

1 – General

1.1 SYSTEM OVERVIEW & DESCRIPTION

- .1 Provide detailed design, supply of all materials, labour, products, tools, plant equipment and related incidentals necessary to complete the removal and turnover of one (1) existing LED scoreboard and installation of one (1) 10mm RGB LED video display board into the City of Winnipeg Pan Am Indoor Pool Aquatic Facility.
- .2 All design and equipment must meet the requirements of the Manitoba Building Code, Manitoba Electrical Code and local authorities having jurisdiction as referenced below.
- .3 It would be expected upon completion that there would be a fully operational Video Display system that will allow the City of Winnipeg to visually display event results, videos, advertising and time of day. The upgrades to the pool display will satisfy the needs of the 2017 Canada Summer Games and the City of Winnipeg.
- .4 All Work will be completed in accordance to the contract documents, written specifications and drawings.
- .5 The drawings and specifications provided are only the minimum standards and necessary dimensions. The drawings are not complete in every detail necessary for the construction of the video display and are not to be construed as manufacturing shop drawings. It is the responsibility of the contractor or manufacturer to confirm the exact dimensions and structural specifications of the existing mounting location. The contractor/installer is to confirm with the manufacturer that all their materials and manufacturing meet the Bid Opportunity specifications and requirements
- .6 Ensure that the video display, when mounted on the wall meets all structural and electrical specifications and requirements. All drawings must be certified and stamped by an engineer hired by the contractor and the engineer must be licensed in the province of Manitoba.

1.2 SUMMARY

Related Sections: The following description of work is included for reference only and shall not be presumed complete.

- .1 Existing Display Board – This Section details the specifications of the removal and return to the City of Winnipeg of the existing LED scoreboard located in the competition pool at the Pan Am Indoor Pool. This includes all work required to complete this removal.

Administrative Requirements – This section outlines the administrative requirements of the Contract

- .2 – Existing Display Board – This section details the specifications of the removal and return to the City of Winnipeg of the existing LED scoreboard located in the competition pool at the Winnipeg Pan Am Pool. This includes everything required to complete this removal.

.3 – Supply of 10mm RGB LED video display board – This Section details the specifications for manufacturing requirements of one (1) new Video Display for the Winnipeg Pan Am Indoor Pool.

.4 – Installation of 10MM RGB LED video display – This Section will detail the installation of the new video display board.

.5 - Installation of the Front End Equipment – This Section will outline the front end hardware and software required to provide the features of this Bid Opportunity. The program requirements are also outlined in this Section

1.3 REFERENCES

.1 - Reference Standards

.1 - **FINA** - Federation International De Natation – Facility Regulations for the 4 Aquatic Sports – Olympic Games Level.

.2 – **MBC** - Manitoba Building Code.

.4 - **WHMIS** - Workplace Hazardous Materials Information System (WHMIS) as set out under the Hazardous Products Act.

.5 - **Manitoba Electrical Code** – Manitoba Regulation 124/2015.

.6 - **Safe Work Plan** – Manitoba – Refer to Part D – Supplemental Conditions - Clause D8.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 – **Coordination** – Pre-Construction Meeting: Refer to Part D – Supplemental Conditions - Clause D13 and D14.

1.5 SUBMITTALS

.1 – **Product Data** - Include material descriptions, performance characteristics and finishes for each type of the following system components. Submit copies:

- Video Display Board
- Mounting Detail
- Electrical Requirements
- Scaffolding Plan
- Profile of Video Display
- Accessories, controllers, software.
- Details from any sub trades
- Details of equipment used at the facility
- Route and procedure of entry into the facility

.2 – **Shop Drawings** - Ensure a registered structural engineer specified herein is responsible for any shop drawings and all structural design loads shall be stamped by a professional structural engineer licensed to practice in the Province of Manitoba.

Provide Shop Drawings for the following:

- Video Display Board
- Mounting Detail
- Structural Calculations
- Profile of Video Display
- Accessories, controllers, software
- Scaffolding Plan
- Details from any sub trades
- Details of equipment used at the facility
- Route and procedure of entry into the facility, including weights pathway, materials needing removal and reinstallation.

.3 - Production and Review of Shop Drawings

.1 - Stamping and signing each Shop Drawing and any associated calculations performed.

.2 - Provide detailed Shop Drawings of the items of equipment being provided, indicating the dimensions, material and characteristics.

.3 - Provide an electronic (PDF Format) and hard copy manuals of Operating and Maintenance Instructions, embracing the operation functions and the maintenance processes.

NOTE: Do not proceed with the manufacturing of the video display until Shop Drawings are reviewed by the Contract Administrator and City of Winnipeg, Planning, Property and Development Department, Municipal Accommodations Division.

.4 - Photos – Provide (3) sets of photos of the Video Display from the sign manufacturer's facility showing quality assessment and transportation protection prior to shipment.

.5 - Certificates – Signed by the manufacturer of the video display certifying that products furnished comply with requirements.

.6 - Test and Evaluation Reports - The manufacturer must submit drawings reviewed by a Registered Professional Engineer licensed in the Province of Manitoba and/or a structural engineer's report including calculations developed by a Registered Professional Engineer, qualified to engage in design development and/or review of the video display system. The drawings and/or report shall be sealed by the reviewing Engineer. The Contract Administrator may request the Engineer provide completed project lists and descriptions as evidence of qualification.

.7 - Manufacturers' Instructions - Wherever specific references to following manufacturer's directions or instructions is made in specifications, submit copies as requested thereof for review before commencing such work. Submit 6 copies of the video display system and other equipment's operating and maintenance manuals.

1.6 CLOSEOUT SUBMITTALS

.1 – Operation and Maintenance Data Manuals – please refer to requirements specified in Clause 3.0 Commissioning.

1.7 MAINTENANCE MATERIAL SUBMITTALS

.1 – **Spare Parts** – To be provided by the installer the following:

Provide spare parts for:

- back up computer - to be plugged into the system if main rack computer fails. Can be placed in rack.
- modules
- 4 sets of connecting cables
- power supply
- drive
- any other spare parts, that might be required in the first year of operation if anything is defective.

1.8 QUALITY ASSURANCE

.1 – **Experience** - Refer to Bid Opportunity Clause B12.1(d).

.2 – **Experience** - The manufacturer/installer shall record the results of in-shop tests of the video display to verify the design standards are met. Test records shall be supplied to the City of Winnipeg. Tests shall be verified by a certified registered engineer licensed to practice in the province of Manitoba.

.3 – **Quality Control Program** - A factory quality control program must be submitted to the City of Winnipeg with submittals which ensures that structural tolerances critical for the mounting of the video display system have been maintained.

.4 - **Licensed Professionals** – Refer to Part D – Supplemental Conditions, Clause D9, Insurance.

.5 - **Product Options** - The overall appearance of the pool is obtained through specific information such as overall geometry, components, colors, materials and performance characteristics as provided on drawings and specifications. The evaluation of completed construction is subject to inspection for purposes of verification by reasonable methods including, but not limited to, post manufacture testing, field testing, and/or performance evaluation.

.6 – **Modification** - Do not modify intended aesthetic effects, as judged by the Contract Administrator, except with Contract Administrator's written approval. If modifications are proposed, submit comprehensive explanatory data to Contract Administrator for review.

.7 – **Protection** - During performance of work, adequately protect work completed and in progress and existing work to remain, such as pool shell, pool deck, floors, finishes, trim and similar components, as completely as possible to minimize replacement of damaged work by each Subcontractor and sub-trade. Work damaged or defaced due to failure to provide adequate protection shall be repaired, or removed and replaced as directed by Contract Administrator and will be the responsibility of the Contractor to complete at their expense.

1.9 **DELIVERY, STORAGE AND HANDLING** – The Contractor will work with the Contract Administrator and City of Winnipeg, Municipal Accommodations Division during the design process to define the location and size of the staging area.

.1 - **Staging Area** - The Contractor may use the staging area as determined in conjunction with the Contract Administrator and City of Winnipeg for material storage, equipment or other necessary purpose directly related to the Work.

.2 - **Entry & Exit** – Points for Displays – Drawing AQ100 provides the entry and exit points for demolition of existing display and entry point for the new display. Any other options must be approved by the Contract Administrator and City of Winnipeg and shop drawings submitted for staging area and entry and exit points.

.3 - **Protection of Entry Exit Area** – Ensure outside of entry exit area is protected against damage to sod, landscaping, glazing, etc. Contractor is to make good any damage to entry and exit area surroundings.

.4 - **Delivery and Acceptance Requirements** - Deliver components and other manufactured items so as not to be damaged or deformed. Package small components together in crates or containers to prevent loss of small items. Package hazardous and/or sensitive materials together and clearly labeled to indicate use of caution or extra attention is required.

.5 - **Damaged Goods** - Any items that arrive damaged are the responsibility of the Contractor to repair/replace at no expense to the City of Winnipeg.

.6 - Storage and Handling Requirements

.1 - Unload, store and erect video display system components to prevent bending, warping, twisting and surface damage.

.2 - All video display system components shall be stored and staged with sufficient site safety and security to ensure damage or losses from vandalism, theft, and weather do not occur.

.3 - Stack non-structural materials on platforms or pallets, covered with tarp or other suitable weather-tight and ventilated covering. Store boxed items to ensure dryness.

.4 - Store hazardous materials as required by WHMIS and the manufacturer.

.5 - Keep out of direct sunlight.

.6 - Store away from open flame or sources of heat.

.7 - Comply with applicable safety regulations governing hazardous material storage and handling under WHMIS training requirements.

.8 - Any items that are damaged during storage are the responsibility of the Contractor to repair/replace at no expense to the City of Winnipeg.

.9 - Refer to Product MSDS for precautionary measures during storage and handling. Submit to the Contract Administrator the MSDS Sheets for all products being used on the Video Display or at the facility that require them. Also make available a site a copy of all these MSDS sheets.

.10 - **Packaging Waste Management** - It is the responsibility of the Contractor to package and dispose of all waste materials using acceptable and recognized waste disposal standards.

.11 - Garbage Removal - Do not use institutional garbage bin facilities for removal of construction rubbish and debris. Contractor shall be responsible for providing their own debris bin and storage containers with lockable covers.

1.10 SITE CONDITIONS

.1 – **Existing Conditions** – Examine site at no cost to the City of Winnipeg for all matters relating to Work, extent of Work, means of access and egress, all obstacles, rights and interests of other parties which may be interfered with during execution of Work, all conditions and limitations Contractor to take into consideration in performing Work, including obstructions, existing structures or facilities, local conditions, actual levels, character and nature of project and any other considerations which may affect performance of Work.

.2 - **Cleaning – Progress Cleaning**

.1 - Keep access areas to Work in tidy condition, free from accumulation of waste products and debris during construction and on completion, other than caused by City of Winnipeg crew or other contractors. Do not dispose of volatile fluid wastes (such as mineral spirits, oil or paint thinner) in storm or sanitary sewer systems or into streams or waterways

.2 - Site Cleanliness - Keep site and building, including concealed spaces, free from accumulation of dirt, debris, garbage and excess material. Remove oily rags and waste from premises at close of each Day work is performed, or more often if required

.3 - Demolition Bins - A demolition bin will be allowed on site where indicated on Drawings and as coordinated with Contract Administrator and City of Winnipeg.

1.11 WARRANTY

.1 - The manufacturer shall provide the City of Winnipeg a separate (5) year warranty on the video display system from the date of installation. The video display shall be free of defects in materials and workmanship (corrosion, rust, etc.) when used in accordance with manufacturer's installation and operation (excluding water chemical balance or ventilation) instructions, The warranty includes modules, drives, power supplies, communication equipment, video rack and workstation.. Does not include or cover abusive or improper treatment by others.

Warranty includes parts but labour is to be paid by the City of Winnipeg.

.2 - The manufacturer will provide a 5 Year Preventative Maintenance Plan.
The Installer is to provide a full operational and maintenance manual. Provide 6 hard copies along with an electronic copy.

.3 - The maintenance manuals will include screen shots for all major steps to operating the software and troubleshooting the system.

.4 - The manufacturer/installer guarantees that with completion of the video display system it will meet all specifications and the requirements for the 2017 Canada Games.

1.12 SUBSTITUTION OF EQUIPMENT

.1 - Refer to Part B - Bidding Procedures, Clause B7. Substitutes.

PART 2 – EXISTING SCOREBOARD, NEW FULL COLOUR VIDEO DISPLAY BOARD AND ACCESSORIES

2.1 REMOVAL OF EXISTING SCOREBOARD - The Pan Am Pool currently houses – 1 LED Scoreboard located on the East Wall at the Shallow end of the Competition Pool which must be removed and turned over to the City of Winnipeg prior to the installation of a new Video Display.

.1 – **Coordination** - Coordinate the removal of the existing Scoreboard with the facility staff around programs and activities. A schedule to completion detailing when the work is to be completed must be submitted for approval prior to work commencing. Refer to Part D – Supplemental Conditions, Form L: Detailed Work Schedule.

.2 – **Existing facility** - The pool facility will be in operation throughout the construction period. Do not interrupt existing services, facilities and activities at the pool complex, except for authorized and scheduled interruptions of services acceptable to the City of Winnipeg. Obtain written permission of City of Winnipeg at least 3 Working Days in advance of any shutdown required for tie-in of new systems. Written requests for shutdown permission shall clearly identify exact extent of systems affected, time and duration

.3 - **Existing Scoreboard** - the existing is to be removed from the wall with care taken to limit damage to the board itself and existing wall structure. Once removed coordinate with the City of Winnipeg a storage location of the Board.

.4 – **Site Protection** – Protect all areas of the facility that could be affected by the removal of the existing scoreboard but not limited to the natatorium wall, pool deck, stairwells, doors, walls, roof, finishes, etc. from potential damage in the removal of the scoreboard.

.1 - Post adequate warning signage prominently displayed warning of the illegality and danger of unauthorized trespassing into the parts of the Place of Work under construction.

.5 – **Removal Site** – The Contractor shall work with the Contract Administrator and City of Winnipeg during the design process to define the location and size of the removal area.

.6 – **Remove** – Remove the existing scoreboard from the wall in a way that minimizes and damage to the scoreboard which will impact its future operation or to the structure of the supporting wall.

.7 - **Remove** – The existing sign panel at the top of the existing display and r-use on top of the new display.

.8 - Disconnect the power and data lines to the display and prepare for the removal.

.9 – **Waste Removal** – Remove any debris accumulated from the removal of the existing display from the wall. Clean up the area of the removal.

.10 – Scaffolding – provide stamped scaffolding drawings for moving product and people up to the face of the board.

NOTE: The Contractor will be responsible for all costs associated with the dismantling of the existing scoreboard from the location as well any costs associated with ensuring that the pool shell and deck and all other areas of the facility are protected during this process.

2.2 NEW REQUIREMENTS

.1 - Base specified product for this project is a Video Display Board – Media Resources – Vision IQ Video Display - Model #P10-RGB-576-224.

.2 – **Video Display** - Will be a single sided LED display using a sealed module system with redundancy and Diagnostics Direct IP communication option. Will have a front end computer to interface with the timing and scoring system, schedule and show different medias.

.3 – **Measurements** - All measurements outlined in these specifications are approximate and will have to be confirmed by the manufacturer or installer to this closest dimension.

.4 – Dimensions

.1 – Cabinet Size - Height: 4.20M , Width: 6.70M , Depth: .20M

.2 – Viewing Size – Same as Cabinet Size.

.3 – Box Construction – Aluminum with Powder Coat Black

.4 – Pixel Pitch – 10mm RGB

.5 – LED Matrix – 416 Pixels H x 672 Pixels W 279,552 total Pixels

.6 – Viewing Angle – 160 Degrees H x 140 Degrees V

.7 – Weight – 800Kg

.8 – Operating Temp - -40C to 50C

.9 – Module Protection – yes , waterproof, sealed modules and cables

.10 – Max/Ad Wattage – 12,000w Max, 3,750 w average

.11 – Brightness – 9000NITs

.12 – Rear Service

.13 – Warranty – 5 Years Part only

.14 - Power requirements: 208v 3 Phased 50amp

2.3 INSTALLATION OF VIDEO DISPLAY

- .1 -- The installation shall be true, level and plumb with the existing structure.
- .2 - During installation, protection shall be provided for the existing deck, pool walls, pool floor and general building construction. The contractor shall bear all costs for replacement or repair as a result of damage by neglect
- .3 - Restore site to condition equal to or, if specified elsewhere, to condition better than existing conditions.
- .4 - Make Good surfaces and finishes damaged or disturbed due to Work of this Contract to match existing. Ensure materials used to repair damage are compatible with existing work
- .5 – All structural design loads will be confirmed by a professional engineer licensed to practice in the province of Manitoba.
- .6 – Re-install the text sign with new black extensions to the new width of the display.
- .7 – Use Existing stringers to install the board.

2.4 FRONT END ACCESSORIES

.1 – **Front End Equipment** - All front end equipment are in 2 locations the first is a commercial style Rack for the Hardware for the Video and the other the Display Board Operator Workstation.

.2 – **Hardware Requirements** – Commercial Rack Style Computer with minimum requirements;

- .1 - 3.4GHz Quad-Core Processor
 - .2 - 16 GB Ram
 - .3 - 3GB Video Card to support 6 displays
 - .4 – CD/DVD Drive
 - .5 – 1 TB Hard Drive
 - .6 – Quad – Input Serial Card to interface with timing systems
 - .7 – 2 – 22” Monitors
 - .8 – Keyboard and Mouse
 - .9 – Fibre Patch Connectors
 - .10 – Internet Access
 - .11 – Scaler – To allow scaling, of the video format to be able to be used with different media, like LCD Screens and any other future screens.
 - .12 – UPS unit
- .3 - **Input Rack**

- .1 - 2- SDI
- .2 – 1 DVI
- .3 – 1 HDMI

.4 – Output Rack

- .1 – 2 –SDI
- .2 – 1- DVI
- .3 – 1 HDMI
- .4 – RCA outputs on rack to be connected to PA System

.5 – Software Requirements

- .1 – Scheduler – Daily, weekly, monthly loops made up of pre-recorded video, still shots, text etc
- .2 – Event File Display – To allow an event group to install sponsor ads, pre-recorded video, still shots, text, et for their event.
- .3 - Interface with the Quantum and Ares Timing Controllers for Swimming and Water Polo.
- .5 - Interface with Diving and Synchro Swimming Sports
- .6 – Warm-up Countdown Clock

3.0 COMMISSIONING

.1 - To provide 2 on-site training sessions on the operation and maintenance of the Video Display.

.2 - Submit a complete record of instructions as part of maintenance instructions and data book given to the Contract Administrator. For each instructional period, supply following data:

- .1. D ate.
- .2 S ystem or equipment involved.
- .3 N ames of persons giving instructions.
- .4 N ames of persons being instructed.
- .5 O t h e r persons present.

.3 - To provide 6 copies of the operating and maintenance manuals. One copy to be in an electronic format.

.4 - Manual to include screen shots of main steps.

.5 – To demonstrate that the exposed surfaces are free of all imperfections or irregularities, a field inspection by the City of Winnipeg will be conducted upon completion of the installation to ensure compliance before acceptance.

.6 – **Final Cleaning** - Prior to 100% complete, clean the Display Board, Place of the Work thoroughly, free of rubbish and surplus material. Dispose of rubbish and debris. Vacate the place of the Work in a clean and tidy condition satisfactory to the Contract Administrator and City of Winnipeg.

.7 - **2017 Canada Games** – Provide technical support to City pool staff for 4 days duration on site during the Canada Games from July 27 to July 30, 2017.