



Larry Nye (left) and Ashebir Jacob are project managers at the San Pedro Bay ports for Moffatt & Nichol, an engineering company based in Long Beach. The company is involved in the Middle Harbor Redevelopment Project at the Port of Long Beach. (Photograph by the Business Journal's Larry Duncan)

Infrastructure Investment Impossible Without Engineers

■ By **BRANDON RICHARDSON**
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Infrastructure investment has been a hot topic in recent months, with talks of an enormous \$1 trillion outlay at the federal level. Here in Long Beach, the city is gearing up for infrastructure improvements city-wide, with numerous street, park and transportation projects on the horizon. Some projects, such as the construction of the new Gerald Desmond Bridge, are already well underway.

When discussing the role of engineers in infrastructure, people tend to imagine structural engineers designing projects such as bridges or buildings; however, engineers are involved in every aspect, all the way down to determining how to best reroute traffic when repaving a street.

“There are going to be engineers involved throughout the whole process,” Eric Nichol, president and CEO of Moffatt & Nichol, a global infrastructure advisory firm based in Long Beach, said. “A lot of people don’t understand that contractors have a lot of engineers on staff. There are engineers throughout our lives daily and throughout projects as well.”

Nichol said infrastructure investment improves commerce and quality of life, creates jobs and sometimes is needed simply

for compliance of new regulations. He explained that the importance of infrastructure cannot and should not be understated, and he used a comparison of Japan and Brazil to illustrate his point. Considering the size difference, Brazil has vastly more natural resources than Japan. However, Nichol said Japan has three times the gross domestic product, and the main reason is its terrific infrastructure.

When discussing what type of infrastructure is the most important to maintain, Nichol pointed out that often whatever is talked about the most is fixed first – unless something is in danger of imminent failure. He said sometimes this can just be potholes because they affect commuters daily.

“It just depends on what the priorities are. Are those priorities going to be jobs? Are they going to be improving the business? Improving the quality of life?” Nichol said. “They are adding four lanes to the 405 [Freeway] so people don’t have to sit in traffic all the time, and they are patching potholes in the city now with the new Measure A funding. Sometimes that flat tire is going to be more important to an individual than a beautiful bridge on the skyline.”

Prior to Measure A and Measure M being passed last year, Nichol said he was concerned certain infrastructure needs were not being met in Long Beach, which would re-

sult in much more costly repairs in the future. However, with those funds going to infrastructure improvements, Nichol said he does not perceive any of Long Beach’s infrastructures as being neglected.

When talking about working on infrastructure projects, Mike Brascia, owner of Brascia Builders Inc., said engineers’ designs are vital to ensure his company avoids delays by having all the information and direction required.

“Without design, you really don’t have a project. We aren’t engineers as builders. We get paid to be the installers,” Brascia said. “With their expertise, engineers and their training and their work experience, that’s how projects are designed and made to be successful.”

Jim Walsh, president and CEO of SCS Engineers, also based in Long Beach, said his company plays the role of an environmental consultant on infrastructure projects to ensure they meet environmental needs, as well as economic ones.

“Compatibility and sustainability are the aspects that our firm contributes to an infrastructure project in any one of the areas, including roads, highways, bridges and ports,” Walsh said. “We’ve built a fairly strong infrastructure system in this country. But it’s been poorly maintained, and it needs a major investment coming up.

Whether it will get it or not, if they can find the money for it, who knows.”

Walsh said the American Society of Civil Engineers releases report cards to grade infrastructure nationwide, as well as by state or region. According to the 2012 infrastructure report card for California, aviation went from a C- in 2006 to a C+ in 2012, levees and flood control from an F to a D, ports from a C+ to a B-, solid waste remained a solid B, transportation from a D+ to a C-, urban runoff remained a D+, wastewater remained a C+, and water decreased from a C+ to a C. The report card showed California's overall infrastructure grade-point average increased from a C- to a C and annual investment needs increased from \$37 billion to \$65 billion.

When talking about Long Beach's infrastructure, Walsh said, “I think roads, highways and storm water management are areas of vital importance. I think that infrastructure needs continued and expanded investment.

“I think roads and highways and bridges have been kind of starved of funding because it's expensive to maintain and expand those kinds of facilities,” Walsh continued. “But I think you're seeing, with congestion and deterioration of those facilities, renewed public interest in that.”

Walsh explained that it is “neat” that every bond measure or tax increase related to infrastructure improvements that comes to a citywide vote passes. He said the public is clearly impacted by failures or falling behind on infrastructure upkeep, which keeps them motivated to invest in it.

As technology advances, infrastructure is being changed and upgraded to keep up, according to Kent Peterson, vice president

and chief engineer of P2S Engineering Inc. He explained that incorporating smart technology in infrastructure has pros and cons. The clear benefit is being able to monitor, and sometimes control, infrastructure remotely without being on-site, through smart and wireless technologies.

“The bad part of it is, like with everything today, the more we use technology, the more it's out there for someone to hack,” Peterson said. “We have kind of the Achilles' heel of infrastructure, and I think that it's something we have to live with. It's a real-life situation.”

With regards to Long Beach infrastructure needs, Peterson said he often thinks about past failures in the electrical grid downtown. July 2015 saw more than one underground explosion and fire wreak havoc on the electrical grid and leave thousands without power for days. With countless businesses and residents, a city cannot afford those types of failures, as they can put hundreds of thousands of people in danger and cost millions of dollars in repairs and losses.

Peterson explained that most projects are done with a citywide infrastructure master plan. Engineers play a key role in creating these master plans and prioritizing what is most critical. In this way, a timeline can be formed for when certain aspects of infrastructure will need maintenance or replacement, barring a malfunction or other unforeseen complication.

“They're going to look at where is the best benefit for the cost you're putting in there,” Nichol said. “The role of the engineer is going to take the politics out of it and look at the real need of the community.” ■



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