

## Adaptability – The Daughter of Invention

By: Charles W. Nelson, P. E.

If necessity is the mother of invention, then adaptability must be one of her daughters, along with flexibility, adaptive-re-use, re-invention and rejuvenation. These must have been siblings. This comment is sparked by the following press release regarding Gulf Gateway Terminal's operation in New Orleans East, on the Intracoastal Waterway.

### **\*\*\*Murex Strikes Deal Over Delivery of Renewable Products Into California**

Murex LLC has secured transloading contracts with two fuel distributor customers that rail renewable products into the California market, the low carbon fuels marketing and logistics company said Tuesday.

The deal was made through Murex affiliate Gulf Gateway Terminal LLC (GGT), which operates in the Port of New Orleans with both barge and unit train access.

GGT recently started a renewable diesel barge-to-rail transloading service in addition to conventional diesel service, and it has optionality to add additional products. The company said GGT's rail connectivity enables customers to reach markets beyond California as well, with access to Canada, Mexico and all contiguous 48 states as well as Alaska.

The company would not divulge details on the identities of the two customers or the terms of the deal.

The Texas-based Murex also markets products from 12 biofuels plants domestically and said it "is exploring



**Public Bulk Terminal - NELSON design 1964-1966**

relationships with several others in the growing renewable fuels space."

The company operates across multiple commodities including ethanol, crude, methanol, jet fuel and diesel.

Murex says it provides turnkey solutions to its biofuel plant partners, managing all aspects of marketing, logistics, regulatory and fleet management, and controls more than 20% of the ethanol export market.

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The Gulf Gateway Terminal was designed and constructed on a fast-track schedule in 2013 on a brown-

field site in New Orleans East owned by the Port of New Orleans (Port NOLA).

Port NOLA originally developed the site in approximately 1960 as part of their "Tidewater" port to alleviate river level fluctuations and fog, which often hampered operations on wharves along the riverfront of the city under the jurisdiction of the port. The facility developed at that time was the New Orleans Public Bulk Terminal, designed to transfer bulk grain, coal, aggregates, and other commodities across the Port NOLA property. The original facility operated for approximately 35 years, serving ships navigating the Mississippi River Gulf Outlet (MRGO), a 76-mile channel which had been dredged from New Orleans East to the Gulf of Mexico


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**CG Railway - NELSON design 2004-2005**

in 1963. Market conditions affected the shipment of bulk commodities during the 1970's, when 8 bulk grain terminals were built along the Mississippi River between New Orleans and Baton Rouge. During that time, two large terminals in Plaquemines Parish provided storage and transshipping for coal arriving from the US interior for export overseas or to Florida. Aggregate and liquid commodities intended for the New Orleans Public Bulk Terminal also found other delivery routes, and the Port NOLA facility was eventually retired.

As an example of adaptive re-use, the Port NOLA site was recognized as an available and valuable asset by CG Rail, a subsidiary of International Shipholding, a New Orleans company with multiple shipping assets and operations. These included the rail ship operation between Mobile, Alabama and Coatzacoalcas, in the state of Vera Cruz, Mexico. The rail-ship concept was in itself an adaptive re-use of vessels that had been operating in Southeast Asia as heavy lift transporters of various equipment and material between island ports. Two of these vessels were converted to rail ferry service, providing significant economies for rail cargo originating from or destined for Mexico, as com-

pared to overland schedules. The conversion of the vessels to support railcars on two levels, plus the onshore assets to support the expanded design, are a prime example of adaptive re-use of properties (mobile and stationary) for conversion into another life of utilization.

As successful as the CGRail operation was, and could have continued to be, it was shut down after Hurricane Katrina by the closure of the Mississippi River Gulf Outlet (MRGO) in 2009 by construction of a rock dike at Bayou La Loutre. The loss of the waterway from Port NOLA's "Tidewater" port to the Gulf of Mexico meant ocean-going ships would not have access to the facilities designed to accommodate them. Once the MRGO was closed, the utility of the port's property in the "Tidewater" port was diminished, and CGRail moved its Mexico operation to Mobile, Alabama, where it operates successfully today.

The third adaptation of the Port NOLA Public Bulk Terminal property came from the insight of entrepreneur partners seeing the advantage of barge and rail interaction along the Intracoastal Waterway, which provides barge access from Florida to Mexico in sheltered waters protected from most heavy weather in the Gulf of Mexico. This project, the Gulf Gateway Terminal, was conceived to support receipt by rail of 70,000 bbls/day of light sweet crude oil from

inland originations. As a "brown-field" rather than "greenfield" site, there were advantages and disadvantages to consider as the new project unfolded. Permits were fairly in place but needed revisions. Foundation, utility and drainage details from previous usage of the site were available from Port NOLA records but had to be considered in the "adaptive re-use." The terminal was constructed on a fast-track basis of only nine months between signatures on the initial design assignment and the unloading of the first train of crude oil. Simultaneous execution of design, procurement, contract and sub-contract management, along with weekly communication with regulatory authorities, expedited project completion.

The project received an ASCE Project Excellence Award in 2014, partly because of its "adaptive re-use" features.

After several years of successful operation in its intended purpose (70,000bbl/day capacity of light sweet crude), market conditions diminished, and the full capacity for the facility was not being utilized. Options for handling other liquids included heavy crude, refined products, or other commodities. Evaluations favored diesel, and negotiations with distributors led to the press release shown above. A further example of adaptable re-use is described on page 5.



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**Gulf Gateway Terminal - NELSON design 2012-2013**

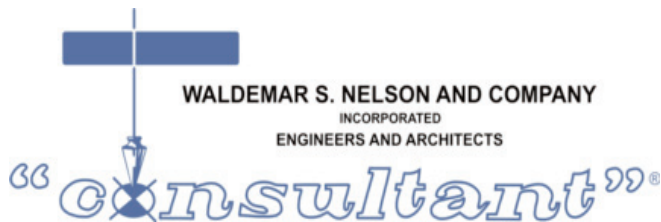
Behind the Winn-Dixie grocery store on Tchoupitoulas Street, New Orleans, is a tall green building adjacent to multiple tall concrete cylinders, or silos. This is the receiving plant for Silocaf, a 36 year-old company that receives coffee beans from multiple sources for processing and delivery to roasters in the New Orleans metro area. The silos were built as a part of a grain terminal erected on the site in the 1960's for storage and shipment of various grains from the vast interior of the United States to multiple destinations. As in the case of the New Orleans Bulk Terminal, the storage and shipment of bulk grains had migrated out of the traditional Port NOLA property and the storage silos were scheduled for demolition. International entrepreneurs with prior coffee experience in Brazil, however, realized that a conversion of the silos from pure intermediate storage to a value-added enterprise was feasible. Thus, Silocaf converted the

silos and facilities from their prior use to a viable enterprise which has operated and expanded. NELSON

designed portions of the initial conversion and has recently designed modifications



**Silocaf - NELSON design 1991-1994**



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1st Quarter, 2022

## ***Congratulations to Our Retiree***

Robert Oliver retired from our New Orleans office effective December 31, 2021 with thirty years of service. Robert was a vice president and manager of the Architecture department and handled many important jobs throughout his career. His most recent work included Great Lakes Tunnel which consisted of 2 industrial buildings over shafts connecting a new pipeline through Mackinaw Straights. Other projects were deep-FEED documents for the Trion living quarters off the coast of Mexico, and various industrial buildings for SNF.



Robert C. Olivier, AIA, NCARB



### ***Congratulations for Promotion***

Bill Rushing, who was recently promoted to Senior Vice President and is manager of Civil and Environmental Engineering, will now succeed Robert by also becoming our new manager of Architecture.

William E. Rushing Jr., P.E., FACI