



EXECUTIVE DECISION DOCUMENT

GENERAL MANAGER APPROVAL:		GENERAL MANAGER ACTION REQ'D:	
DocuSigned by: <i>Michael Jones</i> 47000790F2D7463...			
DATE: 12/16/2019 3/15/2023		BOARD INITIATED ITEM: No	
Originator/Prepared by: Sam Le Dept: Transportation	General Counsel	Controller/Treasurer	District Secretary
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Signature/Date: 3/14/2023	3/14/2023 []	3/14/2023 []	3/14/2023 []

Train Simulator Upgrades

PURPOSE:

To request Board authorization to negotiate and execute a five (5) year sole source agreement with CORYS in the amount not to exceed \$902,090.00 to purchase major software updates and other needed enhancements in accordance with Public Contract Code Section 20227. Two-thirds vote required.

DISCUSSION:

The Transportation Department holds Train Operator classes at its training facility located in the Hayward Yard, and uses a CORYS Train Simulator System. This system mirrors what a Train Operator will see in an actual train cab. The simulator was installed in December of 2016, as part of the Fleet of the Future Project. Since then, the system has been used extensively by the training department, for both New Car Training and Train Operator certification classes.

The simulator has markedly improved the amount of time students can practice operating a District train. For example, trainee's mainline practice has increased from nine (9) hours to forty (40) hours. The most notable improvement is seen on the first days a newly certified train operator is out on a mainline - a drop of more than eighty percent (80%) in delays related to new operators in their early days of operations.

In December 2019, CORYS completed the simulator project, providing needed improvement to the system. The training department worked with CORYS to make the simulators more closely mirror mainline operations at BART. However, the original computer

generated imagery (CGI) did not have all BART's trackage, approximately 75%, and does not have the extension to Berryessa (SVBX). This limits the training department's ability to create the most accurate simulations possible.

This Procurement is for the following:

1. Equipment for Cab and Desk Simulators (\$192,750.00):

The procurement involves the replacement and purchase of specialized computers configured and installed with proprietary CORYS software and Microsoft Windows 11 operating system software to support each of the cab and desk simulators. This consists of computers for 13 desk train simulators (12 desk simulators and 1 spare simulator), and 11 cab simulators (7 cab simulators, 3 instructor stations, and 1 spare).

2. CGI Upgrades (\$365,880):

The upgrades include A thru E.

- Upgrade A - Modify Emergency Exits (\$26,260.00)
 - Changes appearance of simulated Transbay Tube Emergency Exits.
- Upgrade B - eBART Transfer Platform Options (\$35,460.00)
 - Will add the Antioch transfer platform, and the Level 1 upgrade will allow for the simulations to include a moving E-BART train.
- Upgrade C - Blue Line Extension - Dublin/Pleasanton (\$89,200.00)
 - Will provide the rest of the Blue Line to Dublin, allowing the simulations to include the mainline activities specific to that location.
- Upgrade D - Green Line Extension - Fremont (\$85,650.00)
 - Will extend Green Line to Fremont, and as a bonus, has 8 transfer tracks in the Hayward Yard. With the additional tracks that connect North and South Transfers, simulations can be added that replicate operations from that Yard.
- Upgrade E - Green Line Extension - Berryessa (\$129,310.00)
 - Berryessa extension, which will include Warm Springs, and will allow simulations to include those locations.
 - Upgrade D is needed to install Upgrade E.

3. Simulator Enhancements (\$45,010.00):

There are 3 Simulator Enhancements that are additions to the current system - Play List, Computer Based Learning, and Remote Instructor Tablet.

- Play List feature will allow simulations to be launched in sequence, such as a train being misrouted at key points along the line, or a train turning back mid-route.
- Computer Based Learning, which allows test questions to be generated while a train is traversing the system, such as, what is the next station, interlocking or gate.
- Remote Instructor Tablets allows the instructor to coach and interact with the student in or near the simulator.

4. Simulator Maintenance Service (\$298,450.00):

Following the original warranty period, BART entered into a maintenance agreement with CORYS to support the simulator system. CORYS has provided critical troubleshooting, overnight drop ship of parts, replenishment of on-hand spares, and certain requested updates.

Pursuant to Public Contract Code Section 20227, the Board may direct the purchase of any supply, equipment, or material without observance of competitive bidding upon a finding by two-thirds of all members of the Board that there is only a single source of procurement and that the purchase is for the sole purpose of duplicating or replacing equipment currently in use. Here, the proposed purchase of upgrades and enhancements from CORYS is intended to replace and supplement portions of the desk simulators already in place at the Hayward Yard, in order to provide a seamless training experience for District staff. Thus, this purchase is a permissible single source purchase under Section 20227.

Pursuant to the District's Non-Federal Small Business Program, the Office of Civil Rights reviewed the scope of work for this Sole Source procurement and determined that there were no LSB subcontracting opportunities; therefore, no LSB prime preference was set for this procurement.

Vendor CORYS will not be subcontracting any portion of the Work and therefore, the provisions of the District's Non-Discrimination Program for Subcontracting do not apply.

FISCAL IMPACT:

The EDD proposes a total cost of \$902,090.00.

Funds will be budgeted using Operating to Capital Allocation for years FY23 and part of FY24 in the Transportation operating budget (Cost Center #0805763 - Transportation Operations Support and Review, Account 681300 - Professional & Technical Services) as follows:

Proposed Funding:

FY23	\$45,010.00	Simulator Enhancement	FY23 Operating to Capital Allocation
FY24	\$92,750.00	Equipment for Cab/Desk Simulators	FY24 Operating to Capital Allocation
	\$365,880.00	CGI Upgrades	FY24 Operating to Capital Allocation
	<u>\$54,480.00</u>	Maintenance costs	Operating
	\$612,110.00		
FY25	\$56,420.00	Maintenance costs	Operating
FY26	\$59,520.00	Maintenance costs	Operating
FY27	\$62,790.00	Maintenance costs	Operating
FY28	\$66,240.00	Maintenance costs	Operating
Total	\$902,090.00		

Funding for Simulator Enhancement in FY23 will be coming from FY23 Operating to Capital Allocation. Funding for subsequent years will be included in the proposed annual operating budget and Operating to Capital Allocation, which is subject to Board approval.

Fiscal Year 2025 through 2028 is funding for annual maintenance service.

This action is not anticipated to have any Fiscal Impact on unprogrammed District reserves in the current Fiscal Year.

ALTERNATIVES:

Holding a competitive bidding process will generate long lead times, thus jeopardizing the training program on an already aging and outdated system, not optimizing or delaying the user experience for train operators, and not meeting the schedule demands.

RECOMMENDATION:

Adoption of the following motion.

MOTION:

Pursuant to Public Contract Code Section 20227, the District finds that CORYS is the single source of supply for the replacement and duplication of train desk simulators in use throughout the District.

To that end, the General Manager is authorized to negotiate and execute a five (5) year agreement with CORYS in an amount not to exceed \$902,090.00 to procure software upgrades, and enhancements for the train simulators.