

BACKGROUND



Inmotion US manufactures electric motors and controls, for the vehicle, material handling, and construction industries. This project focuses on one of the five electric motor lines, the General Starter Motor, GSM.

Problem

Currently, the GSM line suffers from **high waste**, **excessive Work In Progress**, non-standardized workspaces, and **high clutter**. These factors will **prevent output from expanding** to meet an estimated future demand of at least 7,800 units per year by 2027.

Objectives

1.) Increase 5S Score

- Current: 1.4 / 5
- Goal: 3.4 / 5

2.) Create Plan to Increase Capacity

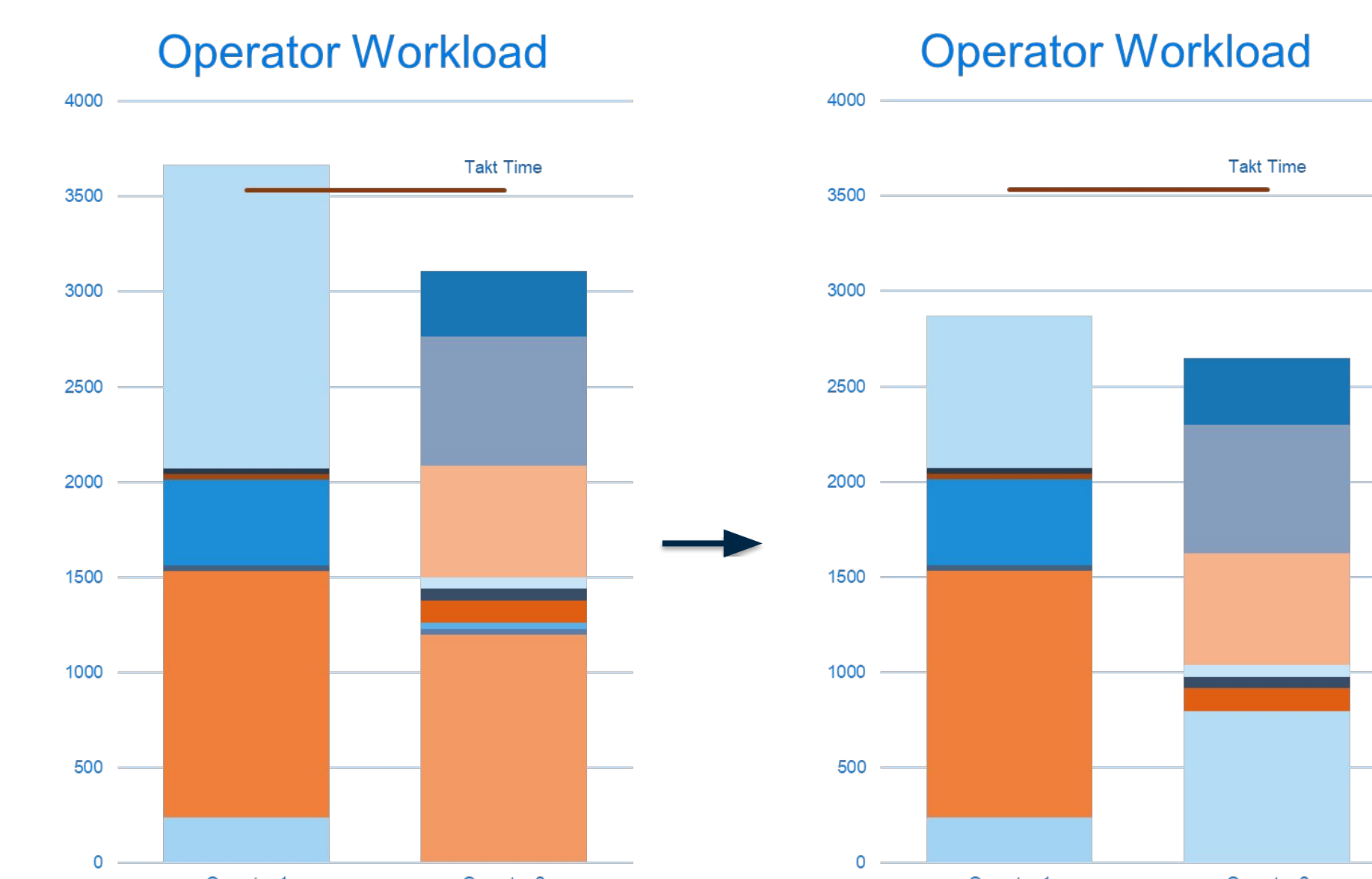
- Current: 1,765 motors per year
- Goal: 7,800 motors per year by 2027

3.) Facilitate Sustainment

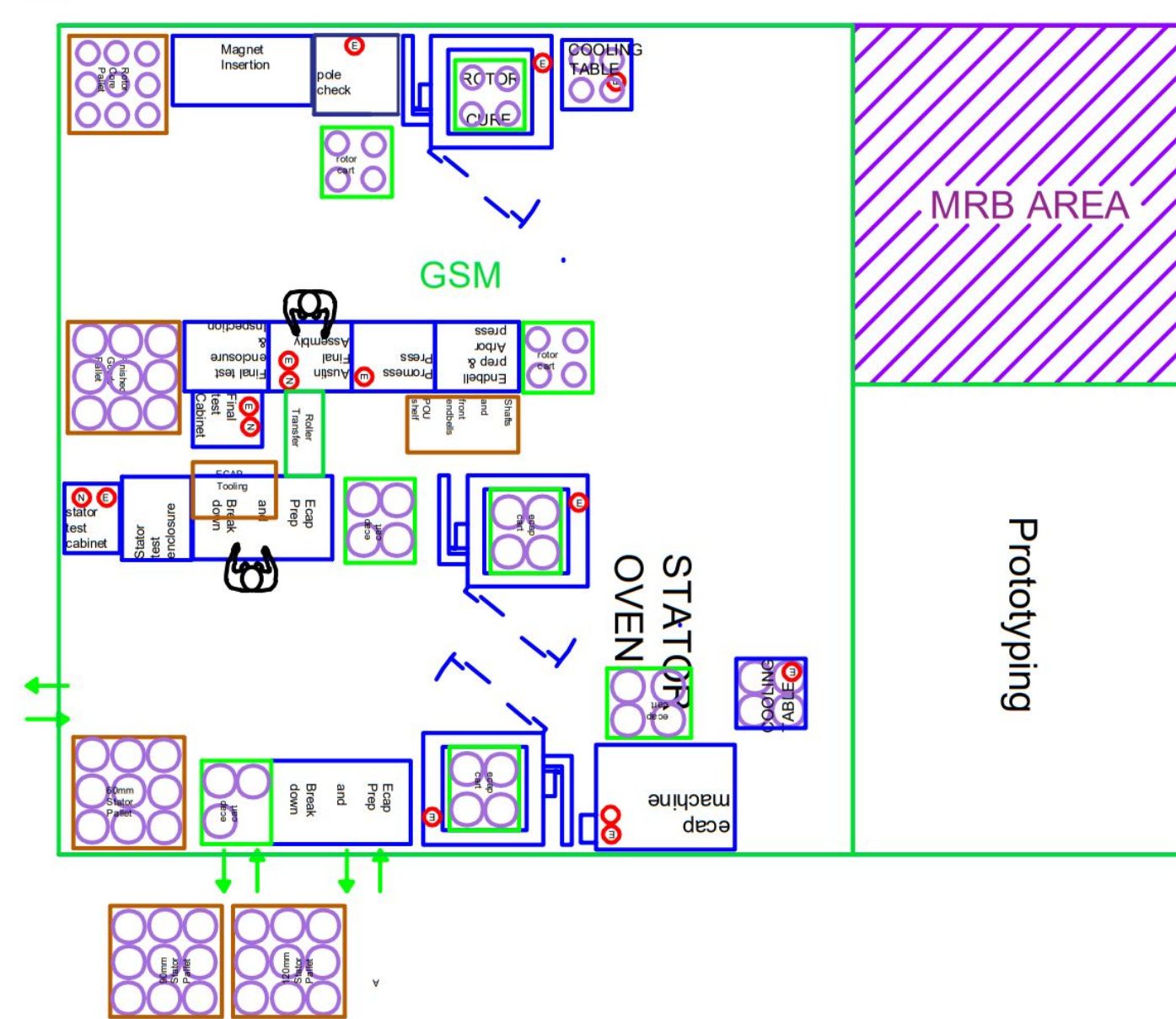
- Create a package of resources to enable sustainment of solutions for at least 6 months

Solutions

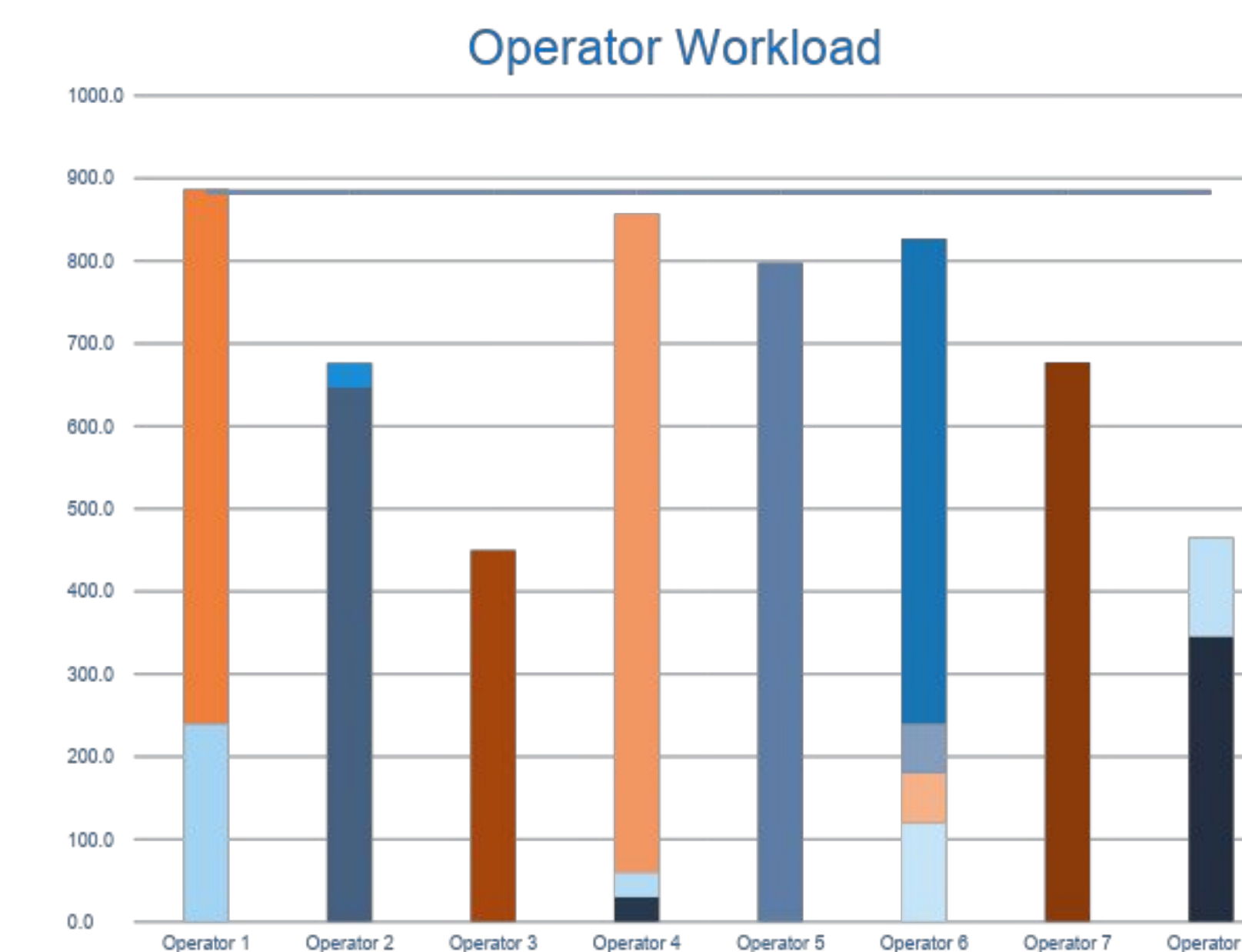
2023
Rebalanced workload between existing operators
Move workstations to streamline flow



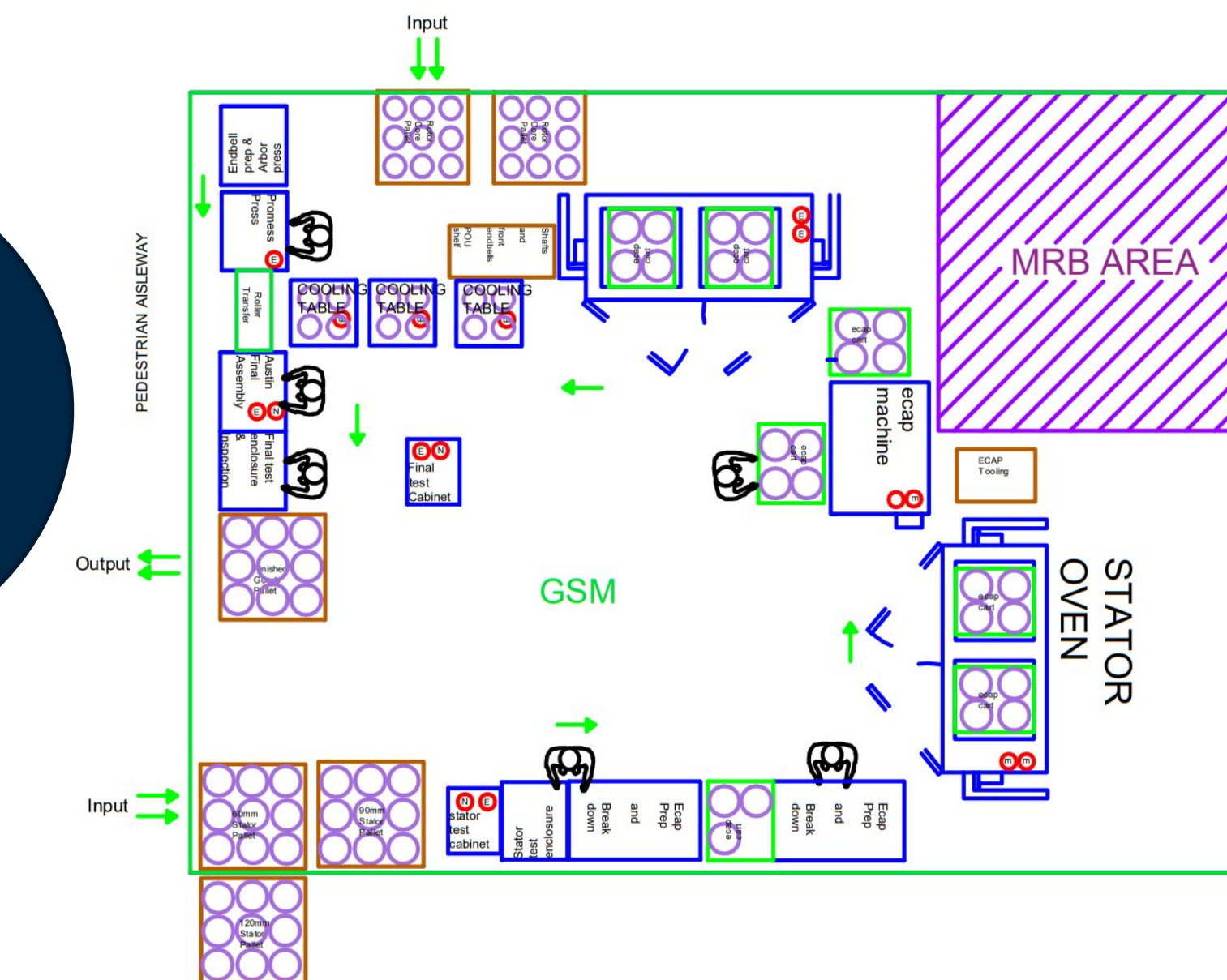
2415
motors/
year



2027
Proposed 6 additional operators
Reconstruct line



7819
motors/
year



Results and Impact

Scored by manufacturing engineers after 5S changes.
New score 3.0/5.

5S Score
Increased by:
32%

Capacity
Increase:
4.5X

Capacity
increase
from
proposal

Distance
saved per
year

Reduced Walking:
**23
miles/year**

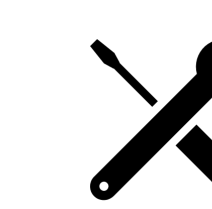
Additional Sales
Enabled:
\$7.6m

Projected
sales enabled
by capacity
expansion

Key Deliverables

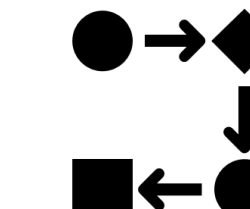
1. 5S Changes

- Create shadow boards
- Implement new visual signage
- Perform sort audits with operators



2. Capacity

- Excel simulation model
- Rebalance line based on demand
- New layouts
- Simio Simulation



3. Sustain

- Updated process sheets to implement 5S cleaning habits
- Created new 5S control document for the plant



PROJECT APPROACH

Define

Finalize project scope
Identify Objectives
Complete Timeline

Measure

Take initial 5S GSM scoring
Identify wastes (8 Wastes)
Conduct time study for capacity data

Analyze

Gap analysis of current state to goal
Create spaghetti diagrams / process maps

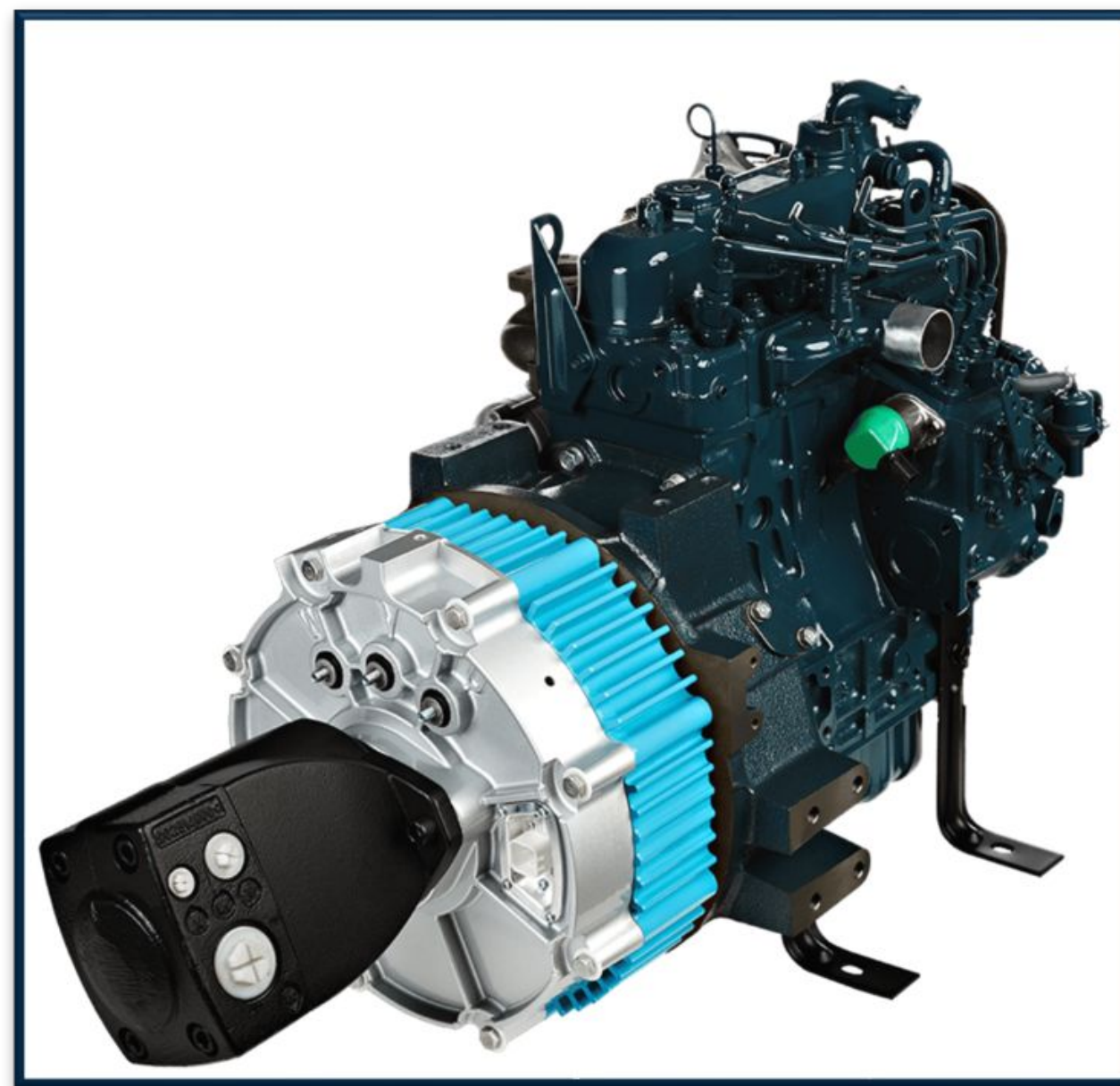
Improve

5S changes implemented in the cell
New cell layout proposals
Future state process map

Control

Create control documents to sustain changes made

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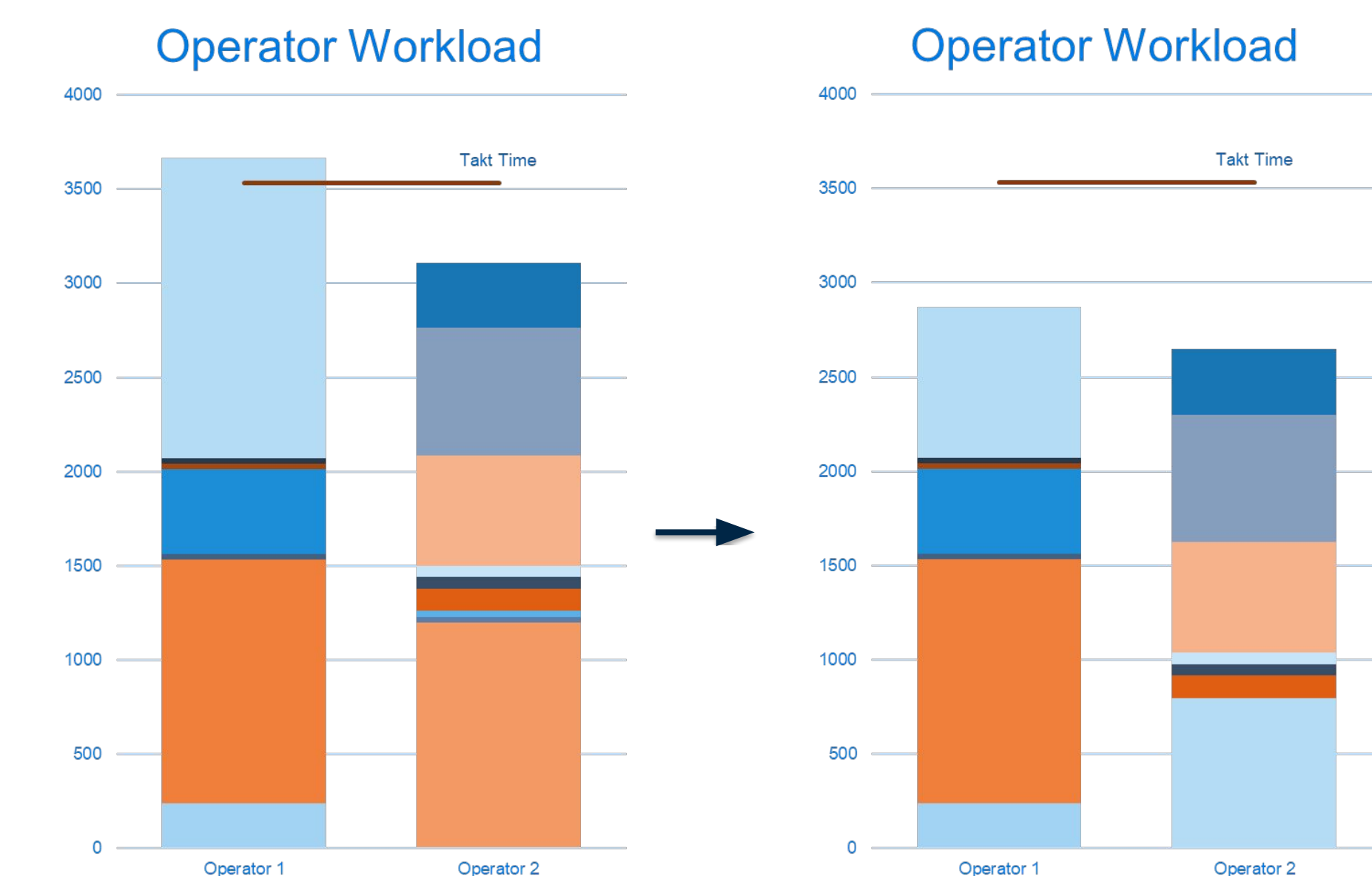
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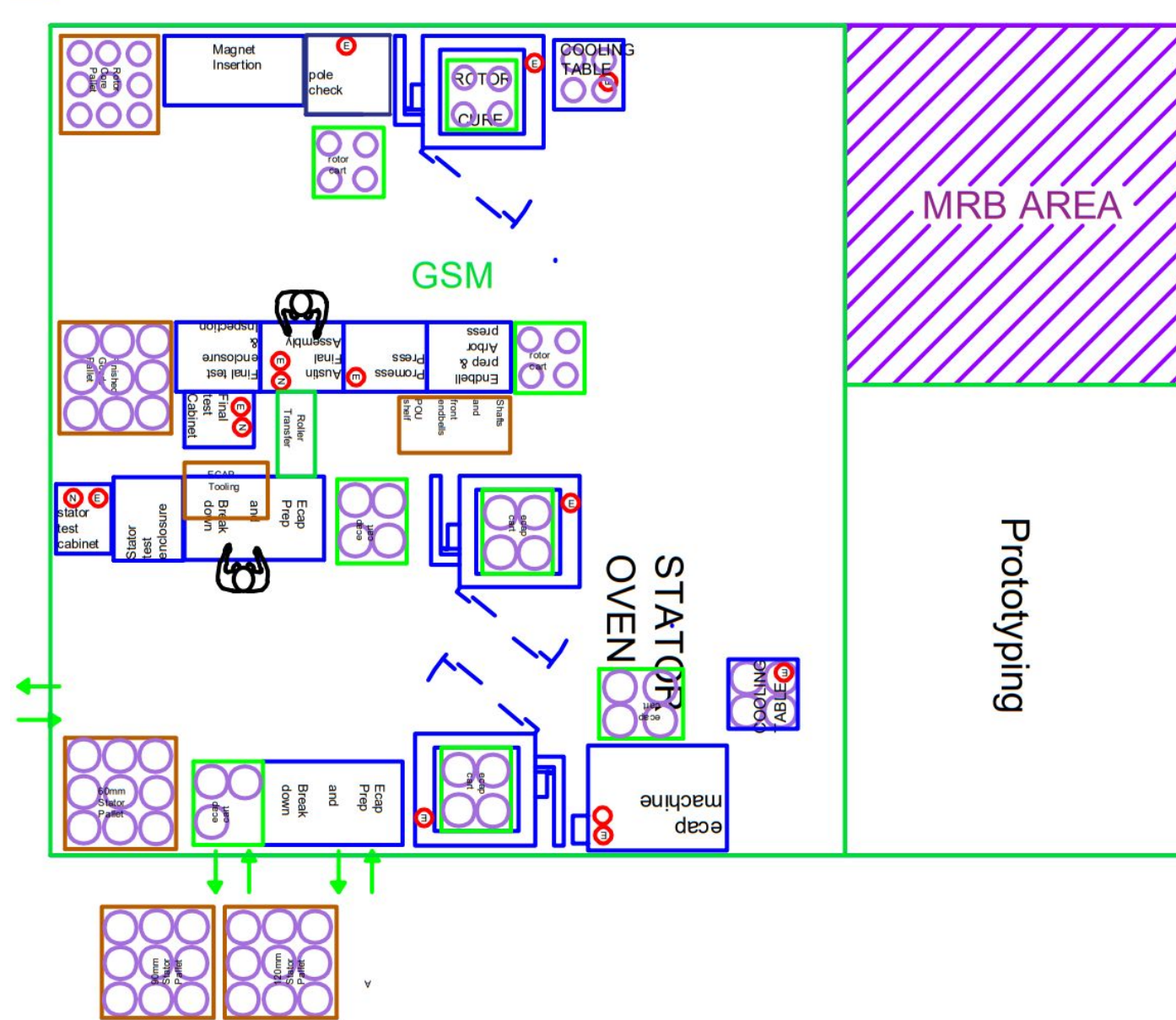
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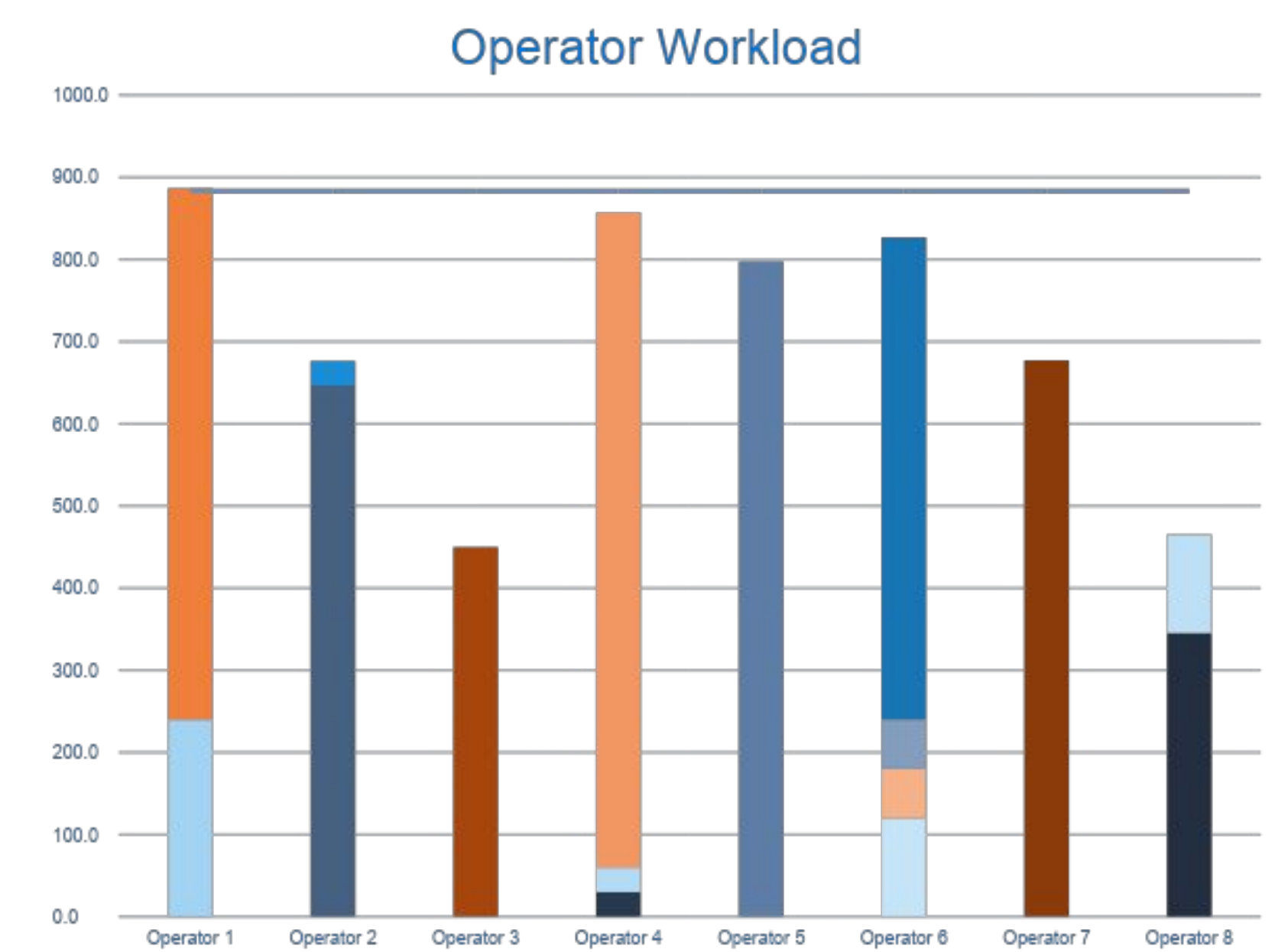
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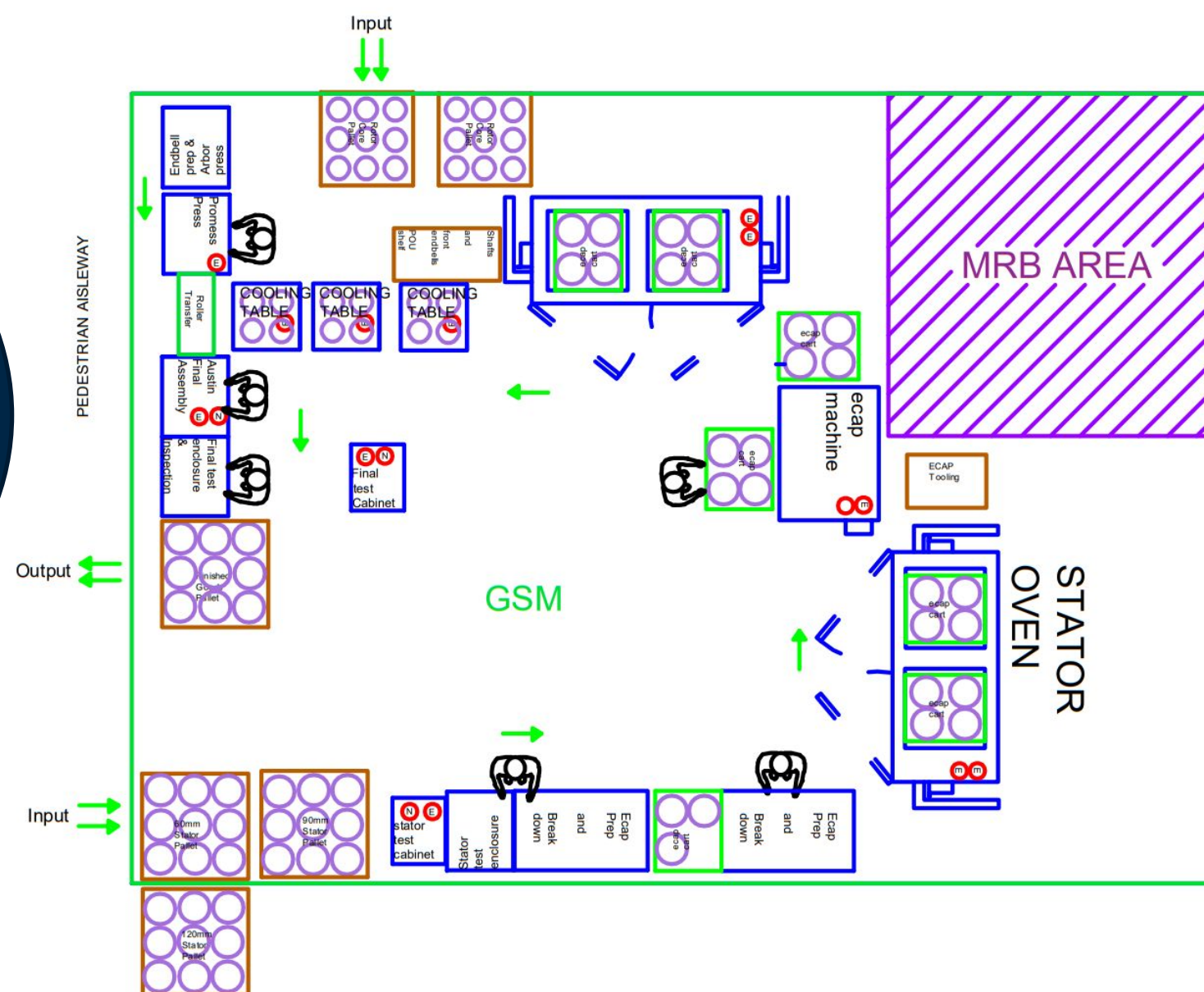
2415 motors/year



2027
Proposed 6 additional operators
Reconstruct line



7819 motors/year



Results and Impact

Scored by manufacturing engineers after 5S changes

5S Score:
3.0

Increase Line Capacity by:
80%

Our plan projects capacity of 7819

From rotor outsourcing and material staging

Reduce Operator Walking by:
70'

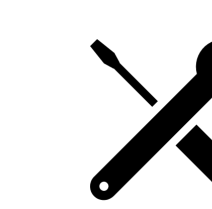
Additional Sales Enabled:
\$7.6m

Projected sales that would be lost if demand not met. Saving include costs of new operators and equipment

Key Deliverables

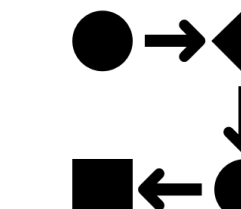
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