NEWS RELEASE

Jacobs Creating First Digital Twin of PUB's Changi Water Reclamation Plant in Singapore

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The Replica™ whole plant simulation model features real-time data feed and predictive capabilities to test operational changes and improve operator training

DALLAS, Dec. 3, 2020 /PRNewswire/ -- **Jacobs** (NYSE:J), has partnered with **PUB, Singapore's National Water Agency**, in an R&D project to develop and trial a whole plant simulation model for the Changi Water Reclamation Plant (CWRP). The model, a digital twin of the plant, will be the first application of its kind and combines real-time data from supervisory control and data acquisition (SCADA) historian with software simulation packages (**Replica™ Digital Twin Platform**) to integrate process, hydraulics, controls and advanced data analytics into a single, whole plant simulation capable of replicating plant operations and predicting future performance in real-time. The trial is expected to be completed by December 2020 and this research is supported by the National Research Foundation Singapore and PUB.

"In today's technology-driven world, digital representations of physical assets, processes and systems – or digital twins – provide unparalleled insight into ongoing plant operations and maintenance, supporting increased productivity, enhancing operational resilience and optimizing energy and chemical consumption," said Jacobs Vice President and Global Digital Market Director Dr. Raja Kadiyala. "PUB is at the forefront of utilizing this technology to improve its wastewater operations, allowing dynamic analysis of resource supply, demand, cost, risk and other factors throughout its systems to make resilient decisions."

Working closely with PUB and with support from National Research Foundation Singapore, Jacobs is designing the model with customized user interfaces to improve its functionality and maximize user experiences. Through a secured connection to the SCADA system, the model replicates CWRP's hydraulic, process, and control components

with near real-time data feeds. The data are checked to enhance accuracy before being automatically fed into Replica™ for hydraulics and control simulation and Sumo© for process simulation of the wastewater treatment plant. The model continuously adjusts its calibrations within defined ranges to match the plant's observed performance via machine learning, ensuring simulations are relevant to real operations, without requiring intervention from staff. The model is also capable of creating customizable scenarios for operator training, thus facilitating knowledge transfer to new staff. The Replica™ whole plant simulation model technology is now being used by Jacobs on water applications globally.

CWRP is one of the world's largest and most advanced water reclamation plants designed by Jacobs. For more than 20 years, Jacobs has been delivering water and wastewater projects with PUB. Other notable projects include the award-winning Deep Tunnel Sewerage System, the iconic NEWater Plant and Visitor Centre, transforming the Kallang River at Bishan-Ang Mo Kio Park under the Active, Beautiful, Clean Waters (ABC Waters) program and Tuas Desalination Plant.

To learn more about how Jacobs is using predictive analytics to improve water systems, read the **latest Forbes column** from Jacobs SVP of Technology and Innovation, Heather Wishart-Smith.

At Jacobs, we're challenging today to reinvent tomorrow by solving the world's most critical problems for thriving cities, resilient environments, mission-critical outcomes, operational advancement, scientific discovery and cutting-edge manufacturing, turning abstract ideas into realities that transform the world for good. With approximately $14 billion in revenue and a talent force of more than 55,000, Jacobs provides a full spectrum of professional services including consulting, technical, scientific and project delivery for the government and private sector.
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Certain statements contained in this press release constitute forward-looking statements as such term is defined in Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, and such statements are intended to be covered by the safe harbor provided by the same. Statements made in this release that are not based on historical fact are forward-looking statements. We base these forward-looking statements on management's current estimates and expectations as well as currently available competitive, financial and economic data. Forward-looking statements, however, are inherently uncertain. There are a variety of factors that could cause business results to differ materially from our forward-looking statements, including, but not limited to, the impact of the COVID-19 pandemic and the related reaction of governments on global and regional market conditions and the company's business. For a description of some additional factors that may occur that could cause actual results to differ from our forward-looking statements, see our Annual Report on Form 10-K for the year ended October 2, 2020, and in particular the discussions contained under Item 1 - Business; Item 1A - Risk Factors; Item 3 - Legal Proceedings; and Item 7 - Management's Discussion and Analysis of Financial

Condition and Results of Operations, as well as the company's other filings with the Securities and Exchange Commission. The company is not under any duty to update any of the forward-looking statements after the date of this press release to conform to actual results, except as required by applicable law.

For press/media inquiries:
Kerrie Sparks
214.583.8433

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