



Identifying & Eliminating Waste in Your Work Environment



Introduction

At Granite, our goal is to be 1% better today than yesterday.

Little changes add up over time to substantial ones. This book is designed to help you make some of those changes.

Part One will help you recognize eight types of waste, or TIM T WOOD, and identify concrete approaches to eliminate or reduce them.

Part Two focuses on why Motion Matters for people and equipment, with steps you can take today to decrease the risk of injury, and improve production and efficiency in your work area.

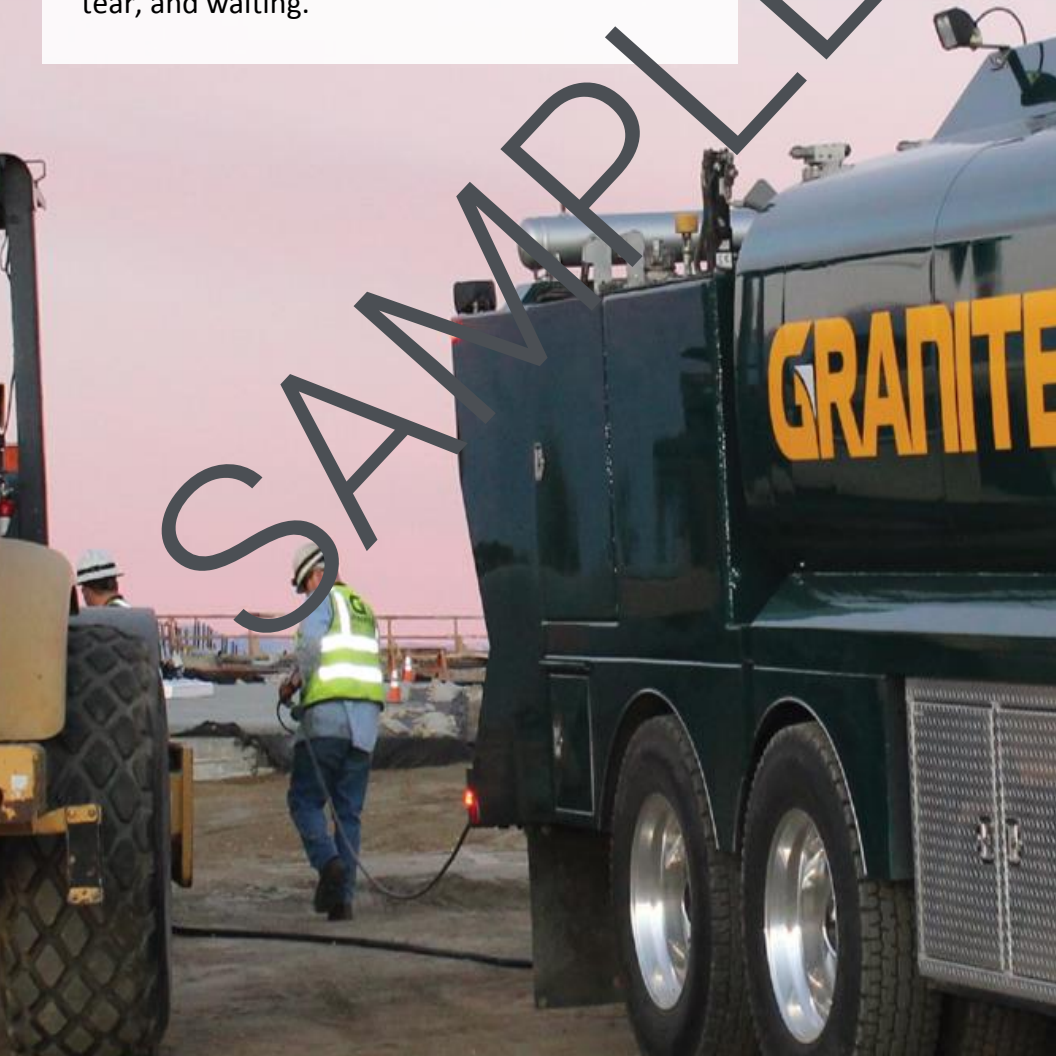
For more information on these and other Lean tools and resources, contact your local Black Belt, Lean Practitioner, or anyone in the Continuous Improvement Community.



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Waste in transportation includes the movement of people, tools, inventory, equipment, or products further than necessary. Excessive movement of materials can lead to damage and defects. Excessive movement of people and equipment can also lead to unnecessary work, greater wear and tear, and waiting.



Examples

- Hauling materials from the plant to job
- Transporting materials with any type of equipment
- Unloading materials and equipment only to load them and move to another location on site



What examples of excessive transportation have you seen in your work?

Take Action

One way we can reduce waste in transportation is to place processes as close together as possible, so that material moves directly from process to process without significant delays.

Eliminating this waste requires a focus on flow. When parts move directly from one process to an adjacent one, the distance traveled is minimal.



Defects

Defects occur when a product is not fit for use or a minimum quality standard is not met. This typically results in either reworking or scrapping the product. Both results are wasteful as they add additional costs to operations without delivering any value to the customer.

Defects often occur when an established process or best practice isn't followed. A defect is the worst type of waste as it creates other forms of waste, like additional transportation or waiting time, besides itself.

Examples

- Injuries and accidents
- Voids and blemishes in concrete work
- Boney mix on the mat
- Under or over compacting asphalt
- Missed time or incorrect time on an employee's timecard
- Forms missing information



How can we prevent defects from happening in the first place?

Take Action

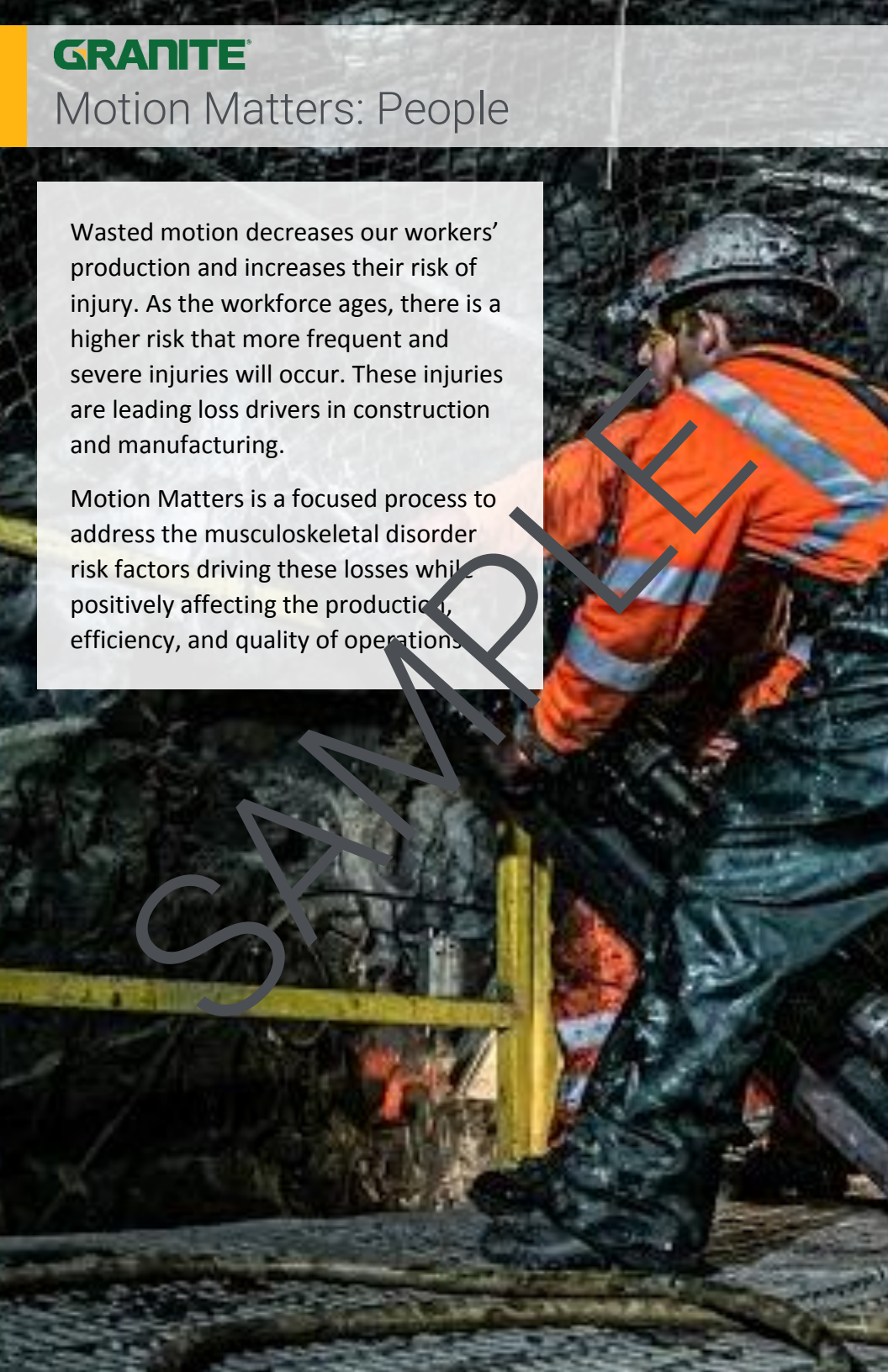
Defects cost a lot more than you think! They can lead to reworking the product or service, filling out reports, and holding problem-solving meetings. You lose not only the time and energy spent completing the work, but you also have to reschedule and invest more time and energy to replace it. It's very demotivating to anyone to have to rework something you've just completed.



Motion Matters: People

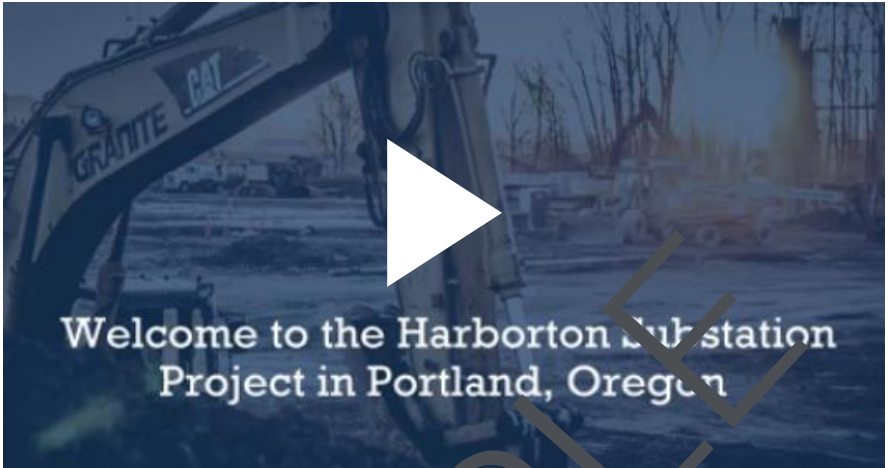
Wasted motion decreases our workers' production and increases their risk of injury. As the workforce ages, there is a higher risk that more frequent and severe injuries will occur. These injuries are leading loss drivers in construction and manufacturing.

Motion Matters is a focused process to address the musculoskeletal disorder risk factors driving these losses while positively affecting the production, efficiency, and quality of operations.



What Do You See?

As you watch this video, think about excess Motion in your work.



What examples have you seen in your area? What is the impact? How can waste in Motion be reduced or eliminated?

Observe. Engage. Improve.

The best way to detect the waste of motion is to go to the *gemba*, the place where the work happens, and observe.

Take notes and ask yourself these questions...

- Are body parts out of neutral? Is the back twisting? Bent over?
- How much straining is happening?
- Are we asking someone to lift for a living?
- How much climbing is occurring?
- Are there repetitive work tasks that can be eliminated?
- Are we paying people to walk places?



Share what you observed with your team and brainstorm ways to make continuous improvements.

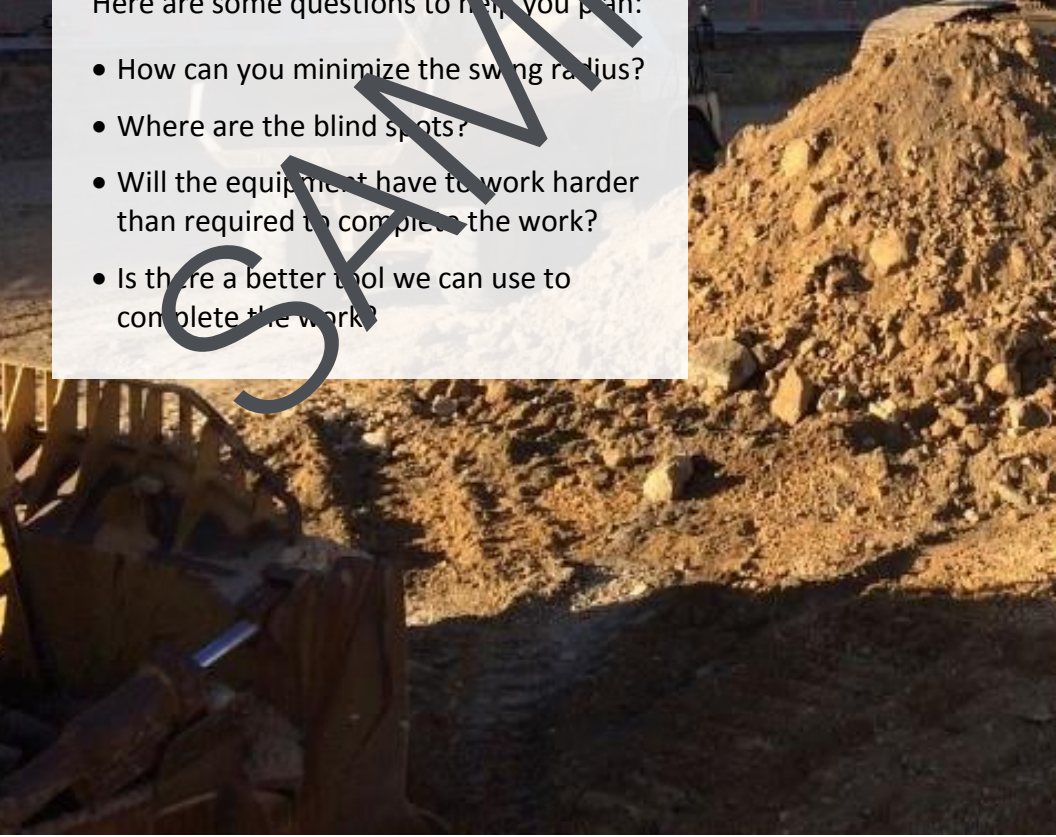
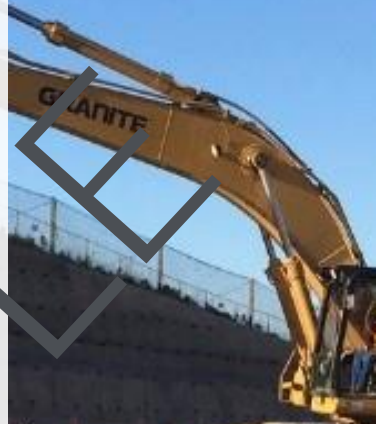
Motion Matters: Equipment

Wasted motion by our equipment results in poor production and excessive wear. Industry best practices and production guidelines from the equipment manufacturer can help us maximize our efforts when we set up a work process.

Think about the movements that will be made ahead of time. This will prevent the need to make changes later on and ensure that we continue to have the equipment needed to do our work.

Here are some questions to help you plan:

- How can you minimize the swing radius?
- Where are the blind spots?
- Will the equipment have to work harder than required to complete the work?
- Is there a better tool we can use to complete the work?



What Do You See?

As you watch this video, look for the 8 types of wastes – TIM T WOOD. What examples do you see?



Note: You may notice some safety and production issues in this video. These issues were addressed immediately and resolved. Thank you to the Coastal Region for allowing us to share their work for training and educational purposes.

See Things Differently.

- Ask questions
- Encourage suggestions
- Create a safe, sharing environment
- Solve root problems continuously
- Uncover chances for improvement
- Respect and challenge people
- Challenge assumptions
- Fight the status quo of “That’s the way we’ve always done it”



What can you do today to be 1% better than yesterday?

8 Types of Waste



Transportation – Every time an item is moved it stands the risk of being damaged, lost or delayed and incurring cost without adding value



Inventory – Inventory represents an outlay of capital that has not yet produced income



Motion – Wasted effort by individuals or machines that can result in damage to the product or the equipment or individual that is moving it



Talent – People not given the opportunity to contribute to their potential or not performing value-added work



Waiting – Waiting either because of an unbalanced process or approvals adds to the overall cycle time without adding value



Overprocessing – When aspects of the product or process are included that do not bring added value to the customer



Overproduction – Creating more product than there is customer demand which results in idle finished product inventory



Defects – Defects require rework that adds cost to the product or service and cannot be passed on to the customer