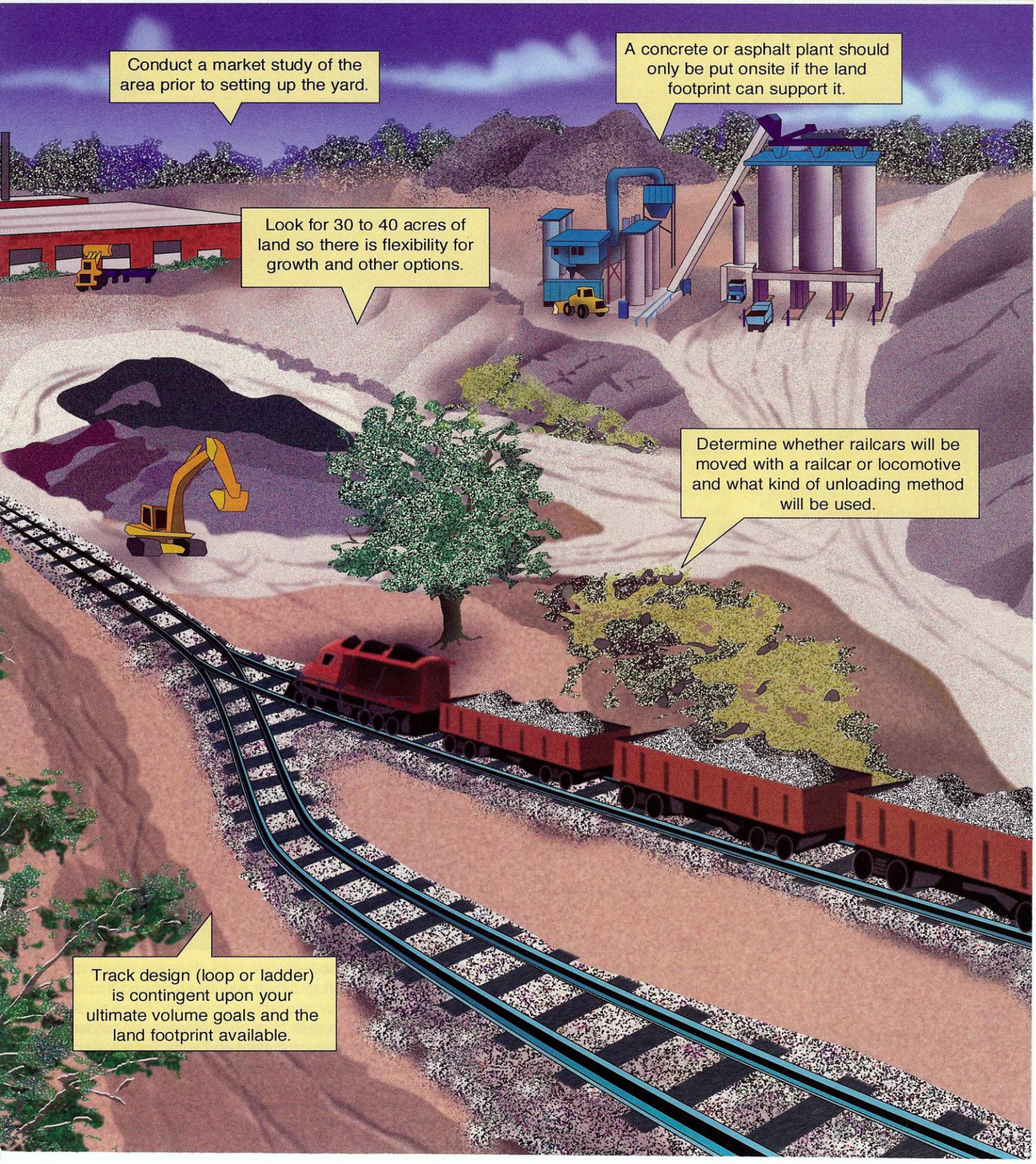
AGGREGATES MANAGER
PULL-OUT GUIDE

by Tina Grady Barbaccia, Senior Editor

OPERATIONS ILLUSTRATED

Managing Your Distribution Yard



Running A Distribution Yard

A clear understanding of your aggregates distribution yard requirements is critical to designing a cost-effective rail distribution yard. With rail distribution yards, there are two types — those with ladder tracks and those with sand loop tracks, says Darell Luther, president of Tealinc Ltd.

A ladder track consists of a series of stub tracks and a set of switches that connects individual tracks. This track arrangement is designed for operations to have a mix of products segregated into different railcars and calls for the need to handle of them separately, Luther explains. A loop track, the preferred method, is composed of a rail loop in which a train pulls into a yard and stays coupled together throughout the unloading process, he says. "This type of rail system is very efficient for moving large volumes of aggregates in a highly effective manner," Luther says.

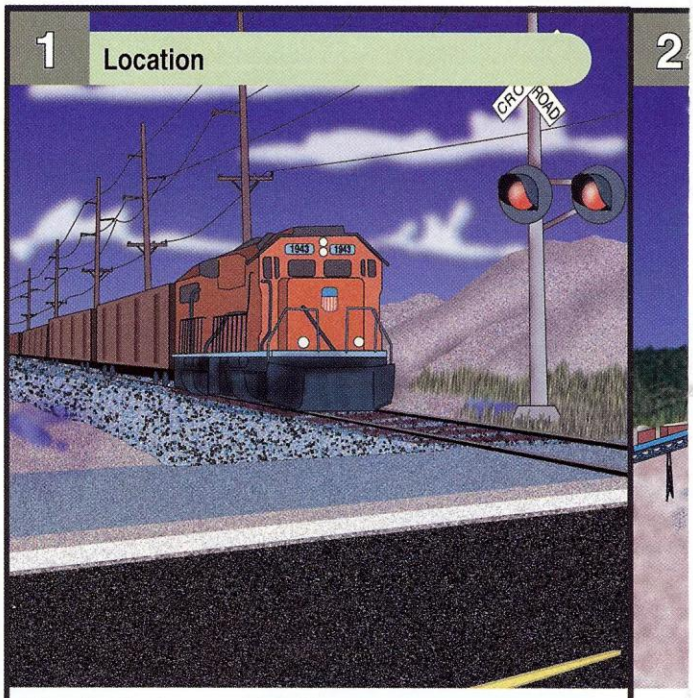
In either case, he notes, railcars are set over an unloading pit or a staging area for top unloading by a trackhoe or backhoe. The most effective method of transporting the railcars is either with a railcar mover or a locomotive. "Railcar movers or locomotives should be sized so they will effectively pull a string of cars containing the same product," Luther says. "Taking 'one cut' of cars is desirable in that you can effectively unload one product at a time reducing concerns about product integrity and yard operations confusion. At the unloading area, there is further segregation of the process."

Ideally, a rail yard would have a loop track, says Bill Meyer, vice president/general manager of Rinker Materials' Georgia aggregates operations. All the yard's material should be in that loop — "your silos, everything else," Meyer says. "Run a conveyor over the track up to the bins or to the ground. You can use a radial stacker to the bins and a side chute when you put material on the ground."

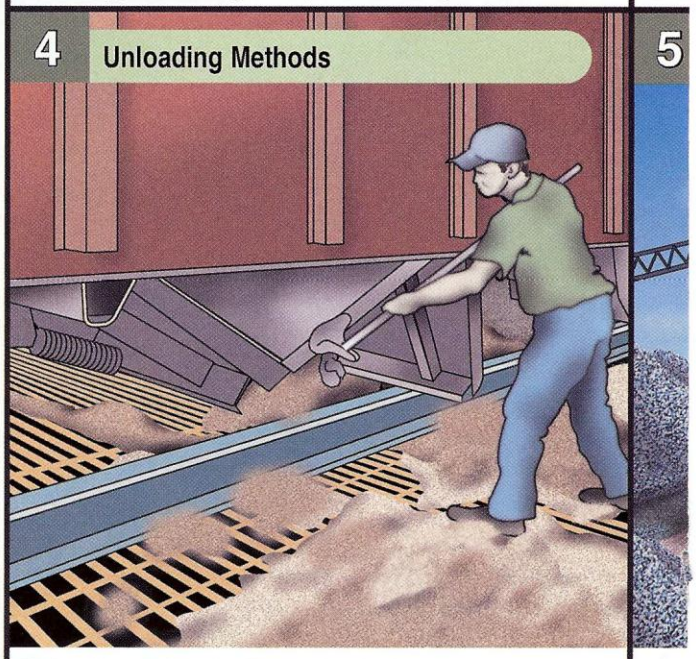
Meyer says the quickest way to get a truck loaded through the terminal is through aggregate overhead bins while sitting on the scales. "It takes three to four passes with a front-end loader off the ground," Meyer says. Although there will be times when front-end loaders need to be used, such as a large run of trucks, he adds.

The track design itself will depend on the unloading method, says Paul Heymann, product manager, aggregates, for Virginia-based Norfolk Southern Railroad. "The kind of railcar, unloading system, and type and length of track all have to tie together when designing the distribution yard," Heymann points out. "You want to plan on unloading a train in one, eight-hour shift. A key is going to be how fast it takes to unload a train."

The train size is dictated by how much volume will be moved and what the railroad's optimal train size is for a given territory. "Talk to the railroad about train size for the terrain it will be going over," he says. "If there is hilly terrain, there will be a limit to how much the locomotives can pull."



The distribution yard location should have good truck access, good proximity to highways, and should be located directly on a rail spur. Conduct a market study of the area before setting up the yard. Typically, you should look for 30 to 40 acres of land so there is flexibility, room for growth, and other options.



Unloading methods dictate track design. Using a car-top unloader railcar mover requires one long track with adequate discharge space to accommodate a truck. Bottom dump hopper cars need room for an unloading pit, hopper-conveyor system and sufficient track to accommodate empty railcars.

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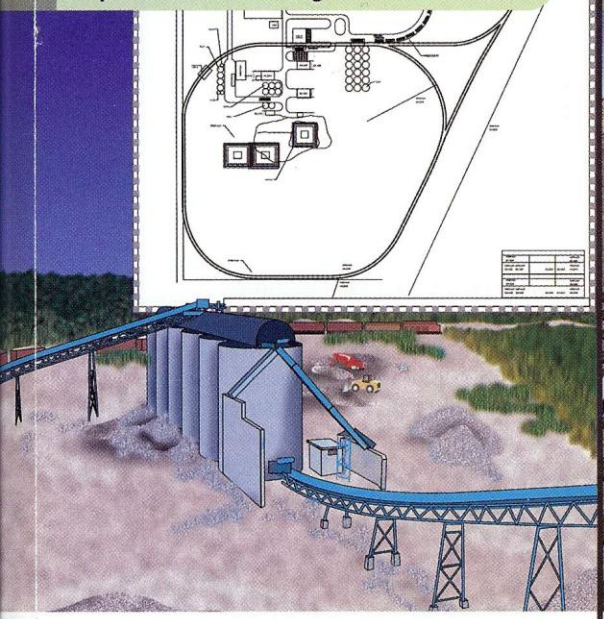
aging Your Distribution Yard

2 Operational Planning

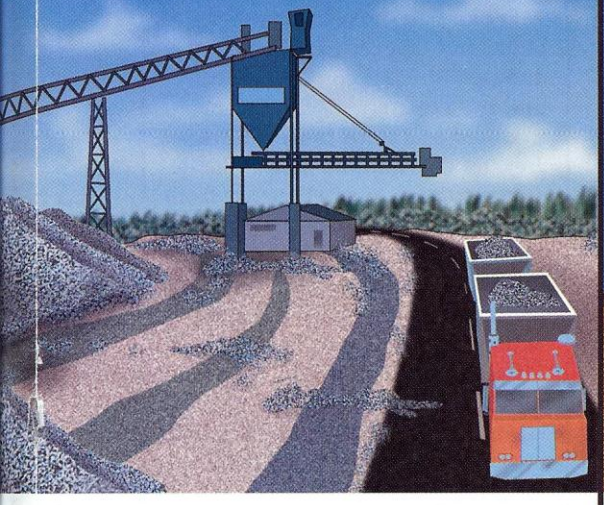


Make sure to allow for tracks, railcar movement requirements, an unloading pit, the conveyor and stockpile area, truck flow, and scales. Consider the site footprint of the land when laying out your distribution yard. The volume of train size will drive the type of land you want as well as potential growth.

3 Track Layout/Options

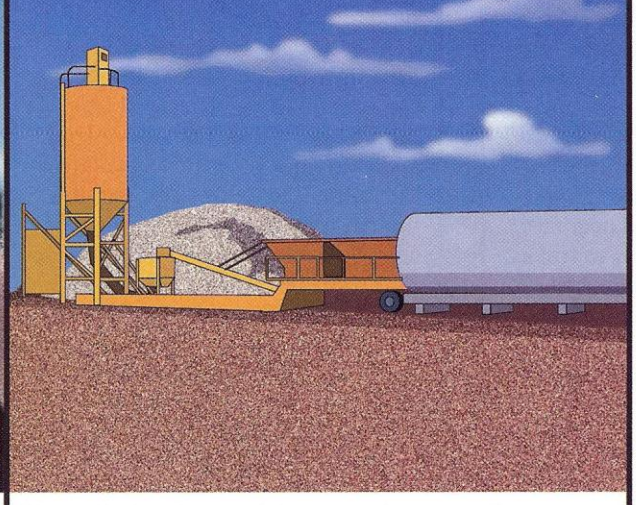
A loop track, in which a train pulls into a yard and stays coupled together throughout the loading process, is ideal for very high-volume yards. An alternative, ladder tracks, which consist of a series of stub tracks and a set of switches connecting individual tracks, are also used in many yards.

5 Material Distribution



For efficient material distribution, keep it in silos and conveyed out in overhead bins while a truck sits on the scale. Continuously fill these bins with your operation's most popular materials. Keep front-end loaders on hand in case they are needed for unloading during extremely busy times.

6 Add-ons



Many distribution yards have onsite or nearby concrete and/or asphalt plants, which can eliminate double-handling and extra trucking. If there are plans to put a plant onsite, make sure the land footprint can support this. With time, there may be millings or pieces of concrete brought back from other sites that will take up yard space.

OUR EXPERTS

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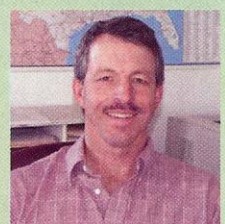
Paul Heymann is product manager, construction aggregates for Roanoke, Va.-based Norfolk Southern (NS) Railway Co. He has a bachelor's degree in economics from Penn State University and an MBA in transportation from The Wharton School. Heymann may be reached at *pcheyman@nscorp.com.*



Darell Luther is president of Forsyth, Mont.-based Tealinc Ltd., a rail transportation solutions company. He holds a bachelor's degree from Montana State University and a master's degree from the University of Mary in Bismarck, N.D. Luther may be reached at *darell@tealinc.com.*

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Voices of Experience

Bill Meyer

To make a distribution yard the most efficient, a market study should be conducted prior to setting it up, says Bill Meyer, vice president/general manager of Rinker Materials' Georgia aggregates operations. Population, growth, and pertinent industry factors such as close proximity to concrete plants, asphalt plants, and pre-cast and pipe operations should be considered in the study. "Then locate a large enough site — 20-plus acres — for stone storage, a scale house, a rail car switcher or locomotive, and a mobile equipment shop," Meyer advises. "Then you need to deal with the railroads and get a competitive rail rate."

The rate will depend on how many cars will be in the train and how far the cars will go, Meyer says. If the yard can handle a unit train, roughly 50 to 90 cars in one movement, a better rate can be secured, he says.

A part of this, too, is finding the most efficient rail line. "This will be dictated by where the quarry is," Meyer explains. When deciding the actual physical location of a distribution yard, proximity to the rail line is one of the top determiners. "You need to be on a rail spur," Meyer points out. "That is the No. 1 factor. Otherwise, the costs are way too high."

But not only does the yard need to be located on the most efficient rail line in the marketplace, preferably, it should be located near an interstate highway system so trucks can come and go in an efficient manner. Being near a metropolitan area is also a plus." Efficient unloading of railcars, fast turnaround time (less than 10 minutes) for trucks, and keeping a good flow of inventory at the yard will keep a distribution yard running well.

A good market, good rail service, quick and efficient flow of trucks, and customer-focused people also are essential. "Relationships are always a key in any business," Meyer says.

Paul Heymann

Just as location, location, location is key when buying a home, the same goes for setting up a distribution yard, says Paul Heymann, product manager, aggregates for Norfolk Southern Railway. The site needs to have good truck access, close proximity to highways, and the cost of real estate relative to the cost of sales is a major factor.

The site should also be on a suitable rail line, Heymann says. "The railroad will need to efficiently access the piece of land." It also may make sense to have a ready-mix or hot-mix plant nearby. But this strategy has a downside. "When you have [these plants] onsite, it usually means that you'll end up with a piece of land that has asphalt millings or crushed concrete that have been brought back from jobsites," Heymann points out. These add-ons should only be onsite if the site footprint can support them, including space for mixer parking and a maintenance shop. The actual piece of land will be driven by the sales volume and train size to be used. "If you're going to do a 60-car train, you need one size," he says. "If you do a 90-car train, you'll need another size."

Look for 30 to 40 acres of land for a distribution yard. "This gives some flexibility with the rail layout," he says. "You'll take your land and configure your tracks to allow the railroad to deliver and pull the desired train size into your piece of land. You may have two long tracks, four short tracks, or a loop track."

A loop track usually works better for loading than unloading, Heymann explains, because all of the product sizes can be placed into a central loadout for rail.

Careful planning also is needed. The railroad and anyone else involved should be consulted. Pit plans should be reviewed and planning for future expansion should be taken into account. "Your most successful distribution yards are the ones most carefully planned," he says.

Darell Luther

Myriad unloading options are available at rail distribution yards. If bottom-dump open-top hoppers or rapid-discharge railcars are being used, a trestle system — a system where the product is dumped through the rail onto an unloading floor or into a hopper — is the most efficient method of unloading the railcars, says Darell Luther, president of Tealinc Ltd. If the product is dumped onto the unloading floor, it's then loaded into trucks by a front-end loader and will either be taken for direct customer or stockpile distribution.

A belt and radial stacker operations works best if the material is dumped into a hopper, Luther notes. "The product falls through the trestle into the hopper and is then distributed by a belt-stacker operation to select stockpiles or directly onto trucks for direct customer distribution."

Use of mill gondolas, is an alternative to using open-top hoppers or rapid-discharge cars. Mill gondolas require either a trackhoe perched on an elevated platform or a backhoe configured to crawl across the top of the railcars.

Looking to the future, Luther points out that the use of a rotary dumper, which is common in coal unit train operations, is being introduced to unload railcars for aggregates distribution. This comes as railroads drive more efficiency from their operations and require larger train sizes, he says. Railroads are providing rate incentives to shippers that install rotary dumpers as well as returning railcars faster. These dumpers effective roll over the car, which is generally a gondola, and dump the product onto an unloading floor or into a hopper for further distribution.

"For newly designed operations, these make sense," Luther says. "However, for existing operations, you'd have to take a hard look at the cost-benefit tradeoffs to be sure you'd recoup your investment."