Annual Report for the Repair and Maintenance of Public School Facilities in the State of Hawaii

I. Introduction

On July 1, 2005, Act 51, Session Laws of Hawaii, 2004, transferred responsibilities and resources for the School Repair and Maintenance (R & M) Program from the Department of Accounting and General Services (DAGS) to the Department of Education (DOE). The DOE has authority over R & M funds and staff for the state, with the exception of the neighbor islands, which are still provided through a Memorandum of Understanding (MOU) by DAGS.

This report outlines the program responsibilities, assesses the current program and finances, and reviews the DOE's plan for this year's R&M budget request as well as future plans.

II. Program Responsibilities

Stated in Act 316, Session Laws of Hawaii, 2001, "a key component in improving public education in Hawaii is the provision of school facilities that support and enhance academic programs." Our facilities responsibilities extend to 268 public school campuses statewide consisting of:

- 3,872 buildings
- 44.6 million square feet
- average building age of 59 years (ranging from 1 year to 165 years)
- $5.4 billion replacement value

Past Legislation

In 2001, the 21st State Legislature passed Act 316. The overall purpose of this Act was to fund the then $600 million backlog of R&M projects over a 10-year period through legislative appropriations, and to fund on-going R&M projects through general fund appropriations. Therefore, the Act established two funds:

- State educational facilities R&M account (SEFR&M) to eliminate the backlog of projects existing on June 30, 2001, and
- School physical plant operations and maintenance account (PPO&M) to fund regular, on-going school R&M projects scheduled after June 30, 2001.

In 2003, the 22nd State Legislature passed Act 188, Session Laws of Hawaii 2003, which gave the DOE the authority to set priorities for school R&M projects. This was the start of the movement to give DOE the authority to oversee its own funds and facilities.

In 2004, the 23rd State Legislature passed Act 51 which significantly increased the DOE's ability to affect its own destiny, including the way capital improvement projects (CIP) and R&M projects are handled. Act 51 enabled the DOE to "delink" from DAGS on July 1, 2005, and to restructure itself to achieve the following major principles:

- Establish that schools are "Clients;"
- Create a client-focused service bureau within the DOE;
- Restructure the current DOE Office of Business Services so that CIP and R&M processes are transparent to the schools and principals;
- Create a "district support team" to oversee and manage the CIP and R&M needs of each school; and
- Create a 24 x 7 "call center" to support the day-to-day facilities needs of the schools.

III. Current Financial Assessment

A. R&M Backlog

The list of unfunded major repair and maintenance projects for schools and other DOE facilities is commonly known as the R&M "backlog." This list of projects is dynamic, growing through December as schools annually inspect their school facilities and submit additional projects during the fall R&M prioritization period and shrinking in July and August, when the R&M projects funded by the "R&M lump sum" appropriation are taken off the "backlog" and moved to the "funded projects" list.

The figures used to prepare this report were taken from the "backlog" as of September 2005. This is the same list of projects that the DOE disseminated to schools in preparation for this year's annual "R&M prioritization visitations." As referenced earlier, we expect the figures in this list to increase as schools submit additional projects during the prioritization period.

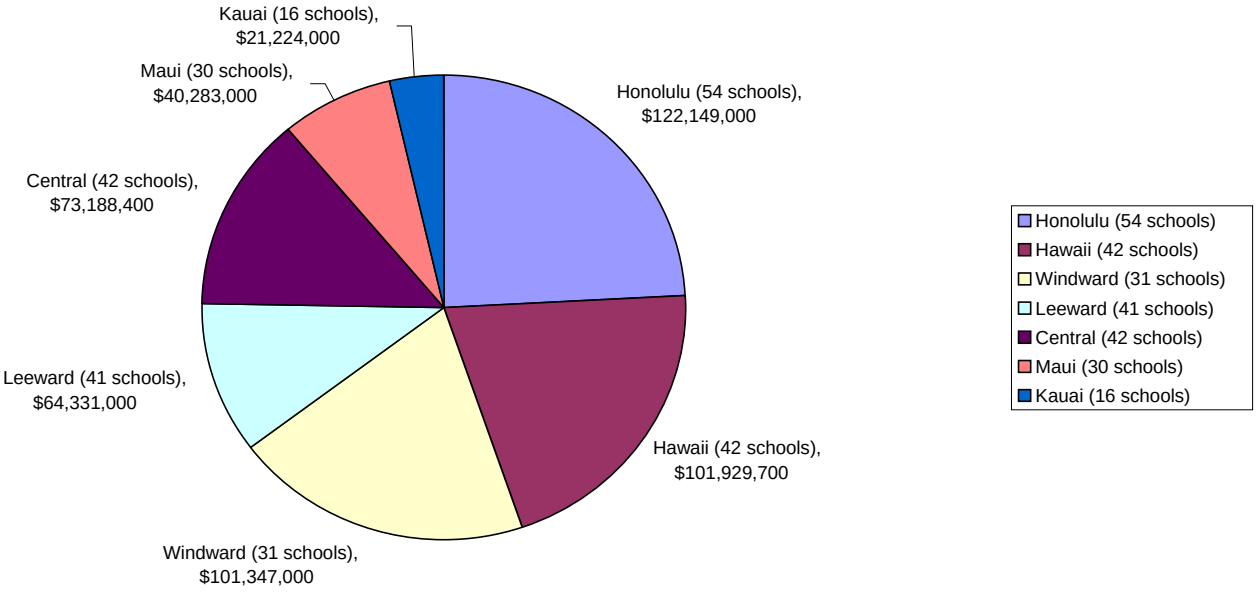
B. Status of R&M Backlog

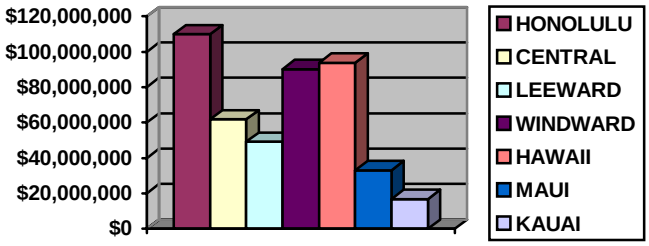
As of September 2005, the current R&M backlog was $524,502,500. A breakdown of the projects by DOE districts indicates the following:

- Honolulu District (the oldest and largest district with 54 schools) has the largest dollar amount of backlog projects at $122,149,000.
- Hawaii District (42 schools with the greatest number of "wooden" school structures spread geographically over the largest area), has a backlog of $101,929,700.

- Windward District (31 schools impacted by the harshest climatic conditions of rain, wind, and salt air) has $101,347,400 of backlog projects.
- Leeward District (41 schools, including five schools built in the last ten years) has a backlog of $64,331,000 or about half of the dollar amount of the Honolulu District.
- Central District (42 schools) has a backlog of $73,188,400.
- Maui District (30 schools) has a backlog of $40,283,000.
- Kauai District (16 schools) has a $21,224,000 backlog.

Backlog by District





C. Financial Assessment – Bond Funds vs. General Funds

The overall purposes of Act 316 were:

- To fund the $600 million R&M backlog over a ten-year period through legislative appropriations, and
- To fund normal R&M through general fund appropriations.

The PPO&M account was established for normal, on-going R&M scheduled after June 30, 2001, and the SEFR&M account to eliminate the backlog of projects existing on June 30, 2000. The balances in each account are as follows:

PPO&M	$290 million
SEFR&M	$234 million

In fiscal year 1999, the Legislature began appropriating bond funds to the R&M program. However, this has presented problems because although the shift in appropriations from general funds to capital bond funds enabled the DOE to fund more projects, not all projects qualify for bond funding. The number and cost of projects in the PPO&M account which can only be funded using general funds is increasing.

IV. Program Assessment

The facility repairs can be separated into two major categories:

- Major repairs – repairs, which, because of the scope or cost, cannot be performed by the DAGS work crews under the "work order" program.
- Minor repairs – repairs which the DAGS work crews can make via "work orders" or repairs which are emergency in nature requiring immediate action to abate either the loss of resources or to enable the school to open and operate.

A. Major R&M Program

The DOE conducted a rough analysis of the existing projects on the backlog list. About 30% of the backlog consists of recurring projects and 70% are non-recurring projects.

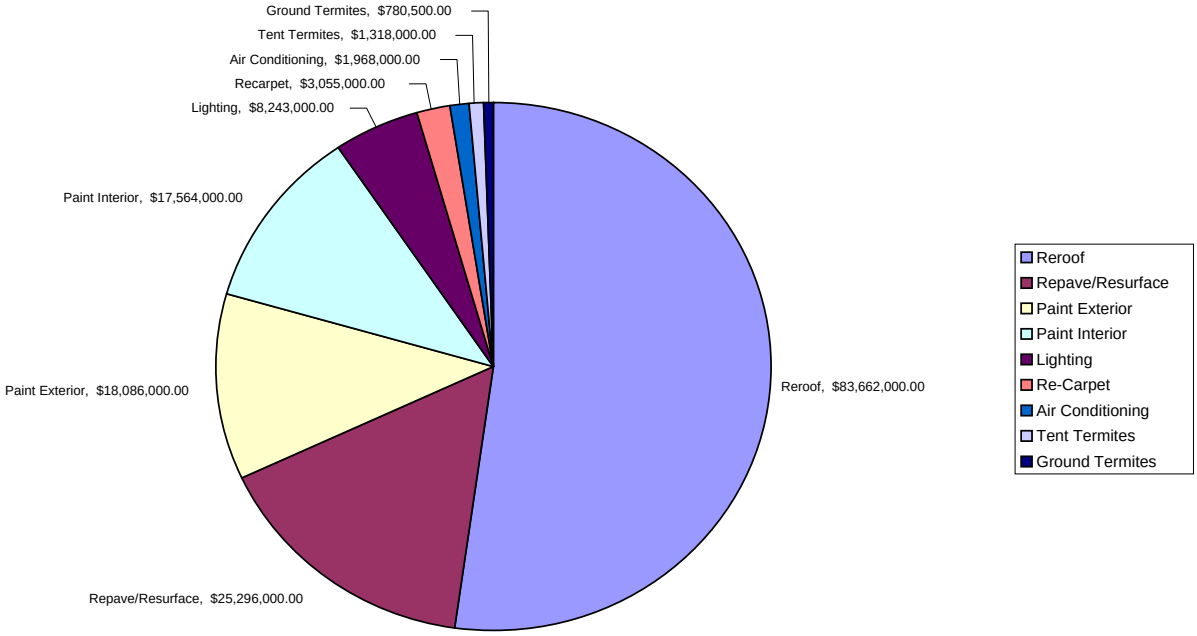
Recurring Projects

- Recurring projects are projects which must be repeated every so many years over the life of the facilities.

- **$159,972,500** of projects in the backlog or 30.5% of the total backlog is recurring. The categories of recurring projects are listed below:

Recurring Backlog Projects	
Roofing	$83,662,000
Repave/Resurface	$25,296,000
Paint Exterior	$18,086,000
Paint Interior	$17,564,000
Lighting	$8,243,000
Recarpet	$3,055,000
Air Conditioning	$1,968,000
Tent Termites	$1,318,000
Ground Termites	$780,500
	$159,972,500

Recurring Backlog Projects



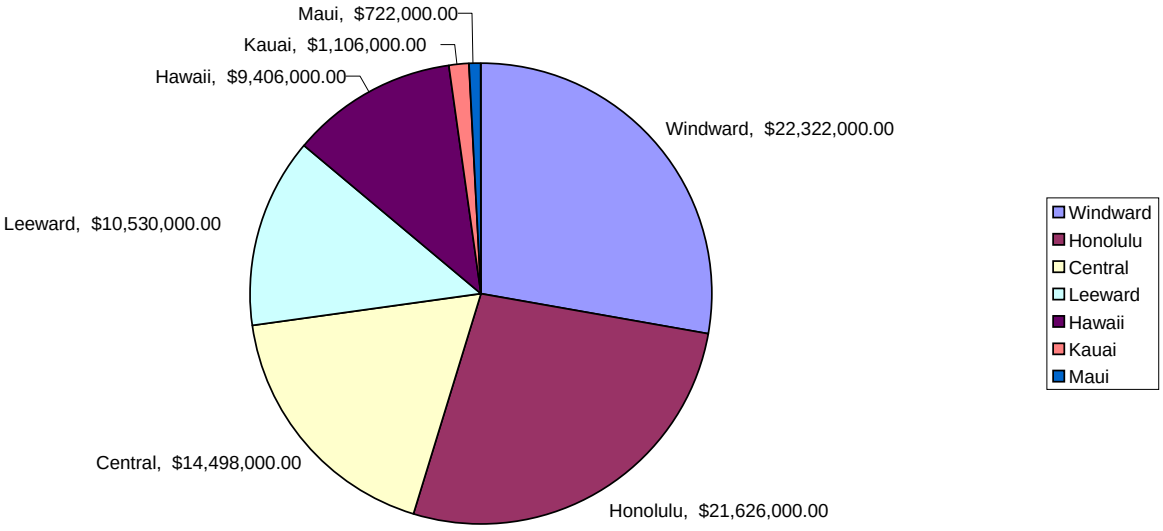
- By improving the DOE asset inventory and projecting the average life of certain components requiring recurring maintenance on a regular cycle, the DOE can develop a preventive maintenance schedule and budget forecast for our entire facilities base.

- The largest category of recurring projects is the building reroofing. Roofs typically have a life expectancy of 12 years. As an example, a

60-year-old building should have been reroofed at least 4 times in order to preserve the structural integrity of the facility. Below is a breakdown of roofing projects by district:

Roofing By District	**Funding Backlog**
Windward	$22,322,000
Honolulu	$21,626,000
Central	$14,498,000
Leeward	$10,530,000
Hawaii	$9,406,000
Kauai	$1,106,000
Maui	$722,000
Total	**$80,210,000**

Re-Roofing by District

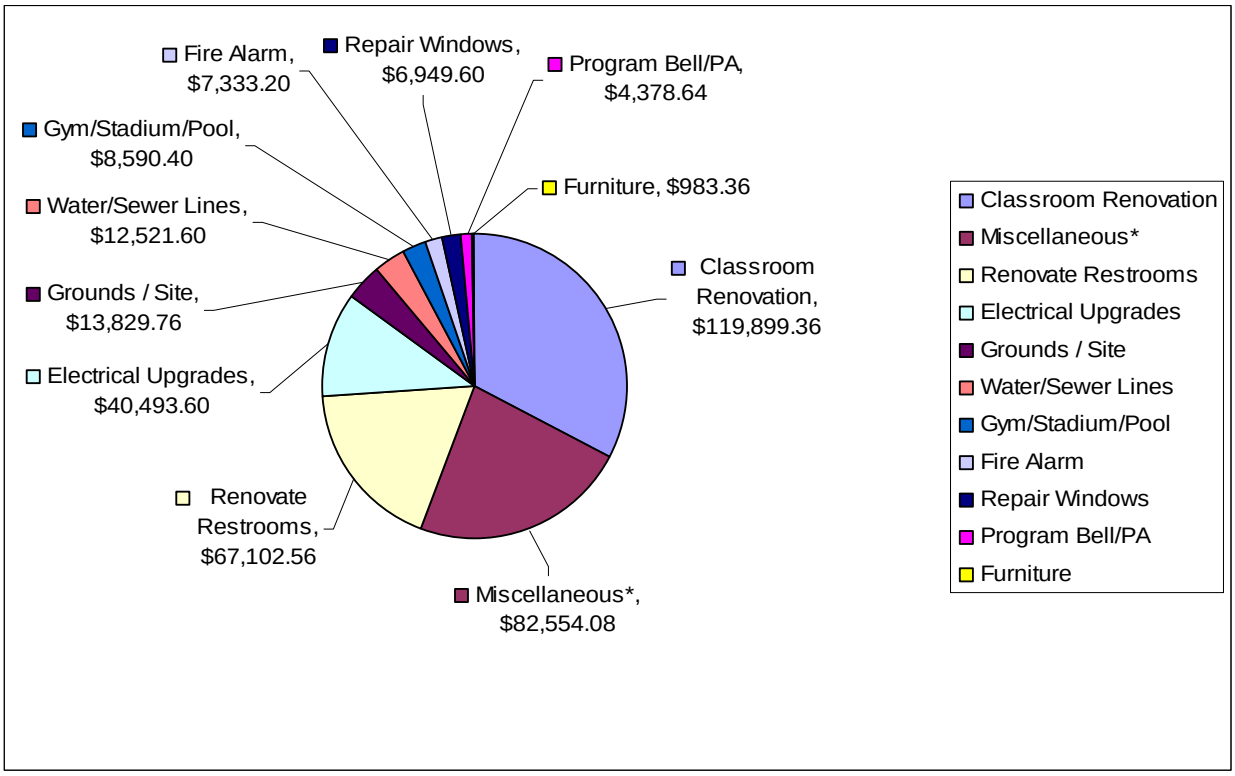


Beginning in FY06, the DOE has started segregating recurring projects for planning and budgeting purposes. Roofing was selected as the first category to be segregated as it is the largest. Since facilities need to be re-roofed on a regular, recurring basis, the DOE is developing a life cycle and replacement schedule for all the roofs in the DOE inventory.

Eventually, the same could be done for all other recurring repairs. This would then enable the Legislature to set an annual level of funding for major R&M projects to cover the cost of all recurring R&M projects.

Non-recurring projects

- The remaining projects can be grouped as "non-recurring" projects, or projects which are usually only needed once during the life of the facilities.
- 69.5% or $364,527,000 of the current backlog is non-recurring projects.
- Many of these projects are replacement of an existing facility or facility component, or rehabilitation of part of an existing facility due to deterioration, usage, or accident.
- The largest category of non-recurring projects is the classroom renovation projects. The classroom renovation projects typically address a multitude of recurring work (i.e., repainting interior and exterior, lighting, re-carpeting) as well as many of the miscellaneous and work order projects on a school's backlog list.
- Since non-recurring projects typically occur only once or twice during the average life of a building facility, these can be considered one time projects and therefore, planning for future R&M work will be handled differently from recurring projects.
- A further analysis of the non-recurring projects indicates that many of these projects can be bond funded.



Non-Recurring Projects	**Backlog**
Classroom Renovation	$119,899.36
Miscellaneous*	$82,554.08
Renovate Restrooms	$67,102.56
Electrical Upgrades	$40,493.60
Grounds / Site	$13,829.76
Water/Sewer Lines	$12,521.60
Gym/Stadium/Pool	$8,590.40
Fire Alarm	$7,333.20
Repair Windows	$6,949.60
Program Bell/PA	$4,378.64
Furniture	$983.36
	$364,636,00

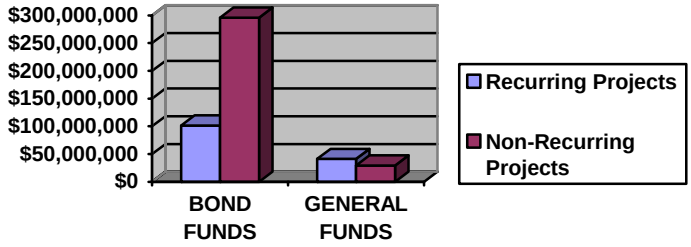
*** Miscellaneous Breakdown**	**Backlog**
Others	$35,183.68
Classroom Renovation	$14,584.64
Security / Insect Screens	$4,930.24
Doors And Hardware	$3,904.32
Other Renovation	$3,507.84
Electrical	$3,039.68
Floors	$2,972.48
Gutters And Downspouts	$1,976.80
Walls And Partitions	$1,840.16
Lockers	$1,825.60
Drainage Improvements	$1,522.08
Fencing And Backstops	$1,251.04
Concrete Walkways	$1,191.68
Ceiling Fans	$1,140.16
Lighting And Lamps	$1,074.08
Bleachers	$936.32
Railings	$728.00
Ceilings	$568.96
Gates	$376.32
	$82,554,08

Bond Funds vs. General Funds

The backlog can be further analyzed as to the amount of both the recurring and non-recurring projects that can be funded by either bond funds or general funds (cash).

- To fund an R&M project with bond funds, the project must meet certain guidelines issued by the Department of Budget and Finance. Typically bond funds can only be used on projects which will last the life of the bond.
- About 15% of the R&M backlog requires general funds, and 85% can be funded with bond funds.
- Of the recurring projects, 29% can be funded with general funds and the remaining 71% with bond funds.
- Of the non-recurring projects, 9% can be funded with general funds and the remaining 91% with bond funds.
- Projects which require general funds can be funded using bond funds if this work is included in the classroom renovation scope of work (i.e. repainting of the interior and exterior of classrooms).

The table below shows the types of projects in each category.



General Funded Project Categories	**GENERAL FUNDS**
Total	**$47,005,000**
Paint Exterior	$16,149,000
Paint Interior	$15,693,000
Doors And Hardware	$3,486,000
Recarpet	$2,728,000
Floors	$2,654,000
Lockers	$1,630,000
Tent Termites	$1,177,000
Ceiling Fans	$1,018,000
Lighting And Lamps	$959,000
Furniture	$878,000
Ground Termites	$633,000

Bond Funded Project Categories	**BOND FUNDS**
Total	**$424,000,700**
Classroom Renovation	$107,053,000
Roofing	$74,699,000
Renovate Restrooms	$59,913,000
Electrical Upgrades	$36,155,000
Others	$31,414,000
Repave/Resurface	$22,586,000
Classroom Renovation	$13,022,000
Grounds / Site	$12,348,000
Water/Sewer Lines	$11,180,000
Gym/Stadium/Pool	$7,670,000
Lighting	$7,360,700
Fire Alarm	$6,547,500
Repair Windows	$6,205,000
Security / Insect Screens	$4,402,000
Program Bell/PA	$3,909,500
Other Renovation	$3,132,000
Electrical	$2,714,000
Floors	$2,654,000
Gutters And Downspouts	$1,765,000
Air Conditioning	$1,758,000
Walls And Partitions	$1,643,000

Drainage Improvements	$1,359,000
Fencing And Backstops	$1,117,000
Concrete Walkways	$1,064,000
Bleachers	$836,000
Railings	$650,000
Ceilings	$508,000
Gates	$336,000

B. Minor R&M Program

On July 1, 2005, Act 51 transferred the R & M Operating Budget from the Department of Accounting and General Services to the DOE. In addition to the Central Services Division personnel and operating costs, the remaining EDN 400 budget funds the following school R&M programs:

- Emergency repairs - by definition, emergency repairs are critical repairs which need immediate attention. Within this category are two sub-categories,
  - Critical emergencies where the school cannot operate (i.e. loss of power to all school buildings) or resources are being wasted (i.e. underground waterline leak). Critical emergencies require a response within two hours or less.
  - Urgent emergencies, which require a 48-hour response. When addressing an emergency repair, permanent repairs may not be immediate but adequate steps are taken to assure health and safety or prevent the waste of resources.
- Work order repairs - generally speaking, work order repairs are minor repairs which are considered "irritant" in nature. These repairs are needed, but can wait since health or operational issues are not involved. DOE's Facilities Maintenance Branch has district/island crews which handle minor repairs through work orders submitted by schools. The crews include tradesmen (painting, carpentry, electrical, and plumbing) and support (masonry, welding). Crews on the neighbor islands are with DAGS and provide similar work for the schools under the MOU.
- Service and maintenance contracts - contracts are maintained on all islands. The list of service and maintenance contracts includes:
  - Fire extinguishers and related fire equipment (all islands - yearly inspection).
  - Air conditioning (all islands - monthly service).
  - Grease trap (Oahu only; Maui as needed - monthly service).
  - Fire protection devices (all islands - annual service).
  - Program bells (as needed).
  - Refuse (trash bin) pickup (all islands - 2-5 times a week, depending on school location).

  - Palm tree trimming (Oahu only 3 times a year).
  - Tree trimming (Oahu only - bi-annually).
  - Furniture repair program with Correctional Industries (Oahu only).
- Classroom replacement furniture - schools annually prioritize projects to replace student classroom furniture and position related furniture. In FY 2005, schools prioritized $1,412,000 for replacement furniture.

C. Other Sources of School Level R&M Funds

There are other programs which address the repair and maintenance of school facilities.

- School Level R&M – the first school-level minor repair and maintenance account was created in 1996. Act 89, Session Laws of Hawaii 1996, allocates up to $25,000 directly to schools to use for minor R&M projects. In FY 2005, the DOE received $1,890,886 which was allocated to public schools based on a formula which incorporated the age of the school, number of facilities, and student enrollment. Schools use these funds to fund minor R&M projects of their choice. In FY 07 these funds will go directly to the schools in the weighted student formula.
- Hawaii 3R's Program – This program coordinates projects for schools where businesses/contractors contribute materials and/or professional labor and schools contribute sweat equity to do major R&M projects at a fraction of the cost. Hawaii 3R's received a $400,000 grant for FY 2006 for project activities.
- Tax Contributions - Act 311, Session Laws of Hawaii 2001, established a special fund for a $2.00 tax contribution from each taxpayer who so indicates the desire to donate to DOE Repair and Maintenance program on his/her tax form. The DOE received $111,580 in FY 2005.

Act 311 Income Tax Contributions	
FY 2002-03	$111,904
FY 2003-04	$127,840
FY 2004-05	$111,580
FY 2005-06	Not received yet

V. Future Outlook and Projected Plans

For Fiscal Year 2005 – 2006, the DOE has been appropriated $75,000,000 and is requesting an R&M bond budget of $125,000,000 for Fiscal Year 2006 – 2007 and $ 14,000,000 per year general fund budget.

Program and Funding Requirements

Forecast of Program Needs

Using the APWA recommendation that annual R&M should be two to four percent of replacement value of invested assets, annual R&M should be between $100 million to $200 million per year. Further, additional amounts should be invested to remove the backlog of deferred maintenance that currently exists. Depending on the rate of reducing the backlog and further analysis of the "true" backlog, the estimate should be increased. Our proposed six-year plan will be based on further analysis of backlogged and future requirements for:

- Preventative and Scheduled Maintenance
- Recurring Maintenance
- Health and Safety Requirements
- Legal Mandates

Funding

About 15 percent of the total backlog will require general funds, and 85 percent can be funded with bond funds. However, our FY 2006 funding was 8 percent general funds and 92 percent bond funds. Of the recurring projects in the backlog, 29.5 percent must be funded with general funds and the remaining 70.5 percent with bond funds. Of the non-recurring projects in the backlog, 10 percent must be funded with general funds and the remaining 90 percent with bond funds.

A. School Prioritization of Upgrades

The amount of funds appropriated by the Legislature cannot keep up with the major repair projects needed on school campuses. Therefore, the DOE has developed an annual process to work with schools to "prioritize" each school's list of backlog projects for funding consideration. Within the process, the DOE is committed to the principles of:

- Local control, and
- Decentralized decision making.

The current method of project prioritization is done in the following manner. Projects which must be funded because of regulatory laws (i.e. grease trap projects, fire alarm projects), or statewide initiatives (i.e. classroom renovation program) are identified and funds "taken off the top" of the R&M appropriation for a portion of these backlog projects. In FY 2004, funding for classroom renovation projects, electrical upgrade projects, and air-conditioning replacement projects were taken off the top.

The rest of the appropriation is allocated by formula to the districts. The R&M appropriated funds are split among the seven districts based on a formula which takes into account variables of the age, square footage, and student enrollment count of each school. This formula was developed by KPMG in 1996 as a "fair" way to allocate the R&M funds, rather than just an equal share per school. The school R&M projects are then funded according to the individual school's priorities up to the budgeted amount of funds available to each district.

Minor CIP improvements should be coordinated with the R&M program requests and handled in a fashion similar to the school R&M program, and prioritized by the schools. Minor CIP improvements include additional electrical outlets, walls to divide "three on two" classrooms, additional security lights, sidewalk extensions, and conversion of existing general classrooms to special classrooms.

Currently, schools must include furniture replacement as a project to prioritize using R&M funds. The existing procedures will be revised to improve internal control of the furniture replacement program. This process will facilitate the establishment of life cycles for specific school furniture; identify funding requirements to reflect "catch-up" needs and to establish a cyclical replacement program.

B. Classroom Renovations

A major portion of the R&M funds over the last three years was taken "off the top" of the R&M appropriation and devoted to the classroom renovation program. Some portion of FY 2007 funds will be used for this program. The classroom renovation program was developed as a six-year program beginning in 2002 to complete the renovation of 232 schools which were or would be at least 25 years old in 2007. The total estimated cost, in 2002 dollars, was $350 million. The scope included:

- Exterior painting of all buildings and covered walkways,
- Interior renovation/refurbishment of classroom/portables (paint, whiteboards, tack-boards, window jalousies, floor tiles and carpet, light fixtures, doors/hardware, cabinets, sinks/faucets and outlets), and

- Renovation of restrooms within classroom buildings.

The objectives of this program were to:

- Renovate entire schools to look new,
  - Reduce the backlog, and
  - Decrease future work orders.

The status of the program, (completed, on-going, and planned) is shown below:

Phase	Fiscal Year	Schools	Budget	Status
I	FY 2001-02	40	$64,509,000	Completed
II	FY 2002-03	55	$98,352,000	Completed
III (1)	FY 2003-04	14	$19,544,000	Completed
IV	FY 2004-05	26	$43,406,000	On-going
V(2)	FY 2005-06	5	$24,200,000	Initiated
VI	FY 2006-07	48	$80,000,000	Planned
VII	FY 2007-08	48	$80,000,000	Planned

(1) Legislative appropriation was $35 million in FY 2003-04. Because of limited funding, 13 schools were renovated by Central Services Division In-house crews.
(2) Legislative appropriation was $75 million. Also included, added funds to cover higher bids for Phase IV.

These projects are bond funded and have been well received by the schools. We intend to complete the entire program within the original six-year timeframe by requesting a cash infusion of $160 million for fiscal year 2006-2007. An important observation is that “for each dollar in classroom renovations, 70 cents in “old” repairs from SEFR&M backlog has been eliminated" (page 4, A Comprehensive Six Year Plan to Repair and Maintenance, Report for Fiscal Year 2004). This is a good use of bond funds given that the current backlog consists of about 85 percent bond projects and 15 percent cash projects.

C. Facilities Assessments

To insure regular and systematic repairs to school facilities, Act 316, SLH 2001, Section 3, requires the DOE to develop and maintain a facilities physical analysis report and a facilities financial analysis report for each public school. These reports are to be posted on the web. Annual inspections are conducted by lay stakeholders at each school (DOE’s School Inspection Program), however, a technical analysis and financial analysis is not currently done. The DOE is working with members of the engineering and architectural communities to develop a Facilities Management capability. In fact, we are initiating a “pilot project” at a school to test the various components of this new system. Once we

collect the data from this pilot, we will be analyzing the results and determining what adjustments may be necessary before applying this to the entire system. Early estimates of the cost of doing these assessments are about $1.4 million for all 268 schools. These assessments would be done on a three-year cycle, but annual financial updates will be used as the basis for budgeting for future years. Further, in line with the DOE's intent to make information transparent to all school stakeholders, this information will be posted on the web through the DOE's FACTRAK tool.

D. Restroom Restoration Pilot

The care and upkeep of restroom facilities in schools has been a major issue with the Board of Education and State Student Council. In many schools, restroom facilities need to undergo complete renovation, which is very expensive because when a restroom is renovated, American Disabilities Act (ADA) requirements must be followed, and the renovated restroom must be brought up to "code." Therefore, a restroom renovation project can typically exceed $150,000 per "gang restroom" in older schools.

In FY 2005, the DOE embarked on a pilot project to "restore" rather than "renovate" restrooms. A major criticism of school restroom facilities is that they do not appear "clean" to the users. Smelly, stained, and broken or missing fixtures make the use of the restroom very unappealing. The goal of the project is to provide users with clean, odor free restrooms with working fixtures without having to spend the funds to "renovate" the existing restrooms.

The restroom restoration project goes beyond just the repair of the restrooms; project goals also include the retraining of custodians to properly care for the facilities, and the development of "school pride" within the school community to keep the restrooms "vandalism free."

- The first phase of the project is to repair broken or missing fixtures and "deep clean" the restroom to remove stains and odors.
- The second phase is to retrain the school custodial staff on proper restroom cleaning methods, and establish a checklist system to monitor and clean the restrooms on a scheduled basis.
- The third phase is to establish educational programs and increase efforts by school administrators and student councils to show that the care of facilities is a user's responsibility. Students are encouraged to take "ownership" of the restroom and school facilities, and ongoing media attention is planned to encourage school communities to take pride in their schools in a effort to curb vandalism.

The DOE piloted this project at four schools on Oahu, one elementary school, two middle schools, and one high school. So far, the program has met with much success. The cost of restoring a restroom is minimal, compared to the cost of renovating the same restroom. However, our limited cash R & M funds must be used for these projects, not bond funding. For FY06, all schools with classroom renovation projects will have their restrooms restored.

E. Roofing Maintenance Program

As stated earlier, roofing projects make up the largest percentage of recurring backlog projects. The current backlog of roofing projects is 944 projects or $72,975,000. Over the last six years, an average of $8,934,500 per year was budgeted for reroofing projects. The two tables below represent total roofing projects funded over the last six years and a breakdown of the current roofing backlog by district.

Total Funding For Roofing Projects from FY 2000 to FY 2005

Fiscal Year	Total Budgeted Roofing Projects	Total roofing projects
FY 2000	$1,091,861	28 projects
FY 2001	$12,413,243	166 projects
FY 2002	$12,878,573	160 projects
FY 2003	$6,659,796	61 projects
FY 2004	$6,690,527	81 projects
FY 2005	$13,870,000	166 projects
Totals	$53,607,000	662 projects

Geographic Analysis of Current Roofing Projects

District	Total Budgeted Roofing Projects	Total Roofing Projects
Windward	$19,931,000	230 projects
Honolulu	$19,309,000	213 projects
Central	$12,945,000	173 projects
Leeward	$9,402,000	164 projects
Hawaii	$8,399,000	97 projects
Kauai	$988,000	12 projects
Maui	$645,000	22 projects

The table below shows the estimated amount of roofing projects to be added to the backlog each year**:**

Total number of roofs in DOE	3,077

inventory:	
Average length of roof life:	12 years
Average roof project cost per roof:	$53,607,000 / 662 projects = $81,000
Estimated number of roofs to be added:	3,077 roofs / 12 years = 256 roofs per year
Estimated cost of roofing to be added:	256 roofs x $81,000 per roof = $20,736,000

While the above numbers are estimates, they indicate the magnitude of the situation regarding roofing. Based on these figures, we estimate that $20,736,000 will be needed per year to maintain the reroofing backlog at current levels. In order to eliminate the reroofing backlog within six years, $32,898,000 per year will be needed for six years and $20,736,000 per year will be needed in future years.

The DOE is exploring the concept of engaging in "roof maintenance" contracts which would extend the life of the roofs. Roofing firms will perform thorough inspections of facilities' roofs and recommend solutions that prolong the life expectancy of an existing roof. These fixes will be more cost effective initially than replacing the roofing system.

F. Preventative Maintenance

Section 2 of Act 316, SLH 2001, requires each newly constructed or renovated school facility (after June 30, 2001) to include a preventative maintenance program to include a recurring maintenance schedule for each major component of the school facility, the useful life, and present value of the projected costs over the life of the facility, as well as projected life and replacement date of the entire facility. This task has not been done. When completed we will be able to add to our budget forecasts a preventative maintenance component. Further, the preventative maintenance database would be tied into the work order system and tracked in the FACTRAK client services system.