

# Material Flow Study Reveals Over \$4M Potential Annual Savings for Automotive OEM

## Customer Challenges

- Inefficient material flow
- Excess labor
- Inefficiencies in storage areas and storage requirements
- Outdated databases and standards
- Insufficient reporting system for maintenance scheduling and bar code scanning

## PROJECT SUMMARY

PMC was retained by a major automotive OEM to perform analyses of material flow within an integrated stamping and sub-assembly plant. The OEM not only wanted recommendations on proposed bar-coding systems and reallocation of production personnel, they also required a reliable tool with which to evaluate future proposed changes to the system.

Throughout the project, PMC's team utilized a variety of industrial engineering techniques. Recommendations were offered, and a custom fit tool was created. Through use of these instruments, the client's requirements were met.

## SYSTEM DESCRIPTION

The plant studied was one of the largest in the automotive industry, containing 23 press lines and occupying 2.5 million square feet.

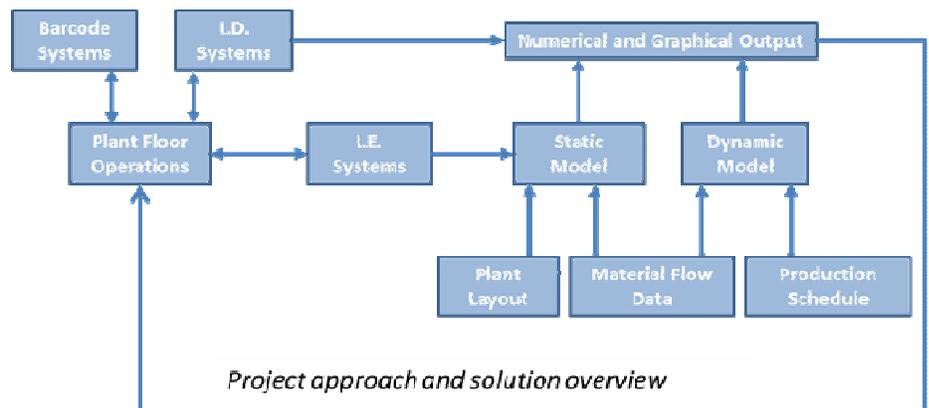
Key system details included:

- Stamping lines' output passed through the sub-assembly area before being shipped out of the plant
- Material flow was generally 'linear' – entrances and exits occurring at opposite sides of the plant
- Stored materials were housed in containers or racks
- Forklifts and dolly trains were the main form of material transport

## OPPORTUNITY

The plant was suffering in several areas relating to inefficient material flow:

- More forklift operators than necessary
- Inadequate storage areas
- Ineffective bar code system
- Inadequate system for reporting equipment utilization and maintenance scheduling



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## APPROACH

PMC's plan was to thoroughly study, analyze, and evaluate infrastructure requirements for better tracking and management of the material handling equipment fleet in the plant facility.

This was achieved by utilizing several methods including: continuous and elemental time studies, static simulation modeling using Flow Path Calculator; and dynamic simulation modeling using Witness software.

## SOLUTION

Upon project completion, PMC's team delivered:

- **Headcount reallocations**  
The plans exceeded the initial goal of 22 operators reallocated
- **Simulation models**  
The analytical tool allowed for quick analysis of material handling resources required by changing production conditions in the plant from both short-term and long-term changes to the production schedule
- **Bar Code and ID System Analysis**  
Full alternative, decoupled solutions that could be pursued in sequence or in parallel

## BENEFIT

PMC's solution offered tremendous savings to the automotive OEM:

- Headcount reductions resulted in an annual savings of \$4.3 Million.
- Bar Code and ID systems recommendations totaled \$1.3 Million in potential savings.

