



**Auditor of State
Betty Montgomery**

LIBERTY UNION-THURSTON
LOCAL SCHOOL DISTRICT
PERFORMANCE AUDIT

APRIL 10, 2003



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Betty Montgomery**

To the Board of Education, Superintendent and Treasurer of Liberty Union-Thurston Schools:

In December of 2002, officials of the Liberty Union-Thurston Local School District requested that the Auditor of State conduct a performance audit of custodial operations. Following discussions with the Superintendent and Maintenance Supervisor, three areas were identified for review: efficiency of custodial operations, staffing levels and span of control, and workload distribution. These areas were selected because they are important components of the District's custodial operations that support its goal of providing students the tools for learning and the skills for living through quality education.

The performance audit contains recommendations that, if implemented, could provide operational and business practice improvements. While the recommendations contained within the performance audit are resources intended to assist in refining operations, District officials are encouraged to assess overall operations and develop other recommendations independent of the performance audit.

This report has been provided to the Liberty Union-Thurston School District and its contents discussed with appropriate officials and management. The District has been encouraged to use the results of the performance audit as a resource in improving its overall operations and service delivery.

Additional copies of this report can be requested by calling the Clerk of the Bureau's office at (614) 466-2310 or toll free at (800) 282-0370. In addition, this performance audit can be accessed online through the Auditor of State of Ohio website at <http://www.auditor.state.oh.us/> by choosing the "On-Line Audit Search" option.

Sincerely,

A handwritten signature in cursive script that reads "Betty Montgomery".

BETTY MONTGOMERY
Auditor of State

April 10, 2003

Background

Liberty Union-Thurston School District (LUTSD) contacted the Auditor of State's Office (AOS) in December 2002 to request a performance audit of the efficiency of custodial operations, the appropriateness of custodial staffing levels and the appropriate workload and span of control for custodial staff. AOS analyzed custodial operations and developed recommendations for improvements and reductions in expenditures. LUTSD is comprised of three separate buildings, with one facility housing the middle and high schools (see **Table 1**). Beginning summer 2003, the District will begin remodeling the current elementary school. Other planned facility changes include building a new middle school for the 2005-06 school year. The custodial staff consists of 9 full-time equivalent (FTE) employees, who currently report directly to the maintenance supervisor who is responsible for assigning work and ensuring its completion.

Throughout this report, comparisons are made to several similar sized school districts. These districts include Bloom-Vernon LSD (Scioto County), Bridgeport EVSD (Belmont County), Eastern LSD (Brown County), Federal Hocking LSD (Athens County), Green LSD (Scioto County), Southern LSD (Meigs County), Trimble LSD (Athens County), and Williamsburg LSD (Clermont County). In addition, results from the 31st Annual American Schools & University (AS&U) Maintenance & Operations Cost Study, which was released in April 2002, are included in the report.

The AS&U mailed a detailed survey to chief business officials at public school districts across the nation to gather information regarding staffing levels, expenditures and salaries for maintenance and custodial workers. Unlike previous years, where results were divided into regions, this year's report provides the median number for each category on a national level and by district enrollment (less than 1,000 students; 1,000 to 3,499 students; and greater than 3,500 students).

According to the 31st Annual AS&U study, "As has gone the economy over the past couple of years, so went spending by school districts on maintenance and operations. Even as the effects of inadequate maintenance continue to plague many of the nation's school buildings, maintenance and operations budgets continue to be among the first cut during tight financial times – resulting in a classic 'pay me now or pay me later' scenario." In addition to making comparisons with the AS&U, several other peer district staffing ratios are used.

Key Statistics

Key statistics related to the maintenance and operations of (LUTSD) are presented in **Table 1**.

Table 1: Key Statistics and Indicators

Number of School Buildings	3¹
- Elementary School	1
- Middle School	1
- High School	1
Total Square Feet Maintained	154,621
- Elementary School	35,003
- Middle School	54,862 ²
- High School	64,755
Average Square Feet Per FTE Custodial Staff Member (9 FTEs)	17,180
- Average Elementary School (3 FTEs)	11,668
- Average Middle School ² (3.5 FTEs)	21,945
- Average High School (2.5 FTEs)	18,501
AS&U 31st Annual Cost Survey 1,000 – 3,499 students	24,782
AS&U 31st Annual Cost Survey National Average	23,985
Peer Average	24,087

¹ The middle and high school are connected by a corridor; however, the District staffs them separately with the exception of the day shift.

² The middle school square footage includes the athletic field house and District office.

Recommendations

Staffing Allocations

Table 2 provides a comparison of LUTSD square footage per custodian with the AS&U and comparative districts.

Table 2: Square Footage per Custodian

Liberty Union-Thurston School District	17,180
Peer Districts:	
- Bloom-Vernon LSD	21,727
- Bridgeport EVSD	18,903
- Eastern LSD	27,850
- Federal Hocking LSD	23,189
- Green LSD	26,588
- Southern LSD	29,740
- Trimble LSD	26,460
- Williamsburg LSD	24,906
Peer District Average	24,920
Difference	(7,740)
AS&U 31st Annual Cost Survey 1,000 – 3,499 students	24,782
Difference	(7,602)

LUTSD’s custodial staff is responsible for maintaining only 17,180 square feet per custodian, which is substantially less square footage per custodian than the comparative districts. Square footage cleaned is an important measure of efficiency in custodial operations. Districts exhibiting a low square footage cleaned in comparison to their peers and the AS&U average suffer from low levels of custodial efficiency and, as a result, draw scarce resources away from educational processes. The actual square footage maintained by each custodian is illustrated in Table 3.

Table 3: Square Footage per Custodian

Building	Custodian	Square Footage Maintained
Elementary School	Day Shift 1	6,605
Elementary School	Night Shift 1	16,252
Elementary School	Night Shift 2	16,197
Middle School /District Office	Night Shift 6	28,228
Middle School/Field House	Night Shift 7	25,518
Middle/High School	Day Shift 2	3,387
High School	Night Shift 3	15,784
High School	Night Shift 4	29,239
High School	Night Shift 5	19,655

Table 3 indicates an inequitable distribution of workload for the custodial staff. The lowest square footage maintained is that of the day shift custodians. The main function of the day custodians is to respond to emergencies. Their cleaning duties are limited because of students in the facility during their shift. The day shift custodian in the elementary school is responsible for setting up and tearing down 15 cafeteria tables in the multi-purpose room and cleaning the floor after lunch so the facility can be used for gym class. The day shift custodian in the middle/high school is responsible for the kitchen. The lunch room, which is used for study hall in the afternoon, is the responsibility of a night shift custodian. In addition, day custodians are also responsible for checking the restrooms two to three times a day and cleaning and restocking as needed.

Each building, with the exception of the elementary school, has a large variance in square footage maintained by each custodian. In the high school, one custodian is maintaining 15,784 square feet while another is maintaining 29,239 square feet. LUTSD could more equitably divide custodial responsibilities by implementing the following recommendations:

- R1.** The day shift high school/middle school custodian should take on additional responsibilities, especially when the new middle school is completed. One possibility is cleaning the high school office area in the morning prior to school opening. This area is approximately 1,749 square feet. Currently the high school night custodian 4 is cleaning this area. By placing the responsibility of the office with the day shift custodian, the night custodian 4's workload would be decreased to 27,490 square feet.
- R2.** The District should split the athletic building job duties between the middle school night custodian 7 and the high school night custodian 3. The George Patty Building and the locker rooms should remain with the middle school night custodian 7, which brings the total square feet maintained to 20,719 and increases the high school night custodian 3's square feet to 20,584

The District will begin remodeling the current elementary this summer. The square footage for the new facility is 55,197. This includes the addition of a new gym allowing for a separate dining area. Assuming the day custodian maintains the same square footage as the current facility (6,605), then the night custodians will be responsible for the remaining 48,592 square feet. The night custodians will maintain approximately 24,296 square feet per custodian, an increase of approximately 8,000 square feet per custodian. This square footage is more in-line with the peer average and the AS&U averages.

In addition to remodeling the elementary school, the District is adding a 68,000 square foot middle school in 2005-06. This will increase the current square footage maintained by the middle school custodial staff (2 FTEs) to 34,000 square feet each. The new building will be located close to the current elementary facility, and the old facility will be demolished.

Table 4 outlines the current square footage maintained by each of the custodians, the redistributed square footage based on **R1** and **R2**, and the potential square footage maintained by each custodian if the current staffing levels are maintained after the remodeling and addition of a new middle school.

Table 4: Current and Planned Square Footage

	Current	Redistributed Square Footage	Remodeled Elementary	New Middle School
Elementary School	35,003	35,003	55,197	55,197
Day Custodian 1 (1 FTE) ¹	6,605	6,605	6,605	6,605
Night Custodian 1	16,252	16,252	24,296 ²	24,296
Night Custodian 2	16,197	16,197	24,296 ²	24,296
Middle School	54,823 ³	54,823 ³	54,823 ³	68,000 ⁴
Day Custodian 2 (.5 FTE)	1,116	1,116	1,116	N/A
Night Custodian 6/ District Office	28,228	20,719	20,719	34,000 ⁵
Night Custodian 7/Athletic Bldg	25,519	25,519	25,519	34,000 ⁵
High School	64,755	64,755	64,755	77,467 ⁶
Day Custodian 2 (.5 FTE)	2,271	4,020	4,020	4,020
Night Custodian 3	15,784	20,584	20,584	27,196 ⁷
Night Custodian 4	29,239	27,490	27,490	27,490
Night Custodian 5	19,655	19,655	19,655	20,955 ⁸

¹ Square footage for the day custodians is assumed to remain as assigned for the current square footage with the remodel.

² The square footage for each night shift custodian is assumed to be equal. Total square footage cleaned for the night custodians is reduced by that maintained by the day custodian.

³ The square footage for the current middle school includes the district office and the two athletic buildings.

⁴ Square footage for the new middle school does not include the district office and two athletic buildings. These square footages are added to the high school once the new middle school is completed.

⁵ This square footage assumes that the evening custodians split the job duties of the new facility equally. It also assumes that if a day shift custodian is added, the square footage is minimal for this position.

⁶ The square footage for the high school includes the district office and the athletic building once the new middle school is constructed.

⁷ Includes original square footage maintained and the addition of the athletic buildings (11,412 square feet).

⁸ Includes original square footage maintained and the addition of the district office building (1,300 square feet).

Once the new middle school is built, the high school custodians will have to maintain the athletic facility and the District office. These facilities are currently assigned to middle school custodians. As depicted in **Table 4**, the high school night custodian 3 maintains the entire athletic facility in addition to the current assigned square footage.

- R3.** The day shift custodian currently assigned to the elementary school could split time between the elementary and middle school once the new middle school is finished. The high school night custodian 5 should assume the responsibility of the District office.

Custodial Supervision

Currently, all custodians report to the maintenance supervisor. The District has raised concerns about the level of supervision this position can provide, since this position supervises three maintenance employees in addition to performing various maintenance functions. The District had previously employed a part-time (three to four hours a day) custodial supervisor and is considering the addition of a full-time custodial supervisor.

- R4.** Based on the current staffing levels, the District has several options regarding custodial supervision without hiring an additional employee to serve as a custodial supervisor. However, once the new addition and school are completed, the District should consider the increase in square footage and its impact on staffing and supervisory requirements.

Option 1

LUTSD could reallocate custodial duties among the current staff to allow a current custodian to perform the needed supervisory functions as a head custodian. This option would allow the District to maintain current custodial costs and provide the supervisory role it is seeking. This would increase the square footage maintained for some of the custodians depending on the reallocation of job duties. This option could limit the contact of the supervisor with the custodians, because this individual would probably be located in one facility and it may not be practical for the individual to travel to the other two.

Option 2

LUTSD could allocate supervisory duties of custodians to building principals. Each building principal would identify key issues to custodians as they arose. Under this option, it is imperative that the custodial staff receives ample training. Principals would not be responsible for telling custodians how to clean, but rather, for ensuring that job duties are performed in a satisfactory manner. This option would allow the District to maintain current costs and provide for a more direct line of supervision and direction. Building principals are in the building daily and can often provide direction in areas that are not being maintained at a satisfactory level.

Option 3

LUTSD could make the current maintenance supervisor a full-time supervisor providing the opportunity to supervise both maintenance and custodial employees. Under this option, the District would have to ensure that maintenance responsibilities are adequately performed. However, maintenance requirements may decrease when the new middle school is finished.

Procedures and Training

The District does not have formal training for custodial employees. In addition, the custodial staff does not have formalized procedures that specify the techniques and products that should be used in various job duties. Each custodian performs their specific job duties with the products and procedures that they want to use rather than a standard product chosen by the District. Other school districts have achieved custodial efficiency by establishing formal procedures for each custodian and those duties assigned to each.

Standardized procedures and supplies ensure that custodial staff is familiar with equipment, cleaning supplies and appropriate cleaning procedures. Likewise, standardization helps custodial staff increase efficiency. In the absence of formal training and standard procedures and supplies, there is an inconsistency and inefficiency in the District's custodial operations. By allowing each custodian to determine the procedures and products they use to clean, the District runs the risk of not having all areas cleaned in the most efficient or effective manner.

- R5.** LUTSD should standardize cleaning procedures for all areas maintained. These procedures should specify the supplies to be used for each job duty. Standardizing procedures and supplies will increase efficiency in custodial operations and ensure that all District facilities are sufficiently and consistently cleaned. In standardizing the procedures, the District should investigate the best equipment, products and procedures to obtain the highest level of efficiency.

- R6.** Once LUTSD has developed formal procedures for custodial operations, it should provide training on those procedures and should periodically review the procedures to ensure that all custodians are cleaning sufficiently and consistently. Experience is important; however, training on procedures may increase the efficiency and effectiveness of the current staff. The District should invest resources in ensuring that the custodial staff receives training on products, equipment and cleaning methods on an annual basis, especially on any new equipment or procedures. The International Sanitary Supply Association (ISSA) has developed a training program manual designed to help train custodians. The program details the correct cleaning methods as well as the proper use of custodial equipment. This manual details procedures, guidelines and pointers on the following:

- Floor finish application;
- Auto scrubbing;
- Carpet care and maintenance;
- Damp/wet mopping;
- Proper dilution methods;
- Dust mopping;
- Oscillating and multiple brush floor machines;
- Rotary floor machines;
- Scrubbing/stripping;
- Spray buffing/high speed burnishing;
- Wall washing;
- Washroom cleaning;
- Wet/dry vacuums; and
- Window cleaning.

The cost of this manual is \$60 for non-members and \$45 for members. In addition to this manual, ISSA has several other training programs for custodial staff.

Equipment

LUTSD staff reported concerns about vacuum cleaners and electric manual floor scrubbers. The District has a substantial amount of carpeted square footage to maintain, and custodians will be able to maintain the facilities easier if the District invests in better equipment. The District's vacuum cleaners do not have attachments available on more current models. This hinders the ability to clean close to walls and bookcases and results in discolored and dusty spots in these areas. If vacuum cleaners are displacing a large amount of dust into the air, then sweeping is of little value. The Carpet and Rug Institute tests and categorizes vacuum cleaners and identifies those units that remove soil, contain dust within the filtration bag keeping it out of the air, and do not damage the carpet while keeping a good appearance. The Institute suggests looking for durability when selecting a vacuum cleaner to reduce the long-term costs of maintaining or replacing equipment. Poor quality vacuum cleaners continue to operate, but cleaning efficiency can deteriorate quickly, and maintenance or replacement costs are high.

The District's current electric manual floor scrubbers are difficult to use, and custodians are hesitant to use them. The high school and middle school share one bulky, hard to use unit. The routine cleaning generally does not include using the floor scrubber, and is limited to dry and wet mopping. The key to keeping dirt out and deterioration at bay is ensuring that dirt is removed on a regular basis, a task for which automatic scrubbers maximize custodial efficiency.

R7. LUTSD should consider purchasing more up to date cleaning equipment for its custodians. This should include vacuum cleaners and automatic floor cleaners. When

investigating vacuum cleaners, the District should consider criteria outlined by the Carpet and Rug Institute, including the air flow, adjustable brushes, and vacuum bags with high filtration. In considering an automatic floor cleaner, ISSA says it is important to consider the size of the machine and ensure that it fits the workers using the equipment. Other factors to consider include the size of the area, obstructions, time allotted for maintenance and budget. Floor cleaners range in cost from \$3,000 to \$5,000, and commercial vacuum cleaners cost between \$250 and \$600.

Conclusion

LUTSD can improve its custodial operations by making minor adjustments in workload distribution, procedures and equipment. By enhancing current operations as outlined in the report, the District will be able to increase the efficiency and effectiveness of custodial services at current staffing levels. LUTSD has started to analyze future custodial and facility needs, and as the District adds square footage to its facilities, it will need to reevaluate workload distribution on a continuing basis.

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