Lean Mail Processing
APWU

August 14th 2013
Introduction to Lean Mail Processing

Lean Mail Processing Projects

Continuous Improvement

Application of Lean Mail Processing Across the Network
Program Objectives

- Implement Lean concepts in mail processing
  - Reduce cycle time
  - Reduce waste
  - Improve efficiency

- As the result of this project, the USPS will
  - Improve service performance
  - Reduce costs
  - Increase employee satisfaction

- Lean Mail Processing is being applied across the network
Mail flow opportunities identified by a national focus group

Pilot projects identified and executed

Prototype Lean Mail Processing plant - South Jersey P&DC

Application across the network
  - Area and Plant Operations Industrial Engineers (OIEs) will be responsible for the implementation process
  - Phase One – Each area develops one Lean Mail Processing plant
  - Phase Two – LMP is applied to all plants, starting with senior plants
  - *Continue to improve Lean Mail Processing*
Lean Mail Processing
In
South Jersey P&DC
South Jersey P&DC implemented 11 projects as Phase One of the Lean Mail Processing program:

- Value Stream Mapping
- 5 S
- MTE Management
- Parcel Sorter Staging
- Letter Staging
- Flats Staging
- Manual Flats
- Reduce Parcel Rework
- Improve Dock Operations
- Signage and Visual Management
- Material Handling Projects
Value Stream Mapping
A complete value stream of all operations in South Jersey was developed and documented.

In addition to the value stream map, craft input on multiple topics was collected, documented, and distributed to the team.
5S
Across The Workroom Floor
Implementation of **5S** was the cornerstone of the South Jersey Project

- **Sorting, Set in order, Shine, Standardize, and Sustain**
- Reduced wasted movement, transport, and inventory (mail transport equipment)
- A statement of culture change and an opportunity for employee involvement
Improve Mail Transport Equipment (MTE) Management
Improve MTE Management

South Jersey project

- Used the MTE Forecasting Tool to calculate the number of mail trays, flat tubs and other MTE for the facility
- NDCs tool to include number of OTRs needed
- Designated a Staging Area for MTE in front of machine and overflow area
- Documented process for stacking and handling MTE at the machine
- Created a centralized MTE work cell to prepare empty MTE to be returned to the MTESC
South Jersey project results

- Reduction of floor space used by MTE
  - From 5,059 sqft. to 2,598 sqft.
  - 49% reduction in floor space
- Validated the design for a new standard work cell for processing MTE
- Validated the MTE Forecasting Tool

Reduced MTE footprint by **48.65%**
(from 5,059 sqft to 2,598 sqft.)
Parcel Sorter Staging
South Jersey project

- Volume analysis completed to determine number of staging lanes per mail class
- Created FIFO Staging Lanes to feed Kanban
- Efficient Mail flow path and assigned staging
- Kanbans implemented
  - Floor markings to show time remaining
  - Installed signal light for far side of machine
- Metrics Measured included
  - Cycle time
  - Throughput variation
South Jersey project results

- Reduced cycle time from first dock scan to first scan on APPS for standard bundles
- Reduced cycle time from first dock scan to first scan on APPS for Periodicals bundles

**Cycle time was reduced by 57.34% (from 19.2 hrs. to 8.19 hrs)**

**Cycle time was reduced by 42.39% (from 10.37 hrs. to 5.98 hrs.)**
Flats Staging
South Jersey project
- Determined number, size and location of staging lanes
- Created and labeled FIFO Staging lanes from APPS to AFSM
South Jersey project results

- Reduced cycle times for Standard flats from Dock to AFSM
- Reduced cycle times for Periodicals flats from Dock to AFSM

Cycle time for Standard Flats from Dock to AFSM was reduced by **34.25%**
(from 47.3 hours to 31.1 hours)

Cycle time for Periodicals Flats from Dock to AFSM was reduced by **25.52%**
(from 27.7 hours to 19.8 hours)
Reduce Parcel Rework
South Jersey project

- Sort Program Analysis completed to ensure proper assignment of bins
- Metrics Measured included
  - Pieces Finalized %
  - Manual down flow volumes
  - Secondary sort plan volumes
  - Cycle Time
South Jersey project results

- Decrease in rework volume accounts for an estimated reduction of 24 work hours per day

% Finalized has improved by **3.32% points**
(from 88.66% to 91.60%)

Manual Rework Volume decreased by **92.38%**
(from 2,807 pieces to 214 pieces)
Improve Dock Operations
South Jersey project

- Improving the flow required improving the infrastructure
  - Registry cage was removed and the operation relocated to unused office space
  - Dock clutter was removed
  - Door numbers and lanes were installed
  - Area was repainted and new signs installed
South Jersey project

- Improving scanning performance and container management
  - Installed Container Information Display Systems (CIDS)
  - Shows the trips and the status of containers assigned to those trips
Signage and Visual Management
South Jersey project

- Standardized signage designs based on industry standards and Human Factors design principles
- South Jersey craft and management participated in the final selections
- Use colors and icons/graphs
  - Letters – Purple
  - Flats – Green
  - Parcels/Bundles – Brown
  - MTE – Grey
- Developed hardware system to support the signs
- Software and ordering agreements to support national deployment are in development
South Jersey project
- Production boards used to display metrics, trends, and goals for each area of the facility
- Empowers employees to fix problems as they arise
Material Handling Projects
South Jersey project results

- Reduce rework caused by not reading the mail tray bar code by installing new cameras to read the tray bar codes

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Reduction of rework by 27.89%
(from 6.34% to 4.55%)

- Implemented simple “APC Closed Flag” poka-yoke project to eliminate confusion between Standard and First Class containers on the sweep side
- Developed by Manager, In-Plant Support Jerry Fillman
Continuous Improvement
12 new projects are being developed, tested or implemented

- Reduce tour overlap and break relief
- Process 100% of rejects on the LCREM
- AFCS 200 mail flow improvement
- Load level the workload for processing and delivery
- Container density improvement
- Bypass utilization replication
- Late trips 0400-0900/Late Slips
- Loose Mail Feed System Improvements
- Operator to Machine Badge-in
- Automated Pallet Handling
- Maintenance 5S for stock room and work areas
- Delivery and Post Office Operations Improvement
Additional projects are being generated as LMP is applied to other plants and NDCs

Projects with national potential will be integrated into South Jersey

Additional improvements will be sought from the same operations addressed in Phases 1 and 2
Application of LMP Across The Network
Phase 1 Area sites to begin July 8-October 1, 2013

Area Phase 1 LMP Sites

- Capital Metro-Merrifield and Dulles
- Great Lakes-Milwaukee P&DC and annex
- Northeast-Providence P&DC
- Pacific-San Bernardino P&DC
- Southern-Tampa and Tampa L&DC
- Western-Des Moines

National Implementation at all Senior Plants to begin August 1-October 31, 2013
Questions ?