



# Warehouse Data Collection and Material Flow Study

## PROJECT SUMMARY

A multi-billion dollar automotive supplier was outgrowing its 1.6 million square foot warehouse. With time running out and customer demand increasing, they called upon PMC to analyze the material flow within their facility. More than 10,000 vehicle instrument panels are assembled and shipped daily from this location.

## SYSTEM DESCRIPTION

Both in-house plastic injection-molded and purchased parts are stored in designated sections throughout the plant. These raw materials are brought to assembly lines via fork trucks or vehicle trains. WIP parts are placed in temporary holding areas and finished goods are stored or shipped out by truck to automotive assembly plants.

## OPPORTUNITY

High vehicle congestion areas were scattered throughout the facility. Once controlled part routings were becoming difficult to manage with increased complexity caused by ILVS (In Line Vehicle Sequencing) strategies recently deployed by automotive manufacturers. With over 1200 named parts to move (including color and style complexities), plant engineers realized something had to be done to improve the situation.

## APPROACH

The goals of the study were to improve the pre and post-assembly material flows within the facility. By establishing a data-driven baseline scenario, alternatives could be tested for increased efficiencies regarding material flow to and from assembly lines. First steps were to collect, assemble, and format material flow data. Material handling labor costs and resource utilization were analyzed, as well as verifying a path for every part within the operation. Secondary efforts included static and dynamic modeling to further test options for operational modes

## SOLUTION

A project team was established to conduct a detailed study of material flows connected to warehouse areas. A phased approach began with a review and overhaul of existing data, complete with all current part numbers. Part routings were verified on the plant floor, and mapped in a material flow computer model. Specific routes for high volume parts were modified to increase overall material handling efficiencies.

## BENEFIT

Over 100,000 square feet of floor space was isolated for a central marketplace where often-handled parts were managed through a WMS. A well-maintained database tracked part numbers and routings to assist in inventory planning and management.