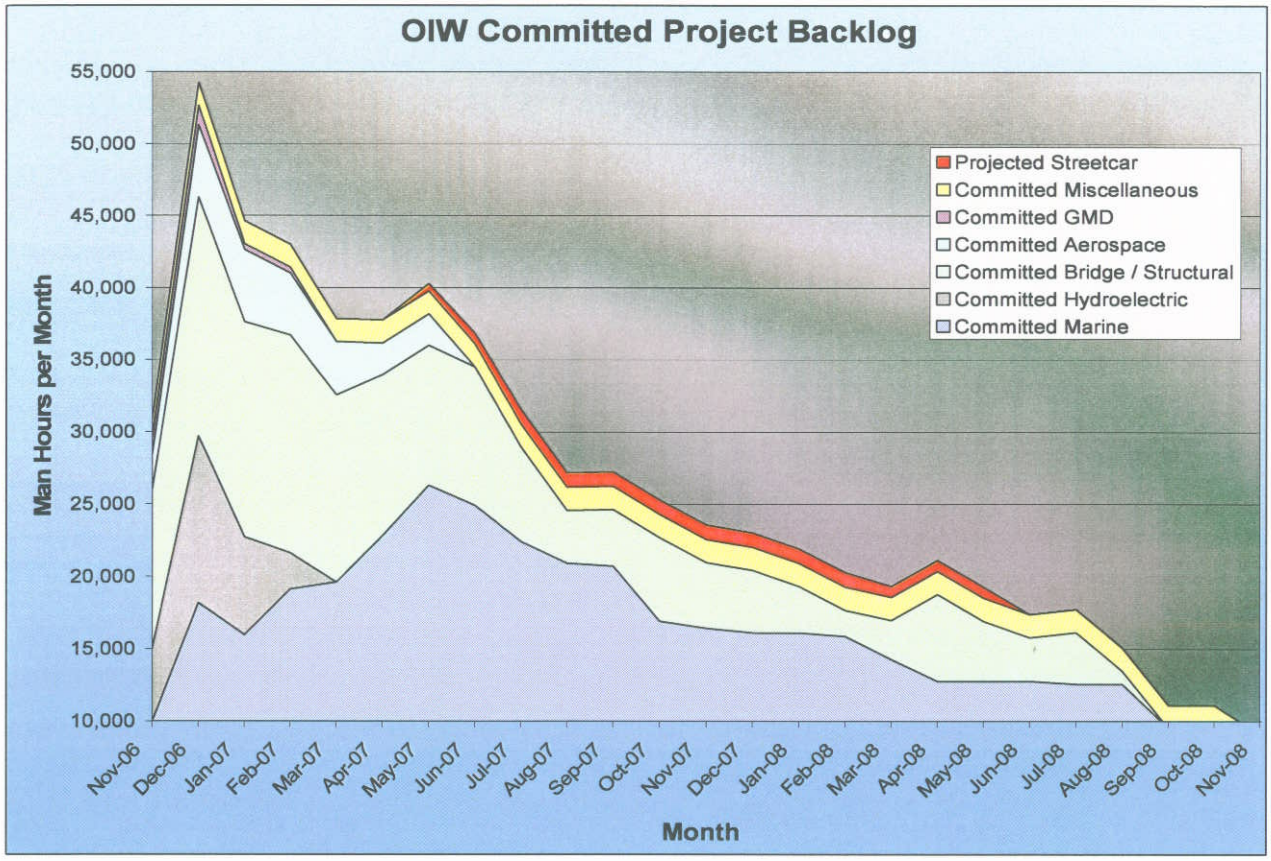
The considerations noted above, complete with the integrity of OIW and their team, presents an outstanding opportunity for The City of Portland to contract with OIW for the completion of the Streetcar.

1.3 CURRENT COMMITMENTS

OIW currently has a backlog of over 760,000 committed man-hours through December 2009. The detailed data of each project commitment has not been included in this proposal in order to minimize the quantity of information for the readers benefit. Further detailed supporting data can be provided at the City's request. The table below details the committed backlog by industry segment.

Industry Commitments	Committed Hours
Marine	493,753
Hydroelectric	25,905
Bridge / Structural	143,421
Aerospace	24,850
GMD Program	3,325
Miscellaneous	12,450
Total	**703,704**

As illustrated in the chart below, the projected man-hours required to complete the prototype will account for a small percentage of OIW's expected labor requirements in the coming years. This will assure that an ample labor pool will be available to support the streetcar production.



1.4 ONGOING PROJECTS

OIW currently has no long term on-going projects, which will interfere with the manufacturing of the Streetcar.

1.5 EXPERIENCE IN SUCCESSFUL AND RESPONSIBLE COMPLETION OF FEDERALLY RESOURCED PROJECTS.

As an experienced government Contractor, the majority of OIW's past and present projects involve federal funding at some level. In such instances, OIW is either a prime contractor working directly for various federal agencies, such as the Corps of Engineers or the Department of Defense, or acting as a subcontractor to a prime on a federally funded contract. OIW has also been directly involved in obtaining direct federal support for various government projects. In some instances these requests have spanned over several fiscal years and OIW played a key role to insure the federal government's continued support was made available.

Specifically, OIW has achieved great success in acquiring in excess of $40 million dollars in direct federal congressional appropriations for various customers over a period of eight consecutive years. OIW is well known to the Pacific Northwest Congressional delegation, and OIW maintains a continuous presence in Washington, DC to meet directly with congressional staff to brief them on current project status and requests for funding.

One example of a federally funded project is the SEALION Program for the Department of the Navy. The SEALION craft is a technology demonstrator that transitioned foreign craft technologies through OIW obtained licensing agreements, and incorporated proprietary OIW innovative construction techniques for vessels that will operate in the littoral waters. The program began in May of 2000, and since then OIW has delivered the SEALION I Technology Demonstration craft, completed a SEALION Modularity Proof of Concept, is about to deliver the SEALION II Technology Demonstration craft, and is completing a related Unmanned Surface Vehicle effort. From FY2000 through FY2005, OIW was successful each consecutive year in securing direct federal funding for this program that totaled over $30 million.

The continued federal funding for all of these efforts was based on the successful and responsible completion of each of the prior years' efforts. A note-worthy element of this effort is that the funding for the SEALION I and SEALION II crafts was divided over two fiscal years with no guarantees for follow-on funding the subsequent year in each instance. This had to be carefully considered and incorporated into contingency project planning so that if follow-on funding was not made available a viable product would still be delivered to the customer.

Beyond direct federal congressional appropriations, OIW has been successful in receiving $4.2 million in federal funding through the Small Business Innovative Research program for our unmanned seaplane effort with the Department of the Navy, known as Sea Scout. This program has successfully transitioned through three incremental funding phases, and the success of each prior phase is a prerequisite for receiving funding for subsequent phases.

Besides direct federal appropriations and funding, OIW also plays a key-supporting role on other large-scale federal contracts. For example, one of our largest federal programs is the Ground-Based Midcourse Defense Program, which is a multi-billion dollar program where OIW is a subcontractor to Boeing and Bechtel. This program is also heavily dependent on continued federal funding and follow-on funding levels have critical direct impacts to the program's success.

2.0 PROJECT SUMMARIES

2.1 HIGH SPEED VARIABLE FREEBOARD CRAFT (HVFC)

a. Name & Description of Project: High Speed Variable Freeboard Craft (HVFC)

Utilizing conceptual marine engineered design drawings, OIW developed the precise tooling and fixtures in order to maintain the close tolerances that were required for this special type craft. This unique craft was designed with an inner hull and a outer hull, the void between the two hulls was used as a ballast tank therefore the craft was able to run on the surface as a planing craft as well as a semi-submersible craft.

The Prototype craft was supposed to be just that, however, the craft was so successful during the five months of builder trials and testing by the customer following delivery that the craft has now been a part of the customers patrol boat fleet for six years and there are no immediate plans to replace it.

The development of the Israeli Alligator craft began when a US-based Israeli firm sought U.S. manufacturer's to fabricate an Israeli designed prototype craft. After selecting OIW for its unique fabrication abilities, OIW initialized an exclusive manufacturing agreement with the Israeli firm and was awarded a contract for the production of a U.S. manufactured prototype. OIW successfully produced the prototype to the customer's satisfaction, and has since delivered a limited production of craft based on the prototype design. Ultimately U.S. customers became interested in the craft and OIW utilized the licensed design to produce similar prototype craft for U.S. customers.

b. Period of Performance: June 1996 – September 1998

c. Client Name /Address: Israeli Navy Ministry of Defense New York, NY
(212) 551-0393 (phone)

d. Estimated Cost: $1,000,000

e. Final Cost: $1,000,000

f. Awards/Prizes Received: None

g. Experience and Expertise Gained on Project: Experience gained in licensing of foreign technology and in marine transport vehicle with emphasis on safety enhancements.

2.2 SPACE LAUNCH COMPLEX SIX (SLC – 6)

a. Name & Description of Project: Space Launch Complex Six (SLC – 6)

The Mobile Service Tower (MST) is located at Space Launch Complex 6 (SLC 6) at Vandenberg Air Force Base (VAFB). The MST was designed and built to service the Space Shuttle Program and is critical to the safety of personnel. As the Shuttle has only been launched from Cape Canaveral, the MST at VAFB is being converted to service the Delta IV vehicle. The work involved design, fabrication, install and test and startup of new platforms at each of the 10 levels of the MST and integrating the new platforms and associated structural supports into the existing building. This includes all electrical, hydraulics and all controls.

The completion of design required multiple input from the various organizations involved in the construction and operation of the facilities. This included the U.S. Air Force, various Consultants to the Air Force, Boeing Corporation, Washington Group and the ultimate operating units of the space launch facility.

OIW determined and provided essential spare parts and special tools for the maintenance of the Tower. OIW has subsequently performed owner directed modifications to the platforms on an as required basis.

b. Period of Performance: August 2000 – January 2003

c. Client Name /Address:
Clark Construction Group, 3100 Bristol Street, Suite 100 Costa Mesa, CA 92626
Contact: Richard Heim (714) 429-9779 (phone)

d. Estimated Cost: $11,000,000

e. Final Cost: $16,936,621

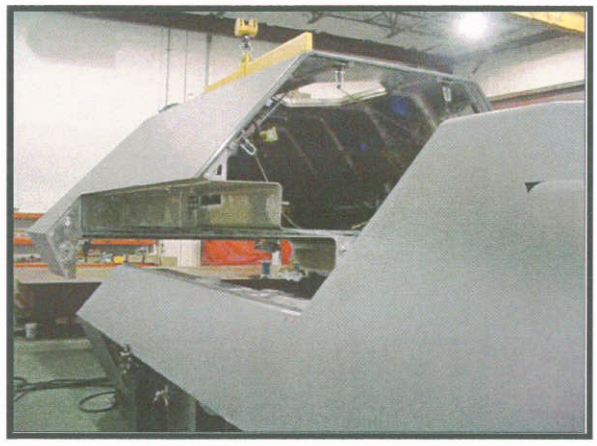
f. Awards/Prizes Received: None

g. Experience and Expertise Gained on Project:
Complex maintenance, provision of spare parts and special tools.

2.3 SEALION MODULARITY

a. Name & Description of Project: SEALION Modularity

The SEALION technology demonstration craft was built and designed to meet the requirements of one specific mission. However, certain benefits of the basic craft design made it a viable candidate for additional missions. This contract was a follow on effort to demonstrate the concept of structural modules equipped with mission specific equipment that could be quickly and easily installed on and removed from the SEALION craft so that the craft's capabilities could be greatly increased.



Oregon Iron Works, Inc. (OIW) was contracted to design, build, and test a proof of concept module mock-up that included a simulated SEALION base craft test platform (structure and systems) and an accurate/functional mission module. OIW jointly designed the module with the Naval Surface Warfare Center, Carderock Division, Combatant Craft Department (CCD), headed by Mr. Gordon Hatchell. OIW then constructed the test base and module and simulated all craft interface systems necessary to support the functional mission module. The module and test base were rigorously tested and evaluated for structural integrity, system interface adequacy, and base craft characteristic impacts. All testing and results were documented and submitted to CCD in report form

The development of this module required addressing complex structural interfaces to maintain SEALION characteristics across structural boundaries. Maintaining these characteristics was critical to the success of this project and entailed achieving stringent tolerances along the structural boundary not achievable by conventional fabrication methods. These interfaces were designed completely by OIW and have resulted in several patent applications.

Difficult systems/mechanical interfaces were approached by utilizing existing technologies in new and innovative ways so that low-cost, yet sophisticated, solutions were provided. This allowed the module to be designed for maintainability which would lower the customer's procurement and life-cycle costs in the future. This also allowed the proof of concept module to be designed, built, and tested in a shorter timeframe since it eliminated the time and effort associated with custom designs.

The proof of concept module was tested to simulate craft operation and evaluate the feasibility and performance of the module in operations. Different operating parameters were developed jointly with the Owner and they were simulated in OIW's secure shop environment. The performance of the module exceeded expectations in all cases.

b. **Period of Performance:** October 2002 – October 2003

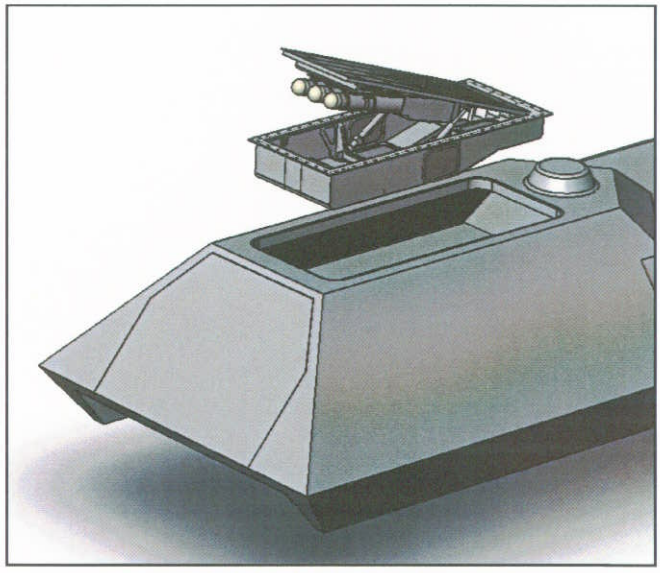
c. **Client Name /Address:** Department of the Navy, Naval Surface Warfare Center

d. **Estimated Cost:** $1,944,538

e. **Final Cost:** $1,969,066

f. Awards/Prizes Received: None

g. **Experience and Expertise Gained on Project:** This project provided experience in several key areas including: (1) sophisticated structural comprehension and the ability to understand complex structural geometries and resolve difficult interferences while maintaining stringent tolerances, (2) applying existing technologies in creative ways to offer low-cost solutions to complicated problems, and (3) further development of OIW's rapid prototyping skills. This experience has resulted in shorter duration and lower-cost prototyping/production for the customer while still providing unique and viable solutions to difficult problems.



2.4 GOLDEN GATE BRIDGE

a. **Name & Description of Project**: Golden Gate Bridge North Approach Towers and Substation, San Francisco, CA

Oregon Iron Works, Inc. fabricated, pre-assembled and delivered four (4) new support box truss towers for the North approach span of the Golden Gate Bridge. This project also included the reinforcement of the existing bridge deck span retrofit. Total material weight of this project was 3,450 tons.

b. **Period of Performance:**
April 1997 – December 7, 2001

c. **Client Name /Address:**
Owner: Golden Gate Bridge Hwy. & Transportation District P.O. Box 9000 Presidio Station San Francisco, CA 94129-0601
General Contractor: Bill Ogle, Program Manager for Balfour Beatty Construction (425) 251-0153 (phone); (425) 251-0136 (fax); E-mail: bogle@bbciusa.com

d. **Estimated Cost:** $7,348,275

e. **Final Cost:** $11,516,000
Note: Cost changed due to significant design changes by customer.

f. **Awards/Prizes Received: None**

g. **Experience and Expertise Gained on Project:** Advancement of computer controlled hole drilling to insure precision of hole to hole fits in large complex geometric structures.

2.5 MCNARY DAM MODERNIZATION

a. **Name & Description of Project**: McNary Dam Modernization – Prototype Vertical Barrier Screens

Oregon Iron Works, Inc. fabricated, delivered, installed and functional test three different prototype Vertical Barrier Screens (VBS). The screens are intended to prevent juvenile salmon from entering the high pressure turbines in the Powerhouse at the McNary Dam.

The screens would be monitored during the annual salmon migration season to the sea for their ability to divert fish to the fish ladder system, maintain power generation efficiency and minimize clogging from river debris. A successful evaluation would lead to replacement of the fish screens to all of the McNary hydro intakes and other dam systems on the Columbia and Snake Rivers.

Two of the fish screens were stationary VBS barriers. One of these used vertical screen slots and the other used horizontal slots. The third screen was called a Traveling VBS. This screen used a motor driven fabric mesh screen that would be rotated vertically around the screen frame. The rotation of the screen allowed it to be self cleaning while maintaining an efficient barrier to divert the fish.

b. **Period of Performance:** February 2003 – February 2004

c. **Client Name /Address:** U.S. Army Corps of Engineers, Walla Walla, WA. Technical POC: Mary Van Sickle, (509) 527-7204

d. **Estimated Cost:** $887,200

e. **Final Cost:** $1,056,247
Note: Cost changed due to design changes in proto-type to enhance performance.

f. **Awards/Prizes Received:** None

g. **Experience and Expertise Gained on Project:** High quality fabrication under a very tight schedule / cost competitive project.