

tors and state and local transportation agencies, said Jost.

Thrustmaster saw the market coming this way and has been making strategic moves over the past three years. One was bringing on board designer Paul Rembach as hybrid systems manager and the patents he developed with **Legacy Automation Power & Design** in Houston.

An expert in energy management, Rembach said the technology now going into the first generation of hybrid workboats still has much to gain in efficiency and “greener” supply chains.

“Part of the cost of batteries is also when you finish using them,” said Rembach, so those financial and ecological costs should be factored in. While some components of dead batteries can be recycled, some 40% are incinerated or otherwise wasted, he said. By dividing a battery’s lifespan in three phases — mining, manufacture and transport, then working life, and in the end as waste — the actual costs can be calculated, he said.

“You’re always coming out with more than 100% carbon in the end,” Rembach added. Thrustmaster’s goal is to come up with solutions that are “economically feasible for our clients, and ecologically green,” he said.

Over at the **American Bureau of Shipping** booth, Domenic Carlucci explained what ABS is doing to assist clients making the move to hybrid power systems.

“We’re seeing a lot of ferry work,” said Carlucci, manager of machinery, electrical and controls, and advanced technology and research for ABS. On the workboat side, operators are interested in hybrid power for dynamic positioning, and energy storage that can add to bollard pull on tugboats and towing vessels.

Reducing emissions is another motivator. Hybrid power can be a solution for boosting horsepower without the expense and design challenges of going to bigger EPA Tier 4 diesels. On the West Coast, California air pollution regulators are looking for ways to tighten what are already the nation’s toughest air quality rules for working vessels.

“California makes everyone look to

the future,” said Carlucci.

The maritime world’s biggest operators are looking there too. ABS experts have been working with containership operators who are looking for new technology in applications like ship generators, said Carlucci.

Shipping giant **Maersk** says it wants more “carbon-neutral” power for its new containerships by 2030.

— Kirk Moore

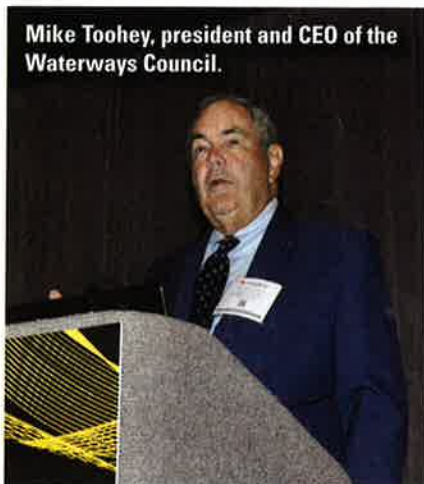
FUNDING HITS RECORD LEVELS FOR THE INLAND WATERWAYS

The inland waterways have enjoyed two consecutive years of strong funding from Congress, which helped with the completion of the Olmsted locks and dam project in Illinois, and funding for other projects to improve efficiency of river transportation, Michael Toohey, president and CEO of the **Waterways Council** said at the **International WorkBoat Show**.

Toohey was the featured speaker at the Inland Waterways and Passenger Vessel Program.

“We have been able to make \$8.8 million in capital improvements so we can continue to compete internationally,” Toohey said. “The world is coming to the United States (for its food supply), and we are preparing to feed the world.” Meeting this demand will involve modernizing the nation’s antiquated and unreliable system of locks and dams.

Progress has been stymied for decades by inconsistent funding from Congress and certain policies at the Army Corps of Engineers, but with a



Ken Hocke

new funding direction, progress has taken a remarkable turn for the better.

Toohey said both the fiscal year 2018 and 2019 federal budgets for the Corps’ civil works programs, which funds waterways improvements, have hit record levels.

In fiscal 2018, the budget hit a record \$6.85 billion, allowing for completion of the much-delayed Olmsted project and for improvements to the Lower Monongahela River in Pennsylvania, the Kentucky lock and the Chickamauga lock in Tennessee. The budget hit another record for the current fiscal 2019, with nearly \$7 billion appropriated. In addition, record funding levels were appropriated for operation and maintenance of the inland waterways system, and none of the budgets include an earlier plan by the Trump administration to impose new taxes, fees or tolls on the barge industry.

Toohey said the 2019 budget also included an important change: a new cost-sharing arrangement to speed up the Chickamauga project from the current 50/50 split between the Inland Waterways Trust Fund and the federal treasury, to 85% federal and 15% trust fund. The barge industry supports the fund through a 29-cent-per gal. diesel fuel tax.

Assuring that the funds are spent on the waterways is a top priority because “there is a great temptation in Congress to spend trust fund money on other programs, and if we don’t advocate, that’s what will happen.”

Toohey said, however, that funding windfalls have a downside, as some locks and dams will close for improvements. In 2020 and again in 2023, the Illinois Waterway will shut for major repairs on six locks, which is expected to extend their lives for another 25 years. — Pamela Glass

SUBCHAPTER M: ALL VESSELS MUST BE IN COMPLIANCE

It’s been less than five months since Subchapter M was officially implemented, requiring towing vessels to comply with a host of new rules to improve safety in the tug, towboat and barge industry. But already, vessel operators say the new regulatory regime