



BROCHURE

How much money are you losing by waiting on materials?

Define bottlenecks in your supply chain and increase productivity.



What is Loop Material Readiness from Octave?

Loop Material Readiness (*formerly Jovix*) is an award-winning material readiness application designed specifically for construction.

How does Loop Material Readiness work?

By digitizing and automating the manual, paper-based data collection often used in construction, Loop Material Readiness from Octave provides real-time visibility to all stakeholders throughout your supply chain. Employing a combination of web-based server software, mobile devices and smart RFID tags and barcode labels, Loop Material Readiness removes impediments to productivity and ensures workers have the materials they need to spend more time on tools.





What is Material Readiness?

A real-time, single source of truth for material availability and the next breakthrough in project performance.

Material Readiness decreases project risk and holds the greatest untapped potential for transformative practices. There are two primary issues when it comes to material availability:

- Knowing where materials are in the supply chain and when they'll arrive at the site, laydown yard or warehouse
- Received materials are often stored off-site for months or years, and the inability to find them quickly can drive major delays and even expedited re-procurement

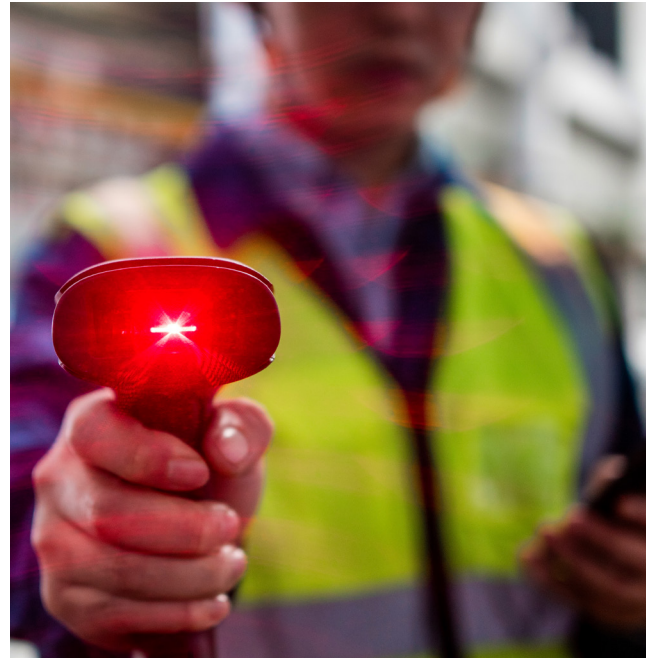
This can be difficult to measure on a project-by-project basis. However, Construction Industry Institute (CII) and Construction Owners Association of America (COAA) studies show that direct labor typically amounts to 35% to 45% of a craftsman's time on the job.

Up to 15% of non-productive direct labor* time can be attributed to waiting on materials.

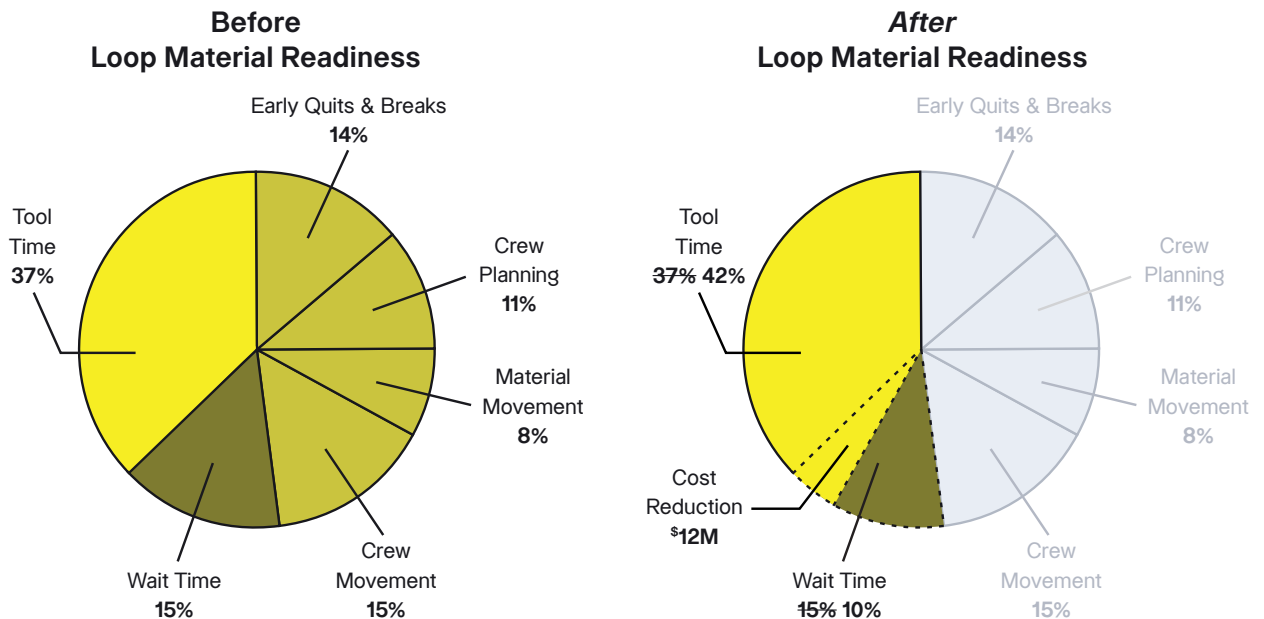
Do you know how much time and schedule you can save?

Every project is different. Different choke points. Different material needs. Different environmental factors. Different supply chain challenges. That's why we offer a Material Readiness Assessment - to show the positive impacts that the Loop Material Readiness solution can have on your project.

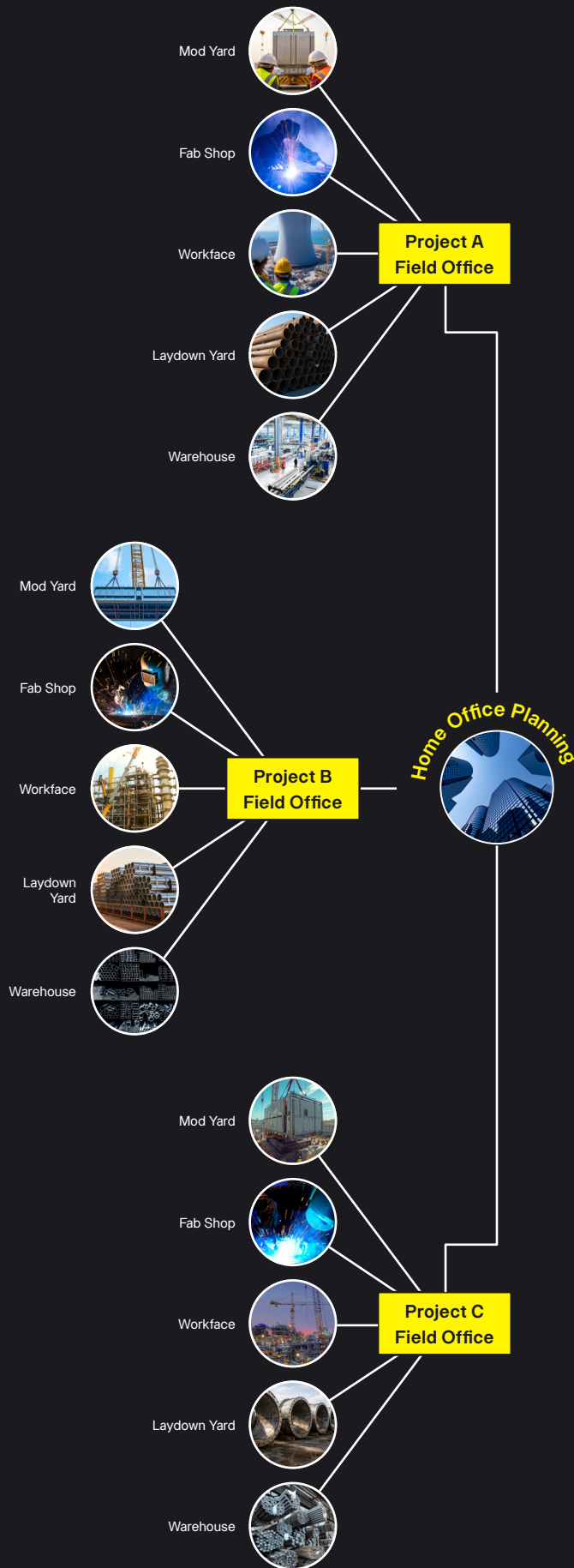
- Decreasing wait time from 15% to 10% to 12% on a \$1B construction project results in \$12M to \$20M in cost reduction
- Providing construction with real-time visibility into material availability leads to better decision-making, reduced wait time and improved direct labor productivity
- This real-time visibility is made possible with the digitization of construction field materials management, and it's what we call "Material Readiness"



Loop Material Readiness integrates material management visibility with construction work demand, and it's available now.



*A project with \$1B TIV devotes 40% of its costs to labor - \$400M. With 15% of an average workday lost to wait times, the project will lose \$60M. If wait times could be reduced to 10-12%, this could lead to savings of \$12-\$20M, or a 3-5% overall cost reduction.



Limited access to data

Many sophisticated tools to support the materials management function can be found at the home office, and workers can access these tools from field offices or job trailers. But once you step into a warehouse, laydown yard or fab shop, you might find that everything is managed with clipboards. RFID, barcoding and mobile technology empowers workers with the necessary data to make informed decisions in the field. Loop Material Readiness is secure, cloud-based software used by contractors to request material online - making emails, phone calls and paper requests a thing of the past. Loop Material Readiness allows real-time access to the location and status of any material required to complete construction work plans.

Lack of real-time visibility

Is material delivered directly to the jobsite, or does it involve a more complex supply chain with off-site fabrication and modularization? Either way, knowing the status of materials can be challenging. By leveraging auto-ID technology such as barcode labels and RFID tags, project teams see the real-time status, availability, and location of any material in the supply chain.

Where are my materials?

What is geo-contextual automation?

The concept of using technology to automate item status and location

How does it work?

Geo-contextual automation starts when a physical item is associated with its electronic tag (RFID tag, barcode or other technology). Once it's associated in the database of the application, the tag is then attached to the item for tracking throughout the supply chain, laydown yard, workface or other location. This initial association is typically done by a scan with a mobile device, and future reads throughout the material lifecycle are achieved by drone, vehicle- or gate-mounted readers or handheld sweeping devices. Every read confirms or updates the location and status automatically.

Geo-contextual automation enables an automated project status workflow and lessens the need for workers to maintain intimate knowledge of the materials in question. This system provides material status from fabrication to installation, updating all stakeholders along with the way with material and status locations.

The Loop Material Readiness system automatically assigns material status based on geo-fencing logic or gate reads, providing a seamless workflow and removing the need for manual status changes and verifications. Loop Material Readiness provides GPS material locations that are visible on a digital map. Construction teams with mobile devices are guided directly to materials via GPS, RFID and/or barcode scanning, significantly reducing location times.



What are the benefits of geo-contextual automation?



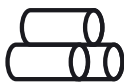
Construction schedule certainty Improve material visibility throughout the supply chain, and enable better construction pull mechanisms based on real-time Material Readiness data by location (engineering, purchasing, fabricating, shipping, on- and off-site staging).



Productivity gains in construction hours Feed construction with on-time delivery of materials to the workface, and reduce craft labor wait times caused by either material management issues or temporarily lost items.



Value to EPC Train with innovative technology, and benefit from a competitive advantage on future projects. Speak a common language. Use a single platform across the entire supply chain. Work together to achieve a common goal.



Reduction of material search labor Finding, picking, and issuing to construction faster can lead to a 9x reduction in material location times.



Reduction of re-procurement The ability to find materials when needed prevents unnecessary scrap and surplus at a project's end and eliminates re-procurement due to lost or improperly stored material.

Which approach is right for my project?

Selecting the right auto-ID technology for your project can be intimidating. That's why we're here. Let us work with you to determine the best technology fit for your needs. Let's look at the factors that may affect your decision.

	Passive RFID	Active RFID	Barcode labels
Power	No internal power source	Battery-powered	No internal power source
Price	Inexpensive tag (typically 50¢ to \$5)	More expensive tags (typically \$25+)	Inexpensive (typically 5¢ per label)
Size, shape & purpose	From small and flexible to rugged and durable, passive RFID tags are available in many shapes and forms	Generally larger tags built to withstand harsh construction environments	Well-suited for the most demanding label applications; Excellent adhesion in all weather conditions
Lifespan	Up to 50 years	Battery lifespan of roughly 5 years	18 months to 3 years
Usage	Single use and/or reusable	Reusable	Single use
Read	Typical: 10m	Typical: 100m+	Typical: <1m
Weather	Can be read under light snow	Can be read under snow and ice	Cannot be read under snow or ice
Line of sight	Doesn't require direct line of sight to scan	Doesn't require direct line of sight to scan	Requires direct line of sight to scan
Best area of use	High-volume assets moving through fixed choke points in definable, uniform systems	High-volume assets moving within designated areas in random and dynamic systems	Structural steel and large, non-moveable materials
Materials	Varies	Varies	Polyolefin-based, clay-coated film; waterproof, tear/grease-resistant, resists temperature fluctuations

Based on our experience implementing auto-ID-enabled solutions on more than 650 sites globally, we've developed a best-practice-based tagging strategy. Our team will work with key project stakeholders to assess the needs and specific use case for each type of material and will recommend the appropriate hardware to deliver optimal results.



What is the value of Loop Material Readiness?

Direct labor savings

Giving construction access to accurate material availability data enhances their work planning. They can better prioritize work by seeing which parts of a work package are currently, or scheduled to be, available on-site. When combined with the enhanced ability of Material Readiness to support that plan, material management issues are eliminated, and craft labor spends more time on tools, driving overall productivity.

Indirect labor savings

Collecting and feeding real-time data into Loop Material Readiness replaces manual, error-prone processes and empowers field workers to be more efficient. Efficiency reduces the number of man hours needed to expedite, receive, inspect, store, pick and issue materials. Loop Material Readiness also reduces the number of indirect hours spent entering material data into home office systems.

Elimination of re-procurement costs

All projects experience some level of re-procurement due to engineering changes. Loop Material Readiness eliminates unnecessary re-procurement resulting from the inability to find materials required by construction.

Protect or accelerate schedules

Clients have reported between one to six months in schedule savings as a direct result of deploying Loop Material Readiness. Elimination of material management issues keeps construction teams productive, resulting in time and cost savings. These figures are based on the estimated savings clients have shown in direct comparisons before and after implementation.

Visibility and accountability throughout the material lifecycle

From fabrication to installation, owner/operators, EPC firms, contractors, fabricators and suppliers can have visibility into the exchange of care, custody and control from the time a digital asset becomes a physical asset and is consumed into the final operating asset.

Material readiness assessment

Because no two projects are identical in terms of geoscape, scope and schedule, it is critical that auto-ID implementations are purpose-fit and scalable to the specific needs of the project. It is also important to estimate the impact that mobile technology and auto-ID will have on a project so that measures can be taken to ensure adoption.

The first step is a Material Readiness Assessment.

What does that mean? An MRA consists of an in-person workshop with your team and our industry subject matter experts, followed by the finalization of the MRA Report immediately afterwards. We come to you, invest in understanding your project and deliver a comprehensive plan for maximum ROI in your Material Readiness implementation.



The MRA agenda

We understand your time is valuable, and that's why we're now offering a one-day MRA FastTrack Session that allows for the dialogue essential to build a comprehensive ROI plan for your project, but at an accelerated pace.

What are the intentions of a material readiness assessment?

Align stakeholders and define goals. Identify the objectives for each team and define what success will look like.

Analyze gaps for new and current processes. Map out existing processes and identify current inefficiencies and pain points associated with manual processes that could be digitized and automated.

Build a data management plan. Identify all legacy systems that will need to interface with the auto-ID-enabled Material Readiness solution.

Determine hardware needs. Develop a tagging strategy to decide what type of auto-ID technology will be used on what type of materials in what portions of their lifecycles. Most deployments do not use a single type of auto-ID. It's usually a combination of multiple tag types and uses, depending on the asset type and use case.

Build an implementation and training plan. Determine the optimum schedule for the project roll-out. We recommend a "crawl, walk, run" approach to implementation, especially for project teams who may be new to the technology. By utilizing a phased implementation approach, we can establish early success and then build on that positive momentum.

Develop a business case and ROI. Ultimately, all of the scope, schedule and budget data rolls up into a business case and ROI that our partner champions can use to make an informed decision about whether to proceed with an auto-ID solution. A key benefit of the process, the Loop Material Readiness MRA is a low-risk value investment that provides our partners with a valuable, project-specific plan that includes all the information necessary to make a go/no-go decision on the technology.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property, and assets– for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency, and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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