Objective:
• GM is very focused on the most efficient process for storing and presenting parts / material to production operators.
• This involves combining CMA and LMS areas into one integrated piece
• Using the same shared space should provide improvement to HPU (Heads per Unit), Floor Space, Overall Process and should provide a return on investment.
• The goal of our project would be achieved if we are planning to be able to understand LMS/CMA Area, document the benefits, and provide improvement recommendations.

Current State
• Kitting
  • Kitting Area is split into 3 Main Sections (Door Rear/Door Front/Regulators&Mirrors)
  • 2 Sides to the Line (Left/Right)
  • Line is Approx. 360 ft. Long
• CMA
  • CMA is currently owned by two parties, responsible for specific parts of the process (GM/Linc)
  • Material in CMA is broken into sections based on delivery zone i.e. (Doors, Cockpit, Hoods)
  • CMA Material is placed in staging to be delivered to kitting area by GM Tugger
• Tugger
  • Currently 2 Tugger Routes (TD4/TD5)
  • Contain averages of:
    Containers/Cycle – 41.975
    # of Cycles – 7
    Distance – 7155 ft/cycle
    Total time/Cycle – 38.92 min
    Utilization – 63.065%

Future State
• Kitting
  • Kitting Area will be placed below high bay storage racking
• CMA
  • CMA will use Dynamic Storage
  • Contain 37 Sections
  • Be capable of holding 9 pallets per section
• Drivers
  • 1 Tugger driver w/ utilization of 19%
  • Delivering material to Door Kit from Dock
  • 2 Stockers unloading material from train and placing in storage location

Current State vs Future State KPIs
<table>
<thead>
<tr>
<th>KPI</th>
<th>Current</th>
<th>Future</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manpower</td>
<td>15</td>
<td>11</td>
<td>18% reduction in Manpower</td>
</tr>
<tr>
<td>Utilization</td>
<td>63%</td>
<td>87%</td>
<td>24% increase in Utilization</td>
</tr>
<tr>
<td>Route Distance</td>
<td>7155 ft/cycle</td>
<td>2700 ft/cycle</td>
<td>63% reduction in Route Distance</td>
</tr>
<tr>
<td>Time to Fill Lane from Empty</td>
<td>21 min</td>
<td>14 min</td>
<td>33% reduction in downtime</td>
</tr>
</tbody>
</table>

Recommendation:
• We have 2 recommendations:
  • Our team is proposing a recommendation of implementing a new Warehouse Management System, this will eliminate a need to create new labels and add waste to the process
  • Based on the parts matrix received we were able to create a table showing what material may need more than one storage location, new re-order points, and identify high runners.

Special Thank You to Paula Jarrett and our awesome team at GM

Costs
• Cost of Implementation - $901,451.25

Return on Investment
• Reduced Headcount – 4 Heads
  • $400,000 Per Year
• Improved Utilization – 63% to 87%
  • $48,000 per year
• Total ROI would be $448,000 per year
• Return on investment would be 2 years maximum

Does not include potential
• ROI from Reduced Driving Distance
• Reduced Preventative
• Maintenance Reduced Safety Costs