



OPERATIONS

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September 2017

AGENDA

Our Zero Harm Commitment

Manufacturing Innovation & Operational Excellence

Tacoma Greenfield Update

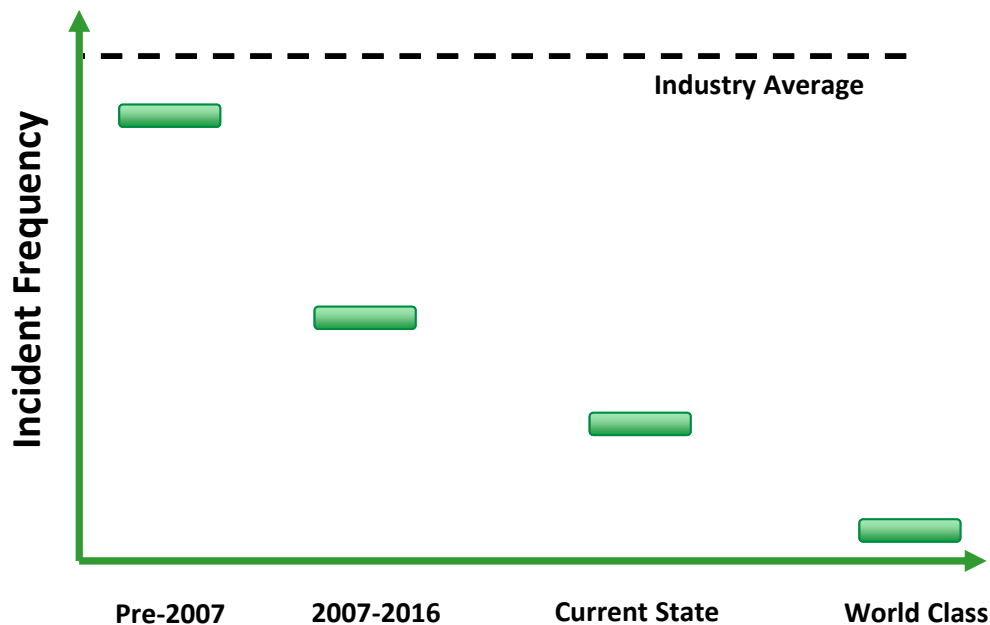
JH Supply Chain Advantage



JOURNEY TO ZERO HARM

WHAT DOES OUR JOURNEY LOOK LIKE

Zero Harm Safety Performance



Driven by a Culture Shift that...

Ensures that safety is our first gate

Thrives on leadership commitment and visibility

Empowers/engages all employees to proactively participate

Results in a predictive approach to safety management in our business

We are committed to a multi-year initiative that results in a World Class Safety Organization

ZERO HARM APPROACH

Vision: World Class Safety Organization focused on Safe People, Safe Plants, and Safe Systems to drive a Zero Harm Culture

Safe People

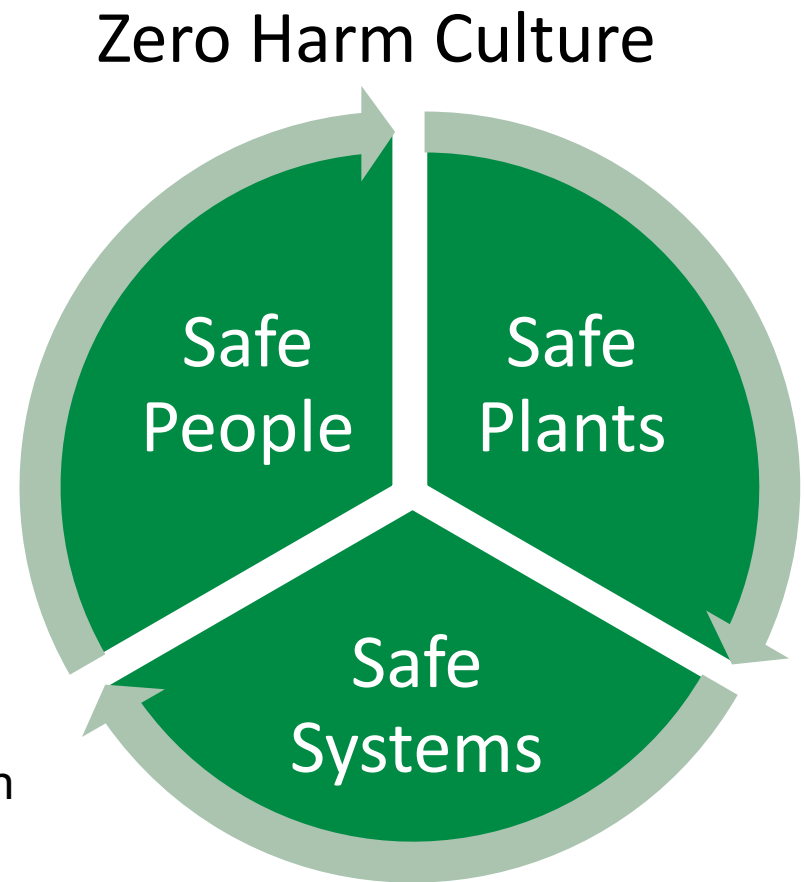
- Engaged, Empowered and Trained
- Visible Leadership
- Committed 24/7/365

Safe Plants

- Clean & Organized
- Facilities that Represent “The Brand”
- Capable Machines and Processes

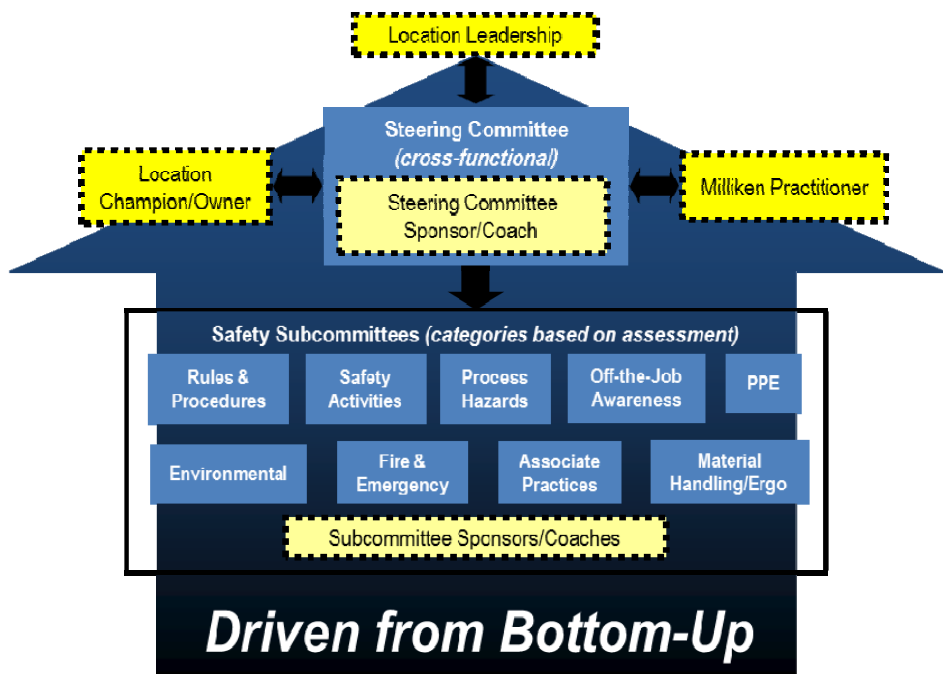
Safe Systems

- Real-Time Feedback
- Data/Tools for Continuous Risk Reduction
- Verification/Audits



SAFE PEOPLE

A key component of our culture shift is to partner with world class safety programs that support plant floor ownership in safety...



Peer-based observations



Self-triggering assessments



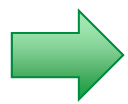
3rd Party verification of JH execution

SAFE PLANTS & SAFE SYSTEMS

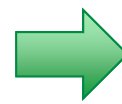
Our journey to World Class includes a shift in how we engineer, operate and manage our manufacturing facilities...

Safe Plants

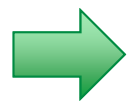
Safe Systems



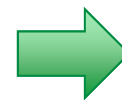
Safety as a core philosophy in plant & process design



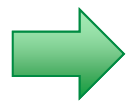
Predictive measures of employee engagement



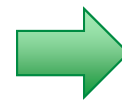
Significant reduction in operator-to-machine interface



Safety data management system



Facility maintenance to a JH brand standard



World Class training systems in LOTO, on-boarding, etc.

ZERO HARM SUMMARY

- We are fully committed to a significant culture shift that results in JH becoming a World Class safety organization
- Core elements of our program are visible leadership commitment, operator empowerment and predictive systems
- One year in, significant progress has been achieved but much work remains



DELIVERING ON THE POTENTIAL OF JH MANUFACTURING

MANUFACTURING ADVANTAGE

JH manufacturing: Major lever in our competitive advantage

Proprietary technology delivers unit cost & ROCE advantage

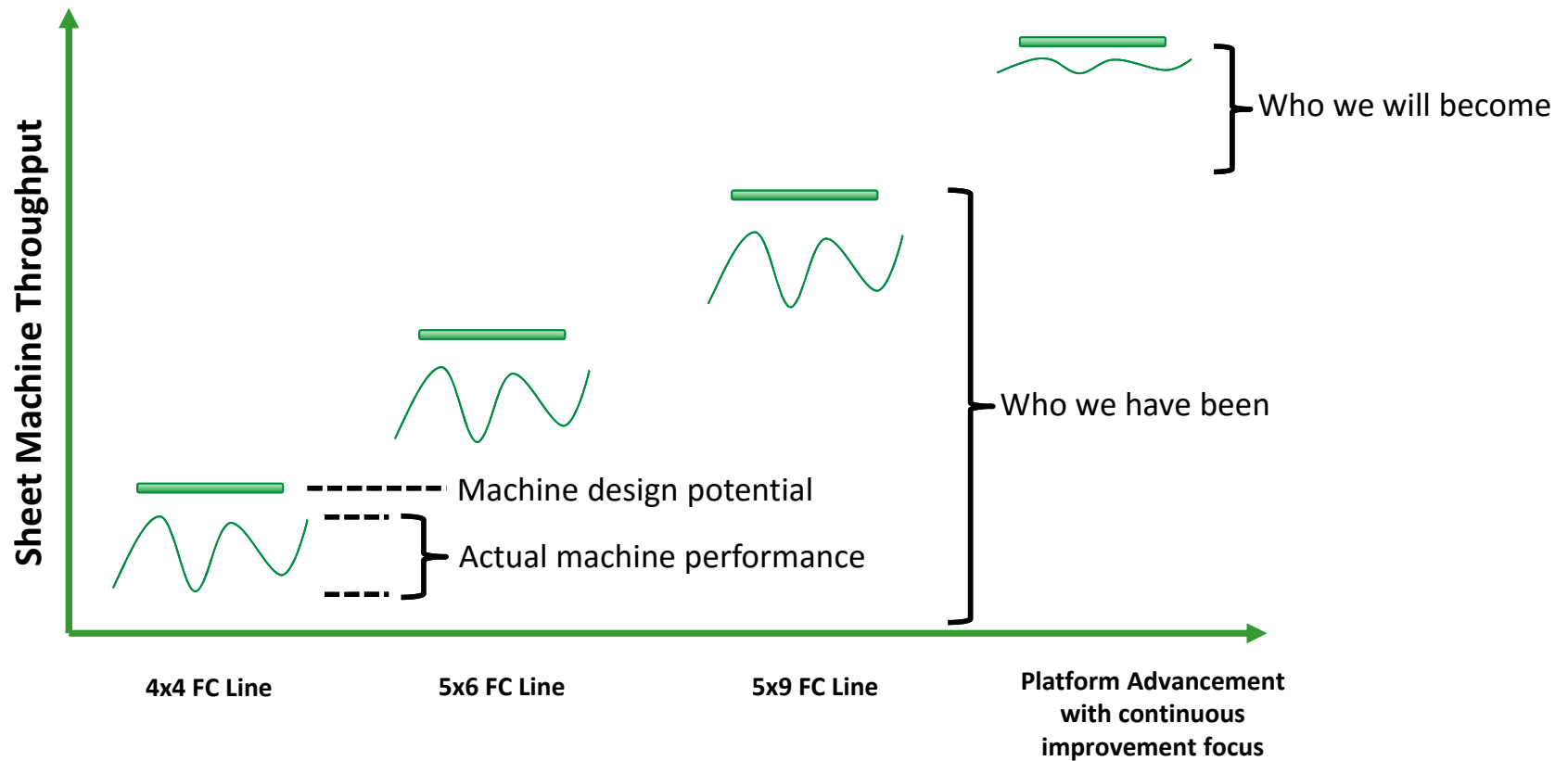
- ➔ Unique throughput advantage in our manufacturing processes
- ➔ Engineered scale creates labor and capital advantage
- ➔ Flexible manufacturing achieves low unit cost through market cycles

Innovation in process capability enables product leadership

- ➔ Process capability delivers innovative product differentiation
- ➔ Innovation approach delivers speed to market advantage
- ➔ Network flexibility creates delivered cost advantage

JH MANUFACTURING EVOLUTION

Historical focus on step change innovation has delivered significant business value

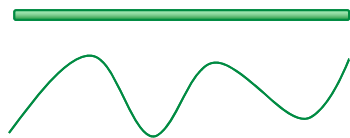


We are becoming a manufacturing organization that can deliver step change & continuous improvement innovation

JH REACHING ITS FULL POTENTIAL

We have created a continuous improvement organization, the sole focus of which is to shift JH manufacturing from...

Reactive Operations



to



Predictive Manufacturing



Enabled by...

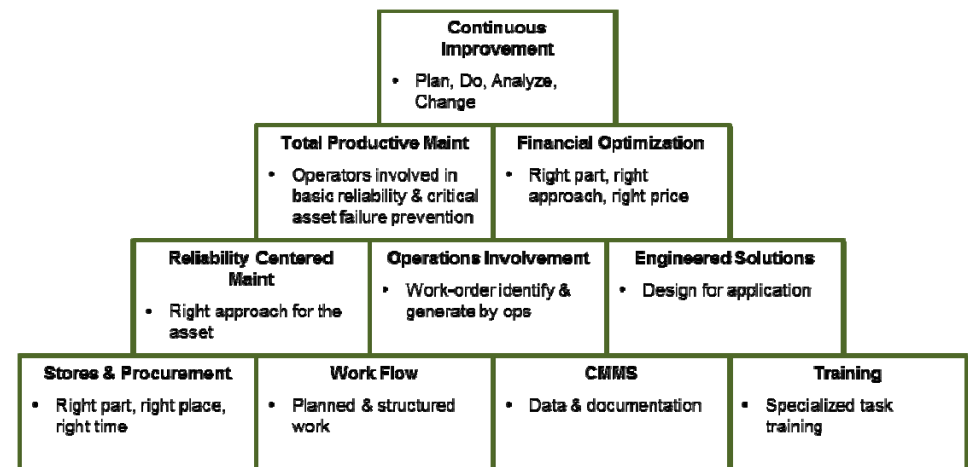
- Dependence on operator intervention → Lean standard work & process control
- Maintenance on equipment failures → Predictive reliability program
- Local decisions on critical assets → Center of excellence on facility investment

SAMPLE OF CONTINUOUS IMPROVEMENT INITIATIVES

Creating a JH Approach to Lean Manufacturing

- ➔ Leader Standard Work
- ➔ Visual Workplace Management
- ➔ Standard Work Initiative

Establishing Foundational Capabilities in Reliability



Greater consistency within plants, and across our network, will significantly reduce variation and capture the majority of our potential performance opportunities

JH MANUFACTURING STEP CHANGE

We have also doubled down on our ability to deliver break through engineering step change in all areas of JH manufacturing

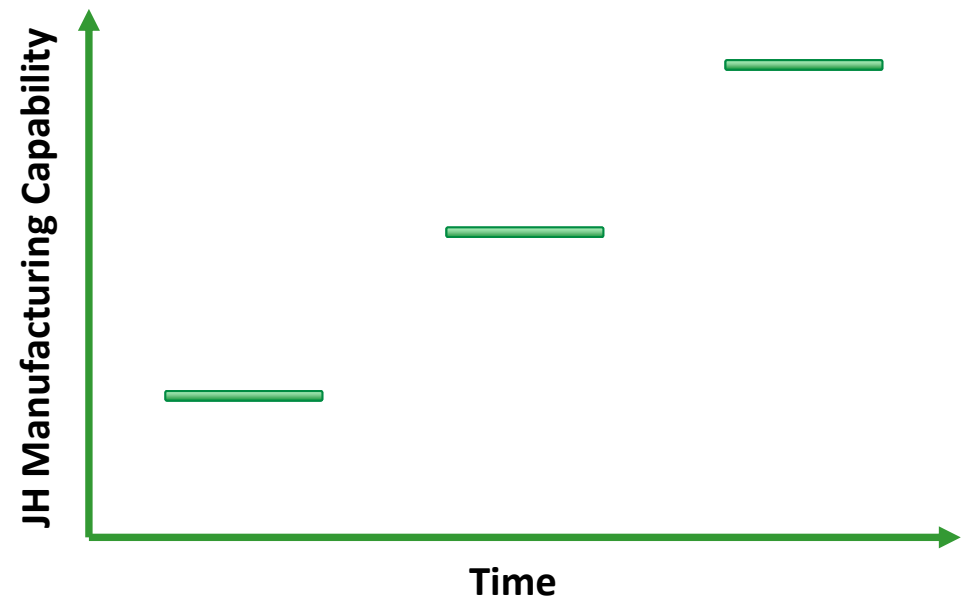
Step innovation in...

Next Generation Hatschek

New Product Enablers

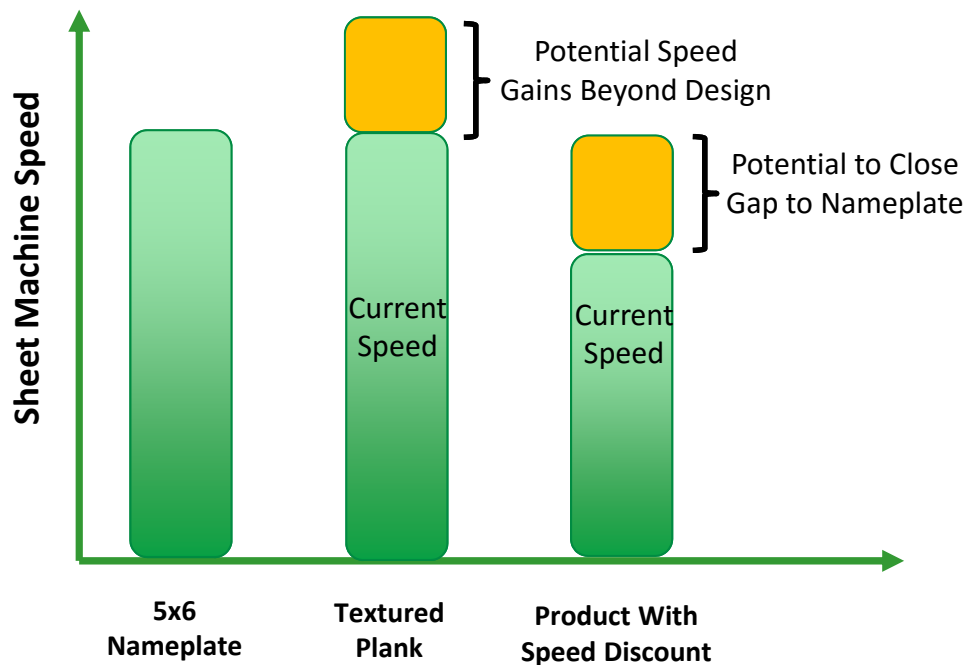
Mfg Platform Development

...enables break through progress



STEP CHANGING THE HATSCHEK PROCESS

Current Speeds vs. Nameplate



Enabled by step change innovation...

- Significant increase in drainage rate
- Raw material formation modifications
- Felt technology innovation
- New approach to sheet forming

MANUFACTURING PLATFORM STEP CHANGE

Manufacturing platform innovation has the potential to unlock significant process, product and cost levers in fiber cement manufacturing.

Enabling Product Attributes

Platform A



Longer



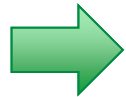
Lighter



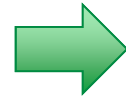
Flatter/Smother

Enabling Total Cost Optimization

Platform B



Lower Capex



Lower Cost RM



Higher Utilization

Enabling New Products

Platform C



Higher Strength



Better Finish



Engineered Properties

MANUFACTURING CAPABILITY SUMMARY

- We have an established history in step change manufacturing innovation
- We are adding to and enhancing the talent and capability of our engineering teams to accelerate the pace of step change in JH
- The value associated with continuous improvement has increased with our scale and we are organizing to deliver
- Step change & continuous improvement efforts are both critical to delivering on our manufacturing strategy



TACOMA GREENFIELD CORE CONCEPTS

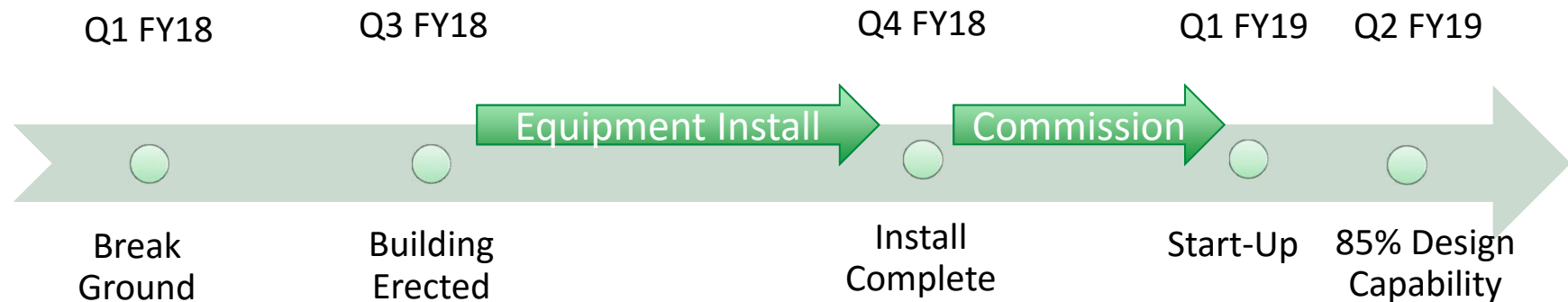
TACOMA EXPANSION – SITE OVERVIEW



- Nameplate Capacity – 300 Mmstdft/year
- Capabilities – Plank, Backer, Heritage, ColorPlus® Technology
- 130 Employees at full production
- Site benefits
 - Low input cost
 - Proximity to growing markets

TACOMA EXPANSION

Timeline Update



Start-Up Approach

People

- ➔ Zero Harm trained – Day 1
- ➔ Network-wide staffing plan
- ➔ Building on existing Tacoma base

Operational

- ➔ Build on Cleburne SM3 approach
- ➔ Maximize learning per dollar
- ➔ Intense focus on site yield

TACOMA EXPANSION – PRE-AUTOCLAVE CONCEPTS

Safety Integrated into Design

3rd Party Safety Design Consultants

Large Reduction in Human/Fork Lift Interface

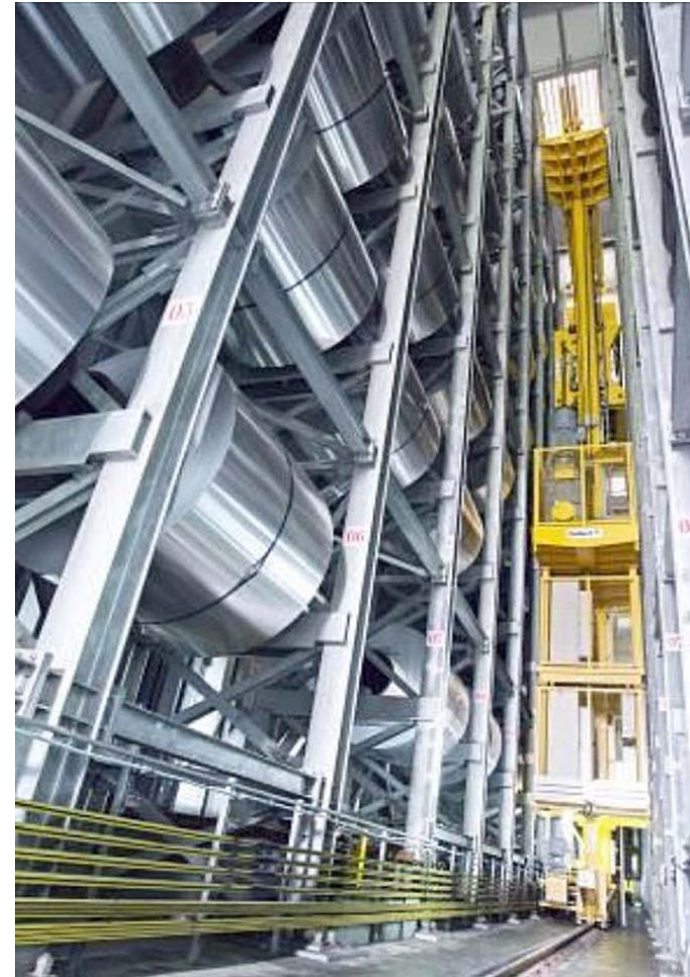
Housekeeping Integrated into Design

Material Handling Step Change

Zero Forklifts from Stacker to Finishing

Enables Building Space Optimization

Reduction in Product Handling Damage



TACOMA EXPANSION – POST-AUTOCLAVE CONCEPTS

Safety Integrated into Design

Focus on Operator Access & Work Floor for Safe Operation

Total Plant Product Flow Designed to Minimize Human Interface

Coating Line Process Step Change

Integrated High Speed Break Out Line

Nested Coating Lines Enabling Operator Efficiency

Single-Line ColorPlus® Technology Coating Applications

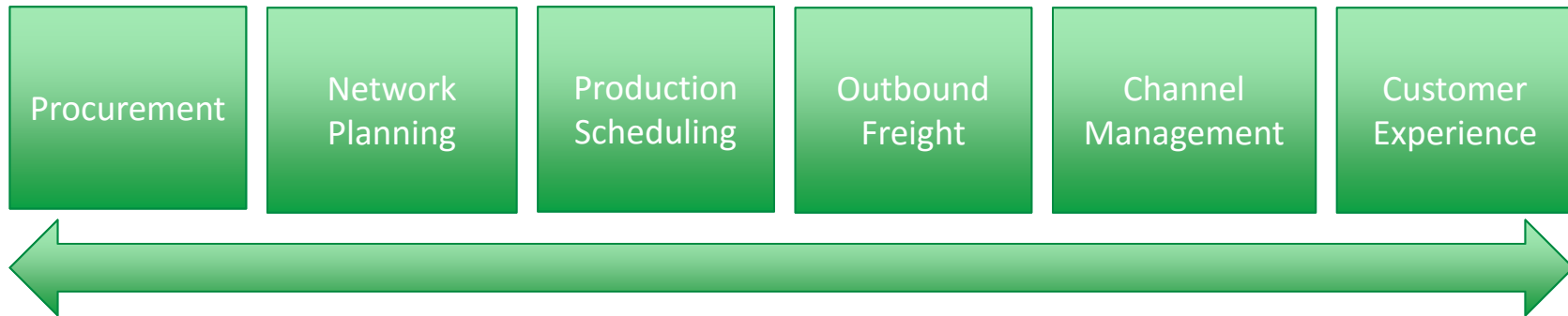
High Efficiency Coatings Applications



JH SUPPLY CHAIN EVOLUTION

JH Supply Chain Overview

A fully integrated value chain that begins with customer value creation...



...and has capabilities that create a substantial competitive advantage:

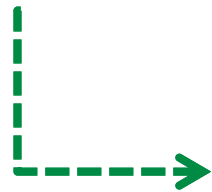
- **Highly integrated customer/channel relationships**
- **To-the-piece order flow, manufacturing, & delivery capability**
- **Automated production scheduling that leverages manufacturing scale**
- **Flexible network model providing redundancy & optimal landed cost**

JH Supply Chain – Capability Advantage

Highly automated, integrated systems...

Enable Customer Integration

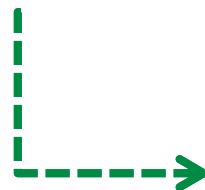
Automated Order Taking Software



Optimization Planning Software builds & aggregates large production runs

Leverage & Exploit Manufacturing Scale

System Generates VMI Replenishments Trucks



TMS Software combines job packs and VMI replenishments to optimize truck weight and multi-stop routing

Optimize Delivered Cost with Freight/Sourcing

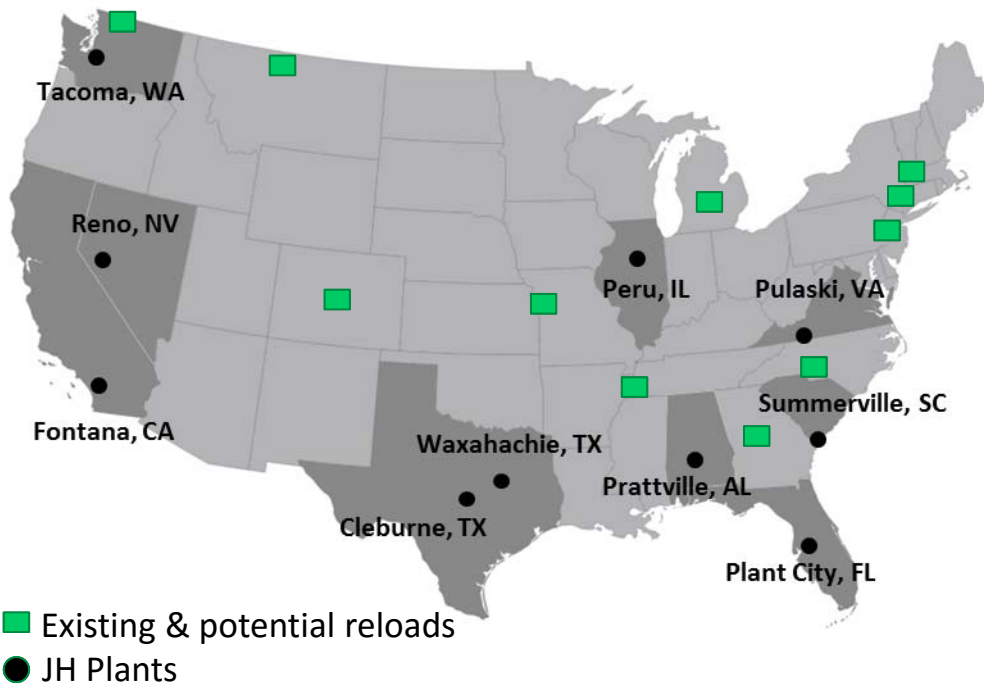
Sequential low cost tendering for delivery



CAPABILITY INVESTMENTS TO ENABLE GROWTH

An expanding network enables a variety of optimization levers...

...requiring a new level of network planning capability to...



Achieve the true lowest landed cost network

Fully exploit the scale of our VMI & reload network

Appropriately level load production through our seasonal demand cycles

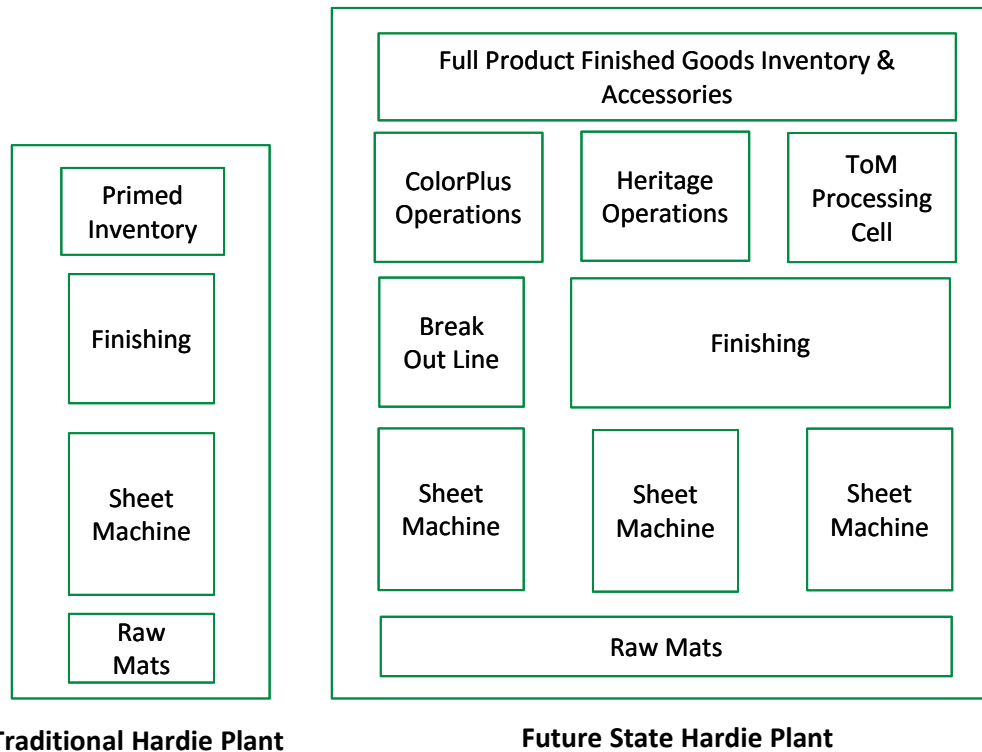
Make optimized trade-off decisions between relative cost differences

We are investing in our significant network planning & modeling capability to enable full leverage of our increasing scale

ENABLING GROWTH “INSIDE THE WALLS”

Increasing plant scale & value-add processing is changing our plant size & flow...

...requiring new capabilities inside the walls...



- Product flow optimization
- Automated material handling
- Warehouse management system
- Work design & flow analysis

We are investing in new capabilities to capture the full benefit of our plant scale & to enable new processing to enhance customer value

FREIGHT OUTLOOK

Market supply/demand dynamics continue to create upward cost pressure...

Market Pressure



Continued economic recovery



Driver shortage



Decreasing trend in driver efficiency



Congested & under-performing rail

JH Response



Optimize proven freight model



Operate as “shipper of choice”



Leverage network product capability



Intense focus on all controllable levers

JH continues to view freight capability as a core competency and expects to offset market pressure through continued performance gains

SUPPLY CHAIN SUMMARY

- We continue to invest in supply chain capability to enable customer value creation at an optimized unit cost
- Our current efforts are focused on leveraging the full benefit of our network and plant scale
- Freight market headwinds persist, but we are well positioned to offset them with industry leading freight capabilities

KEY MESSAGES

- We are becoming a Zero Harm organization
- Step change innovation in manufacturing will continue to deliver significant business value
- We are increasing our focus on continuous improvement to become a more predictable manufacturer
- Tacoma Greenfield on track and includes step change in plant design
- We are continuing to invest in supply chain capability to enable organic growth