DALHOUSIE UNIVERSITY
FACULTY OF ENGINEERING
Department of Industrial Engineering

Layout Redesign at Warehouse 61

Ceren Erturk, Evan Murphy, Georgio Lawen, Roberto Mendez

MICCO Warehousing & Logistics

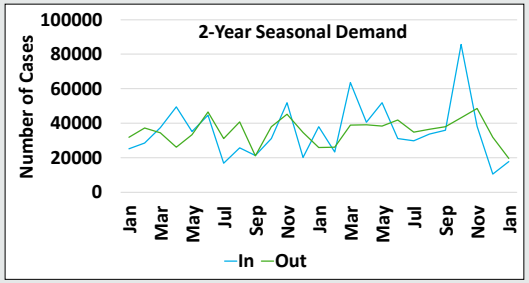
PROBLEM DEFINITION

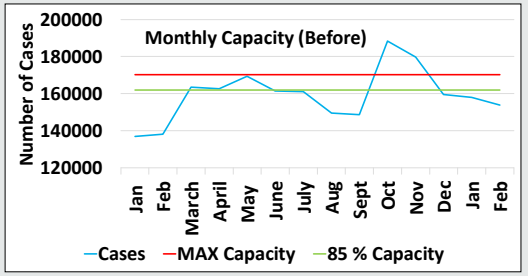
- Inefficient space utilization due to ineffective layout for bulk warehousing processes, causing operational issues.
- FIFO principles are not followed, leading to rearrangements and delays.
- Limited lot accessibility slows operations, complicating warehouse flow.

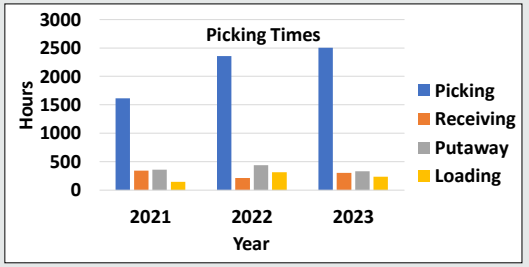
PROJECT SCOPE

- Enhancing the efficiency and product flow within MWL's Warehouse 61
- Redesigning the facility layout for streamlined operations.
- Improving space allocation to meet market demand and customer satisfaction.

DATA ANALYSIS







INITIAL CONDITIONS

Racking Area: Not used to full potential. Utilized to store half pallets and slow-moving products.

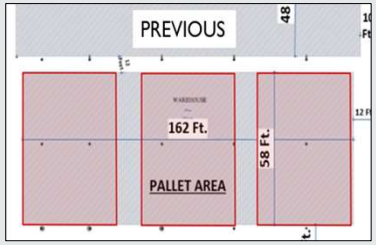
Mezzanine: Occupied by expired products and miscellaneous items.

Quality Assurance: Location is far from pallet wrapper and causing a bottleneck.

FIFO Process: Newer pallets blocking access to older stock causing delays and more handling.

Bulk Lanes:

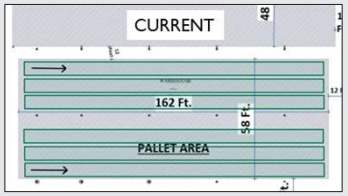
- Unorganized and restricting access to older inventory lots.
- Three arrays of pallets spanning 13 x 15.
- Unnecessary digging required to reach center pallets



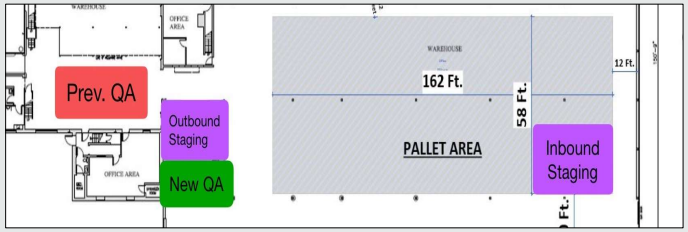
RECONFIGURED WAREHOUSE

Bulk Lanes Turned 90 Degrees:

- Introduces two expansive rows: each 6 pallets wide.
- Reduces the maximum number of pallets that need to be moved to reach the center to two.



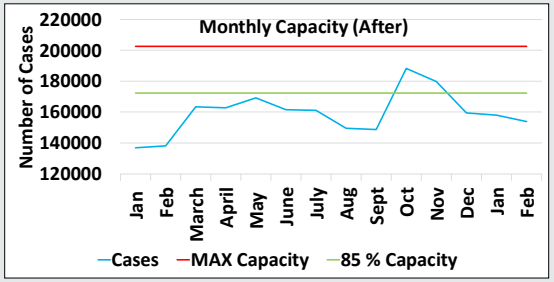
- Relocation of QA area and new inbound and outbound staging areas.

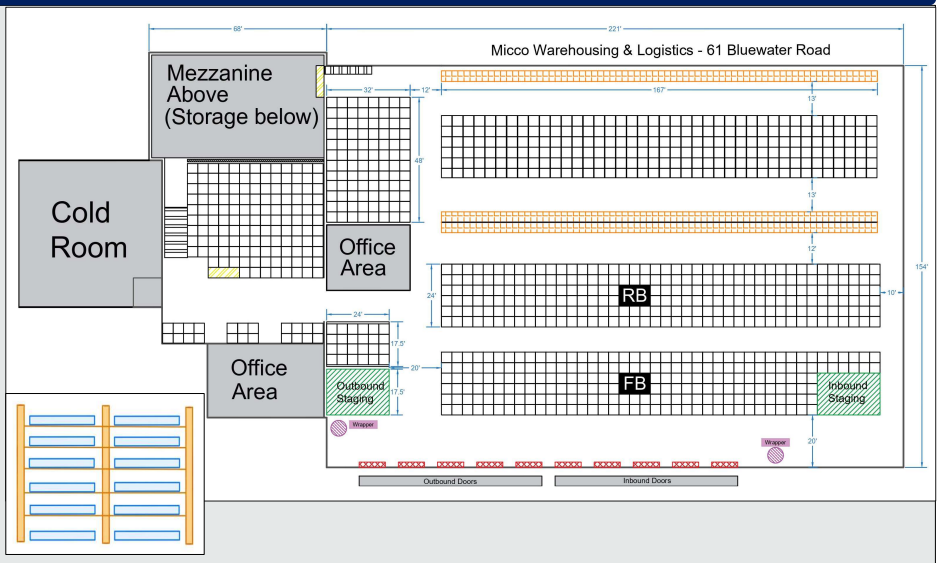


FUTURE RECOMMENDATIONS

Reduce Racking & Add Bulking:

- Maximize warehouse capacity by dividing the available area evenly between bulk and rack storage.
- Achieves a 50% allocation for each option.
- Adds 360 pallets to the racking section, representing a 50% increase in pallet capacity.
- Keeps two racking sections on either side of the partial wall and an additional one at the warehouse's rear.
- Operate at <85% capacity for normal operation.
- Peak demand warehouse capacity becomes 93%.





Reconfigure Remaining Racking Shelves:

- Fit all half pallets into two rows of racking with 6 shelf configuration.