
8.0 FACILITIES USE AND MANAGEMENT

This chapter presents the results of the review of Hillsborough County School District's facilities use and management. The functions reviewed are:

- 8.1 Organizational Structure
- 8.2 Facility Planning
- 8.3 Facility Use
- 8.4 Design and Construction
- 8.5 Maintenance
- 8.6 Custodial Services
- 8.7 Energy Management

A comprehensive facilities use and management program will centralize and coordinate all the planning, use, and maintenance of all the facilities in a school district. The administrators of the program will effectively integrate facilities planning with the other aspects of institutional planning to ensure that the facilities are reinforcing the educational goals of the district.

An effective program will ensure that facilities are fully utilized by the educational program and the community, whenever possible. Full utilization requires an accurate facilities inventory and clear management policies. Underutilized school facilities represent a waste of a valuable public resource.

An effective maintenance program will maintain the facilities at a level which reinforces the educational program and does not detract from the learning environment. The life of the facilities will be extended as far as possible thereby protecting the community's financial investment. A preventative maintenance program is a vital part of a facilities management program.

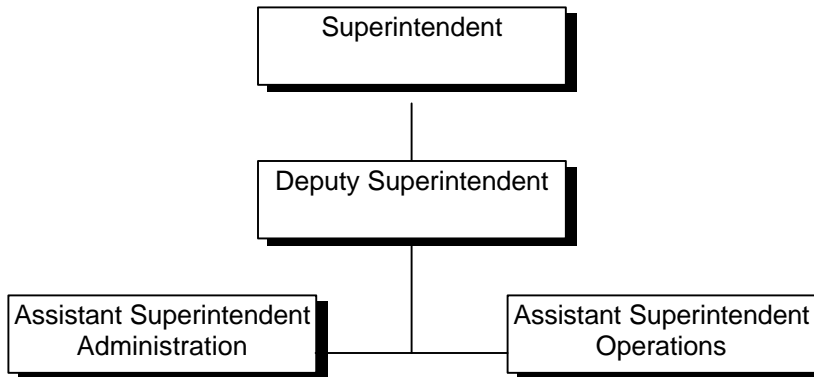
8.1 Organizational Structure

CURRENT SITUATION

The Division of Operations in the Hillsborough County School District is charged with ensuring that all students are provided instructional spaces and supporting facilities that are clean, safe, comfortable, and conducive to efficient and effective educational activities. Division staff plan, design, and build new school facilities and remodel existing facilities; build temporary classrooms; and maintain schools, associated building systems, and equipment. Other functions commonly associated with facilities services (custodial operations, site acquisition, furniture repair, and enrollment projections) are housed in the Division of Administration.

The Division of Operations is under the supervision of the Assistant Superintendent for Operations who reports to the Deputy Superintendent. This organizational structure is presented in Exhibit 8-1.

**EXHIBIT 8-1
ORGANIZATIONAL STRUCTURE OF FACILITIES
IN THE HILLSBOROUGH COUNTY SCHOOL DISTRICT
1996-97**



Source: Hillsborough County School District Division of Operations, 1997.

The Planning and Construction, Maintenance, and Special Projects functions are under the responsibility of the Assistant Superintendent of Operations as shown in Exhibit 8-2. The division has proposed a change in the organizational chart which adds a Director for a new Technology Department. This is scheduled to be effective in the 1997-98 school year.

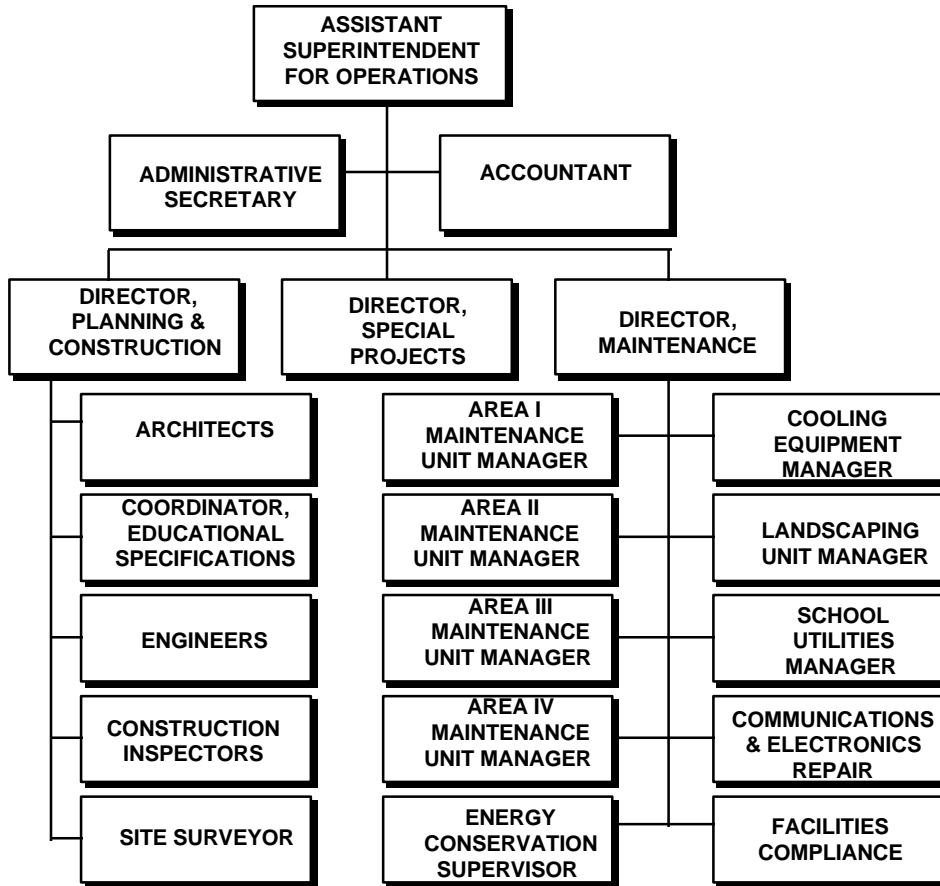
The Custodial and Furniture Repair functions are under the responsibility of the Director of Administrative Services as shown in Exhibit 8-3.

FINDING

The present organizational chart does not accurately reflect the way the department is functioning. The Planning and Construction Unit primarily performs a design and construction function. The personnel composition of this unit includes five architects, four engineers, four construction inspectors, a site survey technician, and a coordinator of educational specifications. With the exception of the Coordinator for Educational Specifications, all positions in the division are related to the design and construction process rather than the planning process. The Coordinator for Educational Specifications provides a link between the planning phase, which is done in the Division of Administration, and the design phase. The communication between the Division of Administration and the Division of Operations is effective.

The Special Projects Unit performs primarily a portable classroom construction function. The director works in conjunction with the Department of Planning and Construction to meet the needs for classroom space as required.

**EXHIBIT 8-2
DIVISION OF OPERATIONS ORGANIZATIONAL CHART
1996-97**



Source: Hillsborough County School District, 1997.

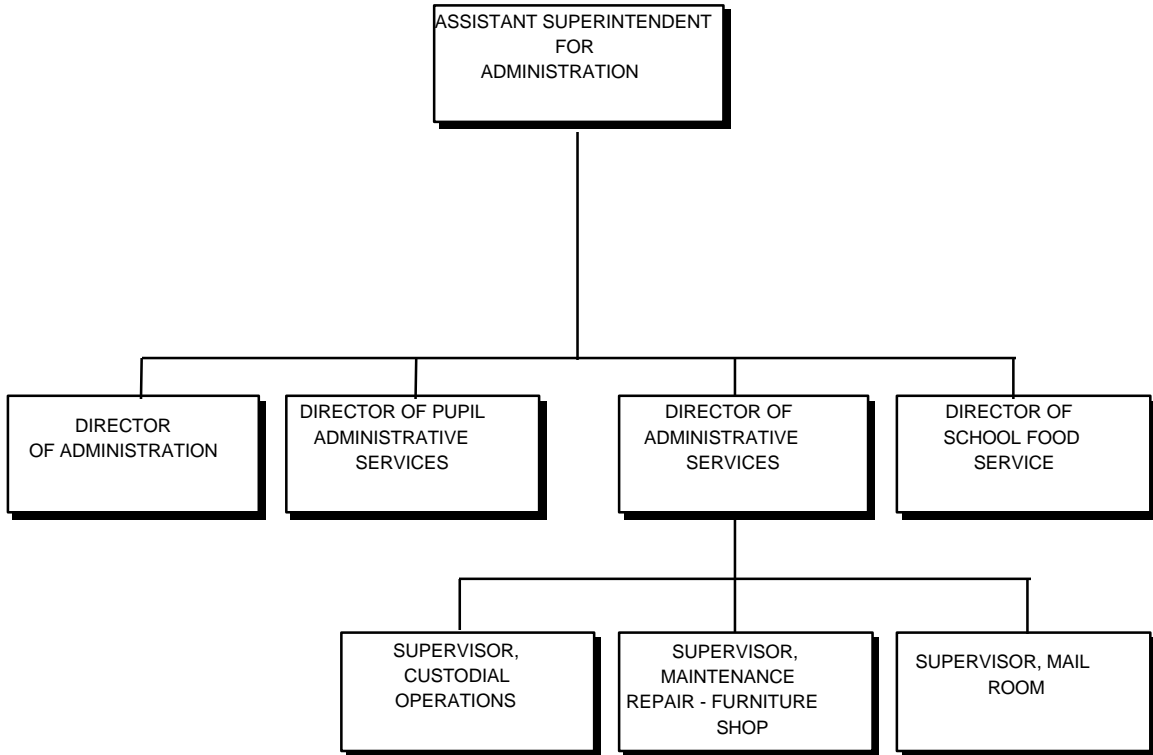
RECOMMENDATION

Recommendation 8-1:

Reorganize the Division of Operations as follows:

- change the Department of Planning and Construction to the Department of Design and Construction;
- eliminate the Department of Special Projects and include this function within the Department of Design and Construction under the direction of a coordinator;
- move the Furniture Repair from the Division of Administration to the Maintenance Division of the Division of Operations; and
- move custodial services to the Division of Operations.

**EXHIBIT 8-3
ADMINISTRATIVE SERVICES ORGANIZATIONAL CHART
1996-97**



Source: Hillsborough County School District, 1997.

The proposed organizational chart for the Division of Operations is shown in Exhibit 8-4.

The effect of the proposed reorganization will be to clearly represent the manner in which the organization functions, as well as put the responsibility for all design and construction activities under one director. Furniture repair is a maintenance function and should be located within that division. The planning function should remain within the Division of Administration because of the added planning function recommended in Chapter 4.

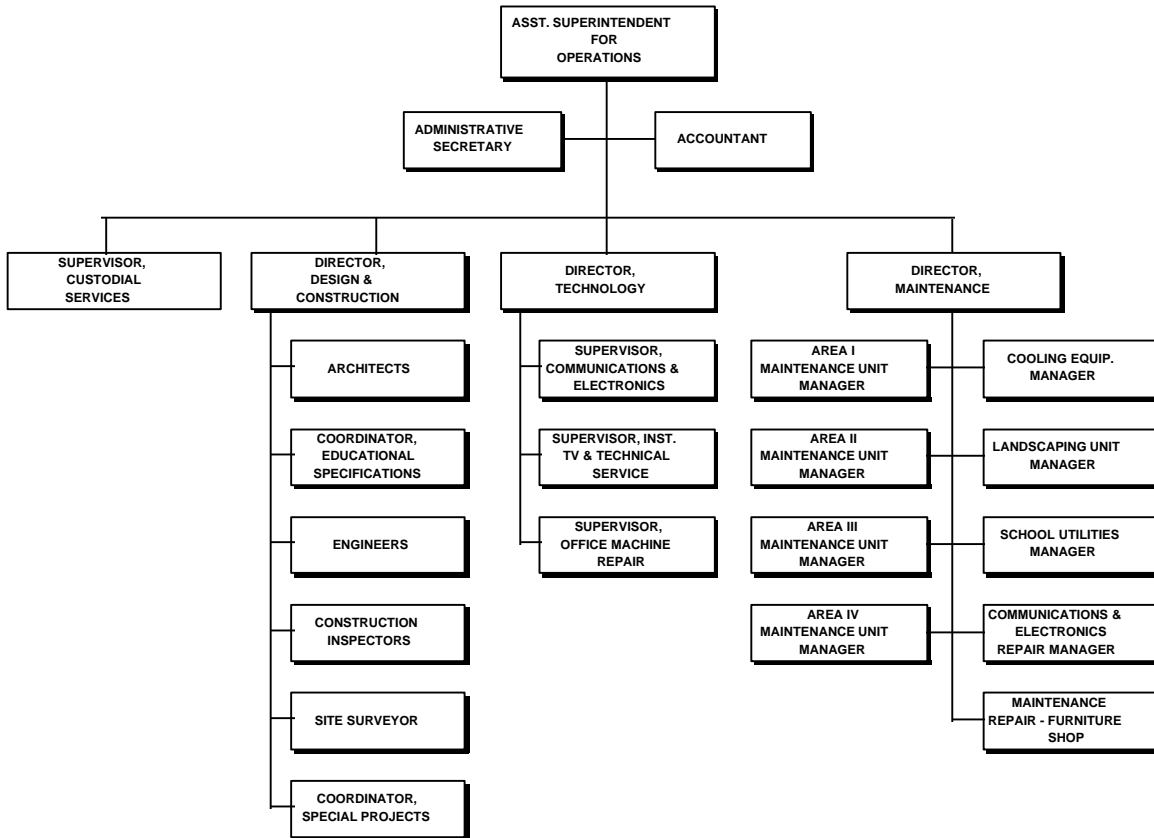
IMPLEMENTATION STRATEGIES AND TIMELINE

- | | |
|--|-----------|
| 1. The Assistant Superintendent for Operations will propose the reorganizational changes. | Fall 1997 |
| 2. The Special Projects Department will begin operations as a section within the Design and Construction Department. | July 1998 |
| 3. The Furniture Repair Section will begin operations within the Maintenance Department. | July 1998 |

4. The Custodial Operations Unit will be transferred to the Division of Operations.

July 1998

**EXHIBIT 8-4
PROPOSED ORGANIZATIONAL CHART FOR THE
DIVISION OF OPERATIONS**



Source: Created by MGT of America, 1997.

FISCAL IMPACT

The fiscal impact of this recommendation is to reclassify the Director of Special Projects as a Coordinator of Special Projects under the Director of Design and Construction. The recommendation will result in a savings of approximately \$33,000 per year based on the salary level difference between a director position and coordinator position within the Division of Operations.

Recommendation	1997-98	1998-99	1999-2000	2000-01	2001-02
Reorganize Operations Division	-----	\$33,000	\$33,000	\$33,000	\$33,000

FINDING

The responsibility for performing safety and code compliance inspections of school facilities is currently under the Director of Maintenance with the Facilities Compliance Section (See Exhibit 8-2). Safety and code compliance issues represent a financial risk to the district especially when viewed in the context of lawsuits from building users. The Director of Maintenance is responsible for maintaining the facilities and not managing risk.

The prioritization of possible risk-related projects should be the responsibility of someone who can effectively ascertain the level of risk to the district as an entity. The facilities compliance function would be more appropriately located in the Risk Management Department where a more focused responsibility will ensure the appropriate priority for projects which are designed to eliminate safety issues.

Recommendation 8-2:

Relocate the Facilities Compliance function under the responsibility of the Director of Risk Management.

By placing the responsibility for Facilities Compliance under the Department of Risk Management, the Director of Risk Management can assure that the inspections are done correctly and the resulting corrective projects receive the proper priority for funding.

IMPLEMENTATION STRATEGIES AND TIMELINE

1. The Assistant Superintendent for Operations should recommend to the Board that the responsibility for Facilities Compliance be moved to the Risk Management Department. August 1997
2. The Board should review and approve the relocation of the Facilities Compliance function. September 1997

FISCAL IMPACT

The relocation of the Facilities Compliance function to the Risk Management Department can be accomplished within the existing resources of the district.

8.2 Facility Planning

Effectively managing a school district's facilities requires the district to have a sound facilities planning process which includes each of the following items:

1. An appropriate organizational structure to coordinate and control the planning process.
2. An accurate needs assessment process to identify both current and future requirements which includes each of the following components:
 - valid demographic statistics including reliable estimates of future enrollments and geographic trends;
 - an up-to-date inventory of existing space by type of space;
 - established facility use rate and space guidelines;
 - established facility capacities;
 - educational program needs as related to current facilities;
 - comparisons of future space needs with current inventories by type of space to identify areas of space shortages and overages;
 - school boundary analysis; and
 - transportation analysis.
3. An accurate definition of the scope of improvements necessary to meet the identified need which will include each of the following components:
 - facility needs programming;
 - accurate cost estimating;
 - scheduling to match needs with planned improvements; and
 - specific improvement plans for each school.
4. Effective strategies planned to ensure the scope of needs will be addressed.
5. A plan for public approval of the facilities improvement needs.

CURRENT SITUATION

The facility planning function is provided primarily through the Office of the Director for Planning and Construction which operates as a section within the Division of

Operations. Exhibit 8-5 provides the current organizational chart for this section of the Division of Operations.

Some of the programs commonly associated with facility planning are housed in other divisions. Exhibit 8-6 shows the functions of effective facility planning and the division or department where they are housed in the Hillsborough County School District.

The process of facility planning in the Hillsborough County School District starts with the development of the School Plant Survey and an analysis of the data by the Division of Operations and the Division of Administration. These data are compared with enrollment projections from which a list of "overcrowded schools" is developed. The district has formed an Overcrowded Schools Task Force which has reviewed the data and made recommendations for improvements. The recommendations have been prioritized and improvements (additions/new facilities) made based on the funding available.

Priorities for facility renovations have been established by area directors and completed, as funding has been available, primarily through the use of state PECO funds.

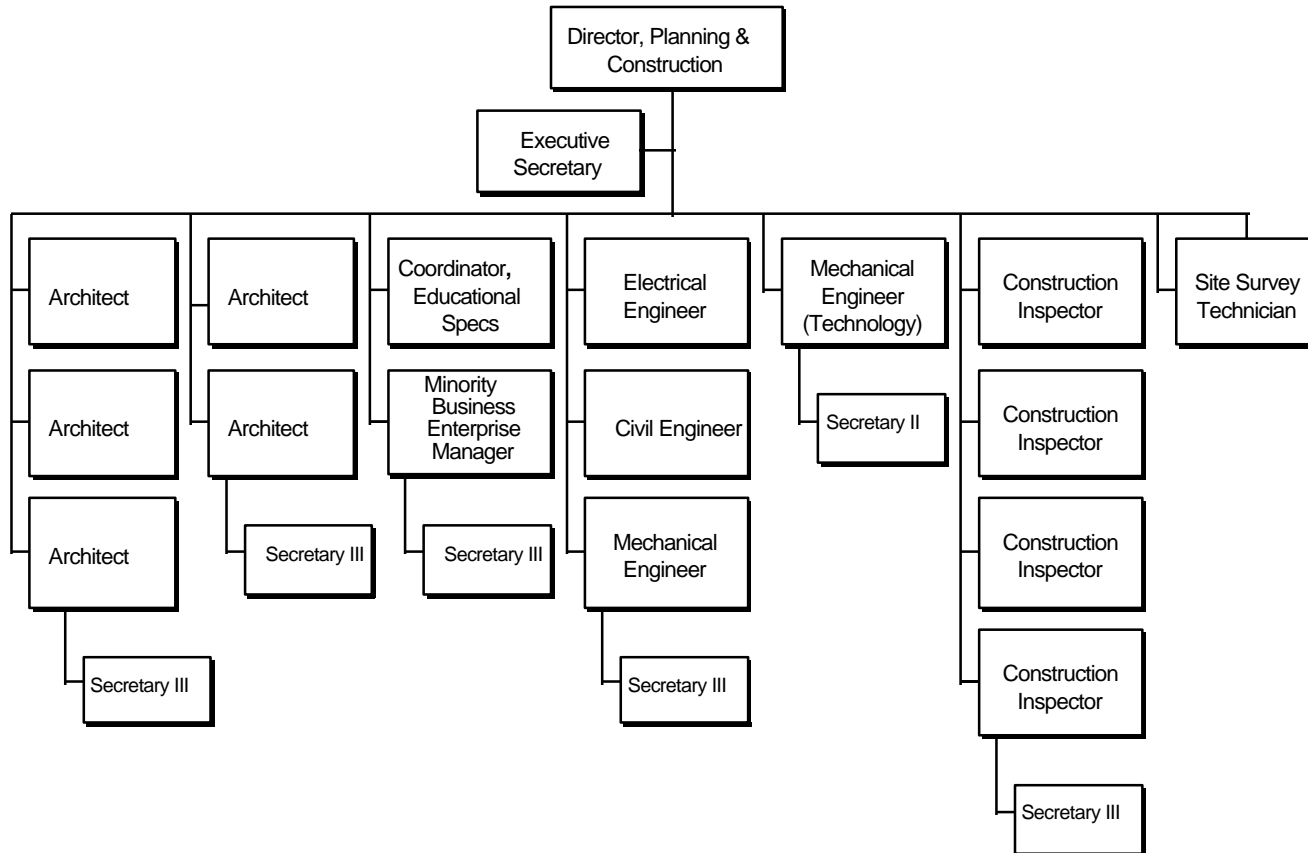
The development of specific projects is assigned to a staff architect who meets with administration and staff involved with the project to determine the program needs. Project development is coordinated with the educational specifications for the level of school being considered (elementary, middle, high). The educational specifications for each level of building have been developed centrally within the Planning and Construction Unit of the Division of Operations.

The planning process resulted in the development of a five-year capital outlay plan for 1994-99. A major portion of the plan included over \$270 million in expenditures funded through Certificates of Participation. The remaining funding comes from PECO and the voter approved millage. The total estimated revenue from these sources is \$143.5 million. The five-year plan was updated in January 1996 to reflect the anticipated revenue from PECO and millage and the projected projects to be funded.

Exhibit 8-7 describes the school construction projects funded through the Certificates of Participation Program. Exhibit 8-8 provides the detail for the five-year plan for the remaining funding with revenue generated by the millage and PECO sources.

When the total amount of funds committed is subtracted from the anticipated revenue of \$143.5 million there remains approximately \$59 million for additional capital projects. Division staff have recommended the projects shown in Exhibit 8-9 as the highest priority for use of these revenues.

**EXHIBIT 8-5
PLANNING & CONSTRUCTION
ORGANIZATIONAL CHART**



Source: Hillsborough County School District, Division of Operations, 1997.

**EXHIBIT 8-6
FACILITY PLANNING COMPONENTS IN THE
HILLSBOROUGH COUNTY SCHOOL DISTRICT**

Function	Current Organizational Placement
Educational Specification Development	Division of Operations, Planning & Construction
Enrollment Projections	Division of Administration
Site Selection	Division of Administration
School Plant Survey	Division of Administration
Boundary Analysis	Pupil Administrative Services
Design & Construction	Division of Operations, Planning & Construction
Temporary Classrooms	Division of Operations, Special Projects

Source: Hillsborough County School District, 1997.

**EXHIBIT 8-7
COPS FUNDED PROJECTS**

School	Projected Cost
Burnett Middle School	\$ 17,558,100
Durant High School	35,746,200
Lockhart Elementary School	8,709,120
"A" South Brandon Elementary School	9,954,000
Valrico Elementary School	9,698,220
Twin Lakes Elementary School	9,644,040
"AA" Hunter's Green Middle School	16,182,180
"BB" North Mobley Middle School	17,529,120
"EE" Williams Middle School	13,195,980
"AAA" Citrus Park High School	35,771,400
"BBB" Tampa Palms High School	34,268,220
Blake High School	49,725,900
"B" Tampa Palms Elementary School	9,954,000
"F" USF Elementary School	11,574,679
Total	\$279,511,159

Source: Hillsborough County School District, Department of Facility Planning & Construction, 1997.

**EXHIBIT 8-8
FIVE-YEAR CAPITAL OUTLAY PLAN
MILLAGE AND PECO FUNDING
1994-99**

YEAR	PROJECTS	AMOUNT
1994-95	District Maintenance	\$9,510,000
	Progress Village	\$13,731,480
	Shore	\$4,510,800
1995-96	District Maintenance	\$9,510,000
	Hillsborough	\$7,013,160
	Lee	\$1,081,080
	Lincoln	\$1,500,282
	Mann (Phase 1)	\$130,914
	Marshall	\$7,876,764
	Tomlin (Phase 1)	\$1,074,780
1996-97 through 1998-99	District Maintenance	\$28,530,000
TOTAL		\$84,469,260

Source: Hillsborough County School District, Department of Facility Planning & Construction, 1997.

**EXHIBIT 8-9
PRIORITY PROJECTS**

Project	Scope of Work	Budget
Coleman	New Construction: Multipurpose room and stage, exploration of manufacturing occupations lab, media center, five ESE resource rooms, one supplementary instruction room; expand music suite	\$3,900,000
Dunbar	Remodeling: Remodel eight intermediate classrooms to primary	\$80,000
Marshall 2	New Construction: Multipurpose room w/stage, technology lab, graphics lab, two music classrooms, four 7/8 th grade general classrooms, custodial suite Remodeling: Convert Building 06 to 6 th grade general classrooms and 6 th grade math/science classrooms, Building 02 to art classroom and two reading resource rooms, Building 03 room A-302 to two 7/8 th grade general classrooms Renovations: Buildings 03, 04	\$4,410,000
McLane I	Renovations: Science rooms 116, 121, 122, 125, 127	\$1,462,000

**EXHIBIT 8-9 (Continued)
PRIORITY PROJECTS**

Project	Scope of Work	Budget
McLane II	<p>New Construction: New 20 classroom facilities</p> <p>Demolition: Demolish old classroom buildings</p>	\$1,306,000
Oak Grove	<p>Remodeling: Building 08 to administration and student services</p> <p>Renovations: Minor renovation of all classrooms</p> <p>New Construction: Graphics communication lab, exploration of manufacturing lab; expand administration and student services</p> <p>Site Work: Reconfigure bus loop, and staff and visitor parking</p>	\$4,475,000
Orange Grove	<p>Remodeling: To be remodeled for use as a performing arts magnet school</p>	\$65,000
Turkey Creek	<p>New Construction: New 10 classroom building</p> <p>Remodeling: Building 05, room 404 to technology lab</p> <p>Renovations: Buildings 03 and 17</p> <p>Demolition: Building 11</p>	\$4,125,000
Witter	<p>New Construction: Two preschool classrooms, two kindergarten classrooms, and seven primary classrooms; food service, faculty dining/lounge/restrooms; four regular resource rooms, four ESE resource rooms, one ESE itinerant; custodial suite, music suite, PE suite, and multipurpose stage</p> <p>Remodeling: Building 06 to media center, Building 07 to administration/student services.</p>	\$4,710,875
Young	<p>New Construction: Add student restrooms to Building 02; elevator to Building 01; faculty dining/ lounge/restrooms; expand administration/personnel services</p> <p>Remodeling: Convert Building 01 to five 7/8th grade science labs, twelve general 7/8th grade classrooms, and two general 6th grade classrooms; Building 02 to five 6th grade math/science classrooms, three storage/prep rooms, three general 6th grade classrooms, art room, foreign language lab, computer lab, agricultural storage</p>	\$6,275,000

**EXHIBIT 8-9 (Continued)
PRIORITY PROJECTS**

Project	Scope of Work	Budget
Young (Cont'd)	room, two math project resource rooms, two math resource rooms, one elective space, and teacher planning room; reconfigure Building 06 media center for better utilization; Building 03, rooms 0209-030E as explore graphics lab, explore manufacturing occupations (technology) lab Renovate: Building 02, rooms 010-021B; Building 04, physical education; Building 05, administration; Building 03, rooms 027 and 028, band and chorus	
Subtotal		\$30,808,875
Funds available for priority distribution		\$59,030,605
Projected balance available to address modular/cost containment construction per priority.		\$21,786,730

Source: Hillsborough County School District, Department of Facility Planning & Construction, 1997.

FINDING

Educational specifications for all building types have been developed and are up to date. The most recent revisions were completed in Fall 1996 and include the following basic components for educational specifications:

- Philosophy and Goals
- Design Guidelines
- Area Analysis (schedule of spaces)
- Description of Activity Areas

COMMENDATION

The Hillsborough County School District is commended for producing educational specifications at the district level that provide the framework for facility planning.

Sound facility planning requires that the framework with which to program individual facilities is provided for at the district level.

FINDING

While quality educational specifications exist at the district level, no formal process exists for adapting the districtwide guidelines to specific projects. The process depends on the staff architect assigned and the desires of the specific school administrators. In many cases, staff committees are formed and their input is solicited. The process varies from project to project. Therefore, the level of local involvement in the process varies greatly among projects.

Recommendation 8-3:

Develop a formal process that calls for staff and community participants to use and adapt the educational specifications as a part of the basis for planning and designing specific projects.

District-level educational specifications provide a sound framework for projects at each school. However, the process also should include the methodology for adapting these district guidelines to the specific program needs for each project. This process should formalize the needs for staff and community input on each project.

IMPLEMENTATION STRATEGIES AND TIMELINE

- | | |
|--|--------------------------------------|
| 1. The Coordinator for Educational Specifications should develop guidelines for project adaptation of the district-level educational specifications. | July 1997 |
| 2. Site administrators should form educational specification committees for each new construction and/or renovation project. | Beginning in the 1997-98 school year |
| 3. Site committee should prepare specific educational specifications for each project based on the district-level guidelines. | Beginning in the 1997-98 school year |

FISCAL IMPACT

This recommendation can be accomplished within existing district resources.

FINDING

Due to rapid growth in the district, long-range facility planning in the Hillsborough County School District favors new construction over the modernization of aging facilities. This results in disparities between newer rapidly growing areas and older established areas of the district. The projects recently completed and those that are proposed, while clearly addressing a need, have not been based on a clear process of prioritization that is defensible to both staff and district patrons. Prioritization of projects has been based on individual criteria rather than a district standard evaluation format.

Recommendation 8-4:

Implement a formal prioritization process for determining the highest need whether they are new projects, renovations, and/or additions.

Once this process is in place the district should conduct a complete evaluation of facility needs which should be updated every three years. Any new projects funded through either existing revenue sources and/or future voter approved funds should be based on the results of the implementation of the process. This recommendation does not duplicate the inventory required through the Florida Plant Survey; rather, the recommendation augments the survey required by the state.

IMPLEMENTATION STRATEGIES AND TIMELINE

- | | |
|--|---------------------------|
| 1. The Division of Operations should prepare a districtwide facility evaluation process including current utilization, enrollment projections, space needs, physical condition analysis, and educational suitability analysis. | Fall 1997 |
| 2. The Division of Operations should conduct a formal facility needs assessment. | Spring 1997 |
| 3. Facility improvements should be based on established criteria. | Beginning in 1997-98 year |

FISCAL IMPACT

This recommendation can be accomplished within existing district resources.

8.3 Facility Use

The effective and efficient use of facilities is a primary responsibility of all public institutions and especially so for public school districts that face constrained budgets and higher user expectations. Proper facility use requires insightful planning (as discussed in Section 8.2) as well as:

- a detailed facilities inventory;
- an assessment of facility needs for repair and renovation;
- effective utilization of existing resources;
- effective utilization of temporary buildings; and
- clear and effective policies and procedures governing the use of facilities, boundary changes, and consolidations.

CURRENT SITUATION

The Hillsborough County School District has calculated the current utilization of all facilities based primarily on:

- the 1993 Educational Plant Survey;
- the Florida Inventory of School Houses (FISH);
- Capital Outlay FTE (COFTE) Enrollment Projections;
- capacity as determined by the FISH report; and
- capacity as determined by district-adopted program requirements.

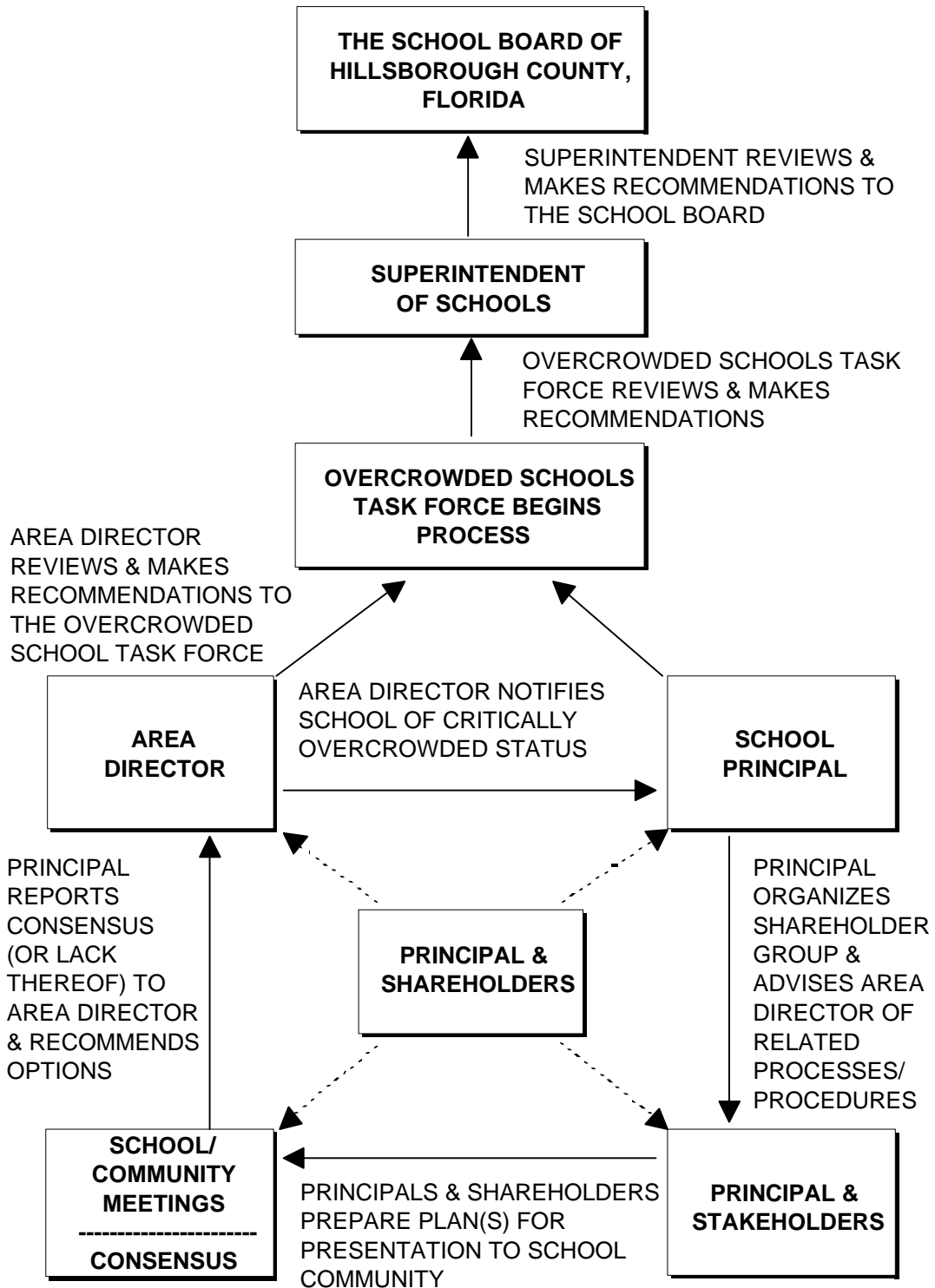
Due to the fact that the district is experiencing severe overcrowded conditions (as determined by the FISH report), the Hillsborough County School District in July 1996, formed an "Overcrowded Schools Task Force" to address the following issues:

- develop a definition of an overcrowded school;
- develop a standard process for determining the level of overcrowding;
- examine the specific buildings that are determined to be the most severely overcrowded;
- examine alternatives to deal with the overcrowding;
- receive plans for correcting the problem at the identified schools; and
- make recommendations to the Board of Education.

The process for implementing these goals is shown in Exhibit 8-10.

To address the definition of overcrowded schools and the development of a standard process, the Task Force adopted a formula that assigned points for the amount a school is overcapacity, the number of portables on site, and the amount of acres that are below district standards. From these data, a utilization score for each facility was calculated. Exhibit 8-11 shows the results of this calculation for the 32 elementary schools, 13 middle/junior high schools, and seven high schools with the highest point totals as these were determined to be critically overcrowded.

**EXHIBIT 8-10
CRITICALLY OVERCROWDED SCHOOLS PROCESS**



Source: Overcrowded Schools Task Force, 1997.

Each school listed in Exhibit 8-11 prepared recommendations for addressing the problem which were submitted to the Task Force and subsequently to the Board. Exhibit 8-12 provides a summary of those recommendations.

FINDING

The Overcrowded Schools Task Force has had a significant impact in dealing with the problem of overcrowded school facilities. They have created a districtwide awareness of the issue, have provided input from a wide range of interests both districtwide and at the individual school level, have developed a video presentation regarding the issue, and have provided specific recommendations for the district to consider.

COMMENDATION

The Hillsborough County School District is commended for the creation of the Overcrowded Schools Task Force and for providing the district with the direction and information necessary to make meaningful information available.

The recommendations of the task force, presented to the Board in February 1997, will become a basis for a much improved future long-range planning process in the district.

FINDING

Portable classrooms are a significant part of facility utilization in the Hillsborough County School District. In fact, portables currently account for approximately nine percent of the total square footage in the district and, at some schools, the square footage in portables exceeds 50 percent. In order to provide portables as economically as possible, the Special Projects Unit has been created with a primary purpose of constructing portable classrooms in-house. The cost for in-house production of portable classrooms is:

Materials and Supplies per Portable Classroom	\$11,764
Teaching Aids per Portable Classroom (whiteboards, bulletin boards, etc.)	\$756
Personnel Costs per Portable Classroom	\$10,019
<u>Overhead Costs per Portable Classroom (10 percent)</u>	<u>\$2,254</u>
Total Cost per Portable Classroom	\$24,793

This cost is significantly less than the purchase price of a portable building at over \$35,000.

**EXHIBIT 8-11
CRITICALLY OVERCROWDED SCHOOLS**

School	FISH Capacity*	Program Capacity*	Projected Enrollment 1997-88	% of Capacity 1997-98	No. of Portables 1996-97	No. of Acres	Area	One Point for Each % Over Capacity	Points at One per Portable	One Point for each Area Under Standard	Total Points
Elementary											
Edison	401	401	837	209%	27	10	1	109	27	5	141
Wilson	207	207	409	198%	18	3	4	98	18	12	128
Egypt Lake	544	544	978	180%	29	13	2	80	29	2	111
Witter	666	666	1120	168%	24	10	1	68	24	5	97
DeSoto	216	216	359	166%	9	2	3	66	9	13	88
Tampa Bay Blvd.	394	394	628	159%	22	10	1	59	22	5	86
Shaw	900	900	1365	152%	22	10	1	52	22	5	79
Broward	483	483	726	150%	23	10	1	50	23	5	78
Crestwood	630	630	945	150%	16	15	2	50	16	0	66
Cleveland	384	384	570	148%	12	4	1	48	12	11	71
Lowry	857	857	1260	147%	17	15	2	47	17	0	64
Hunter's Green	1025	1025	1497	146%	23	15	3	46	23	0	69
Riverhills	562	562	817	145%	19	11	3	45	19	4	68
Sulphur Springs	616	616	885	144%	22	7	1	44	22	8	74
Lake Magdalene	723	723	1005	139%	10	15	1	39	20	0	59
Bay Crest	620	620	848	137%	7	15	2	37	7	0	44
Springhead	542	542	733	135%	13	16	4	35	13	0	48
Alexander	592	592	782	132%	15	16	2	32	15	0	47
West Shore	348	348	459	132%	15	8	2	32	15	7	54
Mort	751	751	959	128%	21	20	1	28	21	0	49
Temple Terrace	754	754	962	128%	11	20	3	28	11	0	39
Lithia Springs	831	831	1053	127%	12	23	4	27	12	0	39
Seffner	754	754	993	132%	10	15	4	27	10	0	37
Yates	785	785	988	126%	13	15	4	26	13	0	39
Limona	764	764	957	125%	22	17	4	25	22	0	47
Gibsonton	737	737	923	125%	16	12	3	25	16	3	44
Robinson	663	663	822	124%	21	16	4	24	1	0	25
Tampa Palms	928	928	1130	122%	18	15	3	22	18	0	40
Woodbridge	635	635	773	122%	9	15	2	22	9	0	31

*Does not include portable capacity

**EXHIBIT 8-11 (Continued)
CRITICALLY OVERCROWDED SCHOOLS**

School	FISH Capacity*	Program Capacity*	Projected Enrollment 1997-88	% of Capacity 1997-98	No. of Portables 1996-97	No. of Acres	Area	One Point for Each % Over Capacity	Points at One per Portable	One Point for each Area Under Standard	Total Points
Schwarzkopf	874	874	1057	121%	21	15	1	21	21	0	42
Forest Hills	732	732	881	120%	2	12	1	20	2	3	25
Roosevelt	437	437	523	120%	5	6	2	20	5	9	34
Middle/Junior											
Sligh JHS	813	732	1289	176%	3	30	1	76	3	0	79
Franklin MS	724	652	1056	162%	15	14	3	62	15	11	88
Burnett MS	1010	909	1442	159%	12	28	3	59	12	0	71
Buchanan JHS	988	889	1406	158%	15	21	1	58	15	4	77
Wilson MS	470	423	629	149%	2	4	2	49	2	21	72
Young Magnet	824	742	1075	145%	8	12	3	45	8	13	66
Adams MS	1030	927	1330	143%	17	15	1	43	17	10	70
Turkey Creek MS	1257	1131	1562	138%	22	21	4	38	22	4	64
Pierce JHS	962	866	1110	128%	5	24	2	28	5	1	34
Tomlin MS	1275	1148	1456	127%	19	20	4	27	19	5	51
Roland Park MS	976	878	1092	124%	10	12	2	24	10	13	47
Stewart (Blake) MS	941	847	1047	124%	0	16	1	24	0	9	33
Marshall MS	850	765	945	124%	17	30	4	24	17	0	41
High											
Bloomingtondale	2069	1966	2909	148%	0	80	4	48	0	0	48
Chamberlain	1853	1760	2435	138%	26	28	1	38	26	22	86
Gaither	2255	2142	2877	134%	5	51	1	34	5	0	39
Brandon	2031	1929	2521	131%	23	108	4	31	23	0	54
Tampa Bay Tech	1397	1327	1717	129%	20	30	3	29	20	20	69
Plant City	2080	1976	2509	127%	35	80	4	27	35	0	62
King	1838	1746	2195	126%	18	51	3	26	18	0	44

Source: Overcrowded Schools Task Force, 1997. *Does not include portable capacity

**EXHIBIT 8-12
SUMMARY OF RECOMMENDATIONS FOR
CRITICALLY OVERCROWDED SCHOOLS**

School Level	Most Common Recommendations
Elementary	<ol style="list-style-type: none"> 1. Add portables <i>-32 percent of all recommendations</i> 2. Restrict enrollment (primarily through capping special assignments) <i>-21 percent of all recommendations</i> 3. Make Facility additions <i>-13 percent of all recommendations</i>
Middle/Junior High	<ol style="list-style-type: none"> 1. Add portables <i>-36 percent of all recommendations</i> 2. Restrict enrollment (primarily through capping special assignments) <i>-27 percent of all recommendations</i>
High School	<ol style="list-style-type: none"> 1. Restrict enrollment (by capping special assignments) 2. Add portables 3. Adjust schedules (primarily through double shifting). <p align="center"><i>-31 percent of all recommendations for each of the above.</i></p>

Source: Overcrowded Schools Task Force, 1997.

COMMENDATION

The Hillsborough County School District is commended for producing portable classrooms in-house in a productive and efficient manner.

The Special Projects Unit produces approximately 125 portable classrooms per year at a cost that is significantly less than they could be purchased elsewhere. In 1995 (the last year the district purchased any portable classrooms), the cost of purchasing was over \$35,000 per unit. The in-house cost, one year later, is at least 40 percent less.

FINDING

While the district cost for producing portable classrooms is low, the fact that some schools house over 50 percent of their students in portables is significant. While portable classrooms are a common feature of American schools, they are usually erected to meet enrollment fluctuations or to house temporary programs. The total amount of portable classrooms in the Hillsborough County School District is nearing the generally recognized maximum of 10 percent and is increasing annually.

The negative effect of overusing temporary buildings for classrooms is the impact on common facilities such as special classrooms and labs for enrichment, auditoriums, cafeterias, and physical education facilities. As the enrollment of a school is allowed to grow beyond the planned capacity, these common facilities become overtaxed and the educational program begins to suffer.

Recommendation 8-5:

Establish a policy on the use of temporary facilities that will provide the criteria for need and establish limits on the total amount of temporary space at a particular facility.

With an inventory of over 1,800 portable classrooms and many recommendations from the Overcrowded Schools Task Force calling for more, the district is in danger of exceeding reasonable limits and, therefore, suffering the negative impacts described above. A clear policy regarding what constitutes need and when a portable will be placed at or removed from a site should be developed immediately.

IMPLEMENTATION STRATEGIES AND TIMELINE

- | | |
|--|----------------|
| 1. Division of Operations staff should meet with district administrative personnel and prepare a policy on use of portables. | September 1997 |
| 2. The Superintendent should recommend the draft policy to the School Board. | November 1997 |
| 3. The Superintendent and staff should implement the policy and guidelines. | January 1998 |

FISCAL IMPACT

This recommendation can be accomplished with existing district resources.

FINDING

While the Overcrowded Schools Task Force reviewed alternatives to new construction in order to solve the issue of overcrowded schools, most recommendations dealt with restricting enrollment and adding portables. Very little mention was made regarding the possibilities of altering the school schedule as a means of adding capacity. It is clear that in some parts of the district the overcrowding is so severe that attendance boundary adjustments and adding portable classrooms will not solve the problem and new construction cannot be completed quickly enough. In these cases, altering the school calendar can be effective.

School Districts such as San Diego Unified in California, Cherry Creek in Colorado, and Buena Vista in Virginia have shown that multi-track, year round calendars can reduce facility needs by as much as 25 percent. A school built for 750 students can handle an attendance of 1,000 since at any one time a quarter of the students will be on vacation. The reduction in need for additional facilities reduces maintenance and operation costs per student and pressure for new buildings.

The multi-track, year round calendar also can benefit the educational program. This type of calendar reduces the time between school terms and provides breaks at regular intervals throughout the year. Some studies have indicated that the year round

calendar increases the student's retention of skills and knowledge from one term to the next.

A major drawback to the year round calendar is the perceived effect it has on family schedules due to a perceived lack of support services such as day care and summer programs. However, in large metropolitan areas, like Hillsborough County, the resources are typically numerous enough to absorb this effect.

Other districts report additional drawbacks to a year round calendar. Teachers often say they are being deprived of an important vacation benefit. Scheduling classes and rooms, especially at the high school level, can be challenging. Teachers will not always have their own classroom. Student participation in sports and other seasonal activities may have to be accomplished during vacation periods. Intercession or vacation programs will require additional planning. This is also true for parents who have children at different schools on different schedules. The San Diego County Office of Education, which has successfully converted the majority of its schools to the year round calendar, has published a planning guide which speaks to these and other issues.

The MGT review team acknowledges that some school districts have not successfully implemented a year round calendar. The year round approach is a major change that affects all participants, administrators, teachers, staff, parents, and students. For any major change in a system to be successful, careful planning must clearly state the priorities, goals, and processes for changes. The planning must include all participants and must be well communicated to the community at large. When these items are addressed, and attendance at a year round facility is voluntary, the results can be successful.

Recommendation 8-6:

Implement a multi-track, year round calendar at 10 percent of the identified severely crowded elementary schools.

With 32 elementary schools identified, this would require that three schools adopt such a calendar. If these are in strategic locations, the option can be offered on a voluntary basis and will significantly reduce the need for additional classrooms at those schools.

IMPLEMENTATION STRATEGIES AND TIMELINE

- | | |
|---|----------------------------|
| 1. The Task Force should appoint a School Calendar Committee comprised of administrators, teachers, parents, and community members. | September 1997 |
| 2. The School Calendar Committee should study alternative school calendars including a multi-track, year round schedule and make recommendations to the Task Force based on the efficient use of school facilities. | 1997 - 1998
school year |
| 3. The Division of Administration should develop a process for educating teachers and parents about the | Spring 1998 |

benefits and planning procedures of a year round calendar.

4. The Board should approve a school calendar that optimizes the use of school facilities and authorizes the administration to identify schools that will implement the new calendar. 1998-99 school year

FISCAL IMPACT

The implementation of a multi-track, year round calendar will have savings as well as some additional operational costs. The costs and cost savings will tend to neutralize each other, but can not be quantified at this time.

By implementing a year round calendar, the district can realize a substantial cost avoidance primarily through the avoidance of capital construction dollars. In a common year round schedule, students are divided into four schedule tracks where one track is always on break. Therefore the district can construct 25 percent less space while achieving 100 percent capacity. Savings are also realized through lower operational costs due to less total square footage.

It is important to also point out, however, that some program costs will increase due to the year round operations. These include transportation, food service, and non-certified personnel.

8.4 Design and Construction

The mission of the typical design and construction department is to provide new and modernized facilities that meet the needs of students at the lowest possible cost. The specific goals of a design and construction department include:

- establish a policy and framework for long range facility planning;
- utilize valid enrollment projections on which to base estimates of future needs for sites and facilities;
- select and acquire proper school sites and to time their acquisition to precede actual need while trying to avoid wasting space;
- determine the student capacity and educational adequacy of existing facilities and to evaluate alternatives to new construction;
- develop educational specifications that describe the educational program and from which the architect can design a functional facility that matches the needs of the curriculum with the potential to enhance and reinforce the education the district desires for its students;

- secure architectural services to assist in planning and constructing facilities;
- develop a capital planning budget that balances facility needs, expenditures necessary to meet those needs, and how expenditures will be financed;
- translate satisfactorily the architectural plans into a quality school building and to do so within the budget and time scheduled; and
- establish and carry out an orientation program so that users of the facility can better understand the design rationale and become familiar with the way the building is supposed to work.

CURRENT SITUATION

As described in the previous sections of this chapter, the typical facility planning functions are spread over two departments within Hillsborough County School District. Of the specific goals outlined above, enrollment projections, site selection, and capacity analysis are functions of the Division of Administration while the development of educational specifications, architectural services, and facility construction are functions of the Division of Operations. Specific recommendations for change to this structure are included in Section 8.1.

Following the planning stages of the facility development process, the responsibility for design and construction for new and/or remodeled schools lies with the Planning and Construction Department within the Division of Operations. The staff includes a director, five architects, four engineers, and four inspectors. As of February 1997, each architect and inspector is responsible for six to nine projects depending on the scope and current status. The in-house architects are given the responsibility for the coordination of a specific project from the design stages through project completion and post occupancy evaluation. Outside architects are appointed for all major projects, but work through the assigned in-house architect. District inspectors are responsible for all plan inspections, building inspections, and testing.

An analysis of construction costs for all new elementary schools constructed 1990 - 1995 is shown in Exhibit 8-13.

FINDING

Change orders for elementary school construction projects during the five-year period shown in Exhibit 8-13 average just over two percent.

COMMENDATION

The Hillsborough County School District is commended for keeping change orders at or near an average of two percent of construction costs.

This percentage of change orders reflects good control during the design phase and a high level of construction supervision. The Council of School Facility Planners, International recommends a budget for changes in the range of three to four percent.

FINDING

The cost per square foot for elementary schools over the five-year period shown in Exhibit 8-13 reflects an average of \$66 per square foot. The average cost for projects bid in 1995 was \$83.50. Since 1942, the R.S. Means Company has annually published square foot costs for all building types in North America. The Means Cost Index for Tampa in 1995 estimates the construction costs for elementary school construction to be \$63.50 per square foot.

**EXHIBIT 8-13
ELEMENTARY SCHOOL CONSTRUCTION
1990-1995**

SCHOOL & BID DATE	BUDGET	TOTAL CONST. COST	% CHANGE ORDERS	TOTAL S.F.	COST PER S.F.
Lithia Springs 1990	\$5,600,000	\$5,528,803	2.8%	83,907	\$66
Boyette 1990	\$5,500,000	\$5,147,206	5.3%	89,240	\$58
Bing 1990	\$5,684,335	\$6,356,588	1.0%	96,058	\$66
Mintz 1990	\$5,500,000	\$6,666,445	6.5%	91,006	\$73
Schwarzkopf 1991	\$5,965,500	\$4,649,598	2.3%	87,899	\$53
Lowry 1991	\$5,000,000	\$4,878,948	0.6%	89,244	\$55
Hunter's Green 1991	\$5,500,000	\$5,639,683	0.4%	91,006	\$62
Folsom 1991	\$5,500,000	\$5,714,348	0.3%	82,880	\$69
Cannella 1991	\$5,700,000	\$5,006,157	1.2%	91,637	\$55
Colson 1991	\$5,700,000	\$4,910,702	2.7%	86,535	\$57
Lockhart 1993	\$6,000,000	\$7,175,289	3.8%	97,654	\$73
Twin Lakes 1995	\$4,000,000	\$7,654,000	0.0%	86,535	\$88
Valrico 1995	\$6,000,000	\$7,697,000	0.0%	98,017	\$79
AVERAGE FOR ALL PROJECTS	\$5,511,526	\$5,924,982	2.1%	90,124	\$66

Source: Hillsborough County School District, Department of Facilities Planning & Construction, 1997.

Recommendation 8-7:

Implement the following cost saving measures with a goal of providing quality facilities at a cost reflecting the average construction costs for buildings in the Tampa area.

New school facilities in Hillsborough County reflect the use of quality materials and a design that meets the educational program. The costs, however, are increasing at a

rate higher than would be expected. The following design components have proven to lower costs without reducing the quality of materials or workmanship.

- Develop a value engineering process consisting of a complete review following the schematic design phase for the purpose of identifying possible cost saving measures for the district's consideration. The process should be conducted by an independent consulting team comprised of architects, mechanical and electrical engineers, landscape engineers, educational specialists, cost estimators, and any other necessary professionals. The value engineering process should be conducted early in design development at the completion of the schematic design when enough design information is available to determine cost accurately, but changes can be made without affecting construction documents.
- Streamline the district design manual and emphasize consistency or standardization. The district design manual, where practical, should allow either one or two models of products for each item. (i.e. lockers, toilet accessories, plumbing fixtures, mechanical units, bleachers, food service equipment). This standardization will save costs over time because excessive parts stocking will not be required, and training on the repair of multiple types of equipment will not be necessary.
- Provide pre-determined specifications to the degree possible. The specifications for whiteboards and chalkboards, for example, should be standardized to a single specification section and given to all of the architect/engineering firms. If there are five projects and five architectural firms working on projects simultaneously, this would eliminate recreating the same specification five times with five different interpretations and five different possibilities for error.
- Utilize prototypical building plans to the highest degree possible. In a district the size of the Hillsborough County School District, with the number of on-going projects underway at any given time, it is possible to provide school committees with prototypical designs that still allow for the flexibility to provide spaces that are program specific. A standard design with options for different district approved programs and aesthetic options can be site adapted and utilized effectively. While the costs shown in Exhibit 8-13 above do not include architectural fees, they commonly add six to eight percent to the cost which can be significantly reduced with the use of prototypical designs.

IMPLEMENTATION STRATEGIES AND TIMELINE

1. The Design and Construction Department should develop a standardized design manual. Summer 1997

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|--|----------------------------|
| 2. The Design and Construction Department should develop a value engineering process. | Summer 1997 |
| 3. The Design and Construction Department should work with selected architectural firms to develop prototypical plans. | 1997 - 1998
Fiscal Year |
| 4. The Superintendent and staff should implement a design manual and value engineering. | September 1997 |
| 5. The Assistant Superintendent of Operations should implement use of a prototypical design with building committees. | 1998-1999
Fiscal Year |

FISCAL IMPACT

The fiscal impact of this recommendation will be realized when future projects are bid. Experience has demonstrated that value engineering will reduce construction cost by .5 percent and the use of prototypical plans will reduce the design costs by three percent. Using a conservative estimate of \$15 million of construction costs annually, the savings would total \$525,000 annually, with an estimated \$100,000 projected savings in 1997-98 because many of the projects for that year are already beyond the design phase where the majority of savings occurs.

Recommendation	1997-98	1998-99	1999-2000	2000-01	2001-02
Implement Construction Cost Saving Measures	\$100,000	\$525,000	\$525,000	\$525,000	\$525,000

8.5 Maintenance

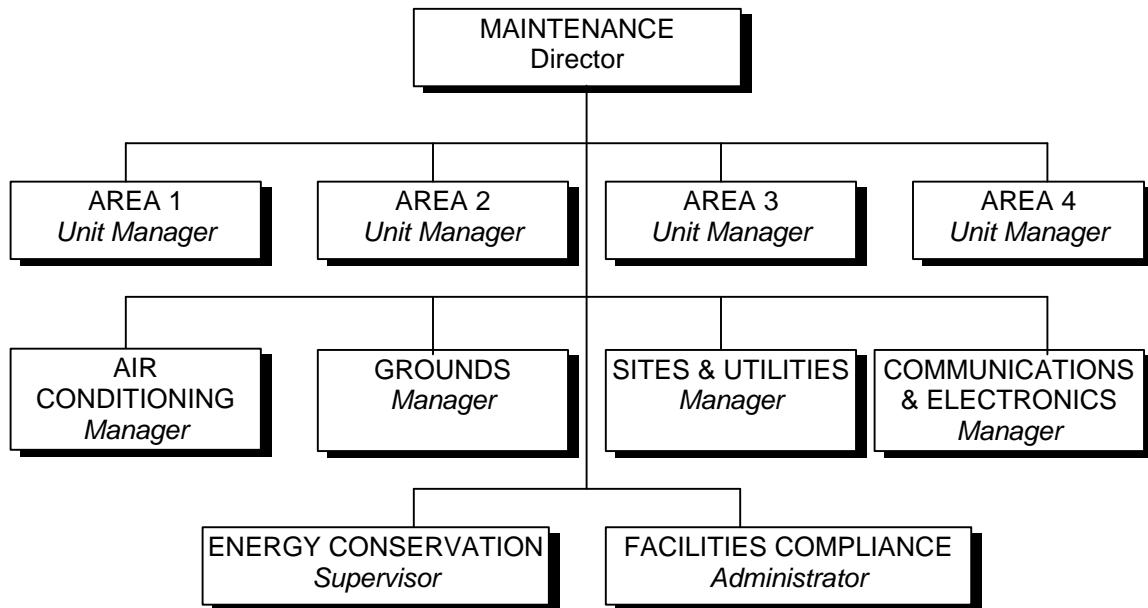
Efficient and effective maintenance of the school system’s facilities and grounds requires well-defined structures and processes which:

- are staffed with the appropriate levels and mix of skilled tradespersons, helpers, supervisors, and support staff;
- are organizationally structured to operate effectively and efficiently;
- have adequate information to plan and manage daily operations; and
- are responsive to work order requests from schools.

CURRENT SITUATION

The Maintenance Department of the Hillsborough County School District maintains approximately 149 schools and 1,800 portable classrooms with about 280 staff positions. The district is divided into four maintenance areas with four corresponding maintenance service centers. The air conditioning, grounds, sites and utilities, and the communications and electronics repair trades maintain one service center each which services the whole district. The Maintenance Department is organized as shown in Exhibit 8-14.

**EXHIBIT 8-14
ORGANIZATIONAL CHART OF
MAINTENANCE DEPARTMENT**



Source: Hillsborough County School District, Maintenance Department, 1997.

The four area service centers operate somewhat autonomously, receiving their work order requests directly from the schools in their respective areas. This is also true of the air conditioning, grounds, sites and utilities, communications, and electronics repair units. Areas I and II Service Centers are located together on the west side of the district, Area IV is located in Plant City on the east, and Area III Service Center is located at the main maintenance facility in the center of the district along with grounds, sites and utilities, air conditioning, communications, and electronics.

The Sites and Utilities Unit oversees and maintains 14 waste water plants, 14 wells, and 100 lift stations. The two six-person construction crews perform site work, small paving jobs, grading, and the location of up to 200 portable buildings each summer. Attempts to outsource portable moving in the past have not been satisfactory due to the unreliability of private contractors in meeting tight schedules. The Sites and Utilities Unit also oversees the solid waste removal for the district's facilities. Hillsborough County staff pick up all solid waste in areas outside Tampa city limits while the city contracts for the work within the city limits.

The Grounds Unit oversees and maintains athletic fields, fencing, landscaping, and irrigation systems. Major problems with the irrigation systems are contracted out. School grounds are mowed by contractors who have from seven to eight schools each. Grounds hires and monitors the mowers who are paid by the schools.

The Facilities Compliance Unit performs annual facility safety inspections which include ADA compliance issues, hazardous waste disposal and radon abatement and

remediation. The responsibility for facility safety is shared with Risk Management which has responsibility for fire extinguishers, personnel safety, and equipment safety.

The Air Conditioning Unit repairs and services the heating, ventilating, and air conditioning (HVAC) units for the entire district. The district is divided into five areas and a separate team of technicians is responsible for each area. The Air Conditioning Unit contracts with 18 private contractors to provide minor preventative maintenance.

The Energy Conservation Unit will be dealt with in a separate section of this chapter.

All work orders are recorded in a central system which uses sophisticated software and is capable of producing standardized and custom reports. The full capability of this work order tracking system is not being used at the present time because the system has not been fully operational until recently. As work orders are received at each service center, they are prioritized and assigned to the appropriate foreperson. The work order priority system is shown in Exhibit 8-15.

**EXHIBIT 8-15
WORK ORDER PRIORITY SYSTEM**

Priority	Target Response Time
1. Emergency safety, health, utilities, athletic event support, security alarms	24 hours
2. Routine health, life, safety, comfort, ADA, indoor air quality, air conditioning/heat, hazardous materials disposal	5 days
3. Vandalism: graffiti, broken windows, and doors	5 days
4. Deteriorating repairs: water damage (roofing), repetitious use.	15 days
5. Routine structure or facility repairs and preventative maintenance	30 days
6. Renovations, beautification, painting, carpeting, irrigation, landscaping	60 days

Source: Hillsborough County School District, Maintenance Department, 1997.

Exhibits 8-16 through 8-21 show the distribution of personhours on work orders for the period from July 1, 1996 to February 11, 1997 by the Maintenance Department. The person hours shown include travel time to the job site and a category for work done by private contractors.

**EXHIBIT 8-16
PERSON HOURS BY TRADE
MAINTENANCE AREA I
JULY 1, 1996 - FEBRUARY 11, 1997**

Trade	Total Requests	Hours	Overtime	Compensatory Time	Total Hours
Boilers	436	1,910.80	4.00	0.00	1,914.80
Carpenter	742	7,078.00	24.50	5.00	7,107.50
Contractor	140	318.50	0.00	0.00	318.50
Electrician	826	2,600.70	12.00	4.00	2,616.70
Glazier	301	1,382.00	31.00	1.50	1,414.50
Locksmith	535	1,366.00	23.00	0.00	1,389.00
Mason	74	521.50	0.00	0.00	521.50
Maintenance Leader	23	59.00	0.00	0.00	59.00
Plumber	1,024	3,727.70	47.00	7.20	3,781.90
Painter	146	1,213.50	0.00	0.00	1,213.50
Roofer	79	454.50	7.00	9.00	470.50
Truck Driver	202	2,342.20	88.00	0.00	2,430.20
Tradeshelper	1	4.00	0.00	0.00	4.00
Various	153	4,729.75	3.00	0.00	4,732.75
Total	4,682	27,708.15	239.50	26.70	27,974.35

Source: Hillsborough County School District, Maintenance Department, 1997.

**EXHIBIT 8-17
PERSON HOURS BY TRADE
MAINTENANCE AREA II
JULY 1, 1996 - FEB. 11, 1997**

Trade	Total Requests	Hours	Overtime	Compensatory Time	Total Hours
Boilers	459	1,755.00	18.00	49.00	1,822.00
Carpenter	664	5,695.00	8.00	35.00	5,738.00
Contractor	237	113.50	-	19.50	133.00
Electrician	872	4,142.00	-	42.50	4,184.50
Glazier	191	986.50	19.00	4.00	1,009.50
Locksmith	524	2,342.00	17.00	25.50	2,384.50
Mason	86	1,513.50	-	9.00	1,522.50
Maintenance Leader	131	152.00	12.00	2.50	166.50
Plumber	1,007	3,306.00	22.00	84.50	3,412.50
Painter	142	1,521.00	4.00	12.00	1,537.00
Truck Driver	304	1,492.00	-	-	1,492.00
Tradeshelper	1	1.00	-	-	1.00
Various	50	3,063.00	108.00	109.00	3,280.00
Total	4,668	26,082.50	208.00	392.50	26,683.00

Source: Hillsborough County School District, Maintenance Department, 1997.

**EXHIBIT 8-18
PERSON HOURS BY TRADE
MAINTENANCE AREA III
JULY 1, 1996 - FEB. 11, 1997**

Trade	Total Requests	Hours	Overtime	Compensatory Time	Total Hours
All Trades	13	749.00	0.00	0.00	749.00
Boilerman	475	1,230.00	85.00	0.00	1,315.00
Carpenter	928	6,467.50	39.00	1.00	6,507.50
Contractor	58	69.00	0.00	0.00	69.00
Electrician	958	3,100.00	29.00	0.00	3,129.00
Glazier	208	598.50	7.00	0.00	605.50
Laborer	13	82.00	0.00	0.00	82.00
Locksmith	475	881.00	21.00	0.00	902.00
Mason	125	583.00	0.00	0.00	583.00
Maintenance Leader	4	4.00	0.00	0.00	4.00
Multitrades	11	26.50	0.00	0.00	26.50
Plumber	433	1,137.80	20.00	0.00	1,157.80
PL	1	1.00	0.00	0.00	1.00
Plumber	626	1,274.10	23.00	0.00	1,297.10
Painter	86	442.00	0.00	0.00	442.00
Truck Driver	210	1,338.00	0.00	0.00	1,338.00
Tradeshelper	2	6.00	3.00	0.00	9.00
Various	7	53.00	0.00	0.00	53.00
Total	4,633	18,042.40	227.00	1.00	18,270.40

Source: Hillsborough County School District, Maintenance Department, 1997.

**EXHIBIT 8-19
PERSON HOURS BY TRADE
MAINTENANCE AREA IV
JULY 1, 1996 - FEB. 11, 1997**

Trade	Total Requests	Hours	Overtime	Compensatory Time	Total Hours
Boilers	259	1,999.50	2.00	0.00	2,001.50
Carpenter	633	7,268.85	6.00	0.00	7,274.85
Contractor	68	56.50	3.00	0.00	59.50
Electrician	691	3,399.00	50.00	2.00	3,451.00
Glazier	224	736.60	15.00	0.00	751.60
Locksmith	390	1,094.60	3.50	0.00	1,098.10
Mason	145	1,533.70	0.00	0.00	1,533.70
Plumber	635	3,371.40	14.50	0.00	3,385.90
Painter	134	1,233.00	0.00	0.00	1,233.00
Roofer	193	1,269.20	1.00	0.00	1,270.20
Truck Driver	180	1,516.60	1.00	0.00	1,517.60
Various	68	4,146.80	332.00	0.00	4,478.80
Total	3,620	27,625.75	428.00	2.00	28,055.75

Source: Hillsborough County School District, Maintenance Department, 1997.

**EXHIBIT 8-20
PERSON HOURS BY TRADE
GROUNDS JULY 1, 1996 - FEB. 11, 1997**

Trade	Total Requests	Hours	Overtime	Compensatory Time	Total Hours
Athletics	746	5,463.00	2.00	1.00	5,466.00
Courts and Tracks	25	272.00	0.00	0.00	272.00
Drivers Ed. Range	6	206.00	0.00	0.00	206.00
Fence	480	5,072.10	0.00	0.00	5,072.10
Grading	118	661.00	0.00	0.00	661.00
Irrigation	71	23.00	0.00	0.00	23.00
Landscaping	166	2,837.00	0.00	0.00	2,837.00
Mowing	405	1,795.00	0.00	0.00	1,795.00
Playground and Equipment	52	504.50	0.00	0.00	504.50
Parking Lots	50	547.00	0.00	13.50	560.50
Site Development	3	179.00	0.00	0.00	179.00
Traffic Signs	110	439.50	0.00	0.00	439.50
Tree Trimming	201	2,410.60	0.00	0.00	2,410.60
Various	21	268.50	0.00	0.00	268.50
Total	2,454	20,678.20	2.00	14.50	20,694.70

Source: Hillsborough County School District, Maintenance Department, 1997.

**EXHIBIT 8-21
PERSON HOURS BY TRADE
AIR CONDITIONING AND REFRIGERATION
JULY 1, 1996 - FEB. 11, 1997**

Trade	Total Requests	Hours	Overtime	Compensatory Time	Total Hours
A/C Repair	3,770	12,733.60	204.80	8.30	12,946.70
A/H Repair	427	1,198.60	17.20	0.00	1,215.80
AQ	1	0.00	0.00	0.00	0.00
Chiller Repair	639	2,049.24	74.30	0.00	2,123.54
Dish Machine Repair	31	120.60	0.00	0.00	120.60
Duct Repair	4	17.50	0.00	0.00	17.50
F/S Equipment Repair	203	875.20	0.00	0.00	875.20
Ice Cream Box Repair	8	26.00	0.00	0.00	26.00
Ice Machine Repair	313	878.90	0.00	0.00	878.90
Inspection	24	70.80	0.00	0.00	70.80
Ice Plant Repair	161	659.60	23.40	0.00	683.00
I.A.Q. (Indoor Air Quality)	52	237.80	0.00	0.00	237.80
Milk Box Repair	108	289.90	0.00	0.00	289.90
A/C Unit Cleaning	727	7,592.20	0.00	0.00	7,592.20
Salad Box Repair	3	3.30	0.00	0.00	3.30
Slicer Repair	55	155.30	0.00	0.00	155.30
Steamtable Repair	25	111.00	0.00	0.00	111.00
Transfer Equipment	73	377.00	0.00	0.00	377.00
U/R Freezer Repair	126	494.90	7.00	0.00	501.90
U/R Refrig. Repair	153	438.15	1.00	0.00	439.15
Various	15	60.40	0.00	0.00	60.40
Warmer Repair	100	198.30	0.00	0.00	198.30
Water Cooler Repair	364	967.90	0.00	0.00	967.90
W/I Freezer Repair	202	526.70	17.80	0.00	544.50
W/I Cooler Repair	185	433.70	5.00	0.00	438.70
Water Leak Repair	362	696.20	18.30	0.00	714.50
Warranty Repair	1	1.00	0.00	0.00	1.00
Total	8,132	31,213.79	368.80	8.30	31,590.89

Source: Hillsborough County School District, Maintenance Department, 1997.

Exhibit 8-22 provides an analysis of the response time to work order requests by the maintenance areas.

**EXHIBIT 8-22
MAINTENANCE REQUEST RESPONSE TIME
BY MAINTENANCE AREA
JULY 1, 1996 - FEBRUARY 11, 1997**

Days to Complete	Area I		Area II		Area III		Area IV	
	No. of Requests	Percent*	No. of Requests	Percent	No. of Requests	Percent	No. of Requests	Percent
0-9	1,147	40%	1,599	43%	1,185	45%	1,023	43%
10-29	784	27%	695	19%	754	28%	576	24%
30-60	386	13%	414	11%	355	13%	389	16%
60-69	553	19%	1,013	27%	360	14%	379	16%
Total	2,870	100%	3,721	100%	2,654	100%	2,367	100%

*percentage calculated by total / no. of requests

Source: Hillsborough County School District, Maintenance Department, 1997.

Exhibit 8-23 presents an analysis of the person hours recorded as compared to the available hours for the period from July 1, 1996 to February 11, 1997. The hours for private contractors have been eliminated from the analysis. Four of the six groups are showing a productivity rate of approximately 84 percent. Maintenance Area III shows a productivity rate of 54 percent, while the Air Conditioning and Refrigeration group shows a productivity of 134 percent. Tracking is not currently taking place to determine if the work order priority system, shown in Exhibit 8-15, is being implemented and stated goals are being achieved.

**EXHIBIT 8-23
HOURS RECORDED AND HOURS AVAILABLE BY GROUP
JULY 1, 1996 THROUGH FEBRUARY 11, 1997**

GROUP	TOTAL HOURS	AVAILABLE HOURS	PERCENT
Maintenance Area I	27,656	32,240	86%
Maintenance Area II	26,550	33,480	79%
Maintenance Area III	18,201	33,480	54%
Maintenance Area IV	27,996	33,480	84%
Grounds	20,694	23,560	88%
Air Conditioning and Refrigeration	31,590	23,560	134%

Source: Hillsborough County School District, Maintenance Department, 1997.

FINDING

The Hillsborough County School District has a sophisticated work order tracking system which is capable of producing a variety of detailed reports. Exhibits 8-15 through 8-21 are a product of this software program.

COMMENDATION

The district is commended for utilizing a sophisticated work order tracking system which can increase resource management capability.

FINDING

The Maintenance Department is not utilizing the work order tracking software to its maximum potential for management activities. The analysis in Exhibit 8-23 shows that one Maintenance Area has a significantly lower productivity rate than the other areas. This analysis also shows that the Air Conditioning and Refrigeration group has a higher productivity than is possible.

In addition to not monitoring the hours recorded by each group on work orders, the Maintenance Department has not developed and implemented performance standards for tasks which are commonly repeated such as replacing the glass in a window, repairing a door lock, or servicing a motor. Using performance tasks will give management a tool to evaluate staff performance and increase efficiency.

Recommendation 8-8:

Develop performance work standards for commonly repeated work tasks and increase staff efficiency.

Utilizing the existing work order tracking software, the Maintenance Department can track the number of hours spent on typical tasks. By analyzing these records and comparing with standards developed nationally, the Maintenance Department can develop performance standards specific to the district.

Performance standards, such as the length of time required to paint a door or replace a door lock, can be used to schedule work activities. Performance standards have been shown to greatly improve employee productivity by providing clear work expectations. By implementing standards, the school district will also create a tool for monitoring employee performance.

IMPLEMENTATION STRATEGIES AND TIMELINE

1. The Supervisors of all maintenance areas should work with foreperson and crew leaders to establish performance standards. July 1997
2. The Computer Programmer should enter the standards into the work order tracking system. January 1998
3. The supervisors of all maintenance areas should use the established standards for performance evaluations. February 1998

FISCAL IMPACT

The productivity of crew members should increase by five percent through more effective management and monitoring of work orders. A five percent increase in productivity is the equivalent of hiring approximately 14 new staff. With proper staffing, this efficiency can be used to implement a preventive maintenance program beyond the minimal one now in effect.

Based on best practice seen in other districts, it is estimated that preventive maintenance measures will save up to 10 percent in long-term costs of emergency repairs or more than \$1.3 million per year when fully implemented. Savings will be phased in beginning in 1998-99.

Recommendation	1997-98	1998-99	1999-2000	2000-01	2001-02
Implement a Preventive Maintenance Program	---	\$334,000	\$667,000	\$1,000,000	\$1,300,000

FINDING

The Maintenance Department does not keep track of response time to work order requests and, therefore, cannot evaluate the level of service being provided. Given the level of autonomy which each service area has, the centralized monitoring of service levels is critical to maintaining high quality performance.

Exhibit 8-22 indicates that only 43 percent, on the average, of work order requests are being responded to in 0-9 days, and nearly 20 percent of work order requests are not responded to for 60 days or more.

Recommendation 8-9:

Use the present work order tracking software to track response time to work order requests by all service areas.

The present work order tracking software system will enable the tracking of response time as shown in Exhibit 8-22. However, at the time of MGT's on-site visit, it was not being used to its full potential. The system should track response time by priority level of the work orders to effectively measure performance.

The Director of Maintenance should discuss the results of the tracking with all service area managers on a weekly basis and work to improve the level of service. Goals should be set to meet the service levels set forth in the Work Order Priority System.

IMPLEMENTATION STRATEGIES AND TIMELINE

1. The Computer Programmer should begin tracking response time to all work order requests on a weekly basis. July 1997

2. The Director of Maintenance should review the response times for each service area with the manager and set goals for improving performance. August 1997
3. The Director should report the improvement rates to administrators and the Board. February 1997

FISCAL IMPACT

The improvements in service performance realized by tracking work order response time can be accomplished within existing district resources. The implementation of this recommendation will greatly improve overall efficiency.

8.6 Custodial Services

Custodial services are essential to keep schools clean, maintain a safe facilities environment, provide minor maintenance services, and both monitor and report facility repair needs to appropriate authorities.

CURRENT SITUATION

School custodial staff in the Hillsborough County School District are under the supervision of the school principal who is responsible for hiring, firing, and evaluating. The district maintains a division of Custodial Operations which oversees the training of custodial staff and helps to supervise their work standards and resolve problems.

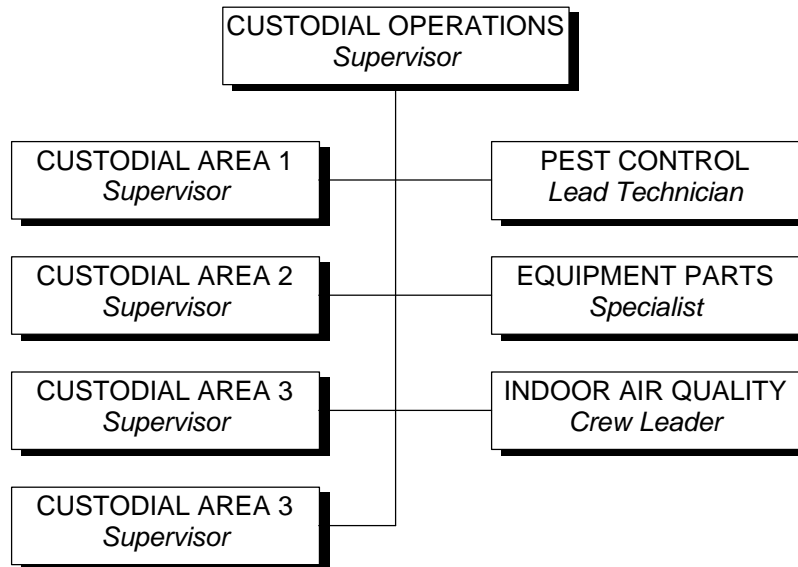
Exhibit 8-24 shows the organizational chart for Custodial Operations.

The Custodial Operations Supervisor oversees the Custodial Area Supervisors, the Pest Control Services, the Maintenance Repair Shop, and the Indoor Air Quality service. The Supervisor talks with sales people and evaluates new products.

The Custodial Area Supervisors visit schools and support the Principals and Head Custodians in supervising the custodial staff. In addition, they offer training to the Head Custodians on a voluntary basis. The areas of training include:

- use of equipment;
- proper use of chemicals;
- proper cleaning methods;
- safety practices; and
- Master Custodial Training Program (20-week course).

**EXHIBIT 8-24
CUSTODIAL OPERATIONS
ORGANIZATIONAL CHART
1996-1997**



Source: Hillsborough County School District, 1997.

The supervisors also help to fill gaps in staffing due to absences since there are no substitute custodians.

The Pest Control Area administers all pest control services and pre-treatment of new construction. Tent fumigation is contracted to private contractors.

The Maintenance Shop maintains all the custodial equipment, approximately 8,000 pieces of equipment, with a staff of one. He receives training from equipment vendors on equipment maintenance and safety.

The Indoor Air Quality Unit was formed five years ago when indoor air quality problems required the initiation of an internal program. The Unit also completes cleaning of gym floors and special cleaning projects. The Unit has completed 200 projects without any law suits to date.

Custodial supplies are ordered by the head custodian at each school and are subject to approval by the principal. While Custodial Operations tests new products, there is no central supervision of the amount of supplies used by each facility.

FINDING

The responsibility for the performance of custodial staff is solely that of the principals who are not professionally trained in efficient cleaning methods or the proper use of cleaning materials. While principals may request the help of the area supervisors, they are not required to do so. Interviews with the area supervisors indicated that this

situation has prevented them from performing their duties to the best of their abilities and limited the performance of some custodial staff.

Random visits to school sites and interviews with principals indicated that they were satisfied with their responsibility for custodial staff. Principals stated that they needed to be able to control the staff who were an integral part of the "school family." They appreciated the support of the area supervisors, but did not want to give up their authority over site staff.

Recommendation 8-10:

Develop districtwide performance standards for custodians by which area supervisors can evaluate the condition of schools and principals can evaluate the performance of custodians.

The development of performance standards should create a common language by which area supervisors and principals can communicate toward the goal of clean, safe schools. Principals will be able to maintain their authority over site staff and area supervisors will be responsible for the performance of that staff.

Schools not meeting the performance standards should be targeted for additional training and supervision by the area supervisors. After a two-month period, a re-evaluation should take place, and schools still not meeting performance standards should be referred to the Administrative Area Supervisor and the Supervisor of Custodial Operations.

IMPLEMENTATION STRATEGIES AND TIMELINE

- | | |
|---|----------------|
| 1. The Area Supervisors should develop cleaning performance standards for school facilities. | July 1997 |
| 2. These standards should be reviewed and approved by the Supervisor of Custodial Operations and the Administrative Area Supervisors. | September 1997 |
| 3. The standards should be disseminated to all Principals and Head Custodians. | October 1997 |
| 4. Area Supervisors should begin a six-month period of training and support to establish that all custodial staff are fully aware of the standards. | November 1997 |
| 5. Area Supervisors and Principals should begin evaluations based on the performance standards. | May 1998 |

FISCAL IMPACT

The establishment of performance standards can be accomplished within existing district resources.

FINDING

While Custodial Operations does offer training for Head Custodians, this training is not required. In fact, no standardized training is required of custodial staff. The lack of standardized training by professionals promotes inefficiency and unsafe practices for handling cleaning materials which can include harmful chemicals.

Recommendation 8-11:

Establish a mandatory, standardized training program for all custodial staff which is based on performance standards.

The Area Supervisors have already developed training programs which cover the necessary subject areas for custodial staff. These training programs should, in time, be improved and expanded into a comprehensive program based on performance standards.

IMPLEMENTATION STRATEGIES AND TIMELINE

- | | |
|--|----------------|
| 1. The Area Supervisors should first train all head custodians. | July 1997 |
| 2. All new hires should be required to attend a training session prior to beginning work at a site. | September 1997 |
| 3. The training of existing staff should be done by head custodians under the supervision of the Area Supervisors. | September 1997 |

FISCAL IMPACT

While it will not be possible for all custodial staff to be trained initially, the training program can be accomplished within existing district resources provided through staff development funds.

FINDING

Custodial services are essential to keeping schools clean and safe. A clean school is an important factor in maintaining a positive learning environment. In previous performance reviews, the review team has seen districts assign an average of between 12,600 gross square feet per custodian and 21,500 gross square feet. Using these averages, it has been determined that the best practice for custodial staffing is approximately 19,000 gross square feet per custodian. With the implementation of performance standards and mandatory training, this best practice is readily achievable.

The Hillsborough County School District uses a custodial staffing model which takes into account five factors: number of teachers, number of pupils, number of rooms, the amount of space, and the site factor. This formula resulted in an average allocation of one custodian for every 17,546 gross square feet. Exhibits 8-25 through 8-27 compares the Hillsborough County School District model with the best practice of one custodian for every 19,000 gross square feet.

**EXHIBIT 8-25
COMPARISON OF HILLSBOROUGH COUNTY PUBLIC SCHOOLS
CUSTODIAN ALLOCATIONS BY ELEMENTARY SCHOOL 1996-1997**

School Name	Total* Gross S.F.	Current Custodial Positions	S.F. per Cust.	Best Practice (GSF/19,000)	Over (Under) Best Practice
Alafia Elem	102,170	6.0	17,028	5.50	0.50
Alexander Elem	66,278	4.5	14,728	3.50	1.00
Anderson Elem	44,946	3.5	12,842	2.50	1.00
Apollo Beach Elem	89,935	4.0	22,484	4.50	(0.50)
Ballast Point Elem	55,546	3.0	18,515	3.00	0.00
Bay Crest Elem	74,523	4.5	16,561	4.00	0.50
Bellamy Elem	84,186	5.5	15,307	4.50	1.00
Bing Elem	98,743	5.0	19,749	5.00	0.00
Boyette Springs Elem	97,536	5.0	19,507	5.00	0.00
Brooker Elem	73,281	4.0	18,320	4.00	0.00
Broward Elem	73,015	4.5	16,226	4.00	0.50
Bryan Elem, Plant City	81,869	5.5	14,885	4.50	1.00
Bryan Elem, Tampa	40,030	3.0	13,343	2.00	1.00
Buckhorn Elem	95,305	5.0	19,061	5.00	0.00
Cahoon Elem	62,852	4.5	13,967	3.50	1.00
Cannella Elem	116,109	5.5	21,111	6.00	(0.50)
Carrollwood Elem	70,966	4.5	15,770	3.50	1.00
Carver Early Childhood	31,437	3.5	8,982	1.50	2.00
Chiaromonte Elem	57,094	4.0	14,274	3.00	1.00
Citrus Park Elem	73,846	4.0	18,462	4.00	0.00
Clair Mel Elem	74,335	5.0	14,867	4.00	1.00
Claywell Elem	96,694	5.5	17,581	5.00	0.50
Cleveland Elem	42,385	3.5	12,110	2.00	1.50
Colson Elem	91,577	5.5	16,650	5.00	0.50
Cork Elem	85,427	5.0	17,085	4.50	0.50
Crestwood Elem	60,800	5.0	12,160	3.00	2.00
Cypress Creek Elem	104,812	5.5	19,057	5.50	0.00
Desoto Elem	32,513	2.5	13,005	4.50	(2.00)
Dickenson Elem	80,682	5.0	16,136	4.50	0.50
Dover Elem	122,373	7.0	17,482	6.50	0.50
Dunbar Elem	39,295	3.0	13,098	2.00	1.00
Edison Elem	65,076	4.5	14,461	3.50	1.00
Egypt Lake Elem	72,776	5.0	14,555	4.00	1.00
Essrig Elem	96,933	6.5	14,913	5.00	1.50
Folsom Elem	108,059	6.0	18,010	5.50	0.50
Forest Hills Elem	95,166	5.0	19,033	5.00	0.00

**EXHIBIT 8-25 (Continued)
COMPARISON OF HILLSBOROUGH COUNTY SCHOOL DISTRICT
CUSTODIAN ALLOCATIONS BY ELEMENTARY SCHOOL 1996-1997**

School Name	Total* Gross S.F.	Current Custodial Positions	S.F. per Cust.	Best Practice (GSF/19,000)	Over (Under) Best Practice
Foster Elem	92,500	6.0	15,417	5.00	1.00
Gibsonston Elem	84,619	5.5	15,385	4.50	1.00
Gorrie Elem	46,368	3.5	13,248	2.50	1.00
Grady Elem	59,416	4.0	14,854	3.00	1.00
Graham Elem	39,222	3.0	13,074	2.00	1.00
Hunter's Green Elem	129,753	7.0	18,536	7.00	0.00
Jackson Elem	40,971	3.0	13,657	2.00	1.00
Just Elem	33,874	3.5	9,678	2.00	1.50
Kenly Elem	58,836	4.5	13,075	3.00	1.50
Kingswood Elem	63,456	3.5	18,130	3.50	0.00
Knights Elem	82,197	5.0	16,439	4.50	0.50
Lake Magdalene Elem	94,139	6.0	15,690	5.00	1.00
Lanier Elem/Monroe MS	229,254	8.5	26,971	12.00	(3.50)
Lee Magnet	43,775	3.0	14,592	2.50	0.50
Lewis Elem	83,032	5.5	15,097	4.50	1.00
Limona Elem	78,139	5.0	15,628	4.00	1.00
Lincoln Elem	54,026	3.5	15,436	3.00	0.50
Lithia Springs Elem	107,536	6.0	17,923	5.50	0.50
Lockhart Elem	97,654	5.0	19,531	5.00	0.00
Lomax Elem	31,105	2.5	12,442	1.50	1.00
Lopez Elem	96,977	6.0	16,163	5.00	1.00
Lowry Elem	94,540	6.5	14,545	5.00	1.50
Lutz Elem	73,427	4.5	16,317	4.00	0.50
Mabry Elem	77,096	4.0	19,274	4.00	0.00
Mango Elem	98,173	5.0	19,635	5.00	0.00
Maniscalco Elem	85,356	5.5	15,519	4.50	1.00
McDonald Elem	82,506	4.5	18,335	4.50	0.00
Meacham Early Childhood	31,979	4.0	7,995	1.50	2.50
Mendenhall Elem	81,382	5.0	16,276	4.50	0.50
Miles Elem	71,625	4.0	17,906	4.00	0.00
Mintz Elem	111,716	6.0	18,619	6.00	0.00
Mitchell Elem	42,652	3.5	12,186	2.00	1.50
Morgan Woods Elem	69,787	4.0	17,447	3.50	0.50
Mort Elem	82,456	6.5	12,686	4.50	2.00
Northwest Elem	87,176	5.0	17,435	4.50	0.50
Oak Park Elem	85,400	5.5	15,527	4.50	1.00

**EXHIBIT 8-25 (Continued)
COMPARISON OF HILLSBOROUGH COUNTY SCHOOL DISTRICT
CUSTODIAN ALLOCATIONS BY ELEMENTARY SCHOOL
1996-1997**

School Name	Total* Gross S.F.	Current Custodial Positions	S.F. per Cust.	Best Practice (GSF/19,000)	Over (Under) Best Practice
Orange Grove Elem	36,986	4.5	8,219	2.00	2.50
Palm River Elem	82,806	5.0	16,561	4.50	0.50
Pinecrest Elem	91,706	5.5	16,674	4.50	1.00
Potter Elem	45,661	3.0	15,220	2.50	0.50
Riverhills Elem	63,383	4.5	14,085	3.50	1.00
Riverview Elem	72,094	4.0	18,024	4.00	0.00
Robinson Elem	84,773	5.0	16,955	4.50	0.50
Robles Elem	83,308	5.5	15,147	4.50	1.00
Roosevelt Elem	57,552	3.0	19,184	3.00	0.00
Ruskin Elem	89,096	5.0	17,819	4.50	0.50
Schwarzkopf Elem	103,251	6.5	15,885	5.50	1.00
Seffner Elem	86,186	5.5	15,670	4.50	1.00
Seminole Elem	77,942	4.5	17,320	4.00	0.50
Shaw Elem	104,076	7.5	13,877	5.50	2.00
Shore Magnet School	34,603	3.5	9,887	2.00	1.50
Springhead Elem	63,593	5.0	12,719	3.50	1.50
Sulphur Springs Elem	94,451	6.0	15,742	5.00	1.00
Summerfield Elem	101,546	5.5	18,463	5.50	0.00
Tampa Bay Blvd Elem	53,093	5.0	10,619	3.00	2.00
Tampa Palms Elem	113,526	6.0	18,921	6.00	0.00
Temple Terrace Elem	95,831	5.0	19,166	5.00	0.00
Thonotosassa Elem	60,552	4.0	15,138	3.00	1.00
Tinker Elem	74,117	5.0	14,823	4.00	1.00
Town & Country Elem	70,216	5.0	14,043	3.50	1.50
Trapnell Elem	71,609	4.5	15,913	4.00	0.50
Twin Lakes Elem	102,473	5.0	20,495	5.50	(0.50)
Walden Lake Elem	101,569	5.0	20,314	5.50	(0.50)
West Shore Elem	43,859	3.0	14,620	2.50	0.50
West Tampa Elem	86,047	5.0	17,209	4.50	0.50
Williams Elem	85,000	4.0	21,250	4.50	(0.50)
Wilson Elem	32,737	2.5	13,095	2.00	0.50
Wimauma Elem	76,013	5.5	13,821	4.00	1.50
Witter Elem	72,660	5.5	13,211	4.00	1.50
Woodbridge Elem	69,512	5.0	13,902	3.50	1.50
Yates Elem	114,156	5.5	20,756	6.00	(0.50)
Total Elementary:	8,276,673	511.0	15,951	440.50	70.50

Source: Hillsborough County School District Administrative Services & MGT, 1997.
*includes permanent and temporary space

**EXHIBIT 8-26
COMPARISON OF HILLSBOROUGH COUNTY SCHOOL DISTRICT
CUSTODIAN ALLOCATIONS BY MIDDLE/JUNIOR HIGH SCHOOL
1996-1997**

School Name	Total* Gross S.F.	Current Custodial Positions	S.F. per Cust.	Best Practice (GSF/19,000)	Over (Under) Best Practice
Adams MS	120,452	6.5	18,531	6.50	0.00
Buchanan JH	120,908	6.5	18,601	6.50	0.00
Burnett MS	167,677	6.5	25,796	9.00	(2.50)
Burns MS	189,535	9.0	21,059	10.00	(1.00)
Coleman MS	81,296	4.5	18,066	4.50	0.00
Dowdell MS	124,339	6.5	19,129	6.50	0.00
Eisenhower MS	173,460	9.5	18,259	9.00	0.50
Franklin MS	100,515	6.0	16,753	5.50	0.50
Greco JH	135,786	7.0	19,398	7.00	0.00
Hill JH	161,957	9.5	17,048	8.50	1.00
Madison MS	94,109	5.0	18,822	5.00	0.00
Mann MS	126,666	6.0	21,111	6.50	(0.50)
Marshall MS	106,096	6.5	16,322	5.50	1.00
McLane MS	116,125	6.0	19,354	6.00	0.00
Middleton Magnet	104,621	6.5	16,096	5.50	1.00
Oak Grove JH	112,610	5.5	20,475	6.00	(0.50)
Pierce MS	132,368	6.0	22,061	7.00	(1.00)
Progress Village MS	152,906	6.0	25,484	8.00	(2.00)
Roland Park MS	122,306	7.5	16,307	6.50	1.00
Sligh JH	105,412	6.0	17,569	5.50	0.50
Stewart MS	112,463	7.0	16,066	6.00	1.00
Tomlin MS	151,257	7.5	20,168	8.00	(0.50)
Turkey Creek MS	159,240	8.5	18,734	8.50	0.00
Van Buren JH	112,310	5.5	20,420	6.00	(0.50)
Webb MS	115,020	6.0	19,170	6.00	0.00
Williams MS	139,368	6.0	23,228	7.50	(1.50)
Wilson MS	62,388	4.0	15,597	3.50	0.50
Young JH	114,511	6.0	19,085	6.00	0.00
Total Middle School:	3,515,701	183	18,576	186.00	(3.00)

Source: Hillsborough County School District Administrative Services and MGT, 1997.

*includes permanent and temporary space

**EXHIBIT 8-27
COMPARISON OF HILLSBOROUGH COUNTY SCHOOL DISTRICT
CUSTODIAN ALLOCATIONS BY HIGH SCHOOL
1996-1997**

School Name	Total* Gross S.F.	Current Custodial Positions	S.F. per Cust.	Best Practice (GSF/19,000)	Over (Under) Best Practice
Armwood HS	279,967	15.0	18,664	14.50	0.50
Bloomington HS	296,790	15.0	19,786	15.50	(0.50)
Brandon SH	384,013	17.0	22,589	20.00	(3.00)
Chamberlain SH	283,109	17.0	16,653	15.00	2.00
Durant SH	295,444	13.0	22,726	15.50	(2.50)
East Bay SH	285,054	14.5	19,659	15.00	(0.50)
Gaither HS	312,021	17.5	17,830	16.50	1.00
Hillsborough SH	284,847	15.5	18,377	15.00	0.50
Jefferson SH	239,683	13.0	18,437	12.50	0.50
King SH	266,017	13.0	20,463	14.00	(1.00)
Leto SH	304,284	16.5	18,441	16.00	0.50
Plant City SH	308,935	17.5	17,653	16.00	1.50
Plant SH	221,960	10.5	21,139	11.50	(1.00)
Robinson SH	221,694	11.5	19,278	11.50	0.00
Tampa Bay Tech HS	269,775	14.0	19,270	14.00	0.00
Total High School:	4,253,593	220.5	19,398	222.50	(2.00)

Source: Hillsborough County School District Administrative Services and MGT, 1997.

*includes permanent and temporary space

Recommendation 8-12:

Adjust the Hillsborough County Public Schools custodial staffing model so that the overall average is approximately one custodian per 19,000 gross square feet of space.

Of the 149 school facilities in Hillsborough County Public Schools, 38 are already operating with one custodian per 19,000 gross square feet or higher. The school district's formula which uses five factors should be continued but adjusted. Position elimination should occur through attrition and reassignments; therefore, an immediate hiring freeze should be imposed until the lower staffing levels are achieved.

IMPLEMENTATION STRATEGIES AND TIMELINE

1. The Supervisor of Custodial Operations should adjust the custodial formula. July 1997
2. The Area Supervisors should adjust staff as necessary. Fall 1997

- | | |
|---|----------------|
| 3. The Superintendent should adopt a policy that vacated custodial positions will not be filled until smaller allocation goals of the adjusted formula are met. | July 1997 |
| 4. The Superintendent should implement the policy in the budget. | September 1997 |

FISCAL IMPACT

The recommended allocation formula for custodians will, through attrition, reduce the number of custodians needed from 914.5 to 849, saving the school district approximately \$1,440,000 (65.5 custodians multiplied by \$21,955 = \$1,438,053, including benefits). Vacancies are based on a five percent annual turnover.

Recommendation	1997-98	1998-99	1999-2000	2000-01	2001-02
Reduce Custodians	\$720,000	\$1,440,000	\$1,440,000	\$1,440,000	\$1,440,000

FINDING

Currently, the Hillsborough County School District allows each school to order their own custodial supplies from the central warehouse. While the Custodial Operations Unit tests and approves all new materials, they do not regulate the amount of materials which should be used. This system creates a range in the amounts of materials used from one school to the next.

Exhibits 8-28 through 8-30 show the amount of money spent on custodial supplies by each school on a square foot basis. The amount per square foot varies from \$0.02 to \$0.11. Using the average for high schools of \$0.04 per square feet, a best practice can be established and a significant savings realized at the elementary and middle school levels.

Recommendation 8-13:

Create a passive order system for custodial supplies and standardize the type and amount of custodial supplies used by each school.

A passive order system should be created by the Area Supervisors developing standards for the amounts and types of custodial materials to be used at schools and developing guidelines for exceptions to the standards. These standards should be implemented by the central warehouse which will deliver the appropriate amounts of materials to each school site each month.

**EXHIBIT 8-28
COST PER GROSS SQUARE FEET OF
ELEMENTARY SCHOOL CUSTODIAL SUPPLIES
1995-96**

School Name	Total* Gross S.F.	Maint. Supplies \$	\$ per S.F.	Best Practice .04 per S.F.	Cost Avoidance
Alafia Elem	102,170	4,948.29	\$0.05	4,086.80	861.49
Alexander Elem	66,278	3,821.24	0.06	2,651.12	1,170.12
Anderson Elem	44,946	2,425.53	0.05	1,797.84	627.69
Apollo Beach Elem	89,935	2,593.81	0.03	3,597.40	(1,003.59)
Ballast Point Elem	55,546	1,876.33	0.03	2,221.84	(345.51)
Bay Crest Elem	74,523	3,815.39	0.05	2,980.92	834.47
Bellamy Elem	84,186	5,648.35	0.07	3,367.44	2,280.91
Bing Elem	98,743	4,930.53	0.05	3,949.72	980.81
Boyette Springs Elem	97,536	5,934.09	0.06	3,901.44	2,032.65
Brooker Elem	73,281	3,988.70	0.05	2,931.24	1,057.46
Broward Elem	73,015	4,193.76	0.06	2,920.60	1,273.16
Bryan Elem, Plant City	81,869	4,034.40	0.05	3,274.76	759.64
Bryan Elem, Tampa	40,030	2,603.21	0.07	1,601.20	1,002.01
Buckhorn Elem	95,305	4,472.18	0.05	3,812.20	659.98
Cahoon Elem	62,852	4,526.26	0.07	2,514.08	2,012.18
Cannella Elem	116,109	5,328.53	0.05	4,644.36	684.17
Carrollwood Elem	70,966	3,717.26	0.05	2,838.64	878.62
Carver Early Childhood	31,437	2,099.88	0.07	1,257.48	842.40
Chiaramonte Elem	57,094	2,737.45	0.05	2,283.76	453.69
Citrus Park Elem	73,846	3,472.36	0.05	2,953.84	518.52
Clair Mel Elem	74,335	4,002.37	0.05	2,973.40	1,028.97
Claywell Elem	96,694	4,393.41	0.05	3,867.76	525.65
Cleveland Elem	42,385	2,488.93	0.06	1,695.40	793.53
Colson Elem	91,577	4,344.57	0.05	3,663.08	681.49
Cork Elem	85,427	3,827.86	0.04	3,417.08	410.78
Crestwood Elem	60,800	4,189.13	0.07	2,432.00	1,757.13
Cypress Creek Elem	104,812	5,250.92	0.05	4,192.48	1,058.44
Desoto Elem	32,513	2,129.41	0.07	1,300.52	828.89
Dickenson Elem	80,682	4,763.82	0.06	3,227.28	1,536.54
Dover Elem	122,373	5,443.64	0.04	4,894.92	548.72
Dunbar Elem	39,295	2,497.31	0.06	1,571.80	925.51
Edison Elem	65,076	3,416.36	0.05	2,603.04	813.32
Egypt Lake Elem	72,776	5,306.80	0.07	2,911.04	2,395.76
Essrig Elem	96,933	4,574.91	0.05	3,877.32	697.59
Folsom Elem	108,059	6,638.57	0.06	4,322.36	2,316.21
Forest Hills Elem	95,166	4,265.04	0.04	3,806.64	458.40

**EXHIBIT 8-28 (Continued)
COST PER GROSS SQUARE FEET OF
ELEMENTARY SCHOOL CUSTODIAL SUPPLIES
1995-1996**

School Name	Total* Gross S.F.	Maint. Supplies \$	\$ per S.F.	Best Practice .04 per S.F.	Cost Avoidance
Foster Elem	92,500	4,975.14	0.05	3,700.00	1,275.14
Gibsonston Elem	84,619	3,957.67	0.05	3,384.76	572.91
Gorrie Elem	46,368	2,651.32	0.06	1,854.72	796.60
Grady Elem	59,416	3,472.53	0.06	2,376.64	1,095.89
Graham Elem	39,222	2,793.39	0.07	1,568.88	1,224.51
Hunter's Green Elem	129,753	5,183.48	0.04	5,190.12	(6.64)
Jackson Elem	40,971	2,257.24	0.06	1,638.84	618.40
Just Elem	33,874	2,682.66	0.08	1,354.96	1,327.70
Kenly Elem	58,836	3,070.50	0.05	2,353.44	717.06
Kingswood Elem	63,456	2,827.48	0.04	2,538.24	289.24
Knights Elem	82,197	4,328.75	0.05	3,287.88	1,040.87
Lake Magdalene Elem	94,139	5,132.18	0.05	3,765.56	1,366.62
Lanier Elem/Monroe MS	229,254	8,043.58	0.04	9,170.16	(1,126.58)
Lee Magnet	43,775	2,107.93	0.05	1,751.00	356.93
Lewis Elem	83,032	4,821.87	0.06	3,321.28	1,500.59
Limona Elem	78,139	4,474.25	0.06	3,125.56	1,348.69
Lincoln Elem	54,026	3,335.00	0.06	2,161.04	1,173.96
Lithia Springs Elem	107,536	5,159.76	0.05	4,301.44	858.32
Lockhart Elem	97,654	5,000.85	0.05	3,906.16	1,094.69
Lomax Elem	31,105	2,308.98	0.07	1,244.20	1,064.78
Lopez Elem	96,977	5,232.25	0.05	3,879.08	1,353.17
Lowry Elem	94,540	6,788.68	0.07	3,781.60	3,007.08
Lutz Elem	73,427	4,172.41	0.06	2,937.08	1,235.33
Mabry Elem	77,096	3,403.06	0.04	3,083.84	319.22
Mango Elem	98,173	4,003.99	0.04	3,926.92	77.07
Maniscalco Elem	85,356	4,612.80	0.05	3,414.24	1,198.56
McDonald Elem	82,506	4,238.46	0.05	3,300.24	938.22
Meacham Early Childhood	31,979	3,209.16	0.10	1,279.16	1,930.00
Mendenhall Elem	81,382	4,667.11	0.06	3,255.28	1,411.83
Miles Elem	71,625	3,470.41	0.05	2,865.00	605.41
Mintz Elem	111,716	6,471.56	0.06	4,468.64	2,002.92
Mitchell Elem	42,652	3,167.26	0.07	1,706.08	1,461.18
Morgan Woods Elem	69,787	3,700.42	0.05	2,791.48	908.94
Mort Elem	82,456	5,983.00	0.07	3,298.24	2,684.76
Northwest Elem	87,176	4,581.30	0.05	3,487.04	1,094.26
Oak Park Elem	85,400	4,618.11	0.05	3,416.00	1,202.11

**EXHIBIT 8-28 (Continued)
COST PER GROSS SQUARE FEET OF
ELEMENTARY SCHOOL CUSTODIAL SUPPLIES
1995-96**

School Name	Total* Gross S.F.	Maint. Supplies \$	\$ per S.F.	Best Practice .04 per S.F.	Cost Avoidance
Orange Grove Elem	36,986	4,013.41	0.11	1,479.44	2,533.97
Palm River Elem	82,806	4,270.97	0.05	3,312.24	958.73
Pinecrest Elem	91,706	3,493.51	0.04	3,668.24	(174.73)
Potter Elem	45,661	2,781.53	0.06	1,826.44	955.09
Riverhills Elem	63,383	4,422.13	0.07	2,535.32	1,886.81
Riverview Elem	72,094	3,775.11	0.05	2,883.76	891.35
Robinson Elem	84,773	3,901.64	0.05	3,390.92	510.72
Robles Elem	83,308	4,408.07	0.05	3,332.32	1,075.75
Roosevelt Elem	57,552	2,284.55	0.04	2,302.08	(17.53)
Ruskin Elem	89,096	4,469.79	0.05	3,563.84	905.95
Schwarzkopf Elem	103,251	5,973.92	0.06	4,130.04	1,843.88
Seffner Elem	86,186	3,812.50	0.04	3,447.44	365.06
Seminole Elem	77,942	2,744.38	0.04	3,117.68	(373.30)
Shaw Elem	104,076	9,615.40	0.09	4,163.04	5,452.36
Shore Magnet School	34,603	2,271.81	0.07	1,384.12	887.69
Springhead Elem	63,593	3,961.90	0.06	2,543.72	1,418.18
Sulphur Springs Elem	94,451	7,001.37	0.07	3,778.04	3,223.33
Summerfield Elem	101,546	4,213.74	0.04	4,061.84	151.90
Tampa Bay Blvd Elem	53,093	3,858.78	0.07	2,123.72	1,735.06
Tampa Palms Elem	113,526	5,687.49	0.05	4,541.04	1,146.45
Temple Terrace Elem	95,831	5,344.86	0.06	3,833.24	1,511.62
Thonotosassa Elem	60,552	2,960.90	0.05	2,422.08	538.82
Tinker Elem	74,117	3,334.57	0.04	2,964.68	369.89
Town & Country Elem	70,216	3,632.48	0.05	2,808.64	823.84
Trapnell Elem	71,609	2,922.19	0.04	2,864.36	57.83
Twin Lakes Elem	102,473	5,161.89	0.05	4,098.92	1,062.97
Walden Lake Elem	101,569	4,908.28	0.05	4,062.76	845.52
West Shore Elem	43,859	2,130.44	0.05	1,754.36	376.08
West Tampa Elem	86,047	4,334.83	0.05	3,441.88	892.95
Wilson Elem	32,737	2,325.77	0.07	1,309.48	1,016.29
Wimauma Elem	76,013	4,522.42	0.06	3,040.52	1,481.90
Witter Elem	72,660	5,246.66	0.07	2,906.40	2,340.26
Woodbridge Elem	69,512	3,446.43	0.05	2,780.48	665.95
Yates Elem	114,156	4,720.60	0.04	4,566.24	154.36
Total Elementary:	8,191,673	437,559.46	\$0.06	327,666.92	\$109,892.54

Source: Hillsborough County School District Budget Department & MGT, 1997.

*includes permanent and temporary space

**EXHIBIT 8-29
COST PER GROSS SQUARE FEET OF
MIDDLE SCHOOL CUSTODIAL SUPPLIES
1995-96**

School Name	Total* Gross S.F.	Maint. Supplies \$	\$ per S.F.	Best Practice .04 per S.F.	Cost Avoidance
Adams MS	120,452	6,127.21	\$0.05	4,818.08	\$1,309.13
Buchanan JH	120,908	6,993.77	0.06	4,836.32	2,157.45
Burns MS	189,535	6,024.03	0.03	7,581.40	(1,557.37)
Coleman MS	81,296	3,188.89	0.04	3,251.84	(62.95)
Dowdell MS	124,339	5,728.51	0.05	4,973.56	754.95
Eisenhower MS	173,460	9,175.38	0.05	6,938.40	2,236.98
Franklin MS	100,515	4,078.66	0.04	4,020.60	58.06
Greco JH	135,786	7,643.77	0.06	5,431.44	2,212.33
Hill JH	161,957	7,446.20	0.05	6,478.28	967.92
Madison MS	94,109	3,347.48	0.04	3,764.36	(416.88)
Mann MS	126,666	5,718.46	0.05	5,066.64	651.82
Marshall MS	106,096	4,586.35	0.04	4,243.84	342.51
McLane MS	116,125	5,471.94	0.05	4,645.00	826.94
Middleton Magnet	104,621	3,893.52	0.04	4,184.84	(291.32)
Oak Grove JH	112,610	5,506.16	0.05	4,504.40	1,001.76
Pierce MS	132,368	4,355.77	0.03	5,294.72	(938.95)
Sligh JH	105,412	6,482.73	0.06	4,216.48	2,266.25
Tomlin MS	151,257	7,085.18	0.05	6,050.28	1,034.90
Turkey Creek MS	159,240	7,070.70	0.04	6,369.60	701.10
Van Buren JH	112,310	4,853.69	0.04	4,492.40	361.29
Webb MS	115,020	3,814.79	0.03	4,600.80	(786.01)
Wilson MS	62,388	3,386.59	0.05	2,495.52	891.07
Young JH	114,511	5,706.90	0.05	4,580.44	1,126.46
Total Middle School:	2,820,981	127,686.68	\$0.05	112,839.24	\$14,847.44

Source: Hillsborough County School District Administrative Services & MGT, 1997.

*includes permanent and temporary space

**EXHIBIT 8-30
COST PER GROSS SQUARE FEET OF
HIGH SCHOOL CUSTODIAL SUPPLIES
1995-96**

School Name	Total* Gross S.F.	Maint. Supplies \$	\$ per S.F.	Best Practice .04 per S.F.	Cost Avoidance
Armwood HS	279,967	6,105.41	\$0.02	11,198.68	(5,093.27)
Bloomington HS	296,790	12,783.16	0.04	11,871.60	911.56
Brandon SH	384,013	8,922.04	0.02	15,360.52	(6,438.48)
Chamberlain SH	283,109	10,131.72	0.04	11,324.36	(1,192.64)
Durant SH	295,444	23,117.27	0.08	11,817.76	11,299.51
East Bay SH	285,054	9,636.07	0.03	11,402.16	(1,766.09)
Gaither HS	312,021	11,581.27	0.04	12,480.84	(899.57)
Hillsborough SH	284,847	11,542.32	0.04	11,393.88	148.44
Jefferson SH	239,683	8,004.40	0.03	9,587.32	(1,582.92)
King SH	266,017	10,435.00	0.04	10,640.68	(205.68)
Leto SH	304,284	8,889.74	0.03	12,171.36	(3,281.62)
Plant City SH	308,935	16,273.44	0.05	12,357.40	3,916.04
Plant SH	221,960	8,535.86	0.04	8,878.40	(342.54)
Robinson SH	221,694	11,255.99	0.05	8,867.76	2,388.23
Tampa Bay Tech HS	269,775	9,779.58	0.04	10,791.00	(1,011.42)
Total High School:	4,253,593	166,993.27	\$0.04	170,143.72	(3,150.45)

Source: Hillsborough County School District Budget Department & MGT, 1997.

**includes permanent and temporary space*

IMPLEMENTATION STRATEGIES AND TIMELINES

1. The Area Supervisors should develop a passive order system by setting custodial materials standards used by each school. Fall 1997
2. The passive order system should be implemented by the central warehouse. January 1998
3. The standards set through the passive order system should be evaluated by the Supervisor of Custodial Operations and the Administrative Area Supervisors. July 1998

FISCAL IMPACT

The utilization of a passive ordering system and implementation of material standards, based on a best practice of \$0.04 per square feet, will produce an approximate annual savings of \$124,700 (that is, cost avoidance at both the elementary and middle school levels).

Recommendation	1997-98	1998-99	1999-2000	2000-01	2001-02
Create Passive Order System	\$62,350	\$124,700	\$124,700	\$124,700	\$124,700

8.7 Energy Management

Proper energy management is a vital tool for the efficient distribution of the school system's utilities. Energy audits and other sources of data are essential to control energy costs. Such data are used by management to determine priorities and to monitor and evaluate the success of a program. While the purpose of the energy management program is to minimize waste, the program should also ensure comfort in occupied spaces and encourage energy awareness across the school system.

CURRENT SITUATION

The present Energy Management Program in the Hillsborough County School District has a staff of 1.5 FTE -- the supervisor, who was hired two and a half years ago, and a shared secretary. In addition, the Maintenance Department monitors and controls the heating and cooling in school facilities with a computer controlled management system (CCMS). The CCMS is installed in 70 of the 170 facilities and two technicians are responsible for monitoring the system.

The Energy Management Program Supervisor visits all 149 regular schools each year to educate the staff in energy conservation. The supervisor speaks with the administrators and staff teaching behaviors which will conserve energy. The energy management program has no budget for educational materials; however, the Director of Maintenance does maintain a \$100,000 budget for energy projects.

The conservation education effort has established an incentive program for the schools. By monitoring energy use, a baseline was established in 1994-95. Schools which reduce their energy use by at least 10 percent over the baseline year, receive half the savings for the school's general fund. Six schools received incentive awards in 1995-96 and saved the district \$92,786. In addition, 30 other schools did not reach the 10 percent goal, but did achieve energy savings amounting to \$88,489.

In addition to the incentive program, the Energy Management Program Supervisor is beginning or investigating several other programs including:

- **Low energy lighting retrofit:** The electric utility will offer a \$1,800 rebate for each facility outfitted with low energy lighting. Calculations completed by the supervisor indicate this program could have a cost savings of \$1,000,000 per year with a seven year payback.
- **Water conservation program:** The Energy Management Program Supervisor has just recently performed an analysis of water consumption in order to develop cost saving measures.

- **Thermal storage:** The goal of the thermal storage program is to move schools off of peak-energy-use times by producing ice at night and using the stored ice for cooling the facility during the day. The utility company pays the district an incentive for each kilowatt moved off peak-use time and the district pays a lower energy rate. Thermal storage systems have been installed at several facilities; however, the savings for these installations did not meet expectations. When the systems break down and have to revert to peak-use times, the district has had to pay the higher peak-use rates and the savings are diminished.
- **Trash compactors:** The Hillsborough County School District pays for garbage removal by the pound in the city limits and by the cubic yard in the county limits. In both cases the district must rent dumpsters to hold the garbage until it is collected. By installing trash compactors, the district can reduce the number of dumpsters it must rent and save on its county garbage removal bill.
- **Exit light relamping:** The Hillsborough County School District has approximately 4,000 exit lights which are illuminated 24 hours a day, 365 days a year. If the typical incandescent lamps were replaced with LED lamps the district could save money in labor replacement costs and energy costs.

FINDING

In 1994-95, the Hillsborough County School District spent \$13 million on energy utilities in the school facilities. The Energy Management Program reduced this amount by \$181,275 in 1995-96. The savings was the product of the conservation education and incentive programs.

COMMENDATION

The Hillsborough County School District is commended for implementing a conservation education and incentive program and attaining a cost avoidance of \$181,275 in 1995-96.

FINDING

The district employs a computer controlled monitoring system to monitor and control the heating and cooling functions in 70 of its 170 facilities. The district also uses a sophisticated software system (FASER) to track and document energy use.

COMMENDATION

The Hillsborough County School District is commended for employing sophisticated software and hardware systems in its energy management program.

FINDING

The Energy Management Program Supervisor is presently responsible for working with all the schools in the conservation program, completing analysis of energy consumption data, and designing and initiating new energy savings programs. This wide area of responsibility is limiting the results of all the programs and delaying the initiation of new programs previously discussed.

Recommendation 8-14:

Employ a technical assistant to the Supervisor of the Energy Management Program who will provide analysis of current data being collected and for new programs being proposed.

A technical assistant should be able to analyze the energy consumption data the program is currently collecting and provide direction for additional cost savings. The assistant will also provide analysis of programs being proposed so that the merit of these programs can be clearly understood by the School Board.

By freeing the Energy Management Program Supervisor of these analysis duties, he will be able to more effectively coordinate the initiation of energy conservation programs. He will also be able to identify the funding necessary to implement new programs (e.g. grants, rebates, etc.) and, consequently, realize additional savings for the district.

The following data show the potential savings from two sample projects.

I. Exit Light Relamping

Based on information provided by Tampa Electric Company, the district has between 3,600 and 4,000 exit light fixtures. Exit lights, by design, are illuminated 24 hours a day, 365 days per year. They are generally equipped with two 20 watt incandescent light bulbs. Typically, incandescent light bulbs have a six-month life expectancy. Normally, the custodian is responsible for the replacement of burned out bulbs. Exhibit 8-31 shows the associated costs with exit light fixtures and the costs associated with relamping with LED bulbs. Exhibit 8-31 indicates that by relamping the exit light fixtures with LED bulbs, the district could realize an annual cost savings of \$56,122 (the difference between Plan 1 and Plan 3).

II. Trash Compactors

The installation of trash compactors at each school would minimize the volume of trash that will have to be removed from the facility. Minimizing the volume will decrease the need for trash containers and decrease the county charges for trash disposal. Exhibit 8-32 shows the projected cost avoidance this program will provide.

**EXHIBIT 8-31
EXIT LIGHT FIXTURE COSTS**

ITEM	PLAN 1	PLAN 2	PLAN 3
No. of Fixtures	4,000	4,000	4,000
Energy Cost	\$112,1128	\$ 98,112	\$ 5,606
Labor	\$ 35,200	\$ 35,200	\$ 17,600
Materials	\$ 12,000	\$ 12,000	\$ 80,000
Total Cost	\$ 159,328	\$145,312	\$103,206

Source: Hillsborough County School District, Energy Management Department, 1997.

Plan 1 - based on fixtures with 2-20 watt incandescent bulbs in each fixture

Plan 2 - based on 2,000 fixtures with 2-20 watt bulbs and 2000 fixtures with 2-15 watt incandescent bulbs.

Plan 3 - based on retrofitting 4,000 fixtures with 2 (2 total watt) LED bulbs.

The utilization of trash compactors will produce an annual cost savings of \$288,413 after an initial investment of \$300,625 for the first year of the program.

These two sample programs document the cost savings that will be realized by an appropriately staffed, and, consequently, more productive, energy management program.

IMPLEMENTATION STRATEGIES AND TIMELINE

- | | |
|---|--------------|
| 1. The Supervisor of Energy Management should prepare a job description for a technical assistant and submit it to the Director of Maintenance. | Fall 1997 |
| 2. The Director of Maintenance should review the job description and submit a request for funding to the Board. | January 1998 |
| 3. The Board should approve and fund the position of technical assistant. | July 1998 |

FISCAL IMPACT

Funding the position at a salary level of \$30,000 will create a cost of \$39,600 annually to the district. This cost will be offset by the savings produced by implementing programs like the Exit Relamping and Trash Compacting Programs. Those two programs will accomplish a cost savings of approximately \$340,000 annually. However, these programs have not been planned nor implemented to date.

An aggressive energy management program should be able to find similar programs and savings for at least the first five years of being fully staffed and implemented. (\$340,000 - \$39,600 = \$300,400). Therefore, the cost estimate is conservative.

**EXHIBIT 8-32
SOLID WASTE REDUCTION PROPOSAL**

School Name	Current Container Service			Proposed Container Service			Annual Reduction	Compactor Cost	1 st Year Savings
	Qty.	Vol. Yards	Annual Rate	Qty.	Vol. Yards	Annual Rate			
Hillsborough	4	160	\$37,950.00	2	48	\$11,498.00	\$26,452.00	\$ 13,705.00	\$12,747.00
Jefferson	3	144	\$34,070.00	2	36	\$ 8,654.00	\$25,416.00	\$ 13,705.00	\$11,711.00
Shaw	3	120	\$28,463.00	2	36	\$ 8,654.00	\$19,809.00	\$ 11,705.00	\$ 8,104.00
Chamberlain	3	90	\$21,393.00	2	36	\$ 8,654.00	\$12,739.00	\$ 13,705.00	(\$ 966.00)
Robinson	3	90	\$21,393.00	2	36	\$ 8,654.00	\$12,739.00	\$ 13,705.00	(\$ 966.00)
Witter	2	80	\$18,975.00	1	24	\$ 5,749.00	\$13,226.00	\$ 11,705.00	\$ 1,521.00
Lockhart	2	80	\$18,975.00	1	24	\$ 5,749.00	\$13,226.00	\$ 11,705.00	\$ 1,521.00
Mendenhall	2	80	\$18,975.00	1	24	\$ 5,749.00	\$13,226.00	\$ 11,705.00	\$ 1,521.00
Plant	2	80	\$18,975.00	1	24	\$ 5,749.00	\$13,226.00	\$ 11,705.00	\$ 1,521.00
Adams	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Stewart	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Broward	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Coleman	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Middleton	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Monroe	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Oak Grove	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Van Buren	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Shore	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Young	2	60	\$14,262.00	1	18	\$ 4,327.00	\$ 9,935.00	\$ 11,705.00	(\$1,770.00)
Foster	2	48	\$11,498.00	1	18	\$ 4,327.00	\$ 7,171.00	\$ 11,705.00	(\$4,534.00)
Franklin	2	48	\$11,498.00	1	18	\$ 4,327.00	\$ 7,171.00	\$ 11,705.00	(\$4,534.00)
Grady	2	48	\$11,498.00	1	18	\$ 4,327.00	\$ 7,171.00	\$ 11,705.00	(\$4,534.00)
Oak Park	2	48	\$11,498.00	1	18	\$ 4,327.00	\$ 7,171.00	\$ 11,705.00	(\$4,534.00)
Cahoon	1	40	\$ 9,487.00	1	18	\$ 4,327.00	\$ 5,160.00	\$ 11,705.00	(\$6,545.00)
Cleveland	1	40	\$ 9,487.00	1	18	\$ 4,327.00	\$ 5,160.00	\$ 11,705.00	(\$6,545.00)
TOTALS:		1,796	\$426,755.00		576	\$138,342.00	\$288,413.00	\$300,625.00	(\$12,212.00)

Source: Hillsborough County School District, Energy Management, 1997.

Recommendation	1997-98	1998-99	1999-2000	2000-01	2001-02
Employ Technical Assistant	----	\$300,000	\$300,000	\$300,000	\$300,000

An alternative to the district employing a technical assistant would be to take advantage of the services offered by the local electric company. Tampa Electric has staff available to perform many of the duties that would be accomplished by a technical assistant and has offered these services to the district at no cost.

FINDING

The cash award incentives which are being distributed to schools for good energy performance are a positive and effective tool for encouraging the conservation of energy. The success of programs like this are dependent on the participation of the building users, which is dependent on their awareness of energy conserving behaviors. An awareness of effective conservation practices can be developed from an intensive educational process.

Presently, the Conservation Education Program is taught by the Energy Management Program Supervisor who has other duties which limit his educational efforts. The results of another similarly sized school system (i.e., Houston Independent School District), with comparable utility costs per student, found an intensive educational program could produce an annual cost avoidance of \$375,000.

Recommendation 8-15:

Employ a full-time conservation educator to conduct an intensive education program throughout the school district.

The goal of the program should be to educate and train building users in energy conservation practices. The conservation educator should develop a curriculum, or use an existing one, and work with faculty, students, and community groups to meet the goals of the program. The program should be site based and require that the educator work closely with building users at each site.

IMPLEMENTATION STRATEGIES AND TIMELINE

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|--|--------------|
| 1. The Supervisor of Energy Management should prepare a job description for a conservation educator and submit the job description to the Director of Maintenance. | Fall 1997 |
| 2. The Director of Maintenance should review the job description and submit it to the Board for approval. | January 1998 |
| 3. The Board should approve the request for a conservation educator and fund the position. | July 1998 |

FISCAL IMPACT

Funding the position of conservation educator at a salary of \$40,000 and benefits will create a cost of \$52,800 to the district. This overhead will be offset by a projected savings in energy use amounting to \$350,000 per year. This savings is based on a best practice established from prior studies which determined that an energy education program will reduce energy conservation from two to three percent (.25 x \$13,867,715 = \$350,000) -- \$350,000 - \$52,000 = \$297,200).

Alternatively, the district could utilize the services of Tampa Electric's energy educator. While these services are offered to the district at no cost, they would be more limited than a full-time staff person and the savings may be reduced as well.

Recommendation	1997-98	1998-99	1999-2000	2000-01	2001-02
Employ Conservation Educator	----	\$297,200	\$297,200	\$297,200	\$297,200