



**Date:** September 29, 2015

**To:** THE TRUSTEES

**From:** THE PRESIDENT and CHIEF EXECUTIVE OFFICER

**Subject:** Procurement (Services) Contract –  
Niagara and St. Lawrence River Flow Forecasts –  
Technical Consultation – Contract Award

SUMMARY

The Trustees are requested to approve the award of a single-source contract to Clarkson University for the services of Dr. Hung Tao Shen, Professor and Chair, Department of Civil and Environmental Engineering at Clarkson University for a not-to-exceed value of \$249,800 and a term of three years and four months, to evaluate new models being developed by the Great Lakes Environmental Research Laboratory (“GLERL”) for Niagara and St. Lawrence River flows for long-term forecasting of stream flow in the Niagara and St. Lawrence Rivers to predict hydropower generation.

Interim approval for an initial amount of \$10,000 was granted by the Chief Operating Officer to allow Dr. Shen to begin preparations on September 1, 2015 for GLERL’s project kick-off meeting which will be held on or about October 1, 2015.

BACKGROUND

Section 2879 of the Public Authorities Law, the Authority’s Guidelines for Procurement Contracts, and the Authority’s Expenditure Authorization Procedures require the Trustees’ approval when the term of a personal services contract, including any extensions or options, exceeds one year.

Concerned with recent forecast inaccuracies, NYPA is partnering with Ontario Power Generation (“OPG”) to improve hydropower generation forecasts and to incorporate the appropriate level of risk assessment regarding forecasts into future budgets. In this connection, NYPA and OPG are participating with the National Oceanic and Atmospheric Administration (“NOAA”) and GLERL to study and improve flow modeling through the Postdocs Applying Climate Expertise (“PACE”) program, which pairs early-career climate scientists with institutions that provide climate research expertise guidance and funding.

As NYPA’s technical consultant, Dr. Shen and his staff will monitor technical progress and evaluate improvements and/or changes to modeling procedures proposed by GLERL and the PACE fellow. In addition, Dr. Shen will evaluate the current Advanced Hydrologic Prediction System (“AHPS”) modeling procedures used by NYPA.

DISCUSSION

Dr. Shen and Clarkson University have a long history and extensive experience in the hydrology of the Great Lakes. Dr. Shen has conducted numerous research projects in river

behavior including the preparation and analysis of mathematical and numerical models. Dr. Shen's expertise as an expert in ice sluice modeling was effectively used by the Federal Energy Regulatory Commission ("FERC") and the International Joint Commission ("IJC"), in the successful FERC relicensing of the Niagara Power Project, to determine the relationship between the operation of the project and the ice flows. Dr. Shen's unique area of expertise at Clarkson University is river ice engineering and he is very familiar with the dynamics of the St. Lawrence and Niagara Rivers. He has served as Chairman of the Committee on Ice Research and Engineering of the International Association for Hydraulic Engineering and Research from 2000 to 2004. He has received numerous honors for his excellence including the 2007 American Society of Civil Engineers ("ASCE") award for significant contribution to cold regions engineering through his long and prestigious career in teaching and his long history in the development of ice engineering models. He also received the 2007 ASCE award for his dedication, research, publications, teaching and volunteer contributions to cold regions engineering and professional relationships between civil engineers in Canada and the United States.

Dr. Shen has written numerous publications on mathematical and numerical modeling of river ice processes, ice booms, dynamics of ice jam formation and release and many other river related topics.

#### RECOMMENDATION

Staff recommends an award of a single-source contract to Clarkson University for the services of Dr. Hung Tao Shen, Professor and Chair, Department of Civil and Environmental Engineering at Clarkson University for a not-to-exceed value of \$249,800 and a term of three years and four months.

#### FISCAL INFORMATION

Payment will be made from the Authority's Operating Fund.

#### RECOMMENDATION

The Senior Vice President – Operations Support Services and Chief Engineer, the Vice President – Engineering and the Vice President – Procurement recommend that the Trustees approve the award of a single-source contract to Clarkson University for the services of Dr. Hung Tao Shen, Professor and Chair, Department of Civil and Environmental Engineering at Clarkson University for a not-to-exceed value of \$249,800 and a term of three years and four months.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below.

Gil C. Quiniones  
President and Chief Executive Officer

**RESOLUTION**

RESOLVED, That pursuant to the Guidelines for Procurement Contracts adopted by the Authority and the Authority's Expenditure Authorization Procedures, the award and funding of a single-source contract for a term of three years four months, and a not-to-exceed value of \$249,800, is hereby approved as recommended in the foregoing memorandum of the President and Chief Executive Officer;

<u>Contractor</u>	<u>Contract Approval</u>
<b>Clarkson University</b> (Single Source)	<b>Multi-year (3 years 4 months)</b>
<b>(#4600003048)</b>	<b><u>\$249,800</u></b>

AND BE IT FURTHER RESOLVED, That the Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.