



**FACILITIES MAINTENANCE  
MAIN WAREHOUSE**

**Workload Measurement, Validation,  
and Process Analysis/Improvement  
Study Report**

**EXECUTIVE SUMMARY**

**11 May 2007**

## EXECUTIVE SUMMARY

1. **CHARTER:** Mr. Richard Storlie, Director, Administrative Services requested a workload measurement, validation, and process analysis/improvement study be conducted in the Facilities Maintenance Main Warehouse. This study was conducted from 15 February – 30 April 2007.

2. **OBJECTIVES:** The main study objectives were to identify and document key processes; measure and document workload; validate manpower requirements; identify process improvement opportunities; and improve warehouse business practices to enhance efficiency, improve customer service, and save money.

3. **STUDY TEAM:** This study was planned and led by Mr. Doug McLean, Facilities Management Analyst. Team members included Mr. William Hauenstein, Supply Technician II and Ms. Debra Heimbuch, Supply Technician II.

4. **METHODOLOGY:** A combination of data collection and analysis techniques were used. A Supplier-Input-Process-Output-Customer (SIPOC) model was developed to identify key customer-supplier relationships. Five key processes were identified, observed, flow charted, and critical steps documented for workload measurement and process improvement. A Man-hour Availability Factor (MAF) unique to Facilities Management's operating schedule was developed incorporating shift schedules, weekends, holidays, leave, and other excused time. Operational audit (workload measurement) was accomplished using historical data, task measurement, and technical estimate. Allowances were also made for indirect labor tasks, defined in this report as Standard Indirect Allowed Man-hours (SIAMs). Customer feedback was solicited via a customer service survey. Customer service frequencies and per accomplishment times were collected for 30 days using tally sheets. Process measurements and validation reflect the current business model.

#### 4. MAJOR FINDINGS & RECOMMENDATIONS:

##### FINDINGS

- 4-Day / 10-Hour work schedule negatively impacts customer service & personnel welfare
- Warehouse is understaffed; workload measurement validates **3.128** manpower requirements
- No career path for warehouse staff
- Manual inventory control process is broken; negatively impacts multiple processes
- Warehouse inventory old/outdated; excess overhead and wasted storage space

##### RECOMMENDATIONS

- Return to 5-Day / 8-Hour work schedule **(Done)**
- Increase manpower +1 FTE **(Aw Management Decision)**
- Explore supervisor options **(Aw Management Decision)**
- Implement Bar Code system **(In Work)**
- Conduct inventory reduction **(In Work)**

## **FINDINGS**

- Purchasing process inefficient; large volume of small purchases / multiple vendors (PC card)
- Bulky items require excessive storage space (HVAC filters, automotive tires, lamps)
- Unrestricted warehouse access; aggravates inventory control process & possible shrinkage
- Unrestricted tool room access; possible shrinkage
- Individual tool purchases costly, time consuming, unpredictable budget item
- Warehouse stock layout inefficient; similar stock items not co-located
- Flammable gasses stored inside warehouse
- Pipe stock difficult to load / unload from warehouse storage racks
- Warehouse lower level cramped; access inefficient; upper level forklift access difficult & wasted space

## **RECOMMENDATIONS**

- Use primary vendor / WSCA / open-ended POs (**Future**)
- Utilize Just-In-Time delivery (**In Work**)
- Restrict after Bar Coding (**Aw Management Decision**)
- Restrict access to supervisors (**Done**)
- Trades purchase own tools (**Aw Management Decision**)
- Reorganize warehouse stock (**Aw Inventory Reduction**)
- Build outdoor storage cage (**Aw Management Decision**)
- Install outside access door (**Aw Management Decision**)
- Replace deck with new racks (**Aw Management Decision**)

5. **FOLLOW-UP:** A follow-up report will be written after process changes are fully implemented and after sufficient time has elapsed for these “new” processes to normalize. Workload measurement and manpower requirements validation will be re-accomplished in order to document these new processes.

6. **IMPLEMENTATION:** The decision to implement all or part of the recommendations or modifications suggested in this report rests with the process owner, Mr. Richard Storlie, with the counsel/concurrence of Facilities Management’s senior leadership.

7. For more detailed information and analysis the full report can be viewed at [Attach 1](#). Please direct any questions or comments regarding this report to Mr. Doug McLean, Facilities Management Analyst at 895-5504 or e-mail [doug.mclean@unlv.edu](mailto:doug.mclean@unlv.edu).

## **Attach 1**



Warehouse Study  
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