

The Future Port Of Long Beach: Busier And Better

■ By MICHAEL GOUGIS

From a distance – say, a satellite-mounted camera – the Port of Long Beach of 2020 will probably look a lot like the port of a decade earlier. The old method of changing a port – dredging or filling in water to create land for new terminals – is all but gone.

But when you look more closely at the Port of Long Beach a decade from now, it will look different in less noticeable but even more significant ways, port officials say. You will see more cargo moving more rapidly and more cost-effectively – all with even less impact on the surrounding environment.

“I think you’re going to see smarter terminals, meaning terminals with more technology in them, probably densifying the utilization of those terminals,” says Executive Director Richard Steinke. “Higher stacks, longer hours, using that asset more intensely than it’s been used in the past. I think you’re going to see new and innovative ways of moving cargo.”

Overall, the port anticipates approximately \$4 billion in infrastructure and capital projects during the next decade. Most of that will move the port toward moving more cargo on the same amount of property. Doing more with the same footprint will be necessary because doing more with more is no longer an option, says Art Wong, assistant director of communications for the port.



Al Moro, P.E., is chief harbor engineer and assistant managing director for the Port of Long Beach.

One of the key external changes shaping the future direction of port development is the rebound of the nation’s rail system. It was not that long ago that the rail network was not as cost-effective as it is today, and that long-haul trucking appeared to be the wave of the future.

“Until the mid-1980s, the rail network wasn’t as sophisticated as it is today,” Wong says. “Trains didn’t move this cargo all across the nation like they do now. At one point, it did not appear that the railroads would survive at all. And when the trucking industry was deregulated . . .”

A stunningly simple change – stacking cargo containers two-high on rail cars – made rail shipping cost-effective again. And the process of adapting to rail-based long-haul systems will take time. “It has

taken a generation before we have big, major rail yards at all of the facilities,” Wong says.

Another external transport change that will continue to affect the port’s future development is the size of cargo ships. Today, the largest ships calling on the port carry about 8,000 TEUs (a TEU is a 20-foot container equivalent unit, or a box 20’x8’x8’). But ships that can carry 13,000 TEUs are already in the water.

Designing a port that can handle these huge ships – and the 18,000 TEU freighters already under discussion – means taking into account the physical needs of these massive vessels. Why do ships keep getting larger? “The shippers are seeing economies of scale in creating larger and larger ships. That’s the trend. So having the water deep enough, the channels deep enough and the turning bays large enough – all of that is critical,” says Al

Moro, P.E., the port’s chief harbor engineer and assistant managing director. One study suggested that shipping a container on an 18,000 TEU ship would cost 30 percent less than shipping it on a 4,000 TEU vessel.

Some of the changes that such mega-vessels will demand will be subtle, but critical. You can’t make the vessels draw much more water, or they will be limited in the number of ports upon which they can call. So they will be wider and longer. That means a number of changes to get them loaded and unloaded.

“These are large vessels of steel and loaded with cargo. They put a lot of stresses on the wharfs,” Moro says. “That means longer cranes, more strain on axles, more strain on the actual dock structure, more power demands – it starts a chain effect. It starts to domino.”

And beyond that, the ships will get taller. That means that if the port wants to attract these vessels, they have to be able to slip under the bridges that connect the ports – something the largest ships will



The site of the 342-acre Middle Harbor redevelopment project, shown here with the boundary in yellow of the future terminal site. The project combines current Piers D, E and F. (March 2011 photograph by the Business Journal’s Thomas McConville)

“Under the environmental guidelines in California, it’s not feasible for us to build a lot more land,” Wong says. “For us to build more land we have to offset that by creating coastal wetlands – and there are only so many more acres we’re going to be able to build. Our footprint, relatively, is what it is going to be evermore. That said, the way we’re going to move more cargo through the port is [through] newer technologies, more modern operating systems.”

One of the few remaining physical revisions of the port’s footprint will be the Middle Harbor project, which will involve merging two of the port’s older, smaller terminals, Wong says.

“The terminals were designed for much smaller vessels. We’re going to fill in some waterways that we’re no longer using,” Wong says. By doing so, the port can install dockside rail capacity, modern cranes and increase the cargo-handling capacity of that portion of the port by two to three times.

not be able to do. So the port plans to replace the Gerald Desmond bridge, the five-lane structure that connects Long Beach to its sister port in Los Angeles.

“We’re working with Caltrans on the final specs so we can get out to bid on it,” Wong says. “We will be seeking design proposals this summer, and hopefully start on construction by the end of the year. There are some pre-construction activities we hope to start on before the end of the year – moving utilities, that sort of thing. But the funding is in place.”

The new bridge, with a price tag of \$950 million, is expected to provide three lanes in each direction, plus a safety shoulder on each side. Right now, a disabled vehicle can shut the bridge down entirely, disrupting not only traffic but the flow of cargo. And instead of the current 165 feet of clearance, the new bridge will soar 200 feet into the air, allowing the largest ships on the drawing board to clear.

Replacing the bridge is just part of the plan to stay ahead of the future needs of the port, Wong says.

“The current structure was never designed to handle the kinds of volumes we’re seeing now,” Wong says. “Roughly 15 percent of the nation’s trade goes across that bridge. Given the stakes here, to keep the two ports competitive, we need to move ahead with a bridge for the future.”

It’s one more way that the port leadership is working to ensure that the port remains the destination of choice for shippers in the future.

“The way we in engineering and design and construction look at this . . . it’s making sure that the Port of Long Beach will be the port of preference, or be able to accommodate anything this industry develops in the future,” Moro says. “Engineering had better provide the infrastructure to attract that business! We have to keep our finger on the pulse on where is this industry heading.” ■



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