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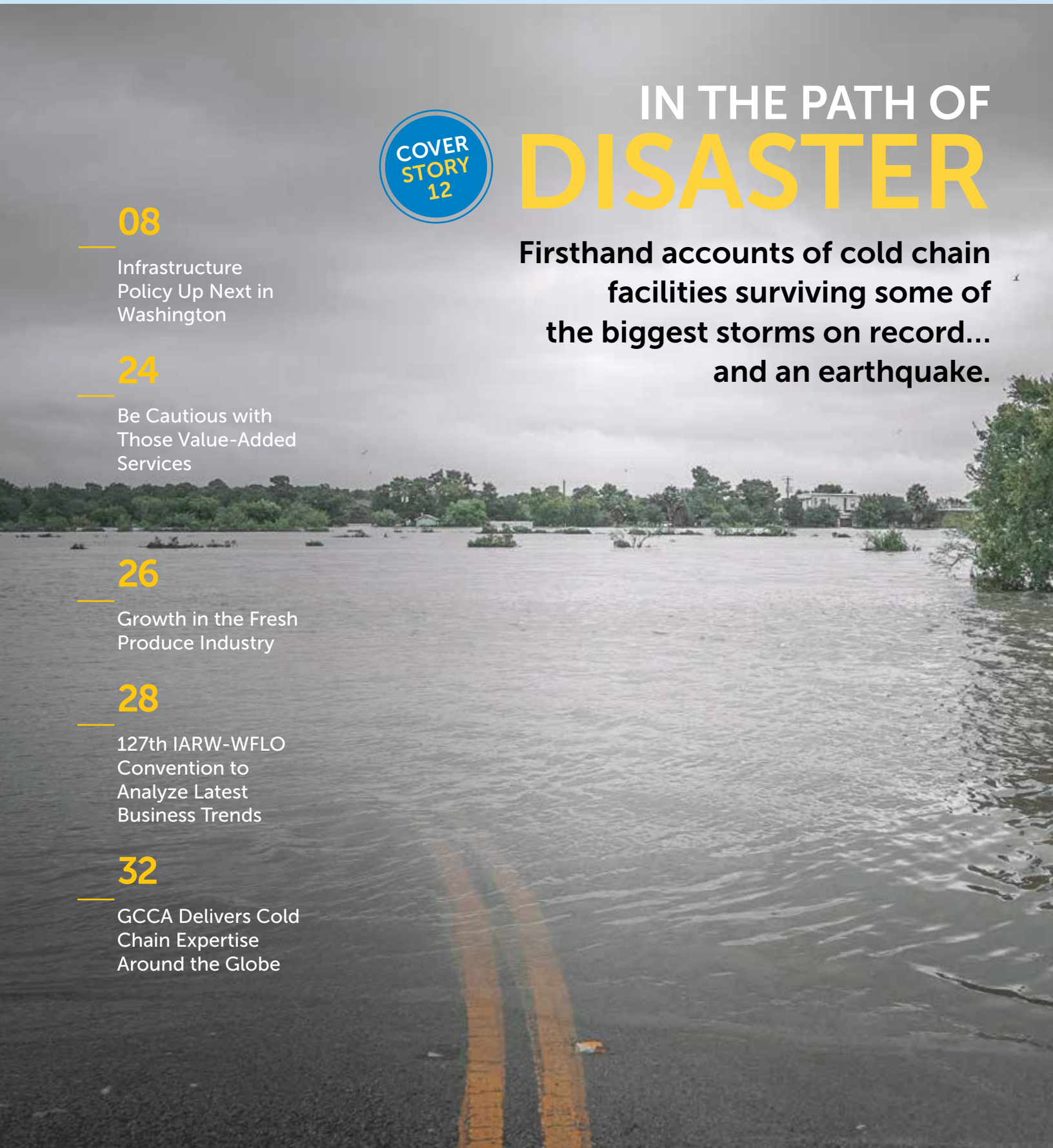
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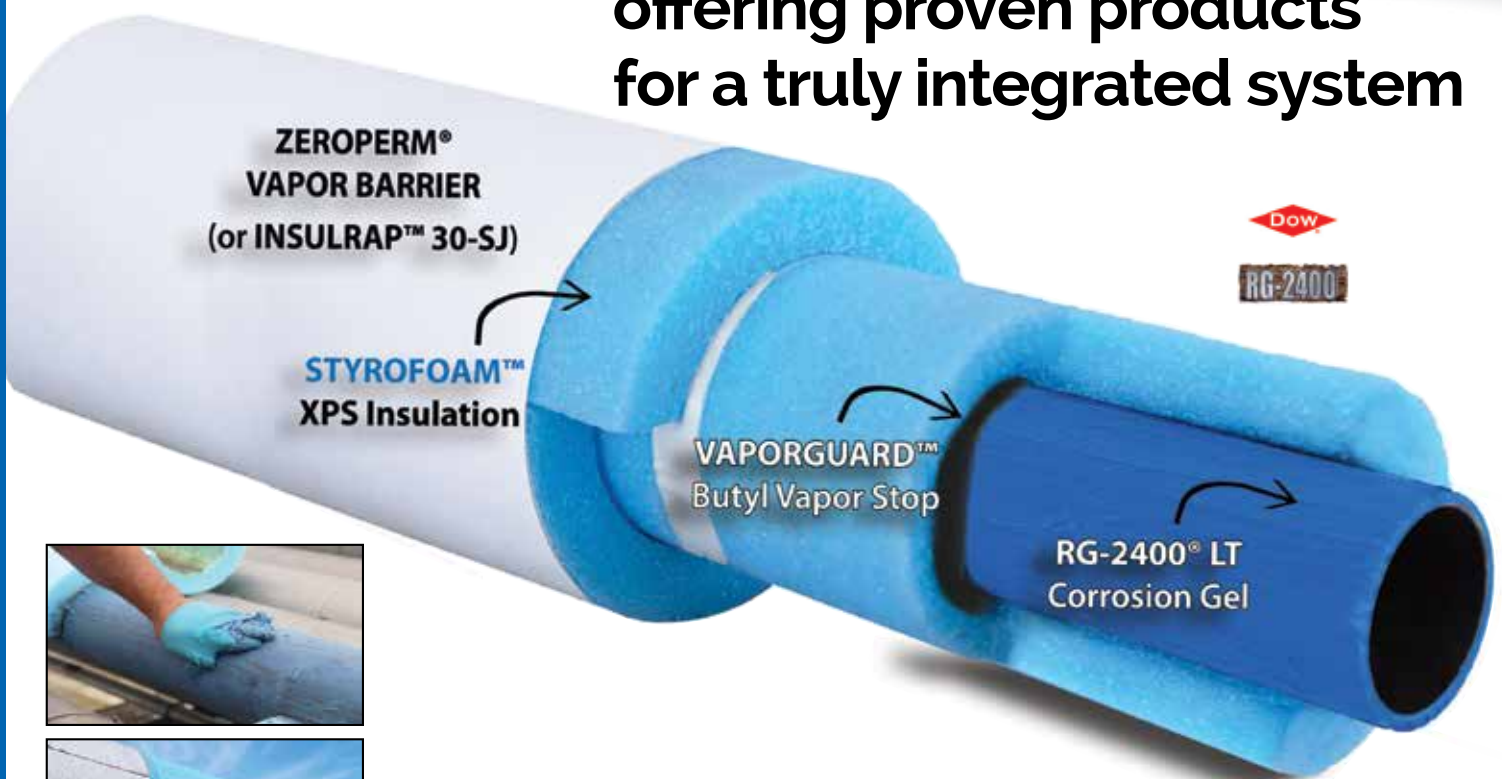
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IARW Builds on Global Presence, Research in 2017-18

THE PAST YEAR HAS BEEN ONE OF IMPORTANT growth and accomplishments for IARW. In recent issues of COLD

FACTS, we've written about many of these endeavors. Together, they comprise programs that have advanced the four pillars of the IARW Strategic Plan, including growing the industry, leading the cold chain, driving supply chain profitability, and developing talent.

We've grown and led the industry by conducting research, building global relationships, and creating forums that foster efforts to improve cold chain operations among IARW members so they can offer the most comprehensive, high-quality services to their customers.

We learned a great deal from our ongoing research with food processors and their retailer customers to better understand their priorities and what their market looks like as they interact with consumers. As essential business partners for them, we are now able to better serve their evolving needs.

Internationally, we partnered with the Refrigerated Warehouse and Transport Association of Australia to host the 2017 Global Cold Chain Summit, a new event that creates new opportunities for global trade and helps share knowledge across the industry.

On the other side of the globe, we created a closer management relationship with ABIAF, the cold chain association in Brazil, which bolsters our growing presence in Latin America and supports the annual Latin American Cold Chain Congress.

We also demonstrated leadership on some green-related initiatives. Food waste is a concern everywhere, and GCCA and IARW held a Food Waste Roundtable that convened many stakeholders – including trade associations representing cold chain customers – to discuss potential initiatives in this area. We formed a task force that is exploring this further.

Energy – one of the highest cost areas for PRWs and another environmentally sensi-

tive issue – is always a concern to members. IARW piloted a new Energy Excellence Program in 2017 and is planning to launch this in 2018.

To continue our efforts to develop talent, IARW played a key role in launching the GCCA NextGen Future Leader Program in Latin America. A representative from that region will now compete with candidates from other regions of the world for top honors at the annual Global Cold Chain Expo, which serves not only the cold chain industry but provides an opportunity for our industry to interact with food processor customers.

These efforts – especially the customer research programs – have helped IARW members hone their businesses to add value and improve profitability. As we look to the coming year, IARW remains committed to our strategic direction and continuing to build programs to benefit members and the entire industry. ☺



David O'Brien

DAVID O'BRIEN
IARW CHAIR

COLDFACTS

COLD FACTS magazine is published every other month by the **Global Cold Chain Alliance (GCCA)**, an organization that unites partners to be innovative leaders in the temperature-controlled products industry. The GCCA Core Partners are:

The **International Association of Refrigerated Warehouses (IARW)**, which promotes excellence in the global temperature-controlled warehouse and logistics industry.

The **World Food Logistics Organization (WFLO)**, which delivers education and research to the industry and empowers economic development by strengthening the global cold chain.

The **International Refrigerated Transportation Association (IRTA)**, which cultivates, fosters and develops commercial and trade relations between all those engaged in the transportation and logistics of temperature-controlled commodities.

The **International Association for Cold Storage Construction (IACSC)**, which provides a forum for innovative ideas, promotes standards of practice, and sponsors professional education programs for the cold storage construction industry.

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INFRASTRUCTURE

POLICY UP NEXT IN WASHINGTON

Improved infrastructure is vital to the future of the cold chain.

By Lowell Randel

With the ink barely dry on major tax reform legislation passed at the end of 2017, Congress and the Trump Administration are expected to turn to infrastructure policy early in 2018.

The need for infrastructure investments was highlighted by President Trump on the campaign trail, but the issue took a backseat to healthcare and taxes in 2017. Infrastructure now appears poised to be at the head of the line of policy issues for Congress and the Administration to tackle in 2018. Modernizing America's infrastructure could pay dividends for the cold chain with safer and more efficient movement across the supply chain.

Infrastructure has the potential for bipartisan appeal, which could be important given the

slim Republican majority in the Senate. Republicans were able to pass tax reform with only 51 votes because they utilized the rules under budget reconciliation that avoid the normal 60 vote requirement to beat a filibuster. Reconciliation is only available when addressing long-term spending and entitlement programs. It does not appear likely that reconciliation will be used for infrastructure. That means that Republicans will need to find at least nine Senate Democrats who will be willing to support the package. With 2018 being a critical

Congressional election year with the balance of power at stake, Republicans will be eager for another win to tout on the campaign trail.

During his State of the Union, President Trump highlighted the elements of the Administration's infrastructure plan, with a more detailed proposal anticipated in the weeks following. Based on current indications, the Trump Administration's proposal will likely stress the importance of leveraging state, local, and private funds to achieve over \$1 trillion in overall spending to shore up critical infrastructure such as highways, bridges and waterworks. The Administration has suggested that about \$200 billion would come from federal spending and the remainder would come from other sources.

The \$200 billion in federal investments would be broken into several categories — \$100 billion would likely go to support cost-sharing



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projects where local governments would receive grants to leverage other funding to complete projects. The Administration hopes that this approach will go towards reducing the federal investment percentage of such projects, which can be as high as 80 percent currently.

The Administration is also targeting efforts to support Rural America. Approximately \$50 billion would go to boost rural infrastructure including traditional projects like roads, as well as broadband access, which has become a high priority for the United States Department of Agriculture. The focus on rural investments would not only meet important needs, but also signal an acknowledgement of the key role that rural voters played in electing the president.

The plan will also likely call for \$25 billion to support a new category of projects called “American Spirit” projects. These funds would target “transformative” projects. Examples could include projects like the Gateway Tunnel, which would connect New York and New Jersey. The Gateway Tunnel is a high priority for Senate Minority Leader Schumer, so such an investment could lessen his resistance towards an infrastructure package. The remaining \$25 million is expected to support

current federal loan programs that target projects leveraging private investments.

In addition to funding, the Administration is also working to reduce the regulatory burdens on implementing infrastructure projects. In the past, obtaining permits for infrastructure projects has been a long and painstaking process. The Administration is advancing regulatory reforms designed to streamline the permitting process and make it easier to start, and complete, infrastructure projects.

With the increased emphasis on infrastructure spending in Washington, industry groups and coalitions are coming together to help shape policy proposals. GCCA is a member of the U.S. Chamber of Commerce and the National Association of Manufacturers, both of which are actively working on infrastructure policies.

In January 2018, the U.S. Chamber’s President Tom Donohue outlined a four-point plan for infrastructure modernization and investment. Key provisions include:

- **Increasing the federal fuel user fee (“gas tax”) by 25 cents** – The first point

in the Chamber’s plan is to increase the gas tax. The Chamber suggests that a 25-cent increase would generate \$394 billion over the next 10 years. While acknowledging that raising the gas tax will cost the average motorist about \$9 per month, the Chamber cites that aging infrastructure currently costs motorists about \$40 per month in increased maintenance and operating costs. For some policymakers, the gas tax has been a sacred cow, but a growing number of people are advocating an increase as an effective way to pay for infrastructure spending.

- **Implementing a multi-faceted approach for leveraging more public and private resources** – Similar to the Trump Administration, the Chamber is advocating policies that would increase the leverage of non-federal and private resources. The Chamber’s plan would make it easier and more attractive for the private sector to participate in infrastructure projects by strengthening and expanding federal loan programs such as Transportation Infrastructure



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Finance and Innovation Act (TIFIA) program and Railroad Rehabilitation & Improvement Financing (RRIF) loans, Private Activity Bonds, grants, and other mechanisms to facilitate public-private partnerships.

- **Streamlining the permitting process at the federal, state, and local level** – The Chamber’s plan highlights the importance of reforming the permitting process and calls for all federal infrastructure approvals to be completed within two years. The two-year timeline should also apply to state and local projects receiving federal funds. Without streamlining the process, new investments will not be efficiently utilized.
- **Expanding the American workforce through work-based learning and immigration reform** – In addition to investments and regulatory reforms, the Chamber is advocating policies to expand the workforce. Without a skilled workforce, delivering on infrastructure projects will be very difficult. The Chamber cites apprenticeships, technical education programs, and immigration reform as strategies to expand the workforce.

The National Association of Manufacturers (NAM) has also developed an infrastructure blueprint called “Building to Win.” The blueprint details a series of policies recommended for inclusion in an infrastructure package.

Specific policies include:

- Addressing imminent challenges by repairing and upgrading America’s bridges and tunnels.
- Relieving highway bottlenecks and repairing roadway systems.
- Spending the \$9 billion balance in the Harbor Maintenance Trust Fund to deepen ports and harbors.
- Taking an expedited approach to upgrading aging locks and dams.
- Eliminating the maintenance backlog and expanding the reach of transit and passenger rail into more communities.
- Developing a plan to accelerate the implementation of NextGen air traffic management technology and upgrading runways and airports to world-class standards.
- Incentivizing continued record levels of private capital reinvestment into railroad infrastructure and enhancing intermodal facilities and grade crossings.
- Promoting new pipeline investments and continuing to update existing energy

infrastructure.

- Upgrading and modernizing drinking and wastewater infrastructure.
- Removing obstacles to expanded development of broadband infrastructure.
- Enhancing and modernizing America’s infrastructure is important to the future success of the cold chain. Safe and efficient roads, bridges, ports, and other critical infrastructure helps enable the movement of product across the supply chain.

As the process moves forward, GCCA will continue to work closely with the Trump Administration, Congress and industry partners such as the U.S. Chamber and NAM to advance infrastructure policies that support the cold chain industry. @

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IN THE PATH OF DISASTER

Firsthand accounts of cold chain facilities surviving some of the biggest storms on record...and an earthquake.

An unprecedented series of natural disasters, some cataclysmic, created a nightmare for many living in the Americas in the autumn of 2017.

The catastrophic hurricanes that devastated Puerto Rico and caused historic flooding in Texas and Florida also triggered the largest evacuation of storm refugees in North America as tens of millions of people fled the storms. And in the middle of this horrific hurricane season, two massive earthquakes hit Mexico.

In the path of the storms, and near the center of the quake, were dozens of refrigerated warehouses, distribution centers, and logistics hubs. But despite the devastation around them, because of the best practices in disaster preparedness put into play, combined in some cases with a lot of luck, the people, facilities, and assets associated with the PRWs and other cold chain facilities all came through relatively unscathed.

Hurricane Harvey

Hurricane Harvey is tied with Hurricane Katrina as the costliest tropical cyclone on record, inflicting at least \$125 billion in damage, primarily from catastrophic rainfall-triggered flooding in the greater Houston, Texas, metropolitan area.

Over a four-day period beginning on August 28, 2017, the system slowly meandered over eastern Texas and adjacent waters, causing unprecedented flooding with peak accumulations of 60.58 inches.

Dan Mims, President of Mims Warehouse Solutions in Houston, says his facility, which consists of 26,000 square feet of warehouse and 12,500 square feet of processing space, was an island surrounded by water after days of unabated torrential rain.

"The best way to beat a flood is to get lucky on your elevation and where you build," Mims contends. "Since my father built this place in 1961, we've had two major floods and both times we were one of the high spots."

Mims says that as he's been through flooding before, he knew what to expect. "I knew we would be dry, we never lost electricity, but we were just surrounded by flood waters so we couldn't get to the warehouse for four days and we could not get trucks out."

"I did have a customer's crew there the

whole time, positioned ahead of the storm," explains Mims. "This customer had to provide food service to the temporary camps used by out-of-town utility workers deployed to help in the emergency, and using vehicles with a high-enough profile, they were able to make deliveries through the flood waters."

But Mims also had to guarantee that the customer's crew had electricity throughout the storm so evaluating his risk and level of uncertainty, he decided to rent a back-up generator in advance of the storm. "We never ended up using that generator, which means insurance didn't cover the rental and it cost me \$20,000 out of pocket, but not having the back-up was never an option, we couldn't take the risk."

"It's also important that we kept our customers in the loop, maybe too much in the loop," Mims quips. "In any natural disaster, you've got to give people timely status reports on the state of the warehouse and their product because there's nothing more frustrating than a lack of information."

"In hindsight, we were fortunate we didn't get water in the facility and we didn't lose power, but if we had lost power for four or five days, we would have run out of fuel for the generator."

Looking forward, Mims says his company is considering acquiring a permanent generator that runs on natural gas because, "we've never not had access to natural gas."

"Waiting for a hurricane is like watching grass grow," suggests Don Durm, Vice President of Customer Solutions for PLM, a fleet management company supporting nearly 10,000 refrigerated trailers. "We start following the weather maps five to six days out and calling our customers to anticipate their needs. It's a very controlled and managed process we go through."

Durm says multiple relief organizations like FEMA and the Red Cross, as well as retailers and food distributors, depend on PLM as a resource when readying for a natural disaster because they have such a large on-demand refrigerated fleet.

But Durm acknowledges that Hurricane Harvey was different. "I don't believe people took this storm particularly seriously ahead of time, because the projections were that it would blow through to Dallas, Texas."

The PLM staff in Houston could not get out of their neighborhoods for four days because



A view of a Florida street in the wake of Hurricane Irma. (Photo courtesy of PLM.)

of flooding so PLM switched gears and started shuttling in trailers from Dallas. “One of the challenges we have with refrigerated trailers is if the water level gets to the wheel wells, you can have major trouble and if the water gets into the engine intake, you can damage the trailer permanently,” he notes.

To help their reefer trailers avoid the worst of the flood and protect their customers’ loads, PLM invested in the advanced technology of Coldlink’s GPS tracking system. “This allows us to overlay flood maps alongside the GPS locations of all our trailers and identify assets that were in the flood zone and use our technological diagnostics to ensure our customers’ refrigeration equipment functions properly during and after the disaster,” Durm explains.

Hurricane Irma

An extremely powerful and catastrophic Cape Verde-type hurricane, Irma was one of the strongest storms ever observed in the Atlantic in terms of maximum sustained winds. On September 10, 2017, Irma weakened to Category 3 status prior to landfall in

Florida after being a Category 5 hurricane for over a week.

Like many refrigerated warehouse operators in Florida, Kevin Margeson, President of Commercial Warehousing, is very experienced in dealing with hurricanes and does a lot of business with big beverage companies that put up inventory in preparation for the giant storms, staging thousands of truckloads of water around the state by June of every year.

“We have a very formal hurricane plan as it relates to cold storage,” Margeson explains. “Our two refrigerated facilities that total 5mm cubic feet are kept at 35 degrees and have onsite generators always available when and if we lose power. Our three freezers that total 12mm cubic feet don’t have onsite generators, but we drop their temperature as low as possible and shut the doors until the power comes back on, and typically we’re fine.”

But Margeson said this storm became so big and its course so unpredictable that at the last moment they rented two generators, using a non-refundable deposit that starts at \$25,000. “Had Harvey not hit Houston just a couple of weeks earlier, it would have been much

easier to find a generator. But as it was, Harvey had created such a huge spike in demand for generators in one region of the country, it was extraordinarily difficult to find them but we did, and were able to hook them up in advance of the storm. It was very lucky and very expensive.”

The power went out at all of Margeson’s sites early in the storm and stayed out for 72 hours. He started running the generators within 24 hours of the outage.

Margeson notes that although he was obviously focused on getting up and running as quickly as possible after the storm to support his customers and to create financial incentive for his co-workers to return to work, most of his customers were not shipping because of storm damage.

“I would say the key lesson learned from this storm, and one which will likely result in modifications to our preparedness plan, is that we won’t rent generators in the future,” Margeson reasons. “I question whether we really need those additional generators when local, state, and federal authorities position thousands of utility trucks in advance of



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ALAN's web portal serves as a clearinghouse for essential supplies, goods, and services during times of crisis. Relief organizations post urgent needs on the portal; these might include requests for local warehouse space; transportation; material handling equipment; advice on how to best move products into position; or other goods and services. Network members view the requests and respond to those that match their capabilities.

For more information, visit www.alanaid.org.

the storm and are so efficient at restoring electricity. If we can get electricity restored in three days, and we don't have to open the freezer doors as a result of light volume, we'll be able to maintain the temperature."

"We were extremely lucky because we only lost a sign off one building and although we did not have a back-up generator, we were able to maintain temperature and didn't lose any product and this was because we followed our plan," notes Robert Fay, President, Florida Freezer. "That's not to say we didn't take a financial hit — we were closed for the five days when we didn't have power, as were many of our customers."

Fay points out that with this particular storm, because it was so enormous and its path so unpredictable, tens of millions of people evacuated first from the Florida Keys and southernmost points up the eastern coast and then were re-directed west across the state, only to be redirected north. "The evacuees consumed all the food, fuel and water along the way until there was nothing left," Faye recalls. "Even if you had a generator,



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you would have needed a week's worth of gas on-hand as the gas stations were manned by highway patrol officers who were making fuel available only to first responders."

Elements of the Florida Freezer hurricane preparedness plan include bringing the freezer temperatures down to -20 F and operating at that temperature as long as possible to build up extra thermal storage. In addition, coolers are brought down to 28 F. As the enemy of cold is air, doors are only opened to take temperature readings and to check for leaks. "A lesson learned from previous hurricanes is we make our own ice packs, giant popsicles if you will, by freezing 55 gallon drums of water and putting those in the cooler to add thermal mass – like an ice pack in a lunch box," Fay says.

Outside, any loose debris or anything that could become airborne is removed and the company's trucks are backed up to the dock doors to both protect the doors, and prevent the trucks from flipping over.

Another element of the preparedness plan is to take out quantities of cash in advance for refueling vehicles and other needs. "If you think you have enough cash, take out three

times more and then distribute it to your emergency response teams at your facilities," Fay advises. "Technology is great until there's no power at which point you can't use debit or credit cards, and then once the power goes back on, the ATM machines are emptied of cash almost immediately."

"The capital investments that we've made to our facility that give us the ability to maintain temperatures, such as our new, light-reflective, mechanically fastened TPO (Thermoplastic Polyolefin) roof and new freezer doors, paid off," Fay notes. "But everything should be in tiptop shape to begin with – that's just a best jpractice."

Central Mexico Earthquake

The Central Mexico earthquake that struck on September 19, 2017, registered a magnitude of 7.1 and caused damage in the Greater Mexico City area, including the collapse of more than 40 buildings and the death of 228 in the city. It was the second quake to hit the country in less than two weeks.

"The reason we chose to build where we did, 20 miles from downtown Mexico City,

is because unlike the city that is built on a dry lake bed, we have rock underneath us and are much less at risk," explains Eduardo Martinez Trigueros, the Director of Frio Espacio Control. "I've had the opportunity to see the different costs of insurance policies around the country based on the risks related to earthquake damage and I would never take the chance of locating in a high-risk area."

That caution paid off as Trigueros' facility has survived three earthquakes in the past six years with minimal damage. "We have cameras inside the warehouse and could see how the racks were swaying, the videos were impressive, but only a few boxes fell over."

In addition to the sensible site location, Trigueros' facility is built by contractors using materials that meet specifications required by the Mexican government and with third party supervision by engineers. And as power outages for two to three days are common with earthquakes, the facility has electrical backup for 16 to 24 hours and a contract with a company that allows them to lease power for up to a couple weeks.

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As part of their emergency plan, evacuation drills are conducted at least once a year and local emergency responders assist in training new personnel. "Because of the nature of our work, we have a lot of rotation with our workers so having the local fire department drill with us is very helpful and it also helps the first responders familiarize themselves with our building," Trigueros notes.

On the morning of the earthquake, the evacuation went according to plan and after it was over, small teams of designated employees went inside to check the facility and an engineer conducted a structural check. Three hours after the earthquake struck, Trigueros' teams were back at work. "We had no idea how bad the earthquake was until we saw the coverage on television and on the Internet."

After things settled down, Trigueros' managers and the heads of the different safety teams met to evaluate their safety performance. "Everything went well but it was a reminder that best practices means never forgetting drills and always being prepared. We can't relax because we're in earthquake

country, but every warehouse should be prepared for the unexpected."

Hurricane Maria

Hurricane Maria is regarded as the worst natural disaster on record in Puerto Rico. Maria had weakened to a high-end Category 4 hurricane by the time it struck Puerto Rico on September 20, 2017. The island suffered catastrophic damage, including destruction of its previously compromised electrical grid. For weeks in Maria's wake, most of the island's population suffered from flooding and lack of resources, compounded by the slow relief process.

John Williams, President of Sterling Merchandising, operates a highly specialized facility that is 100 percent dedicated to direct-store delivery of ice cream. Family-owned and operated since 1993, Sterling sits on just over three acres of land in Puerto Rico. And incredibly, the facility came through the storm intact, other than the loss of gutters and downspouts, impact from flying debris and some damage to trucks.

"Our basic plan to prepare for a hurricane

is to place computer CPUs on the desks in plastic bags, eliminate any loose items that could be flying debris, and strap all condensing units down with prepared eye bolts and cable."

However, what Williams really attributes the facility's safe passage through the storm to is building above Dade County Standards, which he says are some of the most stringent. "Our structural engineer added columns to each truss which helps with uplift. The Metlspan screw schedule is first-class and very important, and we also used 22 gauge on both sides of the panel. We used a standing seam IMP roof versus the standard deck and build-up roof and I think that should be considered the gold standard. We didn't have even the smallest leak and most of the membrane roofs on the island failed catastrophically."

Williams says they resumed business within a week, but most of their customers did not want product because they were running on generator power.

"We were lucky in the sense that our primary is a 38K line and those came back



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on line first,” Williams acknowledges. “However, we did run on 100 percent generator for about 45 days. We ordered a second backup generator within two weeks because auxiliary generators are not designed to run as primary or continuous power. We were very concerned our generator could quit and we would lose \$1.5 million in inventory.”

Williams says 70 percent of the company’s employees could not get out of their neigh-

borhoods because of washed away roads and other storm damage. In addition, communication was non-existent and Williams says it was difficult to assess damage until everyone reported to work about eight to nine days after the storm.

“The biggest obstacles immediately after the storm were security; roads made inaccessible by debris, fallen power lines and trees; and diesel fuel was scarce or not available,”

Williams notes. “We tried to go out within two weeks with double and triple the personnel in each truck but our teams were very nervous about their safety so we decided to take another week before going back out. At that point, we went out in cars to canvas our customers and see who was up and running and wanted service. By the fourth week after the storm, we were selling at about 20 percent capacity.”

Looking back on lessons learned, Williams says that it was a mistake to not leave a skeleton staff onsite. “Someone has to stay to shut off power before the wind gets higher than 30 knots and that person has to be in charge of inspection before firing up backup power to ensure there are no potential issues with shorts or fire.”

Williams also suggests that for a Category 4 or 5 storm, all trucks should be emptied into the main facility and all non-essential power shut down hours before the storm makes landfall.

“Facilities like ours should have a second generator that is prime or continuous rated, sized to run at no more than 60 or 70 percent of the critical load to keep the warehouse at temperature. In our case, a 500kw generator is a good size for standby power requirements, but half that is better for the prime/continuous emergency generator.” Williams says that’s because access to diesel was a huge concern and not because of shortages, but because the logistics did not exist to transport the diesel to where it was needed.

“We now own a generator that is sufficient to run the equipment necessary to keep our freezer at -15F, and we have fuel storage for more than 30 days versus prior to the storm, when we only had fuel for three days.”

Finally, because there was a shortage of filters and 15W40 oil across the island almost immediately, Williams says in the future, their generators will have 60 to 90 days of fuel filters, oil filters, air filters at 24/7 run times, and spare belts on hand as well. ☯

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Logistics companies are often eager to provide value-added services such as transportation, but they need to make sure they have the proper legal contracts to cover these additional services.

BE CAUTIOUS WITH THOSE VALUE-ADDED SERVICES

Do your terms and conditions cover all your services?

By Nathaniel G. Saylor

At their core, logistics companies are problem solvers. If a customer has a problem, logistics companies will go to great lengths to understand it and offer solutions. As such, it is quite common for logistics companies to expand the scope of value-added services provided to their customers, and to do so in a manner that is as “frictionless” as possible from the customer’s perspective.

One common example is a warehouse or cross-dock operator is asked by their customer to begin arranging inbound or outbound transportation services of customer goods to and from the warehouse facility. But, in the push to win business and to do

so in a manner that avoids friction with the customer, the logistics provider might well fail to take the most important step in protecting its interests: negotiating terms and conditions with the customer that address the expanded service offering.

This is often due to a perception that asking the customer to consider new contract terms will be seen as a roadblock to actually winning the business, or to a mistaken belief that terms in place currently with the customer actually apply to the services. More than once, we have been approached by warehousing companies that either assume their warehouse receipt covers their arrangement of transportation or simply acknowledge that they have no terms of service in place with their customers. Each situation is riddled with risk.

The Uniform Commercial Code (UCC) provides a substantial framework for the relationship between a warehouse provider and their depositor, although terms of service can be freely negotiated by the parties. Those terms

generally do not contemplate the arrangement of transportation to and from a warehouse or might expressly disclaim arrangement of transportation services. Thus, a warehouse provider arranging transportation and assuming that the transportation is governed by a warehouse receipt may be in for a fight in the event of a claim if the warehouse provider is seeking to apply the terms of their warehouse receipt to transportation.

This is not to say that the warehouse receipt terms would never apply, but in the absence of transportation-specific terms, the warehouse provider might be in for an unnecessary (and expensive) fight if attempting to enforce them with respect to transportation services arranged or provided by the provider.

The possibility that the logistics provider might find themselves without applicable terms of service is exacerbated if the logistics provider decides to offer transportation services under a separate legal entity. While separating warehousing and transportation operations is good practice from a risk management perspective, it does create additional legal and customer considerations since terms of service negotiated in the past with a warehouse company might not apply to a newly formed transportation company, meaning the transportation company will be required to negotiate terms of service on its own.

To adopt appropriate terms and conditions with respect to transportation services, the logistics provider must first understand what services it is providing because the services will dictate how the law treats the service provider.

For example, if your company is merely arranging for-hire motor carrier services of full truckload freight, then property broker authority may be all that is required. Importantly, U.S. federal statutes impose very little in the way of commercial terms on the relationship between a broker and its customer. But, if the logistics provider is providing services such as consolidation or distribution (consolidation of multiple less-than-truckload shipments into full truckload), the provider may be operating as a freight forwarder. If this is the case, the freight forwarder is deemed by law to be a “carrier” that can issue bills of lading and that is liable for cargo loss and damage claims.

If actually operating trucks to and from the warehouse location, the company is likely operating as a for-hire motor carrier subjecting it to a completely different set of considerations.

If the operations involve air, ocean or rail transportation, additional authorities and

Just as the services rendered will dictate the logistics provider’s status at law, they will also dictate differences in terms of service.

commercial considerations all come into play and should be understood long before the first move is arranged.

Just as the services rendered will dictate the logistics provider’s status at law, they will also dictate differences in terms of service. A full discussion of the issues to be addressed in customer-facing transportation terms and conditions under different authorities is well beyond the scope of this article, but in addition to the typical considerations, where multiple service offerings are being provided, the following additional considerations come into play:

Services Description – Do the terms clearly distinguish between services related to transportation and services related to storage so that it is clear which terms apply to which service offering? In other words, is it clear at which point in the operation the different terms apply? The less clarity, the more likely it is that the logistics providers will find themselves fighting an initial (and avoidable) battle about which terms of service even apply to the claim.

Cargo Liability and Limitations – Simply put, when is the logistics provider liable for cargo loss and damage and how is that liability calculated? Has the liability been capped and, if arranging for services with a third party carrier, has the carrier assumed a similar level of liability that can be subrogated? If the warehouse receipt does not apply to transportation, then the limitation of liability in the warehouse receipt might likewise be inapplicable.

Care and Custody – If the goods are destined to or from the logistics provider’s facility, attention should be given to how to address documentation regarding the condition of the goods at the time of tender or receipt. For example, if the provider is acting as a warehouse and a motor carrier with respect to outbound freight and damage is identified at destination, will there be a presumption that the goods were in good order when loaded (such that damage claims would fall under the carrier terms) or a presumption that damage occurred during storage? In other words, should the claim arise from warehousing or

transportation? The answer likely depends on which terms are more favorable from a liability perspective (and, of course, on what can be negotiated with the customer).

Insurance – A discussion of appropriate insurance coverages and levels should be undertaken with the company’s risk managers who should understand whether the transportation involves hiring of third parties or provision of actual carriage, as different coverages will be implicated in either situation. Likewise, consideration will need to be given as to how to address situations where there might be factual questions about when a loss occurred. Otherwise, disputes amongst insurers (such as a warehouse legal liability insurer and a cargo liability insurer) could develop.

To summarize, while new service offerings allow the logistics provider to increase revenue and create “sticky” relationships with their customers, if the customer does not assent to be bound by appropriate terms and conditions regarding expanded services, the risks to the logistics provider could well outweigh the benefits.

Thus, as part of the process in implementing creative solutions, the logistics provider should carefully consider whether their existing terms and conditions even apply to the contemplated services and, if so, whether they are appropriate.

If not, discussing terms and conditions of service with the customer does not need to be a negative. The customer might not understand the additional or different risks created with respect to transportation and having them explained by the logistics provider might be seen as a feather in your cap.

Take the opportunity to advise your customer of the risks and propose solutions to address those risks. In the long run, your interests, and your customer, will be better served. ☞

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GROWTH IN THE FRESH PRODUCE INDUSTRY

*How can cold storage construction companies add value
and enhance their own businesses?*

By Sheryl S. Jackson

The steadily growing consumer interest in fresh produce is driven by several factors. Consumers of all ages are more health conscious, and access to fresh vegetables and fruit has expanded beyond traditional grocery stores, restaurants and community farmers markets to include convenience stores, pharmacies and discount retailers.

With 48 percent of consumers in a recent Bizerba/Invatron survey indicating that they are eating more fresh produce than they did three years ago because they are more focused on health and wellness, it makes sense that the types of retailers adding fresh produce to their stores has increased.

In fact, Nielsen data shows 21 percent more drug stores, 36 percent more dollar stores and 32 percent more convenience stores are

adding fresh produce to their inventory. The rise in online services that enable customers to place their orders for easy pickup at a store or to have groceries delivered also adds to the demand for fresh produce.

What do these changes in demand for fresh produce mean for cold storage construction providers?

“There is a difference in fresh cold storage and frozen cold storage needs from a construction perspective,” says Drew Yancey, President of Yancey’s in Loveland, Colorado. Learning about those differences is critical if construction companies want to take advantage of the 10-15 percent growth in the need for food storage and distribution centers between now and 2025, he adds.

“To add value to your services and to differentiate your company from other construction companies, it is important to understand the challenges faced by fresh produce distributors,” Yancey suggests. “Top performing companies don’t just find a product that their customer needs, they help them face their challenges.”

Results of a research study that Yancey conducted with owners, c-suite executives and operations directors of family-owned fresh produce processors and distributors points to three main challenges faced by fresh produce processors and distributors.

Regulatory Mandates

Food and warehouse safety requirements have dramatically risen during the past decade with the Food Safety Modernization Act of 2011 and the Global Food Safety Initiative. Because food processors and distributors use third-party certifications from organizations such as the Safe Quality Food (SQF) Institute and AIB International, it is critical that their plant and warehouse facilities comply with guidelines set by these groups to ensure food safety.

“These regulatory requirements add a new dynamic to the age-old question of whether to retrofit an existing warehouse versus building a new facility because the cost of a retrofit has increased in order to comply with guidelines,” Yancey notes. “The small to medium distributor/processors – less than \$25 million – are affected the most.”

Contractors who understand and are up-to-date on the regulations affecting the fresh produce industry can compare the options for retrofit versus new build when pitching a potential client, says Yancy. By showing the cost differences in terms of how a new facil-

ity’s design and use of technology support compliance, the contractor can help the client choose the best option.

“For example, SQF certification mandates a clear separation from fresh produce and the processing area,” Yancey explains. Retrofitting an existing facility may be difficult due to space limitations and infrastructure restrictions while construction of a new facility can address the need to separate areas and leave room for the operation to grow with no need for further renovation.

Margin Pressures

Fresh produce processors and distributors have always operated with low margins but declining markups in revenue to remain competitive and increasing delivery costs as the number of stores offering fresh produce increases have exacerbated the fiscal challenge for operators.

Contractors can easily relate to the warehouse owner because they face the same challenges in their industry with rising wages, increasing materials costs and growing competition, Yancey points out.

The value that a cold storage contractor can bring to a warehouse owner’s project is knowledge beyond just construction – it includes the ability to show how efficiency technologies must be tied together to provide maximum impact. “Understanding the cold storage business means that you know and can explain why AGVs require roll-up doors, and why it is important to plan for them at the start of the project,” he adds.

Unrelenting Competition

As the consumer trend of purchasing fresh produce grows, so does competition for new business. In addition to companies that have operated within the industry, new players are entering the field. Non-industry ownership of processors and distributors by private equity groups provides additional resources – and incentives – to expand market coverage, and non-industry competitors – such as Amazon – are challenging existing companies with expansive, established distribution networks.

While the more intense competitive environment is challenging for fresh produce companies, it also provides opportunities for cold storage construction, says Yancey. “The increase in private equity group (PEG) ownership opens more opportunities for new construction because PEGs like to leverage

physical assets such as buildings and real estate,” he explains.

A contractor must know who owns the company – family-owned, private partnership or PEG – to understand the customer’s priorities. For example, a family-owned business might be more fiscally conservative and want to retrofit an existing facility if possible, but a PEG-owned company may be more interested in new facilities.

The need for a nimble distribution network also means that the “mothership” model of mega-distribution centers for a single region are not enough to meet a fresh produce company’s customer demand for timely deliveries. This is another opportunity for contractors to propose locations and sizes of centers that will enable the fresh produce company to better serve existing customers and attract new customers, Yancey suggests.

While the produce industry has been known as “stingy” when it comes to spending money, this is changing, he says. “In fact, it was a surprise to find that price was not a primary factor when research participants were asked to describe how they would decide between retrofitting versus new construction.”

The most important aspect of any cold storage construction pitch is “the value that the contractor can bring to the owner,” says Yancey. This might be in the form of vendor partnership with technology providers, door manufacturers or equipment companies; or it might be the regulatory knowledge of the contractor’s staff as they explain how design can improve compliance with safety guidelines.

He adds, “Understanding the produce warehouse owner’s challenges and offering ideas that help them solve those challenges to improve their gross profit – and talking in terms of helping them improve their business – differentiates the cold storage contractor from others in the market.”

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127TH IARW-WFLO CONVENTION TO ANALYZE LATEST BUSINESS TRENDS

Programming and events are focused on advancing cold chain warehousing and logistics for improved business outcomes.

By Alexandra Walsh

The 127th IARW-WFLO Convention, to be held at the Ritz-Carlton on Amelia Island, Florida, April 29-May 2, 2018, is the world's leading conference dedicated to bringing together senior-level executives of temperature-controlled warehousing and logistics companies and senior-level industry suppliers to forge, renew and grow relationships.

Prominent social activities, receptions, and the Supplier Showcase give industry suppliers unparalleled access to build partnerships with warehousing and logistics leaders.

Through robust programming focused on business outcomes, the convention delivers an education program intended to help solve the most significant cold chain business chal-

lenges. The educational program is designed for senior-level warehousing and logistics executives looking for solutions to key business challenges and opportunities. Experts and innovators will share their knowledge of how to lead the cold chain, drive supply chain profitability, develop talent, and achieve operational excellence.

Keynote Speakers

Neil Jacobstein, Chair of the Artificial Intelligence and Robotics Track at Singularity University, will address *Artificial Intelligence in the Cold Chain* in his keynote at the convention's Opening General Session.

Jacobstein contends that as our industry continues to face workforce challenges, we have reached a tipping point where cold chain companies are evaluating automation solutions to help solve labor challenges. Robotics and artificial intelligence in warehouse operations have transitioned from far-fetched ideas to operational realities.

Jacobstein will dive into the technical, business, environmental and ethical implications of artificial intelligence (AI) and robotics, and how they will transform the cold chain. He'll look at the latest developments in this field of

Senior executives in the cold chain industry gather each year at the IARW-WFLO Convention to find solutions to key business challenges and opportunities through networking and educational programs.

technology, and hone in on relevant advancements such as the future of atomically precise robotics for manufacturing.

Attend this session to learn more about this changing market, and how companies are already using AI and robotics in their warehouses to help address some of these labor issues.

Tom Furphy, CEO & Managing Director, Consumer Equity Partners, reminds us that Nielsen predicts that 20 percent of grocery volume will move online over the next few years. Join this session with Amazon's former Vice President of Consumables and Amazon Fresh, for an inside look at *How Retail Evolution Shapes the Cold Chain*.

With roughly one in 10 millennials purchasing almost all their groceries online, consumer trends continue to shift, therefore forcing logistics providers to do the same. With industry-altering purchases like Amazon's acquisition of Whole Foods, 3PL providers are left wondering how this will impact business in the cold chain. Hear Furphy's thoughts on the implication of the Whole Foods purchase, and how these disruptions in the retail space will continue to drive producers and consumers to e-commerce, impacting the perishables industry.

For more than 150 years, Pinnacle Foods' iconic brands have brought consumers convenience, taste, and nutrition. Behind the scenes, Pinnacle Foods prides itself on visionary leadership and operational excellence through improved supply chain efficiency while growing their brand portfolio through value-enhancing acquisitions.

Join this session to hear a *Perspective from a Processor* as **Chad Whyte**, Pinnacle Foods' Vice President of Logistics, discusses the company's strategic goals, anticipated trends, and business challenges. Hear from a customer of the third-party logistics industry on what innovations they're looking for from our industry and how we can better serve their needs.

When asked in a 2017 survey what the number-one reason customers of the third-party logistics industry leave their 3PL partner, the answer was "customer service." During the convention's Closing General Session keynote, **Scott Stratten**, President of UnMarketing, will address how companies continue to pour money into traditional marketing practices, when the power is in



TOM FURPHY

CEO & Managing Director,
Consumer Equity Partners

UnMarketing – the day-to-day interactions with customers.

In this session, *UnMarketing: Engaging Your Audience in a Business-to-Business World*, Stratten examines the dynamics of marketing in a B2B environment like third-party logistics. Learn how to stay in front of your partners and potential clients through "unconventional marketing" methods, and how customer service and business ethics speak louder than any billboard.

Cool Pioneers

Within the cold chain industry, there are pioneers who are innovating in human capital development, cost-savings, and time-savings.



SCOTT STRATTEN

President
UnMarketing

The presenters for these "Cool Pioneers" sessions are IARW warehouse members who have made an impact on the industry through their innovations. Attendees will have the opportunity to listen to two of these 30-minute presentations.

Tech Talks

Three industry thought leaders will deliver informative presentations on innovations in the cold storage industry. The IARW Education team works with Tech Talk presenters to create a high-level industry perspective on how their solutions, tools and/or technology can help support their customers' businesses and how they see the industry evolving.

WHO ATTENDS THE IARW-WFLO CONVENTION



Attendee by Company Type

53% Warehouse

47% Supplier



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Don't miss these exciting presentations to see the future of cold storage. Tech Talks will take place during the General Session.

Peer-to-Peer Executive Discussions

These roundtable conversations provide attendees a chance to share ideas, ask questions, and solve problems with their peers in a small group setting of 25 people per group. The groups are divided by warehouse owners, CEOs, executives, legacies, and suppliers. The moderator will guide the participants through questions that they have submitted in advance to talk about, diving into the subjects that matter most to executives in the cold chain industry.

State of the Association

In 2016, IARW-WFLO unveiled a new, outward-facing strategic plan focused on member business outcomes. Join IARW-WFLO leadership, staff, and board members to learn the latest developments to bring the IARW-WFLO Strategic Plan to fruition, and services and initiatives being added to your membership offering.

Held in conjunction with the IARW-WFLO Joint Board Meeting, all Convention attendees



The Supplier Showcase is an opportunity for cold chain executives and suppliers to engage in meaningful dialogue about the industry.

are encouraged to attend.

Networking Events

Coffee in the Supplier Showcase is just one of many networking opportunities for attendees. Others include a first timer and new member reception, an opening night reception, two afternoons set aside to catch up with peers and vendors for private business meetings, a golf classic at the stunning Golf Club of Amelia Island, and the Isle of

Eight Flags Closing Pirate Party.

Register now for the 127th IARW-WFLO Convention at <http://www.gcca.org/127th-iarw-wflo-convention/>. ☞

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GCCA DELIVERS COLD CHAIN EXPERTISE AROUND THE GLOBE

International development projects span 60 countries.

By Alexandra Walsh

Fifteen years ago, GCCA initiated its first international development project. Since then, GCCA has undertaken 91 projects in 60 different countries.

But, more important than the number of projects, is the impact they have had on developing the cold chain.

By partnering with aid organizations and international development partners, the GCCA and the World Food Logistics Organization (WFLO) help emerging economies and lower-income countries meet the challenges that arise when growing a global cold chain. And through this work, GCCA has amassed

a vast amount of reports, contacts, information, and other cold chain resources in a wide variety of countries.

Training and Education

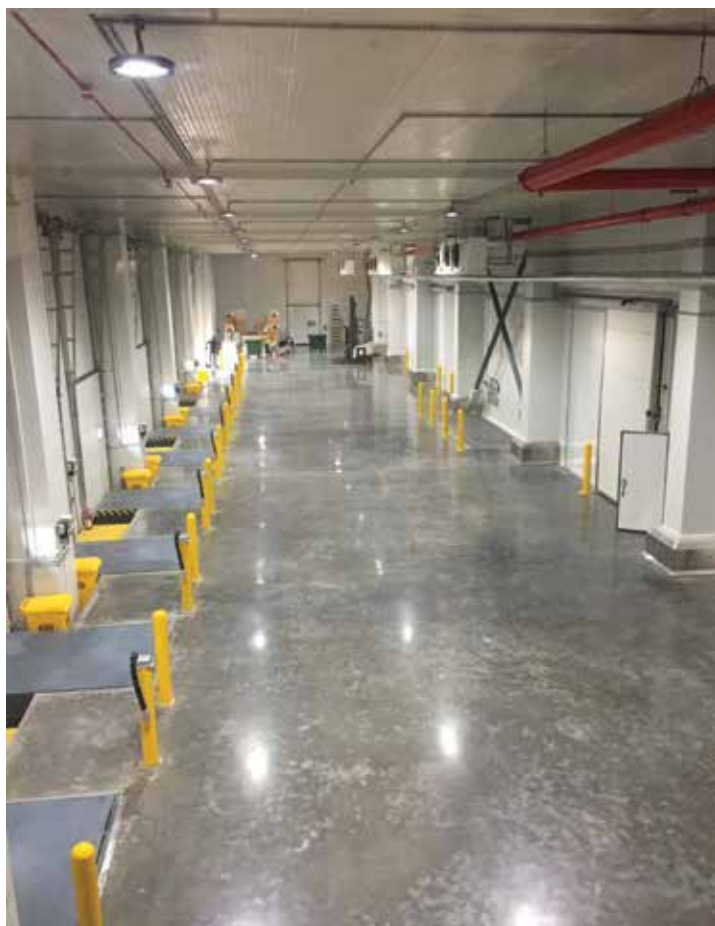
The WFLO offers education and consultancy services designed to assist government agencies,

companies, and industries in implementing safe, efficient, and reliable food distribution practices. The WFLO Technical Training Assistance Program features specialists who provide training on postharvest and food safety best practices.

Dominican Republic

The WFLO training assistance program has been very active in the Dominican Republic during the past several years.

The Dominican Republic is one of the largest Central American markets for U.S. food and agricultural products, including soybean meal and oil, wheat, corn, dairy, and processed food products. In exchange, the USDA is working



Left to right: One crate of product can be stored for 24 hours in the hub at 12 degrees Celsius. (Photo courtesy of Greg Laurin.); Solar-powered cold storage has come to Owerri's fruit and vegetable market. (Photo courtesy of Greg Laurin.); Spire's warehouse has a state-of-the-art refrigerated loading dock with nine dock doors. (Photo courtesy of Spire Group, Ltd.)

to strengthen the Dominican Republic's ability to export high-quality and safe fruit and vegetable products through the Exporting Quality and Safety (EQS) project, which GCCA supports in partnership with the International Executive Service Corps (IESC). GCCA has supported this project since 2016, providing technical experts on postharvest, refrigeration, and cold storage operations who have consulted with a variety of companies on the ground.

One of the main cargo companies in the Dominican Republic, Caribe Cargo, is working at the request of the United Parcel Service to open a receiving terminal for fresh produce in the city of La Vega for a daily Miami-Santo Domingo-Miami air freight route. They plan on installing pre-cooling infrastructure, 500 square meters of cold rooms, and refrigerated transport to the airport.

In January 2017, two GCCA members – Eric Sorensen, Packhouse Operations Specialist, and Juan Carlos Hencker of Refrissistemas, Costa Rica – traveled to the Dominican Republic to visit the site and make recommendations. The finalized recommendations were shared with

Caribe Cargo to assist in the rehabilitation of this site, one step in the improvement of the export of high-quality fruits and vegetables.

An often-overlooked role that GCCA can provide in developing countries is creating linkages, and the EQS project in the Dominican Republic experienced the benefits of using the GCCA network. In 2017, EQS requested assistance on the training of cargo handlers within the country's airports.

In response to the request to locate a trainer for perishable cargo handling, GCCA reached out to a contact at the Miami International Airport (MIA). MIA informed GCCA that they have a program where they identify countries in need of export services, and then provide a "roadshow," bringing together local exporters with U.S. Government officials.

The roadshow took place August 2017, in Santo Domingo, with presentations by MIA, the Port of Miami, and various U.S. Government agencies with 115 local exporters in attendance. Feedback received from the participants has been overwhelmingly favorable, and additional cold chain related assistance is

being requested.

In June 2017, the Global Cold Chain Alliance's Lowell Randel led two workshops on best practices for transport of perishable products. With approximately 50 attendees, Randel noted a wide interest in the topic and acknowledged most of the drivers were eager to learn more about the temperature requirements for the products they were transporting.

One GCCA member who has made multiple trips to the Dominican Republic to lend his expertise to the WFLO Institute Latin America is Brian Beazer, General Manager and CEO of Winchester Cold Storage Company.

The WFLO Institute Latin America, launched in 2014, provides more than 30 classes taught by leading industry experts on food security, warehouse operations, employee safety, cold chain management, customer relationships, and professional/personal development.

"I've now made three trips to the Dominican Republic and on my most recent visit in 2017, I gave classes on the basics of cold chain and transportation best practices and an over-

127th

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Tom Furphy, CEO & Managing
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Chad Whyte, Vice President of
Logistics, Pinnacle Foods

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view of what the cold chain can do in the Dominican Republic,” says Beazer. “Since I’ve been coming here, a lot has changed. Much progress has been made improving the country’s infrastructure, especially the road system, and while transportation has come a long way, when the produce gets to the exporter, it’s still received out in the open, without benefit of cooling sheds in the fields.” Beazer adds, however, that in the classes he teaches, he can tell his students are starting to make a concerted effort to do cost analysis on the benefit of refrigerated transportation throughout the whole process in the cold chain.

Beazer is motivated to lend his expertise in the Dominican Republic because as a small regional player in his own country, he finds it gratifying to have an opportunity to pass on his knowledge. “I want my family to have good quality product to eat so why not help the DR provide that product. And as an added bonus, you make good contacts and you never know when there might be opportunities to put those contacts to use.”

Technical Assistance

As part of its international development mission, GCCA provides specialized cold chain advisory services and technical assistance to government agencies, organizations, and associations through its core partner, the WFLO.

Nigeria

Since 2016, GCCA has partnered with the Global Alliance for Improved Nutrition (GAIN) to provide technical assistance to cold storage companies in Nigeria.

In August 2017, Larry and Greg Laurin of Conestoga Cold Storage flew with GCCA International Projects Director, Amanda Brondy, to Owerri, Nigeria. Owerri is about a 45-minute drive from Port Harcourt. GCCA member ColdHubs is starting up a business in Owerri’s fruit and vegetable market for solar-powered cold storage.

Product loss for fruits and vegetables can exceed 50 percent in Nigeria, especially for highly perishable products such as tomatoes that are transported 16 hours in unrefrigerated trucks on rough roads. The vendors selling these products in the market have had no access to cold storage, and in order to sell the products are forced to reduce the price throughout the day, resulting in large economic losses.

The ColdHubs model is designed to store one crate of product for 24 hours in the



From start to finish, it took 10 years to build this modern PRW in India. (Photo courtesy of Spire Group, Ltd.)



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hub where the temperature is maintained at 12-degrees Celsius. Since the hub first opened in March 2017, 37 retailers and vendors are using the service. Capacity is at approximately 75 percent and given the size of the market in Owerri, there is room for growth.

The Laurin's visit to ColdHubs in August proved to be a critical time for the business. Spending three full days with the team, discussions and advice ranged from profitability to general business practices, financing, materials, growth, roles and responsibilities, and engineering.

Greg Laurin notes, "It was a great experience. We reviewed what they had done, made suggestions on design ideas and went to the market and reviewed the ColdHubs site that was up and running. We encouraged them to complete construction of their remaining hubs so they can get revenue streams in place to grow faster and move on to the next stage."

Laurin says the experience was more rewarding than exasperating but admits there are a lot of problems that can be challenging to wrap your head around or see a solution for.

"Globally, there are millions of customers outside of the modern cold chain. Our industry's personal involvement in the

emerging cold chain will not only increase the strength of the industry worldwide, but has the potential to significantly reduce food waste, improving the daily lives of millions of people."

The same month the Laurins were in Owerri, Don Durm, Vice President of Customer Solutions for PLM Trailer Leasing, was 200 miles to the west in Lagos, the most populous city in Nigeria. He was there to work with two Business-to-Business (B2B) matches for the Postharvest Loss Alliance for Nutrition (PLAN) Nigeria project over a two-week period.

During his time in-country, Durm provided technical assistance on a variety of topics from the application and design of transport equipment, to best practices in cold chain transport, commodity storage and transport conditions, technology engagement for supply chain transparency, development of HACCP SOP's (the National Food Service Management Institute (NFSMI) has developed HACCP-based Standard Operating Procedures in conjunction with the United States Department of Agriculture and the Food and Drug Administration) and supply chain economics.

When asked about the experience, Durm said the GCCA organization was the perfect

outlet to engage in a truly rewarding experience in helping advance the cold chain within the developing country of Nigeria.

"Though the saying goes, 'It takes a village to raise a child,' it is that same support and collective knowledge of the GCCA and its members that I relied on to bring real value to the participants in the host nation," Durm says. "The association brings an international advance team and follow-up visits from other members to build upon the individual work after they leave the country to ensure that the host participants are supported and sustaining that growth."

Durm adds that as a board member of IRTA under the GCCA umbrella, it makes him feel great to know that work that was accomplished during his visit is supported and built upon by other members that have a common goal to give back to an international organization that has been instrumental in their professional growth.

Supply Chain and Food Systems Assessments

WFLO has completed cold chain and food systems assessments in over 20 countries around the world. These assessments employ a four-pronged approach, exploring challenges and opportunities at each link of the supply chain. Typical assessments include a comprehensive evaluation of postharvest practices, food processing, and storage and transportation practices in the perishable food supply chain.

India

The World Food Logistics Organization (WFLO) has been allocated a grant to conduct a cold chain assessment with anticipated follow-on technical assistance activities in India. WFLO sent a team composed of international and Indian industry experts in late January 2018 to examine India's cold chain infrastructure and operational practices to identify characteristics, constraints, and gaps specific to the Delhi-Mumbai corridor.

This assessment is part one of a three-phase program. Once approved by the United States Department of Agriculture Foreign Agricultural Service, the results of the assessment will be presented to key company CEOs and other senior level business leaders in New Delhi and Mumbai to gain their support and secure buy-in for the next steps.

India faces many challenges with its cold chain infrastructure as it tries to keep up with consumer demand. Refrigerated warehousing



This 15,000 pallet position warehouse is one of the biggest in India. (Photo courtesy of Spire Group, Ltd.)

and transportation facilities are limited, costly, and unevenly distributed across the country. Businesses are challenged to realize the returns on investment needed to upgrade refrigeration.

One GCCA member well versed in both the shortfalls and potential of India's cold chain is Pat Gouveia, President and CEO of Spire Group, Ltd., who came to India in 2007 because he believed there was enormous opportunity to develop the country's cold chain over the next 20 years. What he had not counted on was that it would take 10 years to find a local partner, find a site, and build a facility.

"The timeline needed to learn about the Indian market and business culture is exhausting – you won't get anywhere without the right local partner and it took five years just to find that partner," admits Gouveia. "It's a tough sell to outsiders looking to invest in the cold chain because what company would be willing to devote 10 years to getting one facility built?"

But build he did and in 2017, Spire opened a 15,000 pallet position warehouse, one of the

biggest in India, with state-of-the-art technology, refrigerated loading dock, nine dock doors, multi-chamber facility with temperature control ability in each chamber from -23 C to +3 C, and 60-ton blast freezing capacity. "There is no such building like ours in all of India – other than the Taj Mahal," Gouveia jokes. "Customers are in awe of this building and we are at full capacity already with plans underway to expand. Our joint venture will be building eight cold storage facilities in the next four years throughout India to create a pan-India network."

Two of the most important factors in Gouveia's decision to take on the many challenges of building a PRW in India was the enormous need for a modernized cold chain – it is the largest agricultural country in the world but 40 to 50 percent of food spoils before it reaches India's 1.4 billion consumers – and the Indian government's commitment to providing opportunities to companies looking to invest in the cold chain.

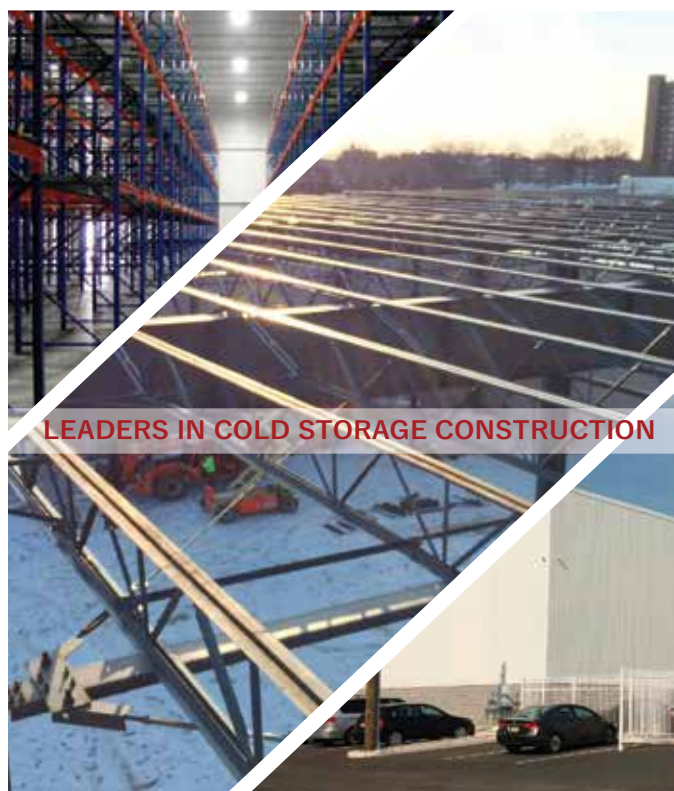
"The government recognizes food waste is a

massive problem and it will put money on the table for major cold chain enhancement. We received a \$100 million (INR) grant to develop a cold storage facility in Mumbai," Gouveia says. "And the government also offers accelerated depreciation for cold storage facilities allowing the write-off of the cost of the property in one year, and that is a very attractive offer."

"You need the time, the will, and the patience to adapt to the business culture in India but so long as you know what you are getting yourself into, there is tremendous opportunity in this expanding nation and we intend to become India's premier cold storage and PRW player and set the benchmark for customer service and quality for cold chain infrastructure in India," Gouveia explains. @

ALEXANDRA WALSH is a Senior Publishing Consultant with Association Vision and Managing Editor of COLD FACTS.

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Technical Article | Industrial Refrigeration

Optimizing the Way We Keep Space Cold

A Brief Look at Low Charge NH₃ Packages

By Jim Hower

Sales Director, Danfoss Industrial Refrigeration

We have come to expect that large Industrial Refrigeration systems are utilizing ammonia (NH₃) systems to keep their products cold, fresh and safe. The benefits of employing environmentally responsible natural refrigerants, the large range of operating temperature – as low as -60°F – and the higher efficiencies that come with using NH₃ systems are undeniable.

Traditional NH₃ systems are not one size fits all. These are highly engineered systems that are erected on-site and become integrated into the building structure. Considering the necessary resources and time constraints involved in constructing these NH₃ systems, leading manufacturers have collaborated with Danfoss on low charge NH₃ system solutions that result in faster project completion times at a lower expense.

By employing compact, direct weld valves and valve stations, low charge systems reduce leak potential and lower installation and service costs. With a full range of components optimized for a wide pressure range, these systems combine high quality with safe, reliable operation to offer alternative benefits to traditional large-scale systems.

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Typical low charge system installations will require multiple parallel low charge systems, ranging from 5 to 60 tons of refrigeration in each, to meet the capacity required for the entire installation. Each system requires a refrigerant charge of 1 to 6 lbs. of NH₃ per ton, comparing favorably to the 20 to 30 lbs. of NH₃ per

ton in traditional systems. This significant charge reduction leads to less regulation and can eliminate the need for a Process Safety Management (PSM) program by keeping the total charge below the 10,000 lb. threshold. Along with this charge reduction, off-site consequence analysis, compliance costs, and liability are also all lowered. Since each system is independent of one another, the risk of a large refrigerant release is eliminated and concerns posed to the surrounding community are significantly reduced.

The 'one compressor per penthouse' design eliminates the need to consistently run large compressors at part load, potentially lowering energy consumption and qualifying low charge systems for substantial utility rebates. Additionally, frequency drives are standard in most low charge systems, reducing motor speeds under part load and thus ensuring electricity usage is kept at a minimum.

Low charge systems are shipped with piping pre-welded between the compressor package, condenser and valves ready to be installed with a maximum of two welds. These systems simplify the complexity of projects even further by operating with one compressor and one condenser, which can be air-cooled on some packages. If the condenser is air-cooled, this eliminates the need for water supply piping for evaporative condensers often used in site-erected systems.

The installed cost of low charge systems can be competitive with traditional site-erected systems, and can be reduced even further by eliminating water supply piping if air-cooled condensers are included in the low charge system design.

Low charge NH₃ systems are a smart alternative to traditional large-scale systems due to their combination of reliability and safety. The fundamental benefits of low charge systems continue to disrupt the landscape of the Industrial Refrigeration industry while simultaneously minimizing environmental risks due to its independent design.

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MEMBER NEWS

NEWS FROM MEMBERS OF GCCA CORE PARTNERS

AMERICOLD REALTY TRUST launched its initial public offering of 24 million common shares. The initial public offering price was expected to be between \$14 and \$16 per share. The common shares were approved for listing on the New York Stock Exchange and will trade under the symbol "COLD."



HANTEMP CONTROLS released bulletin MCBV1117a, which includes capacity tables for Stainless Steel MCBV Motor Controlled Ball Valves and manual COBRA-NECK® ball valves. In addition to providing valuable information for engineers, the data illustrates the superior flow characteristics of ball valves. The application examples detail the use of HANTEMP ball valves in industrial refrigeration systems.



JAMISON DOOR COMPANY promoted Dwight Clark to President and Chief Operating Officer. John T. Williams retains the title of Chairman and Chief Executive Officer. Clark joined the company in 2001 as Vice President Sales and Marketing and has led the sales effort since that time, developing a sales organization capable of selling the growing number of products the company manufactures. Active in industry activities, Clark has served on the Board of Directors of the International Association for Cold Storage Construction since 2002.



LINEAGE LOGISTICS, LLC acquired eight temperature-controlled warehouses from **U.S. GROWERS COLD STORAGE**. With these acquisitions, Lineage adds significant capacity to its expansive facility network in Southern California.

TIPPMANN INNOVATION (TI), in conjunction with the Texas International Produce Association, hosted a tour of the state-of-the-art Index Fresh Plant and Distribution Center in Pharr, Texas. The TI team discussed its experience in working with clients in a talk entitled "Managing Unpredictability" in the ever-changing produce industry. The symposium discussed how to design flexibility into plants and distribution centers and how small-to-medium-size processors are using shared facilities and logistics services to lower their costs while improving service performance.



WATERFRONT COLD STORE, LLC opened its newest public cold storage facility in New Bedford, Massachusetts – the top grossing seafood port in the United States. After a soft opening in May 2017, Waterfront Cold Store is now fully operational, racked, and ready to serve cold storage needs. @

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GCCA Members Partner to Reduce Peak Demand Up to 45 Percent

Longtime GCCA member and cold chain logistics provider Dreisbach Enterprises was searching for efficiency technologies to help reduce energy expenses for their California warehouses. They were experiencing very high energy costs, particularly due to peak period demand charges when their energy costs increased.

Dreisbach found fellow GCCA member Viking Cold Solutions as a potential solution to their energy efficiency challenges. Viking Cold provides thermal energy storage (TES) technology that enables flexibility and savings to the energy-intensive, low-temperature cold storage industry. Their TES systems consist of environmentally-friendly phase change materials (PCM), intelligent controls, and 24/7 remote monitoring and predictive software

that provides their customers with reduced energy costs, improved temperature stability, increased refrigeration efficiencies, and daily performance reporting validation.

The systems were installed in two rooms of the Dreisbach warehouse, which required flexible installation methods and integration with their legacy control system. Once the TES system was commissioned, Dreisbach experienced an immediate reduction in refrigeration equipment run time, significant load reduction during peak pricing periods, and stable temperatures throughout the entire freezer. These impacts were realized because the PCM stabilizes the temperatures throughout the freezer (absorbing 85 percent of the heat infiltration in lieu of the food). Their daily demand was reduced by as much as 45 percent while also reducing total consumption by as much as 35 percent.



TES cells filled with phase change material installed on top of the racks in Dreisbach's freezer. (Photo courtesy of Viking Cold.)

"The Viking Cold TES systems have delivered increased refrigeration flexibility and significant energy savings that directly improve our facilities and our bottom line," says Jason Dreisbach, owner of Dreisbach Enterprises.

This column highlights a cold chain question and answer submitted through the GCCA Inquiry Service to the team of experts on the WFLO Scientific Advisory Council (SAC).

Q: We use automated equipment in our warehouse when working with perishable foods. Do you have any recommendations for best practices or considerations when cleaning this food-grade equipment?

A: There are several options and considerations when developing a program or protocol that will meet the requirements of your customers and the U.S. government.

One option is to contact the manufacturer of the equipment and ask them if they have any written protocols for cleaning and sanitizing their equipment. They may or may not have any such procedures, but it does not hurt to ask them.

Another option is to contact your chemical supplier. Most commercial companies that manufacture and/or sell cleaning and sanitizing compounds for the food processing industry would be willing to consult with you and recommend the appropriate cleaners and sanitizers that will remove bacteria and any biofilms on your equipment. They also provide customer training on proper cleaning and sanitizing procedures.

Finally, consider reaching out to state university extension services. Many land-grant universities have excellent resources available for food safety consulting.

The main consideration is finding the correct detergents and sanitizers that will remove dirt, grime, pathogens, fats, oils, biofilms, and other contaminants without damaging or "pitting" the equipment. The equipment manufacturer and chemical supply company should be able to recommend the best detergents and sanitizers for your equipment in compliance with USDA and FDA guidelines.

An important step in the process is periodic verification of the effectiveness of the cleaning and sanitizing program. This can be accomplished by swabbing the equipment and surrounding areas for bacteria. ☞

Answer provided by Scientific Advisory Council Chair Dr. Michael Jahncke, Virginia Seafood Agricultural Research & Extension Center.

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Dr. Charles White, Mississippi State University
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Dr. Elhadi Yahia,
United Nations Food and Agriculture Organization, Cairo, Egypt
Expertise: Postharvest Technology of Perishable Foods

2018 CALENDAR

MARCH 14-16, 2018
21st GCCA European Chain Conference
Antwerp, Belgium

APRIL 29-MAY 2, 2018
127th IARW-WFLO Convention
Amelia Island, Florida, United States

JUNE 25-JUNE 27, 2018
2018 Global Cold Chain Expo
Chicago, Illinois, United States

JULY 29-AUGUST 1, 2018
2018 GCCA Assembly of Committees
Washington, D.C., United States

NOVEMBER 5-7, 2018
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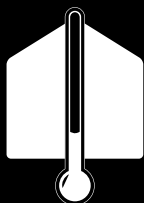
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ASSOCIATION NEWS

NEWS ABOUT GCCA CORE PARTNERS

GCCA in partnership with the United Fresh Produce Association recently released the educational program and registration information via a website for the Global Cold Chain Expo, to be held June 25-27, 2018 in Chicago. GCCA offers quality educational programming both on and off the trade show floor, including a Cold Chain Education Conference, Cold Chain Regional Roundtables and an expansive trade show, creating a valuable and a comprehensive business-to-business networking event. Learn more at www.globalcoldchainexpo.org.



The **IARW** Productivity and Benchmarking Survey is now underway. Use the online survey tool to benchmark where your facility/facilities stand related to each other or other similar facilities. The online platform allows you to compare dozens of warehouse-specific KPIs, including

labor, revenue and many others. Those companies that participate annually can create reports to compare facility performance year over year. Submit your data via the online tool by April 1 and receive free access to premium KPI reports.



Scholarships were awarded to two talented industry professionals at the **WFLO** Institute East and West programs. Tyler Heffernan of Interstate Warehousing was awarded the RefrigiWear WFLO Institute Scholarship for the WFLO Institute East in Atlanta, Georgia. Luis Guadalupe Ortega of Lineage Logistics was named the scholarship winner for WFLO Institute West in Los Angeles, California. Heffernan and Ortega were nominated by their companies based on their performance, leadership skills and dedicated to the industry. Both students received a full scholarship for

the tuition and related expenses to attend the WFLO Institute.



New officers and board members of **IACSC** were elected at the group's recent Board of Directors meeting, which was held in conjunction with the 37th Annual IACSC Conference & Expo in November 2017. Tim Nguyen [ESI Group, Arlington, Texas, U.S.] was elected to serve as the 2017-2019 Chairman of IACSC. Vince Free [Sub-Zero Constructors, Inc. Margarita, California, U.S.] was elected to serve as Vice Chairman and Marko Dzeletovich [Coldbox Builders, Concord, Ontario, Canada] was named Treasurer.



IRTA hosted an education session at the 2018 Cargo Logistics Canada event, which took

continue on page 44



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Talcahuano, Region del Biobio, Chile

Olmo Cold Storage

Delegacion Iztacalco, CDMX, Mexico

Rasla

Riyadh, Saudi Arabia

Association News *continued from page 43*

place February 6-8, 2018 in Vancouver, British Columbia. The session focused on best practices in refrigerated transportation, specifically related to U.S. and Canada cross-border activities. Stephen Neel, Senior Technical Advisor for GCCA, presented alongside IRTA board member Don Durm, Vice President, Customer Solutions, PLM Trailer Leasing. The *IRTA Refrigerated Transportation Best Practices Guide* was featured throughout the session as an important tool to keep shippers and carriers in compliance with important guidelines related to the U.S. Food and Drug Administration Sanitary Transportation of Food rule.

GCCA launched a new and improved Cold Connection e-newsletter in January and transitioned to a bi-weekly delivery schedule. Users can now access real-time industry news with the GCCA online newsfeed that compiles stories from industry trade publications, GCCA members, COLD FACTS magazine, and our own association news. Top stories are then delivered directly to subscribers' inboxes via the e-newsletter. The refreshed look and feel combined with the real-time newsfeed helps members stay up-to-date on the latest cold chain news. The newsfeed can be accessed via the main menu at gccca.org under Resources/Publications/e-newsletters.

GCCA will bring a Cold Chain Pavilion to this year's Seafood Expo North America, taking place March 11-13, 2018 in Boston, Massachusetts. The Cold Chain Pavilion program invites members in different sectors to participate in an industry tradeshow under one Pavilion which highlights the cold chain industry and the services that GCCA members provide. Pavilion locations are based on key markets within the perishable supply chain industry. Participating companies in the Pavilion at Seafood Expo include: Commercial Warehousing, Inc., TI Design Build, Tippmann Group/Interstate Warehousing, and Western Distribution Services, LLC. ☞

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TOM FURPHY

Tom Furphy is the CEO and Managing Director of Consumer Equity Partners (CEP). Prior to CEP, Furphy was at Amazon.com as Vice President, Consumables and AmazonFresh, where he was responsible for the company's grocery, gourmet food, health and beauty, prestige beauty and AmazonFresh businesses. He broke into retail through various senior roles at Wegmans Food Markets. Furphy will be a keynote speaker at this year's IARW-WFLO Convention. See page 28 in this issue of COLD FACTS for a feature article about the convention.

CF: Amazon is growing faster than the rest of e-commerce. What would you say is the key to its success?

TOM FURPHY: Amazon is really good at focusing on its customer and innovating on their behalf, driving trends and building new ways to positively impact the customer's life and then optimizing the value chain to get stuff to that customer in a better, more cost-efficient way – and they almost always squeeze the margin out of existing businesses currently serving that market.

CF: Are PRWs protected from Amazon moving into our industry because frozen product is more complicated and complex than center aisle groceries and consumers are not likely to do a lot of frozen food purchasing online?

TF: No, I don't believe PRWs are insulated.



I'm convinced that the grocery store model of today will become extinct. Maybe not in five years, but probably in 10 to 15."

Amazon doesn't let complications and complexities get in its way – if the shopper wants a product, Amazon will figure out a way to get it to them.

CF: If you were a PRW operator, what would you be thinking about to get your company ready for the pivot to e-commerce?

TF: I would look at what Amazon has accomplished in other business segments as far as scale and lowering the cost structure. In cloud computing, entertainment, retail, advertising, and logistics, look at what they did. I would consider the agility and speed with which they brought innovations like Fresh and Prime Now to market and determine if I will be able to move as quickly. We know Amazon will wring costs out of the system and offer better prices, so what does that mean for me and how can I think about my business and the end consumer in new ways and drive them the best value. Also, I would look for pockets of excessive costs in my business and supply chain. Finally, I would ask myself if I fully understand my ultimate consumer and how to provide them value in their daily life with the best service and at the lowest cost structure possible. As Jeff Bezos says, "I never met a customer that asked for higher prices and less convenience."

CF: Thinking back to your Wegmans days when you started in the retail food industry, what would have surprised you most about today's

consumer trends in food purchasing/consumption?

TF: Wegmans and Amazon are both very similar in the way they focus on the customer. So, given how the customer has changed over the years – with technology, being time-starved and expecting new levels of value – I'm not surprised to see the types of innovation that Amazon is bringing to them. That said, if 20 years ago we could look into a future of two-hour delivery, cashier-less stores, and automated replenishment to the home, I would have been blown away.

CF: What do you envision for the future of the food retail market that might surprise our readers?

TF: I'm convinced that the grocery store model of today will become extinct. Maybe not in five years, but probably in 10 to 15. Aisles and aisles of products brought together in one large format store have provided value to shoppers better than the smaller scale models before it. However, with technology and new service models, shoppers can have access to virtually limitless products, available to them on-demand, on-schedule or simply replenished in the background, without having to expend the task of walking to the store and filling their cart. I think we'll see the store become even more experiential – about the sights and smells, product discovery and valuable advice from experts. Stores will still be important, they will just be very different. @



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