

**REPORT FOR
SENATE CONCURRENT RESOLUTION NO. 39
REQUESTING A REVIEW OF THE
PERFORMANCE INFORMATION PROCUREMENT SYSTEM (PIPS)**

PREPARED BY THE
PIPS ADVISORY COMMITTEE

NOVEMBER 2002

**REPORT FOR
SENATE CONCURRENT RESOLUTION NO. 39
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PERFORMANCE INFORMATION PROCUREMENT SYSTEM (PIPS)**

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PART I – EXECUTIVE SUMMARY

A. Purpose

S.C.R. No. 39, S.D. 1, “SENATE CONCURRENT RESOLUTION REQUESTING A REVIEW OF THE PERFORMANCE INFORMATION PROCUREMENT SYSTEM” (Appendix A) requested the Department of Accounting and General Services (DAGS) to form an advisory committee to make recommendations to improve the PIPS system. The resolution required the committee be comprised of construction industry employer organizations, construction employee organizations, and other interested construction industry organizations as approved by the Comptroller, and requested a report to identify the following:

1. If PIPS resulted in cost savings.
2. If PIPS resulted in greater accountability.
3. If construction projects were equitably distributed among contractors.
4. If PIPS resulted in a lower number of change orders.
5. If PIPS resulted in higher quality (including timeliness) as compared to alternate forms of outsourcing State construction projects.

B. PIPS Advisory Committee

In June 2002, the Comptroller appointed 12 representatives of various construction industry organizations to the PIPS Advisory Committee to review and make recommendations to improve PIPS (Appendix B). The committee held five meetings, which are recorded in the minutes of the meetings in Appendix B. The Comptroller greatly appreciated the members’ dedication toward this effort.

Members of the Committee:

American Institute of Architects – Hawaii
Council
Glenn Yokotake, AIA

Associated Builders and Contractors
Henry Aylward, Secretary

Building Industry Association of Hawaii
John Cheung, V.P.

Consulting Engineers Council of Hawaii
Tim Higa

General Contractors Association of Hawaii
Glenn Nohara, Legislative Committee
Vice Chair

Hawaii Building and Construction Trades
Council
Sheila Fukuda

Hawaii Roofing Contractors Association
Scott Ai, President

Laborers’ International Union of North
America
Melvin Cremer

The Pacific Resource Partnership
Peter Lee

Painting and Decorating Contractors
Association
Ray Fujii

Plumbing and Mechanical Contractors
Association of Hawaii
Harry Honda

Sheetmetal Contractors Association
Fred Moore

C. Independent Auditor

The Comptroller hired an independent auditor, KPMG LLP, to conduct an unbiased review of PIPS. The auditor researched, reviewed, and reported on PIPS and low-bid projects completed by DAGS. Based on the findings of the audit, the advisory committee produced this report on the review of the PIPS system.

D. Background - Why PIPS?

Prior to 1999, DAGS Public Works Division (PWD) received numerous complaints on the quality of the completed construction projects and poor coordination of the projects during construction, especially in re-roofing and painting. Roofs were poorly constructed, contractors were slow in correcting punch list items, response to warranty work was slow or non-existent, and there was no accountability between the designers and the roofing contractors. Painting was in an even more critical situation. Even with tight specifications and detailed plans, the quality of work was so bad that DAGS Central Services Division (CSD) assumed repainting work on Oahu with their in-house staff.

It was in search of a process to correct these problems that PWD was introduced to PIPS.

E. Summary of Conclusions

1. PIPS resulted in 3% savings of overall project costs, which includes reduced design, project management, and maintenance costs.
2. PIPS resulted in greater contractor accountability. For example, immediate responses to trouble calls, no leaking roofs, no outstanding issues on completed projects, good communication with customers, contractors are motivated to obtain and continue training, fewer punch list items, and fewer change orders.
3. PIPS projects were not as widely distributed as the low-bid projects. Recommended modifications will make PIPS more equitably distributed.
4. PIPS resulted in a lower number of change orders.
5. PIPS has given higher quality construction. PIPS is the only best value process with documented results over a period of time. Other forms of outsourcing State construction projects do not have documentation of higher quality, timeliness and distribution.

F. PIPS Modifications

PIPS is a dynamic system. The staff and performing contractors are always striving to improve the system. The following changes have been proposed to improve the value to the State and increase the opportunity and distribution of projects to contractors:

1. Reduce and standardize the rating criteria from an average of forty-seven (47) items down to ten (10) items, except for roofing. (Retain two additional roof performance criteria for roofing.)

2. Allow the contractors to send out the surveys to the owners, and the owners send it back to the State. This would allow contractors to ensure that their references got the survey.
3. Initiate continuous registration.
4. Establish a price override mechanism. (Award to the second best proposal if the cost difference between the best and second best exceeds a percentage established for each project in the range of 15% to 20%.)
5. Award the project to the low-bidder if all bids exceed the project budget by over 20%. If additional funds are justified to award the project, we should consider the lowest bid without consideration for past performance. This allows contractors with little or no past performance the opportunity to compete on price alone. Although this brings risk, the low bidder must still pass technical review and will be rated on the completion of the project.
6. Publicize PIPS formula and sample calculations.
7. Provide a one-week interim period between cost proposal due dates and management plan submittal dates.
8. Post project budgets immediately after closing of cost proposal receipt deadline, provided at least one responsive and responsible cost proposal is within budget. If no proposals are within budget, the budget will not be posted. This will allow contractors the opportunity to determine whether or not they want to proceed with the mandatory management plan submittal one week later.

G. Recommendations

It is recommended that:

1. PIPS be used as an alternative means to procure construction and not used to replace the low-bid process. Those who would rather participate in the low-bid system, should keep bidding on the low-bid projects (majority of projects.)
2. The PIPS modifications discussed in the previous section be implemented to minimize large differentials in award price and increase the opportunity and distribution of work.
3. The performance delivered by all procurement processes should be well documented in a timely manner.
4. User agencies should have the prerogative to select the PIPS process.
5. The PIPS modifications proposed in the previous section be adopted and analyzed after more procurements are run.

PART II – ANALYSIS

This comparison of PIPS and low-bid is based primarily on the roofing projects since the PIPS roofing program is in its fourth year, has the largest number of completed projects and includes participants who have been involved with the PIPS program from its inception.

A. Cost of the PIPS

A comparison is being made of the entire delivery system (Appendix G, Table G1). The costs were derived in the following manner:

1. **Design costs.** These come from PWD records. The design costs are based on a percentage of the project cost for roofing.
2. **“In-house” Project Management costs.** This was derived from PWD records on the total construction project expenditure and the staff personnel expenditure, resulting in a management cost in percentage of the project expenditure (Appendix G, Table G2.)

For 2002, PWD delivered a higher amount of construction, resulting in a management cost of .0265 or 2.65%. The conservative assumption is that the cost before and after construction contract award is 30% / 70% due to the planning function being less than a third of PWD functions. Based on the University’s case study with roofing and painting, 80% of the remaining 70% of the function is deleted for PIPS projects¹.

The PWD inspectors and engineers are also spending less time on PIPS projects, but it is harder to document due to the number of personnel involved and the mix of projects each personnel is covering. It was also noted that one project manager could manage all the roofing and painting contracts. A conservative estimate is the project manager can handle up to 3 times the number of projects compared to the traditional process. The management of design and inspection of construction is minimized. The PIPS “in-house” PM costs is therefore .4% of the total project costs.

3. **Construction Costs.** The PIPS construction costs is based on all the PIPS projects (100 vs the 34 in the independent audit.) The low bid costs came from the audit numbers (34 roofs), which was 13% under budget. The construction costs for the PIPS projects (based on 78 roofs with no insulation) is 5.6% below the budget (Appendix G, Table G3). The budgets for projects with insulation are listed in Appendix F, Table F8, which show that the budgets were relatively accurate for non-insulation projects and inaccurate for insulated projects.
4. **Costs of Quality.** The cost of quality is substantial when what is procured does not work. The cost of quality is the cost of what the State has to pay when the low-bid project does not perform. A couple of examples are:
 - The University of Hawaii Stan Sheriff Center, which leaked from the day it was constructed. The cost to repair the leak was \$401,675.
 - The State of Hawaii Capitol roof, which also leaked from the day it was built. The roof was repaired numerous times but still leaked. After the State Capitol was last re-roofed, gaps between the original roof construction and wall, which allowed water to penetrate below the roofing membrane, were discovered.

¹ Serikawa, 2002.

- The refusal of the coating manufacturer to warranty the roof coating for Ali'iolani Hale building.
- The waterproofing of the Kalanimoku Building, which did not stop the leaking. The original cost of the waterproofing of the Kalanimoku Building was \$589K (with an interim repair finally done with a PIPS contractor for \$20K on the completed section of the project and an additional \$338K for redesigned work remainder of the project.)
- Another couple of examples of a designer specifying a roof construction and not knowing the performance results are the Hamilton Library roof and the State of Hawaii Convention Center walking deck roof. In both cases, the general contractors are liable to repair the systems, however, the repaired system is never as good as a performing system (and the warranty will only be for the minimum amount of time).
- High risk projects are ideal for PIPS, but the major advantage can only be quantified as "the problem has been fixed." The only reason risk exists, is a lack of performance information and insufficient funds to do the project. Using the 80/20 rule, it is these projects which consume the "in-house" project manager's time. It is also the reason for customers being dissatisfied with PWD work. The cost of quality for the low-bid procurements is listed at .5% of the project costs.

5. **Total Costs.** The costs for low-bid is 3.07% higher than the costs for PIPS (Appendix G, Table G1.)

In conclusion, PIPS resulted in roofs that were 3.07 percent less expensive for systems that were over 5 times more value (last longer, maintenance is less, contractors and manufacturers respond versus the low-bid roofs where the State responds to repairs over two years old.) Additionally there are no costs for nonperformance on over 100 roofing installations over the last four years (i.e. the State has not paid for any maintenance costs.)

B. Accountability of Contractors

The KPMG audit (Appendix D) reported that there were less punch list items on PIPS projects than on the low-bid projects. In addition, the following information was not covered in the scope of the audit:

1. PIPS roofing contractors responded immediately to three reports of leaking PIPS roofs. Two of the problems were non-roof related, and the third was fixed immediately by the contractor.
2. There are no leaking PIPS roofs (oldest being four years old) and no anticipation of any leaking in the near future. CSD has not had to respond to any leaks.
3. Painting contractors have done outstanding work without specifications. Out of 33 painting projects, there are no outstanding issues. Many of the painting jobs had minimum inspection during construction. When unforeseen problems occurred, the contractors worked with the State to come up with logical solutions at no cost to the State.
4. PIPS contractors have fixed unforeseen conditions without promise of reimbursement by the State. Notice is given to the inspector, fixes are made, and unforeseen conditions change order is turned in when the project is complete. (In many cases, contractors have not asked for extra payment.)

5. Contractors have gone ahead on their own risk without any directive from the State to perform work during windows of opportunity to assist the State.
6. Performance has been so good in terms of the contractors being accountable, that two schools have given a party/luau for the contractors, principals have requested PIPS roofs, and inspection is minimized on PIPS roofs (Appendix N).
7. When the University of Hawaii ran PIPS for painting jobs, the painting contractors requested the local training group to either provide a quality control person, or train the contractors to quality control their own work. Ironically, all the contractors had been previously trained. However, under the low-bid environment, training and craftsman skilled work is not a requirement, and therefore the training had no impact. PIPS makes the contractors liable, puts them at risk, motivates and encourages the use of training².

C. Distribution of Work

An analysis of the roofing projects compared low-bid awards with PIPS awards, as follows:

1. The low-bid roofing awards of 96 projects from 1998-2002 were awarded to 33 contractors with the top five contractors being awarded 50% of the work (20%, 8%, 7%, 7%, 7%).
2. The PIPS roofing projects were awarded to 8 contractors with the top five being awarded 96% of the projects (32%, 24%, 17%, 16%, 7%).

These numbers seem to show that PIPS distributed work to fewer contractors. However, when a more detailed analysis was done on the entire sample of roofing awards, only seven roofing contractors received at least one or more jobs a year under the low-bid system (Table C1 and C2), and five roofing contractors were getting repeated work under the PIPS system. When these numbers are compared, the two processes are fairly similar in their distribution of work.

Regardless of these results, modifications to the PIPS process (see Part I above, PIPS Modifications) will make the PIPS results even more similar to the low-bid distribution requirements. It should also be noted that PIPS is relatively new, and contractors and manufacturers need to be educated on the importance of performance, and liability for nonperformance.

D. Change Orders

All change orders on the 100 completed PIPS projects were for unforeseen or scope changes for the benefit of the State. There were no change orders due to design error or omission. Based on the KPMG review (Appendix D) of compiled data, there was, on average, fewer change orders associated with PIPS than low-bid projects.

E. Higher Quality

PIPS has given performance (i.e., higher quality construction and better communication with customers) without increasing cost. PIPS has given a superior product at a reasonable cost, reduced the overall delivery cost of construction, distributed the work among performers,

² Fujii, 2001.

required the low-bidders to perform, and motivated the contractors to improve. PIPS is the only best value process with documented results over a period of time.

PIPS is unique for several reasons:

1. It forces the contractor to identify their performance before bidding.
2. It uses past performance as a key component for the award.
3. It rates the contractor at the end of the project, which affects the contractor's future competitive nature.
4. It compares subjective performance factors (contractor met quality expectations, was considerate, did not impact operations, communicated with the user), objective observation factors (on-time and within budget), and performance numbers (number of years of roof performance, number of leaking roofs) simultaneously, without the subjective translation into numbers that have less meaning. The non-performing contractor cannot depend on a State decision maker making a subjective decision to allow nonperformance for any reason.
5. It forces competition among alternatives with different approaches to the problem, maximizing the use of State funds.

F. Alternate Systems

Design Build

There are numerous forms of “best value” or “performance based” procurement systems. The federal government established a two step selection process in 1996 based on “efficient competition”. “Efficient competition” is defined as a balance between full and open competition and the need to efficiently fulfill the Government’s requirements³. The solicitation for design build contractors reduces the number of potential bidders in the first step to not more than five. In the second step, the contractor who provides the “best value” is selected. The solicitation includes a scope of work statement and the evaluation factors. The evaluation factors for the first step include specialized experience, technical competence, capability to perform, past performance and other appropriate factors⁴. The Federal Acquisition Requirements (FAR) definition for past performance is subjective and permits the government agencies wide latitude in establishing a contractor’s performance rating⁵. Price and detailed design are not considerations in the first step.

In the second step, the agency must state whether all evaluation factors other than cost or price, when combined, are significantly more important than, equal to, or significantly less important than price⁶. This allows the agency to determine which proposal provides the best value by permitting tradeoff among cost and no-cost evaluation factors⁷. The regulations require that competitors be treated fairly and impartially but need not be treated the same⁸. In addition, the

³ Heisse, 2002. Page 2

⁴ Heisse, 2002. Page 2

⁵ Heisse, 2002. Page 3

⁶ Mickaliger, 1999. Page 43

⁷ Mickaliger, 1999. Page 43

⁸ Heisse, 2002. Page 3

FAR allows the agency to negotiate with competitors to achieve the “best value” and each offeror is allowed to revise its proposal to submit a best and final offer⁹.

PWD has solicited a number of projects through this design build process. The most significant project was the Stan Sheriff Arena. The University recently spent \$401,675 (includes two options) on a PIPS contract to correct significant leaks that reportedly were identified when the project was first completed but, never corrected by the design build contractor. In 1994, PWD completed two eight classroom design build projects. These projects were too small and simple for design build solicitations. More recently, PWD started and terminated two design build solicitations for a state prison and is negotiating with the sole offeror for a design build solicitation for a jail project. The State expended more than \$1M for these three solicitations.

Task Order Contracting

The Corp of Engineers, Pacific Ocean Division and the U.S. Navy, Pacific Division have also used task order contracting (TOC) almost exclusively for their smaller projects. The agencies generally solicit proposals using best value criteria to include past performance, price and other relevant source selection criteria¹⁰. After reviewing the proposals, the agency selects an adequate number of best-qualified contractors, usually three, and awards each selected firm a base contract¹¹. For subsequent projects only the contractors selected for the TOC are allowed to submit proposals. Contracts are normally for one year with two yearly renewals. This process eliminates the unsuccessful contractors from participating for as long as the TOC contracts are renewed.

Delaware

Many states also have legislation that permits best value procurement. The only state that has a non-subjective best value process is Delaware. This is because Delaware bases its best value only on price and schedule. Price is weighted at least 70% but not more than 90%. Schedule is weighted at least 10% but not more than 30%. However, the contract may be awarded to a bidder other than the lowest responsible and responsive bidder, if in the opinion of the contracting agency, the interest of the agency shall be better served by awarding the contract to another bidder¹². The basis for the rejection is not specified other than unsatisfactory performance on any previously awarded contract by the bidder being rejected.

University of Hawaii

The University of Hawaii completed several successful PIPS re-roofing and repainting projects (see Appendix L), but has terminated PIPS. They are exploring an alternative subjective best value procurement process because the university attorneys feel they can better defend a subjective system from challenges (See Appendix L for a case study of the University of Hawaii).

G. Conclusions and Recommendations

PWD has been criticized for a lack of performance (timely, within cost, and satisfying the customer.) It is this perceived lack of performance, not their financial management (3%

⁹ Heisse, 2002. Page 4

¹⁰ Staresina, 1999. Page 44

¹¹ Staresina, 1999. Page 44

¹² Delaware Code, Chapter 69, Page 54

overhead) that is being criticized. The issue is performance. PWD recognized the significance of performance and implemented PIPS to improve performance results.

The PIPS procurements so far have provided an increase in quality without an increase in expense (overall costs have actually been 3% lower than similar low-bid projects). However, the PIPS information environment created change and opposition because it forced all functions (contracting, design, and management) to self-analyze their performance and productivity. Change causes consternation. Therefore, DAGS has committed to provide education on PIPS to its personnel and the construction industry since education can increase understanding and acceptance,

Some of the industry (designers, PWD project managers, and contractors who prefer the low bid award) involved with the delivery of construction have voiced opposition to PWD's use of PIPS. However, the customers (State of Hawaii Executive Branch Departments) have voiced tremendous appreciation of the quality work. Accordingly, PWD will continue to use PIPS as an alternative procurement method because PWD is a servicing agency to the customers. Customers dictate performance, not the components that deliver construction.

It is important to note the difference between a construction delivery system and a procurement selection process. PIPS is a selection process that is information based. It can be used with different delivery processes. Accordingly, it is recommended that:

1. PIPS be used to procure construction as an alternative delivery mechanism and not used to replace the low-bid process. Those who would rather participate in the low-bid system, should keep bidding on the low-bid projects (majority of projects.)
2. The PIPS modifications discussed in Part I be implemented to minimize large differentials in award price and increase the opportunity and distribution of work.
3. The performance delivered by the processes should be well documented in a timely manner.
4. State agencies should have the prerogative to select the PIPS selection process.
5. The PIPS modifications proposed in Part I be adopted, and analyzed after more procurements are run.

PART III – RESULTS AND DISCUSSIONS OF THE KPMG AUDIT

A. Audit Results

The audit performed by KPMG, LLP (KPMG) (Appendix D) produced the following results (Appendix E):

1. Low-bid project awards (construction) were consistently under the budgeted amounts.
2. PIPS project awards (construction), with the exception of air conditioning projects, were higher than budgeted figures.
3. PIPS projects had fewer change orders.

4. PIPS projects had fewer punch list items, which tended to be resolved by relevant deadlines.
5. PIPS projects were not as widely distributed as the low-bid projects.
6. PIPS projects resulted in a lower number of change orders.
7. There was no information on other delivery systems with regard to quality, timeliness, and distribution of work.

B. Discussion of Audit Results

A discussion of the KPMG audit results is provided in Appendix E.

PART IV - APPENDICES

APPENDIX A:	SENATE CONCURRENT RESOLUTION
APPENDIX B:	PIPS ADVISORY COMMITTEE
APPENDIX C:	ANALYSIS OF PIPS PROJECTS
APPENDIX D:	KPMG REPORT
APPENDIX E:	DAGS ANALYSIS OF KPMG AUDIT RESULTS
APPENDIX F:	ANALYSIS OF ROOFING PROGRAM
APPENDIX G:	ECONOMIC ANALYSIS OF PIPS vs. DESIGN-BID-BUILD DELIVERY SYSTEM
APPENDIX H:	HISTORY OF PIPS IN DAGS
APPENDIX I:	PIPS PROCESS
APPENDIX J:	SELECTION PROCESSES THAT INCREASE THE VALUE OF PROCURED CONSTRUCTION
APPENDIX K:	NATIONAL AND INTERNATIONAL RESULTS OF PIPS
APPENDIX L:	CASE STUDIES
APPENDIX M:	ARTICLES
APPENDIX N:	LETTERS OF SUPPORT
APPENDIX O:	REFERENCES

APPENDIX A
SENATE CONCURRENT RESOLUTION NO. 39, S.D. 1

THE SENATE

TWENTY-FIRST LEGISLATURE, 2002

STATE OF HAWAII

S.C.R. NO. 39
S.D. 1

SENATE CONCURRENT RESOLUTION

REQUESTING A REVIEW OF THE PERFORMANCE INFORMATION PROCUREMENT SYSTEM.

WHEREAS, the State of Hawaii's Department of Accounting and General Services' (DAGS) administration and management of the State's public works projects is critical to the health and welfare of the people of the State; and

WHEREAS, three years ago, DAGS added to the low-bid system for public procurements on re-roofing construction projects a performance based procurement system, which it has designated as the Performance Information Procurement System (PIPS); and

WHEREAS, the PIPS proposal is selected by DAGS based upon a performance rating for the contractor and roofing system manufacturer with due consideration to price; and

WHEREAS, DAGS has begun to utilize PIPS on construction projects other than re-roofing; and

WHEREAS, it was hoped that PIPS would address DAGS' concerns about accountability, control of project costs and change orders, and would provide greater protection to the State; and

WHEREAS, the prudent approach is to evaluate the results, benefits, and deficiencies after the trial period; now, therefore,

BE IT RESOLVED by the Senate of the Twenty-first Legislature of the State of Hawai'i, Regular Session of 2002, the House of Representatives concurring, that the Department of Accounting and General Services form an advisory committee to make recommendations to improve the PIPS system; and

BE IT FURTHER RESOLVED that the advisory committee be comprised of construction industry employer organizations, construction employee organizations, and other interested construction industry organizations as approved by the Comptroller; and

BE IT FURTHER RESOLVED that the Advisory Committee submit a report to the Legislature at least twenty days prior to convening of the 2003 Regular Session, regarding its review of PIPS, including:

- (1) Whether the system has resulted in cost savings to the State;
- (2) Whether the system has resulted in greater accountability by contractors;
- (3) Whether State contracts for construction projects under PIPS are equitably and widely distributed;
- (4) Whether the system has resulted in a lower number of change orders; and
- (5) Any other information that is relevant to compare PIPS with alternative forms of outsourcing State construction projects with regard to quality, timeliness, and distribution of work; and

BE IT FURTHER RESOLVED that a certified copy of this Concurrent Resolution be transmitted to the Comptroller.

Report Title:

Requesting DAGS to form an advisory committee to review PIPS and report to the legislature.

**APPENDIX B
PIPS ADVISORY COMMITTEE**

Members of the Committee

American Institute of Architects – Hawaii
Council
Glenn Yokotake, AIA

Associated Builders and Contractors
Henry Aylward, Secretary

Building Industry Association of Hawaii
John Cheung, V.P.

Consulting Engineers Council of Hawaii
Tim Higa

General Contractors Association of Hawaii
Glenn Nohara, Legislative Committee
Vice Chair

Hawaii Building and Construction Trades
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Sheila Fukuda

Hawaii Roofing Contractors Association
Scott Ai, President

Laborers' International Union of North
America
Melvin Cremer

The Pacific Resource Partnership
Peter Lee

Painting and Decorating Contractors
Association
Ray Fujii

Plumbing and Mechanical Contractors
Association of Hawaii
Harry Honda

Sheetmetal Contractors Association
Fred Moore

Meeting Minutes

June 28, 2002

CONSTRUCTION INDUSTRY PROCUREMENT ADVISORY COMMITTEE MEETING
DAGS Comptroller's Conference Room
Friday, June 28, 2002, 2:00 p.m.

Attendance:

Melvin Cremer	Laborers Union 368
Henry W. Aylward	Associated Builders & Contractors
Roy K. Yamashiro	Consulting Engineers Council of Hawaii
Scott Ai	Hawaii Roofing Contractors Assn.
Sheila Fukuda	Hawaii Building & Construction Trades Council
Ray Fujii	Painting & Decorating Contractors Assn. of HI
John Cheung	Building Industry Assn. of HI
Peter Lee	Pacific Resource Partnership
Harry Honda	Plumbing & Mechanical Contractor's Assn. of HI
Johnny Higa	General Contractors Assn. of HI
Glenn Okimoto	DAGS Comptroller
Mary Alice Evans	DAGS Deputy Comptroller

Nelson Lau	KPMG
Ralph Kanetoku	KPMG
Dean Seki	DAGS Comptroller's Assistant
Gordon Matsuoka	DAGS - PIPS Administrator
Steve Miwa	DAGS - PIPS Administrator's Assistant
Chris Kinimaka	DAGS - PIPS Program Manager
Gaylyn Nakatsuka	DAGS - PIPS Coordinator
David DePonte	DAGS - PIPS Data Manager

1. Glenn Okimoto called the meeting to order at 1:55 p.m. Each attendee made self-introductions. Mr. Okimoto then announced:
 - Advisory Committee is being convened per Senate Concurrent Resolution No. 39, SD1 and Senate Resolution No. 19, SD1.
 - KPMG LLP will be conducting the audit of DAGS Public Works' PIPS and Low Bid programs.
2. Chris Kinimaka gave a brief description and update of the PIPS program at DAGS Public Works.
3. Mary Alice Evans reported on the implemented audit scope for comment. The audit starts next week and will focus on a comparison of PIPS vs. Low Bid results. The following timeline was provided:
 - Preliminary report due to DAGS October 15, 2002. Final report due to DAGS October 30, 2002. Committee requested update from KPMG audit as soon as possible.
 - Report to Governor due December 1, 2002.
 - Final report due 20 days prior to next Legislative Session.

- Audit includes timeliness of project implementation, involvement of DAGS personnel, reviewing experiences of other agencies involved with PIPS (current and past), qualitative issues as scoped by DAGS.
 - KPMG asked to look at other procurement processes.
4. Discussion on scope and direction of Advisory Committee. Committee needs data from Audit. Will need information from auditors earlier than October to be able to function in coming months.
 5. Mr. Okimoto then provided the current PIPS program status:
 - Awaiting determination from hearings officer for 10 protested PIPS projects.
 - DAGS will be settling with the protestor on protest of 45 projects. Projects include roofing, mechanical and electrical projects. Settlement is conditional on all 45 projects being procured using the low bid process.
 - The entire next round of school renovation projects is under consideration to go low bid. The final determination has not been made. The committee raised an issue that the industries have invested time and effort in PIPS as a worthwhile program and, they are concerned that using low-bid for ongoing projects is a step backward.
 - Comptroller is still open to industry feedback on their efforts with the PIPS program.
 - Comptroller will ask DAGS Central Services Division to identify painting projects to be bid using PIPS.
 6. Modifications to the PIPS process were discussed:
 - DAGS is reducing the number of performance criteria for General Contractors down to 10 items. Looking at likewise reduction for all contractor classifications.
 - Evaluation/rating forms are being revised to include rating guidelines.
 - Alternative procurement method: Suggestion was made to use a “2-Step” process whereby contractors scoring above the 80 percentile for performance are “qualified” to bid, then award is made to the “qualified” low-bidder. Concerns were raised that this system excludes 80 percent of the contractors from consideration and that these bidders are arbitrarily excluded and have no way to participate. Also, rating at end of project would only be punitive, i.e., good rating only lets contractor remain in top 20 percent. It was clarified that this process originated to address large design build projects, where it is expensive for teams to submit proposals. Hence, it’s more feasible and efficient that only selected top proposals would be considered.
 7. The following decisions were made on behalf of the Advisory Committee:
 - Chairman: Glenn Okimoto for this first meeting, Mary Alice Evans for all future meetings.
 - Until preliminary audit data provided by KPMG, the committee was directed to focus on non-audit issues, including alternate procurement processes for DAGS consideration. It was clarified that the advisory committee is not involved with identifying projects for PIPS.
 8. The Advisory Committee agreed on the following:
 - Meetings will be conducted on the 4th Friday of each month, at 1:00 p.m. in the Kalanimoku building, room 410.
 - Items for future discussion for include looking at alternative outsourcing and “Best Value” (today’s agenda was focused more on price).
- Next meeting: July 26, 2002 at 1:00 p.m., in Kalanimoku room 410.
9. The Meeting adjourned at approximately 3:30 p.m.

July 30, 2002

CONSTRUCTION INDUSTRY PROCUREMENT ADVISORY COMMITTEE MEETING
DAGS Comptroller's Conference Room
Tuesday, July 30, 2002, 1:00 p.m.

Attendance:

Scott Ai	HRCA
Henry W. Aylward	ABC
John Cheung	BIA
Ray Fujii	PDCA
Sheila Fukuda	HBCT Council
Harry Honda	PMCA
Sey Ito	CECH
Rick Kwock	GCA
Peter Lee	PRP
Glenn Yokotake	AIA
Mary Alice Evans	DAGS Deputy Comptroller
Ralph Kanetoku	KPMG
Nelson Lau	KPMG
Patricia Ohara	DAGS – Attorney General's Office
Dean Seki	DAGS Comptroller's Assistant
Gordon Matsuoka	DAGS - PIPS Administrator
Steve Miwa	DAGS - PIPS Administrator's Asst
Chris Kinimaka	DAGS - PIPS Program Manager
Gaylyn Nakatsuka	DAGS - PIPS Coordinator
David DePonte	DAGS - PIPS Data Manager

Mary Alice Evans called the meeting to order at 1:00 p.m. Each attendee made self-introductions.

1. KPMG Report Update:

- KPMG: Selected 50 PIPS and 50 Low Bid projects – awaiting project files.
- DAGS: Paradox database files not interconnected, files to be culled by DAGS staff.
- Advisory Committee should not replicate tasks KPMG contracted to report on.

2. PIPS Protest Update: Pat Ohara reported that of the 45 projects protested earlier this year, 13 were mechanical/electrical projects that the protestor, Hi-Tec Roofing Services, Inc. (Hi-Tec), was willing to drop in settlement discussions. Hi-Tec wants the remaining roofing projects to be bid using Low Bid versus PIPS. The State is okay with the request during the time PIPS is under review.

3. General Contractor's Criteria Update:

- Gordon Matsuoka distributed proposed 10 PIPS criteria (8 plus 2 carry-over criteria based on reference totals) for rating General Contractors and the proposed transfer of current ratings to apply to new rating criteria. The selection of the eight criteria for transfer was based on the existing criteria that most closely represented the new criteria. Min./Max./Ave. data on list passed out are based on current contractor ratings.
- Contractors will be informed at beginning of project on the identity of the raters.
- Description of rating system will be included as part of the rating sheet provided to contractor references and project raters.

- The next Registry will allow all contractors the opportunity to be rated based on the new guidelines, although doing so will not be mandatory.
 - Contractors will retain the capability to request to have existing customers resurveyed under the new guidelines.
 - Concern was discussed about prime contractors pressuring subcontractors to rate them above their actual performance in order to get work, but past performance is only a part of the rating process. Contractors are also rated on Management Plan submittals and Interviews. The largest impact is the Close-out Rating received at the end of PIPS-awarded projects, where the contractor's rating accounts for 25% of their future performance line.
 - PIPS to update criteria for all contractor specialties (approximately 36 different specialties). Need to go over criteria in each specialty since criteria differ among contractor specialties.
4. Alternate procurement Systems:
- Mary Alice noted that PIPS is bid as a Request for Proposals (RFP), and the RFP is just one system available under Chapter 103D. PIPS is a legal procurement system.
 - Henry Aylward distributed handouts and discussed a few best value procurement options.
 1. State of Delaware – Distributed best value sample legislation.
 2. Reverse Option Bidding – State would post a procurement, pre-qualify bidders, place information on a website, conduct a third-party “reverse auction” and take the low bid. Bidders can see the bids on the website and bid lower until close of bidding. Some Industry members consider this to be “bid-shopping” and contrary to “best value”. ABC is taking a negative stand on this type of bidding. The Feds, by comparison, utilize the “Best and Final” process which allows bidders to lower prices only once, without knowing other contractor's bid prices.
 3. Task Order Contracting (TOC) –Uses a two-step process to pre-qualify bidders. Selection based on "best value". Individual can be selected on technical merit. Concerns focus on the rating system which is usually locked in for 3-5 years for a minimal number of contractors (typically less than five firms). Long-term venture contract work has also been issued for 20-year terms for housing maintenance contracts.
 - Overall trend: shifting burden from government to contractor and making decision process easier for legislative funding.
 - New trend – contracting officers now bidding against each other to service customers for construction procurement work. Contracts needed to pay for manpower (similar to privatization). Army Corps, Navy and Hawaii National Guard competing. State can hire Feds to award contracts. Key factor: fast response.
 - IDIQ: Invitations for Bid are public. Anyone can bid, but only 3 are selected. Each of the three companies are given one contract initially. As new projects come out, all 3 get to bid against each other, unless there are other qualifying capabilities that would predispose selection of one firm.
 - Federal law says Feds need to comply with State law, but there has been no enforcement of this. Also, under the Federal system, a general contractor may oversee just one trade.
 - John Cheung suggested classifying contractors by ratings, with higher rated contractors pre-qualified to bid on high risk projects and more or all contractors allowed to bid on low risk projects. He also recommended grouping by bonding/financial capability.

- Ray Fujii noted that UH has tried categorizing contractors based on the size of the projects out to bid, allowing small groups of contractors to bid against like-sized companies. The painting contractors liked this.
 - Mary Alice noted that the UH procurement director was tasked with making the procurement system meet UH's needs, and that unlike DAGS, UH is exempt from complying with 103D. 103D allows for 5 procurement systems: Small Purchase, Low Bid, RFP, Professional Services and Crisis & Emergency.
 - Henry noted that GCA Subcontractor Council was looking at bonding for subcontractors. Currently subs contractors don't need to be bonded. State only contracts with general contractors, so may be hard for State to request this. Steve noted that for PIPS School Renovation projects, some contractors are rethinking subcontractor selection based on low price.
5. Ad Hoc Committee Unfinished Business:
- Ray noted that the ad hoc committee was established through the Construction Industry Council and that surveys were distributed to committee members (many of whom are represented by the current committee), of which three have been returned. One of the three was from Bill South, which was confirmed by Chris as basically the same letter he sends to protest on PIPS – it did not address the pros and cons per the survey format. South is a roofing manufacturer representative, not a roofer. The following were addressed by comments from the other two responses (in bold), followed by committee response:
 - Management Plans:
 1. **Architect/Engineer should not be a rater at closeout.**
 2. **Management Plan rating should not be based on warranties.** PIPS already addressed this issue. Only roofing requires a joint manufacturer/contractor warranty. Warranties in this case are a separate performance criteria item, and are not included with the management plan rating.
 3. **Budget concerns. Management Plans are important, but costly for contractors to compile.** Since some contractors said that posting the project budget would help contractors decide whether or not to pursue submitting Management Plans if their cost proposals were too high, DAGS ran two types of budget-posting tests. The first was to post the budget immediately after the cost proposals are due, provided at least one proposal is within budget. This worked well, and we will continue to do so. The second test was to post budgets prior to the bid opening dates for two of the PIPS school renovation projects. Proponents of this believed that contractors would still bid the “honest” price with a fair profit. Unfortunately, the result was that all bids came in below the budget, unlike the previous projects which had a much wider range of costs, including many above the budget. We will continue to post only budget ranges before bid opening on future PIPS projects.
 4. **Concerns about closeout rating at end of project.**
 - **Some members did not feel that subcontractors should get same rating as general contractor.** However, it is hard to separate ratings, raters may not know who did what. May have two critical subcontractors – one performed but the other did not, resulting in a good sub being harmed by work out of his control. General contractors want to be able to rate subcontractors separately, but do not want subcontractors to rate general contractors. Also concern that general contractors can coerce high ratings from subcontractors.
 - **GC has greater liability.** GC should be responsible. GC picks their own team, therefore ratings should be for the whole team and reflect the GC's performance in getting his team to successfully complete the project.

6. Re-established formal committee members, per list provided at initial meeting of June 28, 2002. For this meeting, GCA represented by Rick Kwock, but new appointee by GCA is Glenn Nohara. Sey Ito represented CECH for Tim Higa. Mel Cramer was not present to represent Laborer's International.
7. Discussion of Committee's Scope & Goals: Committee members identified which of the five task items were most critical, in order of importance:
 - Item No. 1: Whether the system has resulted in cost savings to the State (7 votes). KPMG to report.
 - Item No. 5: Any other information that is relevant to compare PIPS with alternative forms of outsourcing State construction projects with regard to quality, timeliness, and distribution of work (6 votes). To be supplied by the committee.
 - Item No. 4: Whether the system has resulted in a lower number of change orders (4 votes). KPMG to report.
 - Item No. 3: Whether State contracts for construction projects under PIPS are equitably and widely distributed (2 votes). KPMG to report.
 - Item No. 2: Whether the system has resulted in greater accountability by contractors (1 vote)
 - August Meeting will focus on items 1 and 5.
 - September Meeting will focus on items 2, 3 and 4.
 - KPMG established that once they gather all data, it has the resources to complete the work ASAP. Recommends committee focus on alternate procurement items. KPMG will have data regarding Low Bid and PIPS (Item No. 4), but committee should still discuss experiences and perceptions on all items.
 - Chris noted that cost factors for the two systems are different. Was KPMG comparing bid and award figures only? Design costs? Change orders? Lifecycle cost? The committee agreed the most equitable comparison would be by lifecycle cost, but need to determine if all factors are available from past projects for comparison.
 - Question was raised whether or not this committee has an impact on the backlog of work, and how the State is addressing the backlog. Answer: "Yes, although it's delayed...we are working to avoid having all the projects bid for construction in the 4th quarter of the fiscal year."
 - Mary Alice asked the committee if they wanted a presentation by a State procurement officer on 103D. The committee agreed.
 - Committee can recommend to DAGS and own legislative committees changes to current laws.
 - Dean Seki confirmed that all current projects shall be procured by Low Bid. State concerned that proceeding with PIPS before committee recommendations are made may reflect poorly if those recommendations contradict current PIPS practices. Regarding project backlog, the State has tried to get projects out in a timely manner, and will continue efforts to get projects out to bid in regards to construction schedule and market saturation.
8. Future Meetings Schedule:
 - Next meeting set for Wednesday, August 28, 2002 at 1:30 p.m. in Kalanimoku room 410.
 - The following meetings are all at 1:30 p.m. in Kalanimoku room 410, unless otherwise noted:
 - a. Wednesday, September 25, 2002
 - b. Wednesday, October 23, 2002
 - c. Wednesday, November 27, 2002
9. Meeting adjourned at approximately 3:00 p.m.

August 28, 2002

CONSTRUCTION INDUSTRY PROCUREMENT ADVISORY COMMITTEE MEETING
DAGS Comptroller's Conference Room
Wednesday, August 28, 2002, 1:30 p.m.

Attendance:

Tim Lyons	Hawaii Roofing Contractors Assn. (HRCA)
Fred Moore	Sheet Metal Contractors Association (SMCA)
John Cheung	Building Industry Assn. of Hawaii (BIA)
Ray Fujii	Painting & Decorating Contractors Assn. of Hawaii (PDCA)
Sheila Fukuda	Hawaii Bldg. & Construction Trades Council (BTC)
Harry Honda	Plumbing & Mechanical Contractors Assn. of Hawaii (PAMCA)
Tim Higa	Consulting Engineers Council of Hawaii (CECH)
Glenn Nohara	General Contractors Assn. of Hawaii (GCA)
Peter Lee	Pacific Resource Partnership (PRP)
Glenn Yokotake	American Institute of Architects (AIA)
Mary Alice Evans	DAGS - Comptroller

Robert Governs	DAGS - State Procurement Office
Justin Fo	DAGS - State Procurement Office
Ralph Kanetoku	KPMG
Nelson Lau	KPMG
Dean Seki	DAGS - Acting Deputy Comptroller
Gordon Matsuoka	DAGS - PIPS Administrator
Steve Miwa	DAGS - PIPS Assistant Administrator
Chris Kinimaka	DAGS - PIPS Program Manager
Gaylyn Nakatsuka	DAGS - PIPS Coordinator
David DePonte	DAGS - PIPS Data Manager

1. The meeting was called to order at 1:30 p.m. Each attendee made self-introductions.
2. State Procurement Office (SPO) briefing on Chapter 103D by Justin Fo.
 - Distributed handout with sheets on Small Purchases, Formal Offer Process and State Procurement Office general information.
 - Briefly described the available options for procurement and identified which options used for construction versus goods and services vary.
 - Defined parceling. Parceling not allowed.
 - Identified Act 239 and 316 affecting DOE Facilities projects (small purchases for repair and maintenance construction work up to \$100,000).
 - Discussed bid processes (Multi-step, RFP, Emergency, Sole Source, etc.)
 - Invitations for Bids process – low bid (detailed specifications, no negotiation, award to lowest bidder).
 - Multi-step Bid – combination of IFB and RFP, award to lowest bidder, but can consider other factors besides low bid, e.g., can evaluate offers without price, then open bid prices at a later date.
 - Request for Proposal (RFP) – low price is not a factor, or there are other factors which are important. Solicitation identifies weighted criteria. Proposals can be evaluated, discussions with bidders, can ask for best and final offer, etc. Chris

Kinimaka then described the PIPS bidding process and how it complies with the RFP process.

- Reference the SPO website (see handout). Everything discussed is under chapter 3-122.
3. KPMG Report Update:
 - Still gathering and breaking down data for report. About 80% of project files have been collected and 50% of the files have been processed.
 4. PIPS Protest Update: The Request for Hearing on the 45 projects protested earlier this year has been withdrawn because of the Settlement Agreement which requires the Competitive Sealed Bid method of source selection (low bid) to procure the 32 roofing projects involved in the protest. DAGS is looking at going low bid to procure the 45 projects.
 5. Discussion on PIPS
 - PDCA noted that the painting contractors greatly improved the quality of their Management Plans, as evidenced by submissions for the recent painting projects at UH. The improvement of the management plans and the painting contractors' understanding of what is expected on each project, price then becomes the deciding factor because the "performance" ratings of the contractors are similar.
 - PAMCA wants PIPS to continue.
 - SMCA supports PIPS. They want separation between the Proposal and Management Plans.
 - There needs to be more education on PIPS, including within DAGS - Public Works. PRP contractors were concerned that they wouldn't be able to win future bids if they weren't in the running for the first round of School Renovation projects. More education about PIPS would disprove this concern.
 - Question asked if PIPS limits contractor participation or narrows competition based on number of PIPS projects awarded. It was noted that many of the contractors who "lose" in PIPS are those that don't participate. PIPS program always been open to educating everyone. PIPS does not track number of projects a contractor does and that is not a criteria item, so contractors are not rated on how many projects a contractor "wins".
 - DAGS has had strong positive feedback (Aina Haina ES) and also negative (Wailuku ES) feedback from "customers". To show that PIPS is not "dead", DAGS is to proceed with PIPS projects that implement Advisory Committee recommendations, are as "protest-proof" as possible and which address cost concerns in the method of award.
 - Question asked how the change in Governor might affect PIPS. It was noted that there will be the inevitable transition period, and that we will not know the direction of the new administration.
 6. General Contractor's Criteria Discussion:
 - Feedback from HRCA passed out.
 - PAMCA generally feels the new GC criteria are well done. They would like to propose some amendments to clarify the guidelines. PAMCA wants the general contractor criteria changes applied to mechanical contractors because they are normally the prime in PIPS air conditioning replacement projects.
 - BIA basically agrees that the reduction in number of criteria is great. Discussed BIA concerns about each criterion:
 - How will revised general contractor criteria affect new PIPS participants? (Next PIPS Registry criteria would be based on revised general contractor criteria.)
 - What is the definition of "contractor generated change order"? (Unforeseen changes are not considered "contractor generated change order". Definition will be included in the bidding documents.)

- Define completion date. (Already defined in General Conditions. Key “players” who may affect acceptance of a project should be identified prior to start of construction so contractor is not caught off-guard at the end of the project.)
 - Ability of Contractor to coordinate with subcontractors: concern that DAGS inspector dealing directly with subcontractor. (This should not occur on projects. Contractor responsible for coordination of subcontractor work.)
 - Skill of craftsmanship of contractor is too subjective. (Example stated by John seems to be addressed by clearly defined specifications versus having to define “craftsmanship”.)
 - Feels it is unrealistic to have no final punch list items. (PIPS promotes communication so punch list items are identified and addressed before the final inspection.)
 - What constitutes failure of communication? (PIPS promotes communication between all parties involved, so no one at the end should feel that they were not made aware of key issues.)
 - Wants inspector to provide list of what constitutes good housekeeping. (PIPS intends to get everyone involved in the project communicating and fleshing out what is expected)
 - Point system – if deduct one point for every infraction, contractor’s rating could be devastated. (PIPS is already looking at how to make the deduction fair so that the contractor’s rating is not unreasonable harmed.)
 - SMCA will review and provide suggestions at the next meeting.
 - PDCA liked the changes, but wanted the definitions simplified.
 - Tim Lyons asked if KPMG was open to discussions with HRCA roofers on PIPS (per feedback handout from Scott Ai). It was established that KPMG would proceed without the discussions.
7. Discussion on Task 1 – Cost Savings:
Not enough data. Want to look at total cost versus initial cost. May pay more for PIPS up front, but it could be less than Low Bid after the project is completed (addition of change order costs) or if lifecycle costs are considered. Hard to evaluate with current data.
8. Discussion on Task 5 – Comparison of PIPS with Alternative Forms of Outsourcing With Regard to Timeliness, Quality and Distribution:
- Handouts provided for a few different types of PIPS project evaluation surveys, a few responses from schools regarding completed PIPS projects, and KPMG’s list of projects. Committee asked if they wanted to send out their own survey.
 - Concern expressed that the audit may not portray a true “picture” of the success of PIPS with regard to mechanical projects. Because of the proportionately larger sample of roofing projects, the effect of PIPS for mechanical projects may be “watered” down, i.e., the 3 mechanical projects, which may have excellent ratings, could be overshadowed by the mixed ratings of the 34 roofing projects. Suggest the auditors to look at possibly rating projects by subclassifications. Even for same types of projects, the low bid roofing projects and the PIPS roofing projects are not similar (e.g., Big Island roofing projects are typically replace or repaint corrugated metal roofing, which would be hard to compare to a remove/replace low slope roofing on a concrete or wood deck building.)
 - The KPMG report contract now requires KPMG to provide data only and that the Comptroller and Advisory Committee will make determinations based on the report data.
 - Comments on completion time and data will be covered at the next meeting.
9. Changes to PIPS: Discuss at next meeting.
10. Meeting Schedule:

- Next meeting set for Wednesday, September 25, 2002 at 1:30 p.m. PDCA and SMCA will each designate a representative to attend the meeting in place of current representatives who will be out of town.
 - The following meeting is set for Wednesday, October 23, 2002 at 1:30 p.m.
11. Meeting adjourned at approximately 3:00 p.m.

September 25, 2002

CONSTRUCTION INDUSTRY PROCUREMENT ADVISORY COMMITTEE MEETING
DAGS Comptroller's Conference Room
Wednesday, September 25, 2002, 1:30 p.m.

Attendance:

Scott Ai	Hawaii Roofing Contractors Assn. (HRCA)
John Cheung	Building Industry Assn. of Hawaii (BIA)
Sey Ito	Consulting Engineers Council of Hawaii (CECH)
James Kuroiwa	Laborers International Union, Local 368
Peter Lee	Pacific Resource Partnership (PRP)
Kent Matsuzaki	Plumbing & Mechanical Contractors Assn. of Hawaii (PAMCA)
Fred Moore	Sheet Metal Contractors Association (SMCA)
Glenn Nohara	General Contractors Assn. of Hawaii (GCA)
Glenn Yokotake	American Institute of Architects (AIA)
Mary Alice Evans	DAGS – Comptroller
Nelson Lau	KPMG
Jeremy Swanlund	KPMG
Gordon Matsuoka	DAGS - PIPS Administrator
Steve Miwa	DAGS - PIPS Assistant Administrator
Chris Kinimaka	DAGS - PIPS Program Manager
Gaylyn Nakatsuka	DAGS - PIPS Coordinator
David DePonte	DAGS - PIPS Data Manager
William South	Manufacturer's Agency Pacific (Roofing Products Manufacturer's Representative)

1. Mary Alice Evans called the meeting to order at 1:30 p.m. Each attendee made self-introductions.
2. KPMG Report Update:
 - Bulk of project files have been collected. Still gathering the data.
 - General observations based on early findings:
 - Bidding patterns: PIPS projects have fewer intent to bids and fewer actual bids compared to Low Bid.
 - Low Bid projects tended to be under budgeted cost.
 - PIPS projects tended to be at or above budgeted cost.
 - PIPS projects tended to have fewer change orders (occurrences) and punch list items compared to Low Bid.
 - Timeliness: PIPS projects tended to be in line with budgeted time constraints.
 - Low Bid projects tended to have shorter time periods between bid opening and the signing of contracts than with PIPS.
 - Per Fred Moore's question regarding "budgeted costs", KPMG confirmed that they will look at end cost of projects as well as the budgeted cost.
3. General Contractor's Criteria Discussion – Follow Up
 - Gordon Matsuoka provided handout with changes to scoring guidelines based on comments received.
 - GC scoring criteria includes change order definition identifying acceptable and unacceptable change orders.

- SMCA requested documentation of project end requirements and asked DAGS to identify how standard of work will be measured. Also wanted key issues, identified per CSI sections, addressed during the Pre-award Meeting.
- Contractor can also identify key issues and how they will measure quality in their Management Plan, Interview and the Pre-award Meeting.
- End user is important part of rating system and considered the DAGS “customer”.
 - Letter from school principal is an example of how schools, the end user for the school renovation projects, identify that communication between the contractor, DAGS, the school and other parties can make a difference in the success of a project.
 - BIA concerned that the end user is sometimes not knowledgeable about the project.
 - Communication between the all parties is critical for relaying information such as scheduling, deliveries, conflicts, etc., and can avoid negative impact on a project or contractor ratings.
 - Painting Criteria
 - 44 existing criteria reduced down to 8 rated items (10 total items including number of references received and number of different references) based on coordination with PDCA.
 - Advisory committee had no comments.
 - HVAC Criteria - Harry Honda (PAMCA) gave some comments, but Gordon awaiting final information from Harry to proceed with revised/reduced criteria.
 - In attempting to make generic criteria so criteria are similar for all contractor license types, there are currently some specialties that have unique criterion which need to be addressed. The suggestion to add a Warranty criterion for Response to Warranty Work measured in number of days and Response Time to Emergencies measured in number of days, hours or range of hours was not adopted. The Committee discussed warranty as a reflection of quality and that the rating at end of project can be revised over a contractor’s warranty period if he/she does not honor his/her warranty. Currently, “Quality” criterion is not continually updated while “Warranty”, under the warranty response time criterion, is continually updated and rated by the number of days or hours contractor has to respond to warranty items. The Committee felt a 1-10 rating would better reflect the seriousness of any warranty infraction or poor response time and could be updated under the current proposed “Quality” criterion.
- 4. New Painting and Air Conditioning PIPS Projects
 - Gordon said PIPS is initiating 4 painting projects on the Big Island.
 - PIPS also approved for 7 air conditioning projects, which have already been initiated - 2 projects on Big Island and 5 projects on Oahu.
 - Recommend using revised criteria on these projects.
- 5. Task 1 – Cost Savings:
 - PIPS identified by KPMG as at or above budget estimates. Many of the PIPS projects grouped together and advertised for bid under one RFP shared the same overall budget appropriation, and depending on the Method of Award rules, leftover funds from projects under budget may have been used to fund projects to consider proposals at or within a documented percentage above the budget. The KPMG random selection of projects may have taken a disproportionate number of “above budget” projects versus “under budget” projects.
 - Glenn asked committee to look at and compare project costs over a stipulated time after project completion.
 - KPMG data does not consider design cost, only construction cost. PIPS group has noticed consultant costs are generally lower for PIPS projects versus Low Bid.

- Committee noted that they were interested in looking at differences in staffing for PIPS versus Low Bid if multiple PIPS projects can be run by less DAGS personnel than the same number of Low Bid projects.
 - Mary Alice Evans said that concerns not on the KPMG report could be included in the committee's notes to the legislature regarding PIPS.
6. Task 4 – Lower Change Orders:
- Fred thought the definition for Change Orders provided in the meeting handouts was clear. He noted that his company's involvement in PIPS regarding change order items usually resulted in the company covering the cost of the changes themselves which avoided defining acceptable and unacceptable Change Orders.
7. Task 3 – Distribution of Contracts:
- Appearance that PIPS roofing projects favored only a few manufacturers and contractors who received contracts. Concern whether this was a distribution versus quality issue.
 - Current Renovate and Paint classroom projects bidding Low Bid have had 19-20 bidders.
 - Projects that were solicited to 3-5 PIPS registered contractors under the Informal Bid process were awarded based on Low Bid and referenced to as "Modified PIPS" projects. The bid documents for these projects were not uniform, and many projects did not include language in the specifications indicating that the contractor would be rated at the end of the projects and that rating incorporated into an existing or future PIPS performance line. Therefore not all these "Modified Informal" projects have been rated or tracked for ratings.
 - Regarding the amount of bidders for previous HVAC projects – HVAC contractors feel that the up-front time and costs before award discouraged many contractors from bidding. Now that the process has been streamlined, there should be more contractor interest in PIPS.
8. Task 2 – Greater Accountability By Contractors
- Contractors have been more proactive with PIPS projects. They are improving at identifying risks and how to resolve them. Some contractors caught on quickly and communicated well, especially with the schools. Schools have been happy about overall communication, especially on schedules.
 - Committee wants to see more letters from school principals/vice principals, more staff information (like one staff member coordinating 40 PIPS projects versus more staff required to run less Low Bid projects) and to confirm that schools have been sending letters regarding Low Bid projects. Compare the number of positive and negative letters between PIPS and Low Bid projects. Committee expects more complaints versus
 - Committee also wants other available ratings for consultants, staff, etc., for past projects. Gordon said Quality Control Branch surveys were available.
 - Glenn asked if DOE has documents, letters or ratings. Gordon said that DOE may have surveys, but if so, have not shared them with DAGS. Survey may PIPS will provide whatever letters have been submitted regarding PIPS projects.
 - PIPS program provides incentive for and encourages communication. There is no incentive in Low Bid projects to promote communication.
9. Changes To PIPS:
- John Cheung passed out a spreadsheet representing the BIA comments. Items identified or discussed are as follows:
 - Contractor sends PIPS survey to own customers, receives customer ratings and then submits to DAGS whatever surveys the contractor selects. PIPS wants contractors to know their customers. A contractor should know if they did good work for their customers. Past surveys indicate that some contractors don't know their customers

because the customers submitted by the contractor as references rated the company very poorly. Customers are informed that their ratings are confidential, which is in accordance with the Sunshine Law. PIPS recommends that contractors contact their customers to inform them of the rating process, and are encouraged to submit only good references. The BIA proposal would void the contractor from having to know about his/her performance on a customer's project since he/she could simply eliminate the surveys they don't like. This works against PIPS' promotion of communication and "knowing your customers".

- Size and complexity of job categories to separate contractors. As in Low Bid, PIPS does not tell contractors which projects they can or cannot bid on. Contractor is responsible in Low Bid for determining which projects he/she can bid on, should be the same for PIPS.
 - Information Factor distortion could be a big factor. John's personal opinion that the Information Factor may distort the final rating because it is based on natural log which ramps up for large distances and minimizes small differences in ratings.
 - Unit pricing for nebulous quantities (e.g., termite damage). PIPS already incorporating unit pricing for various material and repairs. The first phase of school Renovate and Paint projects may not have reflected that option.
 - Speed up award of projects.
 - Want to submit prices first, then Management Plans. PIPS recommends that Management Plans be submitted separate from the price proposal for future projects.
 - Want to compare bid to budget before submitting Management Plan. For the school Renovate and Paint projects, PIPS has been posting the budget whenever at least one bidder's price proposal was under budget. If no budget was posted for a project, all price proposals submitted were above the project budget. PIPS group recommends this budget posting procedure for all future PIPS projects.
 - Request for Bidder prioritization rankings to be posted was denied because procurement laws prohibit it.
 - Committee will review the spreadsheet comments from BIA and discuss at next meeting.
10. Next Meeting:
- Next meeting set for Wednesday, October 30, 2002 at 1:30 p.m.
 - Draft outline of report
 - Evaluate what committee can show legislature
 - More KPMG updates
 - Revisit 5 Tasks
 - Update on PIPS solicitations
11. Meeting adjourned at approximately 3:20 p.m.

October 30, 2002

CONSTRUCTION INDUSTRY PROCUREMENT ADVISORY COMMITTEE MEETING
DAGS Comptroller's Conference Room
Wednesday, October 30, 2002, 1:30 p.m.

Attendance:

Scott Ai	Hawaii Roofing Contractors Assn. (HRCA)
John Cheung	Building Industry Assn. of Hawaii (BIA)
Tim Higa	Consulting Engineers Council of Hawaii (CECH)
Peter Lee	Pacific Resource Partnership (PRP)
Fred Moore	Sheet Metal Contractors Association (SMCA)
Glenn Nohara	General Contractors Assn. of Hawaii (GCA)
Ray Fujii	Painting & Decorating Contractors Assn. of Hawaii (PCDA)
Mary Alice Evans	DAGS - Comptroller

Patricia Ohara	Attorney General Office
Nelson Lau	KPMG
Ralph Kanetoku	KPMG
Jeremy Swanlund	KPMG
Gordon Matsuoka	DAGS - PIPS Administrator
Steve Miwa	DAGS - PIPS Assistant Administrator
Gaylyn Nakatsuka	DAGS - PIPS Coordinator
Jana Oliveros	DAGS - Planning Branch

1. The meeting was called to order at 1:30 p.m.
 - Committee should get information early enough to review draft report before the next PIPS Advisory Committee meeting which is scheduled for November 27, 2002. Special meeting will be set and committee members notified just prior to draft report completion, on or about November 14, 2002.
 - PIPS Report is due to the legislature 20 days prior to next Legislative session, making report due about mid-December 2002.
2. BIA Comments - Gordon Matsuoka provided handout with DAGS response to BIA comments submitted at the September meeting:
 - Evaluation System:
 - The contractor can always ask a reference to re-rate the company or the contractor can continue to add more reference surveys to the company's performance line as options to address existing low ratings.
 - Factors such as the contractor's management plan, price, interviews, and specific project description of work can offset low ratings on past performance from references.
 - Contractor submits to DAGS their list of references. Reference surveys will be sent out to contractors. Contractor sends individual surveys out to their references. References sends completed surveys directly to DAGS. DAGS provides contractor copy of references that were returned to DAGS.
 - Painters concerned about lack of PIPS projects.
 - Weighing on Items: The owner should determine the importance and weight of criteria.
 - Information Factor Distortion:
 - DAGS will post information formula on website.

- Provide education on formula and modeling to clear misunderstandings of the modeling process and PIPS.
 - Price Spread Not Weighted Properly:
 - Weighting is done by a project's Evaluation Committee and then inserted into the model. DAGS does not alter the model, only inputs data/past performance. See OVERRIDE provision below.
 - Project budget will be posted as a range during bidding.
 - Weighting of Rating: Need clarification on the "general solution". DAGS considering elimination of the manufacturers' rating if it increases participation of manufacturers not currently competing for PIPS projects. DAGS' concern is that the manufacturers' rating is the only item that reflects a manufacturer's performance (good or bad) on completed PIPS projects and applies that rating to future PIPS projects. DAGS hasn't had problems with the warranties provided on completed PIPS projects
 - Scope of Work: For Phase II classroom renovation projects, drawings and specs are expected to be more defined compared to Phase I projects. DAGS feels there is no need for detail drawings for painting or reroofing projects, minimum plans required for air conditioning projects. Time constraints control whether consultant or contractor routes the building permit.
 - Inconsistency with Inspection and Plans/Specifications: Some concerns can be resolved if "standard of quality" issues are scoped in the bid documents and addressed at the pre-award meeting. Where items still undefined, inspectors shall address at pre-construction meeting. As necessary, standards shall be defined in the specifications and should be discussed at the pre-award and pre-con meetings.
 - Where Is PIPS Best Used: PIPS is used best in areas where there are problems with quality; where no plans or pay for design costs are needed; where there are areas of risk.. PIPS can be used for projects with full plans and specs, just project requirements, or anywhere in-between. Committee noted PIPS would be good for single discipline projects, wanted suggestions for other types of projects.
 - Timeliness From Start of RFP to NTP: PIPS searching for ways to get projects out faster. Main target is to get the job out as soon as possible and to find other ways to reduce time. There is still a need to review the proposal with the committee and in pre-award meeting to confirm the work included in the contract.
 - Closing Evaluation: Custodians have been made responsible for minor renovations at schools in the past few years and are appropriately considered for rating the contractor. For many schools, contractors need to work directly with custodians. Larger schools may have a Vice Principal to oversee construction projects, but still work with the custodian. Committee noted that all raters should be educated on rating procedures and instructed that ratings are based on project criteria and not on the rater's own bias.
 - Perception of Program: Learning opportunity, ability to invest more on schools. Need to give PIPS a chance to respond to concerns or problems encountered.
 - Perception of Program: Learning opportunity, ability to invest more on schools. Need to give PIPS a chance to respond to concerns or problems encountered.
 - PIPS registry to be open, potentially an on-line registration process. PIPS group to coordinate/schedule education/training sessions through the year, as needed.
3. Contractor's Criteria Discussion – Follow up
- General Contractor Scoring Guidelines – Gordon pointed out changes that were additions from sheet metal contractors.
 - GC Guidelines will also be used for the Painting, Sheet Metal and Air Conditioning disciplines.

- Plumbing Contractor Scoring Guidelines – Address skill of plumbers/quality of workmanship with plumbing knowledge of personnel. This is in addition to the standard general contractors’ rating factors.
 - Industry recommendation that consultant not be on PIPS project Evaluation Committee, but still available as a resource for Management Plan rating and contractor interviews. Industry also concerned about consultant rating the contractor for the closeout rating. CECH preferred consultant rating input, but satisfied with input at Management Plan and interview processes. There an Appeal Process? DAGS conducts a fair review where any questions are addressed by the committee. The industry may consider setting up an appeal committee.
 - Regarding Okada Trucking Decision – If it is determined that a general contractor’s license is required, contractor should still check if any critical subcontractors are identified. Critical subcontractors get same closeout ratings as general contractor.
4. Proposed Changes to Process
- Registry: Proposing an on-going process, possibly on-line, to encourage more contractor participation, with regularly scheduled training.
 - Override: Included in the bid documents under Method of Award, the override would recommend award to the second highest prioritized proposal if the top prioritized proposal price is 25 percent or more greater than the second highest prioritized proposal price. The actual percentage shall be set per project by each project’s Evaluation Committee.
5. Painting, Air Conditioning, Roofing PIPS Projects, Classroom Renovations - Update
- DAGS is working with the industry to improve the PIPS process. PIPS follows procedures for Competitive Sealed Proposals, and is not an illegal procurement system.
 - DAGS has a list of new projects suitable for PIPS. These projects are targeted to start construction during the summer but may start construction earlier depending on the type of job. For projects with future construction funding, the intent is to start the design process with current funding.
 - HRCA felt that new PIPS roofing projects implementing the changes identified in these committee meetings could bring more roofers in. Need to inform roofers that PIPS program will continue.
 - SMCA wanted consideration before design phase of project is started to be involved in the design process, whether the project will be design-build, fully designed, or somewhere in the middle. They stated a preference for minimum design.
6. KPMG Draft Outline Report
- Summary of General Observations Based on Sampling of Projects – see attached handout:
 - Fewer intentions to bid and bids are received under PIPS than Low-Bid: Many of the sampled low bid roofing projects involved work requiring general contractors to bid while all PIPS projects were bid only to roofing contractors, which creates an unfair comparison.
 - Disbursement of Awards to Manufacturers:
 - Change deceiving heading – Contractor selects manufacturer in contractor’s proposal. PIPS modeling does not select the manufacturer for award.
 - Get contractor feedback on results.
 - Except for roofing projects, percentages based on very small samplings.
 - Disbursement of Awards to Contractors:
 - Except for roofing projects, percentages based on very small samplings.
 - Bid & Final Contract Amount to Budget Analysis:

- DAGS report to address differences in results, including the concerns regarding the samplings used.
 - HRCA feels the performance of the manufacturer played a roll in the award of roofing projects. The successful manufacturer in PIPS has not been as successful bidding outside of PIPS. DAGS will check comparison of performance lines of registered manufacturers and get feedback from contractors.
 - Timeliness of Contractor Procurement
 - Timeliness of Project Completion
 - Punch-list Issues
7. Legislative Task Items 1-5: Will be discussed at next meeting.
8. Additional Comments:
- Behoove DAGS to educate legislature/legislators about PIPS.
 - PIPS with is an alternate procurement method.
 - Is PIPS Growing?: Dr. Dean Kashiwagi, Director of the Performance Based Research Studies Group of the Del E. Webb School of Construction, Arizona State University, who first introduced the Performance Based Procurement System (PBPS) to DAGS. He is currently working with the Dallas School District, West Coast FAA, the U.S. Coast Guard, U.S. Marine Corps, and in different parts of Europe to run test PBPS, based on research data from Hawaii's PIPS program.
8. Future Meetings:
- Next PIPS Advisory Committee Meeting is set for Wednesday, November 27, 2002 at 1:30 p.m. - Review and approve draft outline of report for the legislature.
 - Draft Outline Meeting date to be set later. PIPS Advisory Committee members will be notified of date and time and are encouraged to attend and provide input. Meeting will be scheduled around November 15th.
9. Meeting adjourned at approximately 3:30 p.m.

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES DIVISION OF PUBLIC WORKS – PLANNING BRANCH

CONSTRUCTION INDUSTRY PROCUREMENT ADVISORY COMMITTEE MEETING

DAGS Comptroller's Conference Room
Wednesday, November 27, 2002, 1:30 p.m.

Attendance:

Scott Ai	Hawaii Roofing Contractors Assn. (HRCA)
Fred Moore	Sheet Metal Contractors Association (SMCA)
Glenn Nohara	General Contractors Assn. of Hawaii (GCA)
Ray Fujii	Painting & Decorating Contractors Assn. of Hawaii (PCDA)
Harry Honda	Plumbing & Mechanical Contractors Assn. Of Hawaii (PAMCA)

Mary Alice Evans	DAGS - Comptroller
Nelson Lau	KPMG
Ralph Kanetoku	KPMG
Dean Seiki	DAGS - Acting Deputy Comptroller
Gordon Matsuoka	DAGS - PIPS Administrator
Steve Miwa	DAGS - PIPS Assistant Administrator
Chris Kinimaka	DAGS - PIPS Program Manager
David DePonte	DAGS - PIPS Data Manager
Jana Oliveros	DAGS - Planning Branch

1. The Meeting was called to order at 1:30 p.m.
2. Draft Report
 - Review of revisions
 - In reference to Part I, G (Page 3), should "Recommendations" be reworded to maybe "Statements" or "Facts?" Leave as "Recommendations."
 - Mary Alice pointed out that important material were brought forward in the report to make it easier for the legislators to observe what the committee has found, are modifying, and are recommending.
 - Report now includes three parts: Summary, Analysis, and Results and Discussions of the KPMG Audit. More results are now included in the audit.
 - Question from Scott Ai concerning Appendix G-1: How does construction costs (percent under budget) relate? The analysis is the total overall costs of PIPS vs. low bid instead of focusing on construction costs alone. Construction costs is just one factor in the total cost of DAGS.
 - Table F6: Change the use of percentages to real numbers. Include footnote in the title of graph – Customer Evaluation based on 55 projects done by 3 contractors. Combine 12a and 12b to emphasize on excellent performance of the contractors. Enlarge font on graphs.
 - Table F5: Change the use of percentages to real numbers. Change footnote to *Based on 20 inspector evaluations.
 - Table F4: Change the use of percentages to real numbers. Change footnote to *Based on 6 inspector evaluations.
 - Table F3: Define scale. Add in footnote *Based on a scale of 1-10.
 - Appendix F: Change title to "Analysis of Roofing Program."

- Appendix E: Change title to “Analysis of KPMG Sampler Audit” to clarify that this is the DAGS’ review of the KPMG audit.
 - Appendix E, Line 5: Should be explained further.
 - Table E-1: Average Cost of Work Performed per Day should be reworded to Work installed per day.
 - Part I – Change title from Preamble to Executive Summary.
 - Part I: E, Line 1 – Change percentage to number.
 - Part I: G, Line 3 – Reword: The performance delivered by all procurement processes should be well documented in a timely manner.
 - Part I: G, Line 4 – Change the word “State” to “User.”
 - Fred Moore stated Part I was most important for legislators and made a motion to accept the draft and the committee agreed.
3. Future Tasks for DAGS and Industry Representatives.
 - Get status on resolution
 - Keep committee together
 - Establish a meeting with new comptroller.
 - Dr. Dean will be offering training from December 2 – 11th.
 4. Meeting with new comptroller set for December 18, 2002 at 1:30 p.m. to present draft.
 5. Meeting adjourned at approximately 3:30 p.m.

**APPENDIX C
ANALYSIS OF PIPS PROJECTS**

Table C1: Analysis of All PIPS Mechanical Projects

MECHANICAL ANALYSIS	AVERAGE
Total Number of Projects Awarded	15
Overall Estimated Budget	\$ 2,492,000
Total Overall Cost	\$ 2,718,835
Percent +/- Overall Budget	8.3%
Number of Different Contractors Awarded Jobs	3
Projects That Were Awarded to Lowest Bidder	60%
Number of Project Completed On Time	100%
Number of Change Orders	0
Average Post Project Rating	9.8

Table C2: Analysis of All PIPS Painting Projects

PAINTING ANALYSIS	AVERAGE
Total Number of Projects Awarded	33
Overall Estimated Budget	\$ 1,470,038
Total Overall Cost	\$ 1,537,672
Percent +/- Overall Budget	4.4%
Number of Different Contractors Awarded Jobs	11
Projects That Were Awarded to Lowest Bidder	39%
Number of Project Completed On Time	100%
Number of Change Orders	0
Average Post Project Rating	9.7

Table C3: Analysis of All PIPS Roofing Projects

ROOFING ANALYSIS	AVERAGE
Total Number of Projects Awarded	100
Overall Estimated Budget	\$ 8,816,252
Total Overall Cost	\$ 9,174,684
Percent +/- Overall Budget (All Roofs)	+4.1 %
Percent +/- Overall Budget (78 Non Insulated Roofs Only)	-5.6 %
Number of Different Contractors Awarded Jobs	8
Projects That Were Awarded to Lowest Bidder	22%
Number of Project Completed On Time	98%
Number of Change Orders	0
Average Post Project Rating	9.6

APPENDIX D
KPMG REPORT



STATE OF HAWAII
COMPTROLLER

Agreed-Upon Procedures

May 1, 1998 through June 30, 2002

(With Independent Accountants' Report on
Applying Agreed-Upon Procedures Thereon)



P.O. Box 4150

Honolulu, HI 96812-4150

**Independent Accountants' Report
on Applying Agreed-Upon
Procedures**

Comptroller
State of
Hawaii:

We have performed the procedures enumerated below, which were agreed to by the Comptroller of the State of Hawaii, solely to assist the Comptroller in evaluating the Performance Information Procurement System (PIPS) and the Low-Bid Procurement System (Low-Bid) for certain projects completed during the period from May 1, 1998 through June 30, 2002. This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. The sufficiency of these procedures is solely the responsibility of the Comptroller of the State of Hawaii. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The procedures consisted of the following:

- I. We obtained a listing of all PIPS projects categorized by type (e.g., roofing, painting, etc.) completed during the period from May 1, 1998 through June 30, 2002 from the Public Works Division of the Department of Accounting and General Services (Public Works). From this listing we selected 50 projects out of the population of 141 for detail testing, to include 34 of the 97 roofing projects, 3 of the 9 air conditioning projects, 9 of the 26 painting projects, and 4 of the 8 repair projects. For the projects selected (see Appendix A), we performed the procedures described below:
 - A. Obtained the number of contractors who submitted an intention to bid, as reflected on the project bid tabulation sheet.
 - B. Obtained the number of contractors who submitted a bid proposal, as reflected on the project bid tabulation sheet.
 - C. Obtained the number of pages of design specifications and drawings (e.g., 12 pages of design specifications and two rolls of drawings) included in the project file.

- D. Documented the completion of the standard bid document in the project file, and obtained the number of pages of the supplemental bid proposal forms and contractor management plans in the project file.
- E. Obtained the bid proposal amounts, by contractor, as reflected on the project bid tabulation sheet.
- F. Obtained a brief description of the project (e.g., re-roof an elementary school building).
- G. Obtained a brief description of the process recommended by qualified bid proposal (e.g., build a sloped roof, use tar and gravel, use waterproof coating, etc.) as reflected on the supplemental proposal forms.
- H. Obtained the supplier and manufacturer for each bid proposal.
- I. Obtained the successful contractor, bid proposal amount, and project budget amount.
- J. Obtained the justification used by Public Works for the selection of the successful contractor.
- K. Obtained the original contract amount.
- L. Obtained the number of change orders and the total number of working days and dollar amounts added to the original contract, included in the project file which were user requested or for unforeseen conditions.
- M. Obtained the final contract amount.
- N. Obtained the number of working days to procure the contractor measured by the number of working days between the bid opening date reflected on the project bid tabulation sheet and the date the original contract was signed.
- O. Obtained the number of working days to complete the project as reflected in the contract, as adjusted by change orders, and obtained the number of working days from the notice to proceed date to the project acceptance date, as reflected on the project acceptance document.
- P. Obtained the number of punch-list issues at the completion of the project, as reflected on the punch-list, the date for completion of the punch-list items, and the sign-off date for final inspection; both of which are reflected on the project acceptance document.

- II. We obtained a listing of all low-bid projects categorized by type (e.g., roofing, painting, etc.) completed during the period from May 1, 1998 through June 30, 2002 from Public Works. From this listing we selected 50 projects out of the population of 591 for detail testing, to include 34 of the 97 roofing projects, 3 of the 41 air conditioning projects, 9 of the 15 painting projects, and 4 of the 290 repair projects. For the projects selected (see Appendix B), we performed the procedures as described below:
- A. Obtained the number of contractors who submitted an intention to bid, as reflected on the project bid tabulation sheet.
 - B. Obtained the number of contractors who submitted a bid proposal, as reflected on the project bid tabulation sheet.
 - C. Obtained the number of pages of design specifications and drawings (e.g., 12 pages of design specifications and two rolls of drawings) included in the project file.
 - D. Documented the completion of the standard bid document in the project file.
 - E. Obtained the list bid proposal amounts by contractor, as reflected on the project bid tabulation sheet.
 - F. Obtained a brief description of the project (e.g., re-roof an elementary school building).
 - G. Obtained the supplier and manufacturer used by the successful contractor.
 - H. Obtained the successful contractor, bid proposal amount, and project budget amount.
 - I. Obtained the justification used by Public Works for the selection of the successful contractor.
 - J. Obtained the original contract amount.
 - K. Obtained the number of change orders and the total number of working days and dollar amounts added to the original contract, included in the project file which were user requested or for unforeseen conditions.
 - L. Obtained the final contract amount.
 - M. Obtained the number of working days to procure the contractor measured by the number of working days between the bid opening date, reflected on the project bid tabulation sheet, and the date the original contract was signed.

- N. Obtained the number of working days to complete the project, as reflected in the contract, as adjusted by change orders, and obtained the number of working days from the notice to proceed date to the project acceptance date as reflected on the project acceptance document.
 - O. Obtained the number of punch-list issues at the completion of the project, as reflected on the punch-list, the date for completion of the punch-list items, and the sign-off date for final inspection; both of which are reflected on the project acceptance document.
- III. Based on the results of our procedures performed on the selected projects, we compiled our observations on the PIPS and Low-Bid processes (see Appendix C).
- IV. Obtained a listing of all PIPS's projects categorized by work type completed during the period from May 1, 1998 through June 30, 2002, from Public Works indicating the complex, project title, work type, contractor award amount, date of award, and final acceptance date (see Appendix D).
- V. Obtained a listing of all Low-Bid projects categorized by work type competed during the period from May 1, 1998 through June 30, 2002, from Public Works indicating the complex, project title, work type, contractor award amount, date of award, and final acceptance date (see Appendix E).
- VI. Based on the procedures performed, we provided other observations as it relates to the PIPS evaluation process, project file maintenance and retention, notice to proceed, and the use of purchase orders (see Appendix F).

We were not engaged to, and did not conduct an audit, the objective of which would be the expression of an opinion on the PIPS and Low-Bid processes. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of the Comptroller of the State of Hawaii, and is not intended to be and should not be used by anyone other than this specified party.

KPMG LLP

September 30, 2002

STATE OF HAWAII

Observations on Selected Projects

For the period from May 1, 1998 through June 30, 2002

Based on the results of our procedures performed on the selected projects, the following represents our observations on the PIPS and Low-Bid process:

BIDDING PATTERNS*Reroofing Projects*

For PIPS reroofing projects, on average, 5.6 contractors submitted intentions to bid, of which, on average, 4.2 of these contractors subsequently submitted a bid proposal. In contrast for Low-Bid, on average, 10.6 contractors submitted intentions to bid, of which, on average, 6.9 of these contractors subsequently submitted a bid proposal.

Air Conditioning

For PIPS air conditioning projects, on average, 5 contractors submitted intentions to bid, of which, on average, 3 of these contractors subsequently submitted a bid proposal. In contrast for Low-Bid, on average, 13.7 contractors submitted intentions to bid, of which, on average, 8.3 of these contractors subsequently submitted a bid proposal.

Painting

For PIPS painting projects, on average, 7.2 contractors submitted intentions to bid, of which, on average, 3.6 of these contractors subsequently submitted a bid proposal. In contrast for Low-Bid, on average, 7.9 contractors submitted intentions to bid, of which, on average, 5.2 of these contractors subsequently submitted a bid proposal.

Repair

For PIPS repair projects, on average, 4 contractors submitted intentions to bid, of which, on average, 3.3 of these contractors subsequently submitted a bid proposal. In contrast for Low-Bid, on average, 13.3 contractors submitted intentions to bid, of which, on average, 10 of these contractors subsequently submitted a bid proposal.

Observation

Based on our review of the compiled data, fewer contractors file intentions to bid and actually submit bids under PIPS in comparison to Low-Bid.

STATE OF HAWAII

Observations on Selected Projects

For the period from May 1, 1998 through June 30, 2002

DISBURSEMENT OF AWARDS TO CONTRACTORS*Reroofing*

Based on our review of the compiled data, two contractors were involved with a significant portion of the PIPS reroofing projects. For the 33 PIPS reroofing projects tested, two contractors were awarded 29% and 32% of the projects selected. In contrast for Low-Bid, only one contractor was awarded 26% of the Low-Bid projects. This contractor was also one of the contractors receiving a significant portion of the PIPS projects.

Air Conditioning

Based on our review of the compiled data, one contractor was involved with two of the three PIPS air conditioning projects selected. There does not appear to be any significant concentrations for the Low-Bid projects selected.

Painting

Based on our review of the compiled data, two contractors were involved with a significant portion of the PIPS painting projects. For the nine PIPS painting projects selected, two contractors were each awarded two of the projects selected. In contrast for nine Low-Bid painting projects, two contractors were each awarded two projects, while another contractor was awarded three projects.

SELECTION OF MANUFACTURERS BY AWARDEES

Based on our review of the compiled data, it appears there are several instances where certain manufacturers are involved in a significant percentage of the selected projects. For PIPS reroofing projects, it appears one manufacturer was involved with 76% of the PIPS reroofing projects. For PIPS air conditioning projects, a manufacturer was involved in all of the projects selected. For the selected painting projects, it appears one manufacturer was involved in approximately 44% of the Low-Bid projects selected, whereas, a different manufacturer was involved in approximately 44% of the selected PIPS projects.

BID AND FINAL CONTRACT AMOUNT TO BUDGET ANALYSIS*Reroofing*

For the selected PIPS reroofing projects, the awarded bids and final contract amounts, on the aggregate, exceeded the aggregate budget amount by 7% and 8%, respectively. In contrast, the awarded bids and final contract amounts for Low-Bid reroofing projects were 13% and 10%, respectively, below budget.

STATE OF HAWAII

Observations on Selected Projects

For the period from May 1, 1998 through June 30, 2002

Air Conditioning

For the selected PIPS air conditioning projects the awarded bids and final contract amount, on the aggregate were 12% and 5%, respectively, below budgeted amounts. In contrast, the awarded bids and contract amounts for Low-Bid air conditioning projects, on the aggregate, were 14% and 11%, respectively, below budgeted amounts.

Painting

For the selected PIPS painting projects, the awarded bids and final contract amounts, on the aggregate, were 20% above budgeted amounts. In contrast, the awarded bids and final contract amounts for Low-Bid painting projects, on the aggregate, were 23% below budgeted amounts.

Repair

For the selected repair projects, with information available, the awarded bids and final contract amounts, on the aggregate, were 7% above budgeted amounts for PIPS projects. In contrast, the awarded bids and final contract amounts for Low-Bid repair projects, on the aggregate, were 17% below budgeted amounts.

Observation

On a consistent basis, the awarded bids and final contract amounts for Low-Bid projects were under the budgeted amounts. In contrast, with the exception of air conditioning projects, PIPS projects awarded bids and final contract amounts were higher than budgeted figures. We were informed by Public Works officials that certain PIPS projects are grouped together and collectively issued under a single request for proposal. As proposals are received, certain projects may be awarded above and others below budgeted amounts as long as the aggregate budget for the projects is not exceeded.

CHANGE ORDERS

Refer to Appendix F for discussion regarding the use of purchase orders in lieu of change orders. For purposes of the procedures performed, purchase orders to the contractor within the project files were treated as unprocessed change orders. As such, the following figures include these purchase order amounts.

Reroofing Projects

Of the PIPS reroofing projects for which change order information was available, 6 out of the population of 30 or approximately 20% involved at least one change order. On the aggregate for the PIPS reroofing, there were 7 change orders for \$64,810 and extensions of 145 working days. In contrast for Low-Bid for which change order information was available, 17 out of 33 or approximately 52% involved at least one change order. On the aggregate for the Low-Bid reroofing projects, there were 24 change orders for \$78,458 and extensions of 446 days.

STATE OF HAWAII

Observations on Selected Projects

For the period from May 1, 1998 through June 30, 2002

Air Conditioning

Of the PIPS air conditioning projects for which change order information was available, two out of the population of three involved at least one change order. On the aggregate for the PIPS air conditioning projects, there were three change orders for \$23,918 and no time extensions. In contrast for Low-Bid for which change order information was available, all three of the selected projects involved at least one change order. On the aggregate for Low-Bid air conditioning projects, there were five change orders for \$13,950 and extensions of 76 working days.

Painting

For the selected projects there were no change orders for either PIPS or Low-Bid.

Repair

For the selected projects there were no change orders for PIPS repair projects. In contrast for Low-Bid, one of the four selected projects had change orders (four change orders for \$4,244 and no time extensions).

Observation

Based on our review of the compiled data, there were, on average, fewer change orders associated with PIPS than Low-Bid projects. However, all circumstances of change orders were for unforeseen conditions and/or user requested solutions to existing problems and were not the product of the contractor's work.

TIMELINESS FOR CONTRACTOR PROCUREMENT*Reroofing*

For the PIPS reroofing projects tested, on average, the time frame measured from bid opening date to the signing of the original contract was 38.6 working days. In contrast for Low-Bid, on average, the time frame measured from bid opening date to the signing of the original contract was approximately 11.1 working days.

Air Conditioning

For the PIPS air conditioning projects tested, on average, the time frame measured from bid opening date to the signing of the original contract was 51 working days. In contrast for Low-Bid, on average, the time frame measured from bid opening date to the signing of the original contract was 15.3 working days.

Painting

For the PIPS painting projects tested, on average, the time frame measured from bid opening date to the signing of the original contract was 26.8 working days. In contrast for Low-Bid, on average, the time frame measured from bid opening date to the signing of the original contract was 12.9 working days.

STATE OF HAWAII

Observations on Selected Projects

For the period from May 1, 1998 through June 30, 2002

Repair

For the PIPS painting projects tested, on average, the time frame measured from bid opening date to the signing of the original contract was 34 working days. In contrast for Low-Bid, on average, the time frame measured from bid opening date to the signing of the original contract was 16.5 working days.

Observation

Based on our review of the compiled data, the time frame measured from bid opening date to the signing of the original contract is shorter with Low-Bid projects than with PIPS projects.

TIMELINESS OF PROJECT COMPLETION*Reroofing*

PIPS reroofing projects were completed, in the aggregate, 14% below the aggregate budget for time. In contrast for Low-Bid, the reroofing projects were completed, in the aggregate, 7% below the aggregate budget for time.

Air Conditioning

PIPS air conditioning projects were completed, in the aggregate, at the aggregate budget for time. In contrast for Low-Bid, the air conditioning projects were completed, in the aggregate, 2% above the aggregate budget for time.

Painting

PIPS painting projects were completed, in the aggregate, 14% below the aggregate budget for time. In contrast for Low-Bid, the painting projects were completed, in the aggregate, at the aggregate budget for time.

Repair

PIPS repair projects were completed, in the aggregate, 58% above the aggregate budget for time. In contrast for Low-Bid, the repair projects were completed, in the aggregate, at the aggregate budget for time.

Observation

Based on our review of the data in an aggregate basis, it appears, with the exception of PIPS repair projects, both PIPS and Low-Bid projects are completed at or before the budgeted deadline. It should be noted that the exception relating to the PIPS repair projects was due to a single project in which the manufacturer was unable to supply the awarded contractor in a timely manner.

STATE OF HAWAII

Observations on Selected Projects

For the period from May 1, 1998 through June 30, 2002

PUNCH-LIST ISSUES*Reroofing*

Of the PIPS reroofing projects, 6 of the 32 or 19% of the available files reflected punch lists on the project acceptance forms. On the aggregate there were 19 punch list issues, an average of less than one item per project, all of which were resolved in a timely manner considering the relevant deadline for completion. In contrast for Low-Bid, 19 out of 33 projects or 58% reflected punch list issues on the project acceptance document. On the aggregate, there were 77 punch-list issues, an average of 2.3 per project. It appears 5 out of the 19 projects with punch lists were not resolved by the relevant deadlines.

Air Conditioning

Of the PIPS air conditioning projects, 1 of the 3 available files reflected punch lists on the project acceptance forms. On the aggregate, there were 15 punch list issues, an average of 5 per project, all of which were resolved in a timely manner considering the relevant deadline for completion. In contrast for Low-Bid, all 3 of the selected air conditioning projects reflected punch list issues. On the aggregate there were 53 issues, an average of 17.7 per project. It appears 1 out of the 3 projects with punch lists was not resolved by the relevant deadline.

Painting

Of the PIPS painting projects, 2 of the 9 or 22% of the available files reflected punch lists on the project acceptance forms. On the aggregate, there were 11 punch list issues, an average of about 1 per project, all of which were resolved in a timely manner considering the relevant deadline for completion. In contrast for Low-Bid, 2 of the 9 or 22% of the files reflected punch list issues. On the aggregate, there were 5 punch list issues, an average of less than 1 per project. It appears 1 of the 2 projects with punch lists issues was not resolved by the relevant deadline.

Repair

Of the PIPS repair projects, 2 of the 4 available files reflected punch lists on the project acceptance forms. On the aggregate, there were 5 punch list issues, an average of 1 per project, all of which were resolved in a timely manner considering the relevant deadline for completion. In contrast for Low-Bid, 2 of 4 available files reflected punch list issues. On the aggregate, there were 24 punch list issues, an average of 6 per project. It appears 1 out of the 2 projects with punch lists was not resolved by the relevant deadline.

Observation

With the exception of the painting projects, there are, on average, fewer punch list issues associated with PIPS than Low-Bid projects. In addition, the punch list issues associated with PIPS projects tend to be resolved by the relevant deadline, whereas, several of the Low-Bid projects were not.

APPENDIX E DAGS ANALYSIS OF KPMG AUDIT RESULTS

The independent audit was performed by KPMG on a limited sample of projects completed between May 1, 1998 through June 30, 2002. The KPMG audit compared 50 projects from PIPS, and 50 projects from the low-bid process (roofing 34 each, painting 9 each, and mechanical 3 each, and repair 4 each.) DAGS' in-house staff reviewed the results of the audit and its limited sampling to verify the validity of the results by comparing it to data from the entire sample of PIPS projects (completed between May 1, 1998 through June 30, 2002).

The in-house staff review of the representative population samples of projects revealed the following:

1. The sample amounts of projects for the air conditioning and repair projects were insufficient (3 projects each and only 2 PIPS and 2 low bid projects had complete information on them).
2. The construction costs of the PIPS air conditioning projects were 2% higher than the low-bid projects, but required much less design effort (one designer did all ten PIPS projects.)
3. The PIPS Mechanical project results are listed in Table E1. The projects were professionally done, were well under the total budget, and were highly coordinated such that the facility users showered praise on the PIPS process. However, the mechanical contractors did not fully understand the process resulting in several contractors taking a "wait and see" attitude, which was the same problem in other areas that did not have a large sample of projects.
4. The low-bid repair projects were 17% below the budget, and the PIPS analysis included only two PIPS repair projects (only two projects had complete data) that were 7% over the budget (Table E2).
5. One of the PIPS repair projects in the sample had a high risk problem which the low-bid process would not have solved. This project began as a low-bid roofing job, but no bids were received. The project was reissued under PIPS, and through the cooperative partnering environment inherent in PIPS, PWD discovered that water infiltration problems far exceeded the scope of roofing work. The entire building envelope (roof, parapet and exterior walls) needed to be repaired and waterproofed in order to address all the leaks and provide full material and labor warranties. In addition, since the building was listed on the State Historic Register, many considerations had to be made to address the aesthetic value of the finished product. However, despite the complete change and growth in scope, all changes were not reflected in the "official" budget reported in the PWD database. This oversight alone skews the cost results for the overall sampling within this category.
6. The results of the painting projects are not comparable because there was only one low-bid Oahu project, which was actually a play court resurfacing and striping project (previously all the painting work on Oahu was done "in-house" by CSD due to the very poor and unacceptable performance of the low-bid awarded projects.)

It was not until PIPS was introduced, that CSD was persuaded to allow contractors to bid painting projects on Oahu. The PIPS results were surprising to CSD as the test included side-by-side comparisons of CSD work and the industry work.

The painting industry work was superior in prep work and detailing, and the industry contractors were fast, professional, and flexible in handling unforeseen problems. The results on the DAGS PIPS painting projects are included in Appendix E. The results of the University of Hawaii PIPS painting projects are included in Appendix L.

7. Conclusions on PIPS cannot be drawn from the mechanical, repair, or painting projects for the reasons mentioned above.
8. The roofing projects offer the best study of the performance of PIPS based on:
 - a. Longevity of the program - 4 years
 - b. Education of the industry
 - c. Large number of PIPS and low-bid projects - 34 in the independent audit and 100 PIPS and low-bid projects over the last four years.

Accordingly, the analysis and conclusions on the performance of PIPS is based on the roofing projects, which has the largest sample of completed projects and whose participants have been involved with the program for the longest period of time.

Table E1: Analysis of PIPS vs. Low Bid Roofing Projects (from KPMG Audit)

	ROOFING	
	PIPS	LOW BID
Total Number of Projects	34	34
Average Contract Award	\$ 108,484	\$ 94,143
Average Budget	\$ 101,387	\$ 113,754
Percent Over Budget	7%	-17%
Average Number of Change Orders	0.2	0.7
Total Number of Change Orders	7	24
Average Cost of Change Order	\$ 1,906	\$ 2,308
Average Contract Duration	24	38
Average Actual Duration	22	36
Average Number of Punch List Items	0.6	2.3

Table E2: Analysis of PIPS vs. Low Bid AC, Painting, and Repair Projects (from KPMG Audit)

	AIR CONDITIONING		PAINTING		REPAIR	
	PIPS	LOW BID	PIPS	LOW BID	PIPS	LOW BID
Total Number of Projects	3	3	9	9	4	4
Average Contract Award	\$ 200,573	\$ 156,780	\$ 85,772	\$ 60,541	\$ 92,261	\$ 269,975
Average Budget	\$ 228,650	\$ 181,439	\$ 71,600	\$ 79,076	\$ 86,000	\$ 326,000
Percent Over Budget	-12%	-14%	20%	-23%	7%	-17%
Average Number of Change Orders	1.0	1.7	0.0	0.0	0.0	1.0
Total Number of Change Orders	3	5	0	0.0	0	4
Average Cost of Change Order	\$ 7,973	\$ 4,650	\$ 0	0	\$ 0	\$ 1,061
Average Contract Duration	49	59	19	26	30	46
Average Actual Duration	49	60	16	26	48	46
Average Number of Punch List Items	5.0	17.7	1.2	1	1.3	6.0

APPENDIX F ANALYSIS OF ROOFING PROGRAM

PIPS Roofing Conclusions

The following are conclusions based on the tables and discussions in this appendix:

1. 100% of DOE users surveyed would rather use the PIPS process over the low bid process (Table F6).
2. 100% of the users would use the PIPS contractor again (Table F6).
3. Performance rating by customers of PIPS vs. low-bid: 8.1 : 5.6 (Table F3)
4. PIPS average performance rating: 9.61 (9.86 when deleting the lowest performer)
5. PIPS cost is 6% under budget (after adjusting for insulated roofs) (Table E3).
6. There were 5 contractors that received 4 or more roofing jobs in the last four years using PIPS. This is similar to the low-bid process that resulted in 7 contractors that received 4 or more roofing jobs in the last four years (Table F2).
7. PIPS projects finished approximately 35% faster (Table D1).

Introduction

The roofing projects are the only sample large enough to be considered representative based on (the painting projects in the audit were not comparable because the majority of low-bid projects were on the outer islands.):

1. Education of contractors.
2. Time of program.
3. Number of projects.
4. Similarity of the projects (The majority of the projects on the same island Oahu).

Procured Performance

The PIPS purchased product was an ensured 10 – 25 year roof with an enforceable warranty. The low-bid awards resulted in a 2-year enforceable warranted roof. (After the 2-year period, DAGS/CS would repair the low-bid roofs due to the difficulty in getting the contractor and manufacturer to repair the roof.) The PIPS product is at least 5 times as valuable as the low-bid product when considering enforceable warranty period and customer satisfaction. Three types of surveys were done on the PIPS projects. An end of the project rating to upgrade their performance line, a survey asking the owners to compare PIPS vs low-bid, and a contractor

generated form to ask customers how much they appreciated the PIPS procured contractor services. The following were the results:

1. The average post project rating on PIPS projects was 9.6.
2. PIPS contractors improved their performance numbers from 9.3 to 9.6. When one of the lower performing contractors is removed, the numbers went from 9.4 to 9.7.
3. 98% of the roofs were completed on time.
4. Comparing PIPS vs low-bid: On a scale of 1-10, 10 being the best, respondents rated PIPS 8.1 and rated low-bid 5.6 (Table F3)
5. DOE users who used PIPS said they would choose PIPS over low bid 100% of the time (Table F6).
6. PIPS contractors produced approximately two times as much work as low-bid contractors (\$4.5K/day vs 2.5K/day: audit numbers).
7. Customers (DOE) were so happy with the PIPS projects, two schools threw a party and a luau for the contractor.
8. Over the four-year period of PIPS (2 years over the 2 year enforceable warranty period of the low-bid roofs), CS had not had to repair any roof leak.

Budgets

Budgets were analyzed based on available information. The result is that the budgets did not consider insulation since there was an average cost differential of \$1.42. Based on this information, some of the budgets are inaccurate and are not a good comparison of PIPS vs the low bid. Of the 100 PIPS roofing projects:

1. 35 were over 20% of the budget.
2. Based on the insulation, 36 of the budgets were incorrect.
3. Deleting these projects, the awarded cost was 5.6% below the budget.

Accountability

When issues arose on roofs, the manufacturers and contractors took charge and solved the problem without technical expertise, management, or monitoring by the State. This happened at Ewa Beach Library roof and Pearl City Library roof.

At Ewa Beach Community School Library, the manufacturer sent sub-optimal material, and the contractor approached the State and informed them that he did not want to install the bad material in the best interest of the State. The contractor ordered new material, however, the construction schedule was affected because the construction was supposed to be done within the Christmas break of two weeks. After receiving a new

shipment of material, the contractor worked on weekends and after-hours so they would not impede the operations at the school. The customer gave the contractor 10 ratings.

At Pearl City Public Library, the contractor removed the existing waterproofing membrane and found that none of the roof drains had collars. A quick call to suppliers revealed that the proper fasteners were not available in Hawaii. Accordingly, the contractor air shipped the proper fasteners and finished the roof before submitting a change order request. The contractor did not wait for the approval and execution of a change order, which would have delayed the project, because his primary concern was to complete the project on time. The contractor knew how critical the schedule to complete the work was for the DOE Library Services.

Table F1: Analysis of PWD Low-Bid Roofing Awards (1998-2001)

Contractor	1998	1999	2000	2001	2002	TOTAL
Contractor 1	1	14	2	2	0	19
Contractor 2	0	4	1	3	0	8
Contractor 3	0	4	3	0	0	7
Contractor 4	2	1	1	3	0	7
Contractor 5	0	4	2	0	1	7
Contractor 6	0	2	1	1	0	4
Contractor 7	0	2	1	1	0	4
Contractor 8	3	0	0	0	0	3
Contractor 9	1	0	2	0	0	3
Contractor 10	0	3	0	0	0	3
Contractor 11	0	2	1	0	0	3
Contractor 12	0	0	0	3	0	3
Contractor 13	0	0	0	2	0	2
Contractor 14	0	1	0	1	0	2
Contractor 15	0	0	2	0	0	2
Contractor 16	0	2	0	0	0	2
Contractor 17	0	0	1	0	0	1
Contractor 18	0	0	1	0	0	1
Contractor 19	0	0	0	1	0	1
Contractor 20	0	1	0	0	0	1
Contractor 21	0	1	0	0	0	1
Contractor 22	0	0	0	1	0	1
Contractor 23	0	1	0	0	0	1
Contractor 24	0	1	0	0	0	1
Contractor 25	0	1	0	0	0	1
Contractor 26	0	0	1	0	0	1
Contractor 27	0	0	1	0	0	1
Contractor 28	0	0	0	1	0	1
Contractor 29	0	1	0	0	0	1
Contractor 30	0	1	0	0	0	1
Contractor 31	0	1	0	0	0	1
Contractor 32	0	0	1	0	0	1
Contractor 33	1	0	0	0	0	1
	8	47	21	19	1	96

Table F2: Distribution of PWD Low-Bid Roofing Awards (1998-2001)

Number of Contractors that received 1 projects	17
Number of Contractors that received 2 projects	4
Number of Contractors that received 3 projects	5
Number of Contractors that received more than 4 projects	7

Table F3: Facility User Evaluation of PIPS (Based on 20 evaluations)¹³

NO	CRITERIA	AVERAGE*
1	Overall results of PIPS	8.11
2	Overall results of the Low-bid process	5.61
3	Ability of PIPS to encourage the industry to take responsibility for quality construction.	8.71
4	Ability of PIPS to allow the contractors to improve the quality of construction.	8.55
5	Ability of PIPS to allow PWD to be more effective in meeting user's construction needs.	8.47
6	Ability of PIPS to allow the contractors to provide a quality product.	8.22
7	Ability of PIPS to allow contractors to improve performance.	7.88
8	Facility users that would choose PIPS over Low-bid.	19 out of 20

* Based on a scale of 1-10, with 10 being the best.

Table F4: Contractor Evaluation of PIPS (Based on 6 evaluations)¹⁴

NO	CRITERIA	AVERAGE
1	Contractors that made a fair profit using PIPS.	6
2	Contractors that would participate with PIPS again.	6
3	Contractors that preferred PIPS over Low-bid.	6
4	Contractors that increased their performance under PIPS.	6
5	Contractors that reached a high level of performance using PIPS	6
6	Contractors that reached a high level of performance using Low-bid	0

Table F5: Inspector Evaluation of PIPS Projects (Based on 20 evaluations)¹⁵

NO	CRITERIA	YES	NO	NO RESPONSE
1	Have you been involved with PIPS?	17	3	0
2	Have you seen PIPS contractors work?	14	4	2
3	Was it better?	4	1	15
4	Were you satisfied with the work you saw?	17	0	3
5	Was it less of a hassle to get PIPS contractors to do what was supposed to be done (low-bid vs. PIPS jobs)?	18	0	2
6	Are PIPS contractors more willing to perform?	17	1	2
7	Is there a difference between the same contractor's performance on low-bid vs. PIPS jobs?	11	4	5
8	Is PIPS less work for staff?	18	1	1
9	If PIPS did save time, was there other work you could accomplish with the saved time?	12	0	8

¹³ Kenny, 2001.

¹⁴ Kenny, 2001.

¹⁵ Kenny, 2001.

Table F6: Customer Evaluation (Based on 55 DOE projects done by 3 contractors)

NO	CRITERIA	AVERAGE
1	Jobs started on time	53
2	Jobs completed on time	49
3	Contractor was responsive before the job	55
4	Contractor was responsive during the job	53
5	Job sites that were kept clean	53
6	All the work specified was completed	55
7	Contractor did everything they agreed to do	55
8	Clients that were pleased with the quality of work	53
9	Contractors workers were courteous	53
10	Contractors workers were professional	53
11	Customers that would consider using the contractor again	55
12a	Customers that thought the contractors performance was poor	0
12c	Customers that thought the contractors performance was excellent	55
13	Customers that prefer PIPS over the Low Bid System	55

Table F7: PIPS Roofing Results Based on Square Feet

	Overall	<5000	5001-10000	10001-15000	15001-20000	20001-25000	>25001
Total Number of Roofs	96	10	40	24	7	8	7
Total Area (SF)	1,135,025	34,386	311,259	277,396	121,685	176,800	213,499
Total Award (\$)	\$8,899,766	\$343,912	\$2,800,363	\$2,332,235	\$799,159	\$1,152,048	\$1,472,049
Estimated Budget (\$)	\$8,360,252	\$344,742	\$2,653,620	\$2,246,900	\$749,010	\$1,138,990	\$1,226,990
Award (\$/SF)	\$7.84	\$10.00	\$9.00	\$8.41	\$6.57	\$6.52	\$6.89
Budget (\$/SF)	\$7.37	\$10.03	\$8.53	\$8.10	\$6.16	\$6.44	\$5.75

Table F8: PIPS Roofing Comparison of Insulated vs. Non Insulated Roofs

	Overall	<5000	5001-10000	10001-15000	15001-20000	20001-25000	>25001
Number of Non-Insulated Roofs	60	6	27	16	2	5	4
Number of Insulated Roofs	36	4	13	8	5	3	3
\$/SF of Non-Insulated Roofs (Budget)	\$7.16	\$9.84	\$8.09	\$7.94	\$3.69	\$5.78	\$6.21
\$/SF of Non-Insulated Roofs (Award)	\$6.99	\$9.31	\$8.05	\$7.65	\$3.08	\$6.00	\$5.82
\$/SF of Insulated Roofs (Budget)	\$7.67	\$10.22	\$9.46	\$8.42	\$7.18	\$7.48	\$5.16
\$/SF of Insulated Roofs (Award)	\$9.09	\$10.73	\$11.04	\$9.89	\$8.02	\$7.31	\$8.25
Difference in Budgets	\$0.51	\$0.39	\$1.37	\$0.49	\$3.49	\$1.71	-\$1.05
Difference in Awards	\$2.10	\$1.42	\$2.98	\$2.25	\$4.95	\$1.31	\$2.43

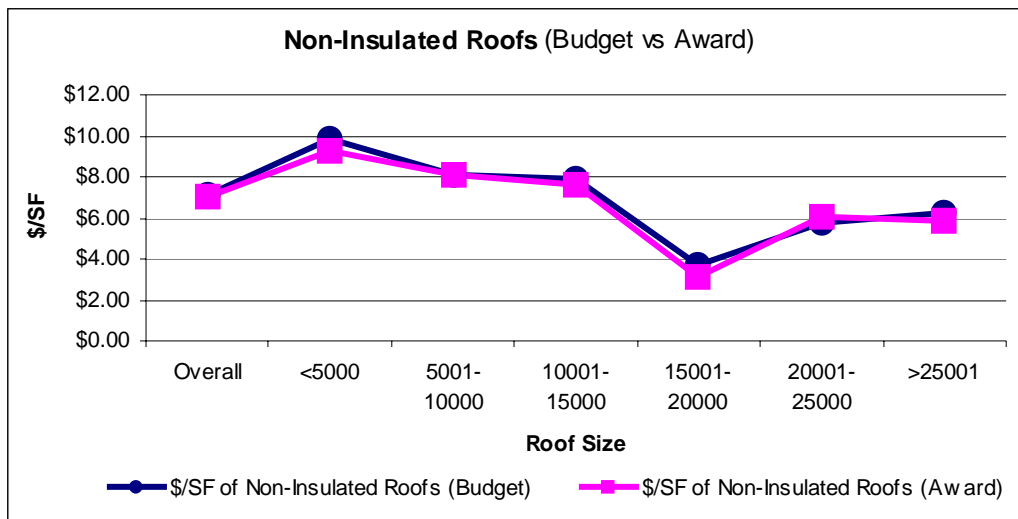


Figure F1: Analysis of Non Insulated Roofs

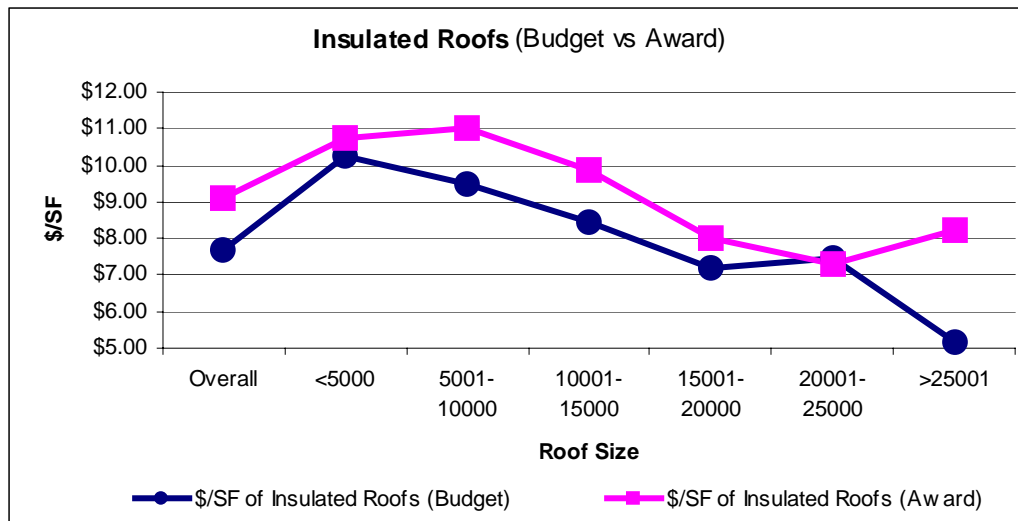


Figure F2: Analysis of Insulated Roofs

APPENDIX G
ECONOMIC ANALYSIS OF PIPS vs. DESIGN-BID-BUILD DELIVERY SYSTEM

TABLE G1: Comparison of Delivery Costs for Roofing Construction

NO	ITEM	PIPS	LB
1	Design Cost (percent of project cost)	2.50%	11.00%
2	Project Management Costs (percent of project costs)	0.39%	1.86%
3	Construction Costs (percent under budget)	-5.6%	-13.0%
4	Cost of Quality	0.00%	0.50%
Total Costs		-2.71%	0.36%
Savings due to PIPS process		3.07%	

Sources:

Design Costs: PWD

PM Costs: See Table G2

Construction Costs: See Table G3

Cost of Quality: conservative estimate based on failed projects, total amount of construction and 80/20 rule

TABLE G2: Identification of Project Manager Costs

Year	Project Expenditures	Payroll Expenditures	Overhead Costs
1999	\$181,994,317	\$6,488,038	3.56%
2000	\$189,735,430	\$6,089,599	3.21%
2001	\$187,221,387	\$6,071,320	3.24%
2002	\$195,021,532	\$5,172,543	2.65%

Amount of work saved by PIPS (.0265* .7*.8) 1.49%
(80% of construction management and 70% of total delivery cost)

Amount of work done by PIPS 1.17%
(normal amount of work (.0265) - work saved (.0149))

Work accomplished by PIPS project manager is 3 times higher **0.39%**
(divide cost of PIPS by 3)

TABLE G3: Construction Costs

COSTS	PIPS	LB
Audit report	7.0%	-13.0%
Audit projects (in-house analysis of numbers)	7.0%	-17.2%
Audit projects (minus 3 projects listed on page 3)	7.0%	-8.4%
Audit projects (minus 10 insulated roofs)		-2.3%
All PIPS roofing projects	4.1%	
All PIPS projects (minus 36 insulated projects)	-5.6%	

APPENDIX H HISTORY OF PIPS IN DAGS

Low Bid Environment - 1999

Prior to 1999, DAGS Public Works Division (PWD) received numerous complaints on the quality of the completed construction projects and the coordination of the projects during construction, especially in reroofing and painting. Roofs were poorly constructed, contractors were slow in correcting punch list items, response to warranty work was slow or non-existent, and there was no accountability between the designers and the roofing contractors. By 1999, PWD had already mandated that all new school buildings be constructed with pitched roofs in order to avoid additional problems. This problem was also recognized by other State agencies. The Housing Community Development Corporation of Hawaii (HCDCH) have added pitched roofs over existing flat roofs on many of their existing housing units. They are still continuing to add pitched roofs, at great cost, to their existing housing units. (The HCDCH Board of Directors disapproved the use of PIPS.) Painting was in an even more critical situation. Even with tight specifications and detailed plans, the quality of work was so bad that DAGS Central Services Division (CSD) assumed repainting work on Oahu with their in-house staff. The classic low bid situation where contractors bid low to get projects then cut corners to remain in business drove away the performing painting contractors who refused to lower their standards. The standards fell so low that newly painted buildings looked old after six months and CSD finally said no more contracted painting projects. The number of painting projects contracted by PWD dwindled from a peak of 101 projects in 1995 to five in 1998.

It was in search of a process to correct this problem that PWD was introduced to PIPS.

History

Dr. Dean Kashiwagi, Director of the Performance Based Research Studies Group (PBSRG) of the Del E. Web School of Construction, Arizona State University, introduced PIPS to Hawaii in January 1998. In May 1988, DAGS Public Works Division (PWD) made a commitment to prototype the PIPS on their roofing projects to correct the lack of designer and contractor accountability, poor contractor performance, unacceptable change orders and poor warranties. In the fall of 1998 six roofing projects were procured by PIPS. The results included:

1. High contractor performance.
2. No change orders.
3. Better warranties.
4. Excellent communication between the contractors and the schools.
5. Less work for the Design and Inspection Branches.
6. All work was within the budgeted amount.

A total of 100 roofing projects have been procured through PIPS.

In the spring of 1999, painting was added to the PIPS program as a demonstration project to simultaneously introduce PIPS to the DAGS Central Services Division (CSD) and allow the painting industry to prove they had high performing painters. The impetus for this project was the lobbying efforts of the painting industry and the simultaneous emergence of PIPS.

Although CSD was skeptical about the quality of painters, the industry felt otherwise and lobbied for projects to prove their capabilities. Thus, in 1999, CSD announced a demonstration program to pit the painting industry against their in-house staff, (i.e. five DOE classroom buildings would be painted by contractors selected under the PIPS program, and five adjacent classroom buildings would be painted by in-house staff for comparison). The following were the results:

1. None of the five awarded painting contractors had done work for PWD in the past three years.
2. The quality of the contract work exceeded the CSD work.
3. The total awards were within 10% of the budget.
4. There were no change order costs.
5. There were no plans and costs to produce the plans.

Following the successful demonstration of selecting performing contractors, more painting projects were bid under the PIPS program. A total of 33 painting projects were procured through PIPS.

The PIPS program continued to expand into other specialty areas. In 1999, a project was completed to coat the parking deck of one of the State's parking structures. In 2000, 11 air conditioning equipment projects were procured through PIPS and in 2001, five light fixture replacement projects were procured through PIPS. These projects were procured through PIPS to establish one point of responsibility and because plans and specifications could be minimized.

In 2001, three large projects that involved construction over the entire school campuses during the school year were procured through PIPS. The first project was a fire alarm replacement project, which was done so efficiently that many of the teachers were not aware of the construction work. The second project was an air conditioning retrofit for the whole school, which was completed successfully even though the contractor had coordination, scheduling and workmanship problems. The third project is an architecture barrier removal project that is still in construction. The contractor for this ABR project has established an excellent rapport with the faculty and staff and the project is progressing very well.

In November 2001, the Legislature in the Third Special Legislative Session of 2001, appropriated \$75M for repair and maintenance of schools. Of that amount \$50M was budgeted for total school renovations. The Governor's direction to DAGS was to start construction by March 2002, an extremely short period to prepare bidding documents. In addition, the schools would be in session while the work was being done. The contractors were required to remove and store the classroom furniture, replace the ceilings, light fixtures, windows, chalk boards, white boards tack boards, flooring, paint the interior of classrooms and the exterior of the entire school. Due to the short period between the availability of the funds and the start of construction, CSD ordered the bulk of the materials and made them available to the contractor. The contractors were given four classrooms to work the interior. They were required to complete all work and turn over the classrooms to the school within seven to nine days. Twenty-nine school projects were procured through PIPS and two Kauai school projects were procured through low bid.

The results to date are:

1. The awarded contracts were more than \$3.5M under the budget amount.
2. More than 75% of the projects are complete.
3. CSD did not procure the materials on time (up to six months delay in materials delivery) and the contractors had to reschedule their work, remobilize and work out of sequence. Although contractors worked after hours and weekends to avoid disrupting classes for the second time, only two contractors requested change orders for the additional costs and one contractor requested additional funds for working after hours and weekends.
4. Several contractors of the completed projects received commendations from the schools for the excellent work and project coordination.

Protests

From January 2000 to May 2001 Hi Tec Roofing, Inc. filed five protests against 69 PIPS re-roofing projects. These protests were denied by the State on the basis that they were untimely (i.e., they were filed after the protest period.)

From October 2, 2002 to November 19, 2002, Hi Tec Roofing filed five additional protests against 13 PIPS roofing projects. The State again denied these protests. On January 30, 2002, Hi Tec filed a request for a hearing. A hearing on the protests was held from February 14, 2002, till May 22, 2002. The allegations raised by Hi Tec were that DAGS:

1. Based Hi Tec's performance rating on subjective data which was improperly inputted/calculated.
2. Failed to provide a factual basis/analysis of it's "in the best interest of the State" determination.
3. Refused to correct mistakes in the performance ratings of Hi Tec and others, and
4. Acted in bad faith during its handling of the protests.

On June 30, 2002, the Hearings Officer ruled in favor of the State in the first three allegations but concluded that the State acted in bad faith by allowing four projects to proceed while they were under protest. The State has filed an appeal to the Hearings Officer's award of legal fees to Hi Tec Roofing Services.

On January 18, 2002, Hi Tec filed another protest against 32 roofing, nine air conditioning and four light fixture replacement projects before the projects were scoped and before the procurement method was determined. The State rejected the protest on the basis that it was premature, i.e., PIPS was not yet determined to be the method of procurement. Subsequently, Hi Tec requested an Administrative Hearing. In order to proceed with the projects, the State settled with Hi Tec to procure the 32 roofing projects through competitive sealed bid and the projects were allowed to proceed on June 17, 2002.

Hi Tec filed its eleventh protest against Kapaa Elementary School – Renovate and Paint Various Building project on April 12, 2002. However, Hi Tec withdrew its protest with a letter dated on April 15, 2002, after they were informed that this was a competitive sealed bid project.

The effect of all of these protests was that more than 70 projects were delayed for many months until the protests were settled. These included 13 projects that Hi Tec was not licensed to bid on and one that was being procured by competitive sealed bids.

Current Status

Currently DAGS has three PIPS air conditioning projects in the construction phase. There were 28 classroom renovation and repaint projects that were started in March 2002. More than half of the projects are completed and all except one of the remaining projects will be completed by the end of the year. DAGS has not initiated any new PIPS projects since 2002 due to the protests. However, 35 new PIPS projects will be initiated in November 2002.

APPENDIX I PIPS PROCESS

CHARACTERISTICS

1. Full information system – provides information to minimize State decision making.
2. Open competition – open to all properly licensed contractors who are registered with PIPS. Registry is open.
3. Contractors control project and take liability for nonperformance – minimizes bureaucracy and liability to owner (contractor is given intent of owner, contractor identifies means and methods, inspects own work, and delivers performance to the State)
4. Raises construction performance – contractors provide best efforts to maximize performance ratings
 - a) Increases communication between contractor, user, and inspector
 - b) Minimizes State construction management and inspection
 - c) Improves quality of construction
 - d) Minimizes change orders
 - e) Projects finish on time or early
 - f) Contractors are mindful of cost constraints
5. Minimizes design, construction management, and inspection costs

PROCESS

1. Identify the Project Intent and Constraints
 - a. Determine the required contractor license
 - b. Identify Risk areas
 - c. Determine if consultant will be solicited
2. Approvals
 - a. Determination to use RFP
 - b. Letter to appoint evaluation committee
 - c. Consultant selection, if required
3. General Requirements
 - a. Open Registry
 - b. Establish new contractors' training session date, if required
 - c. Prepare consultant selection request, if consultant required
 - d. Establish project scope
 - e. Prepare Notice to Contractors for Advertising - identify contractor license requirement
 - f. Evaluation Committee criteria weighting meeting
 - g. Prepare RFP
 - i. Identify all requirements
 - ii. Set Pre-Proposal and Site Walkthrough dates

- iii. Advertise at least two weeks before Pre-Proposal meeting
- h. Pre-Proposal Meeting
 - i. Provide bidder information sheet (indicates required submittal items)
 - ii. Provide manufacturer reference information sheets, if required
 - iii. Provide project budget range
- i. Site Walkthrough Meeting
- j. Meeting Minutes/Addenda
 - i. Prepare Pre-Proposal Meeting and Site Walkthrough minutes
 - ii. Include minutes and responses in contract documents with addenda
- k. Cost Proposal submittal
- l. Post project budget
- m. Management Plan submittal – rate management plans “blind”
- n. Conduct interviews
- o. Run Model – for prioritization
- p. Identify best proposal within budget/rules
- q. Pre-Award Meeting
 - i. Contractor runs meeting
 - ii. Discuss any additive/deductive items identified in proposal or management plan
 - iii. Verify contract cost and schedule, identify critical dates and and scheduling difficulties for user
 - iv. Discuss performance evaluation and identify persons involved in final rating
 - v. Discuss quality expectations, including any available references to standards or measurement procedures
 - vi. Minutes of interview and pre-award meeting become part of contract documents
- r. Recommend Award
- s. Pre-Construction Meeting
- t. Construction
- u. Final Inspection
- v. Contractor post project performance evaluation

AWARD

The contractors are prioritized using a modified displaced ideal model (DIM) based on work created by Zeleny¹⁶. The formulas have been taken from his theory and placed into a spreadsheet program. This program has been used over and over many times since the formulas do not need to be changed (only the data inputted into the program change). The formulas use the following factors:

1. **Relative distance (RD) from the best number** in each criteria.
2. **Weighting factor (WF)** that identifies how important the factor is. This is determined by the State before the bids are opened.
3. **Information factor (IF)**, which identifies how important criteria are based on differential. For example, if the State weighted the criteria customer satisfaction heavily, but the raw

¹⁶ Zeleny, 1984.

data for all the contractors were at 100% (or no differential), the information factor would be zero.

The DIM then prioritizes all the alternatives based on performance by multiplying the RD X WF X IF for each alternative's criteria. It then totals the products of all criteria for each alternative for the total distance from the best for each alternative.

The process then considers the total performance distance versus price on a linear, prorated basis as directed by the State procurement code, and this results in the final prioritization of proposals.

An easy way to describe the program is to think of it as a calculator. You input data, and the program (calculator) then takes the numbers, processes them through a set of fixed formulas and spits out a result. PWD has a layman's explanation of the formulas. Each prioritization model is kept, can be reviewed by the contractors, and each contractor can identify the reasons why they were or were not awarded the contract.

The purpose of the model is to prioritize contractors based on performance and price. Once this is done, there is a set of award rules that govern who gets the award. The award process with modifications has been in three stages:

In Stage 1, the top three proposals (performance and price) are identified. The highest prioritized proposal within budget is selected for award. If none of the top three proposals are within budget the process goes to Stage 2.

In Stage 2, the process looks for the highest prioritized proposal within 20% of the budget, which is recommended for award. If all the bids are over 20% over the budget, the process goes to Stage 3.

In Stage 3, the process will identify the low-bidder regardless of value or past performance. This will bring risk, however the low bidder must meet two requirements. First, the low bidder must pass a technical review by PWD. Second, the low bidder and associated subcontractors and manufacturers, will be rated on the project, and the rating becomes 25% of their future performance rating.

These three stages have modifications from the current process, which increase distribution of work, increase opportunity to participate, and minimize bid prices that may seem excessive by protesting contractors.

It needs to be considered, that the PIPS process is actually less expensive to the State. The process minimizes the management and overhead of the process and maximizes the profit of the performing contractor. This makes it a win-win for both the State and the contractors.

APPENDIX J SELECTION PROCESSES THAT INCREASE THE VALUE OF PROCUREMENT CONSTRUCTION

To date, there is no documented selection process in the U.S. and/or worldwide construction literature with any proven results on performance (on-time, within budget, meeting quality expectations, and competitively bid), on a consistent and sustained basis over a period of time. Regardless, processes continue to proliferate with promises of resolving the problems of nonperformance. However, detailed studies of these processes reveal that they are variations on themes of the low-bid system, which is inherently problematic.

The traditional low-bid system has been identified by the US Office of Federal Procurement Policy as a very inefficient, non-value added process¹⁷. The industry has documented the process as a broken process, which cannot solve problems of nonperformance¹⁸. This has resulted in an industry that no longer has enough trained craftspeople, no longer has sufficient entry level craftspeople and managers, and has failed at solving the problems of nonperformance¹⁹. In a recent article, DAGS was targeted for the resulting poor construction performance (Appendix M).

PIPS advantage is higher performance. The percentage of the construction funding that is required to manage, and inspect the poor performing contractor can be as high as 8% + design costs (overhead charged by Southwest PACDIV for construction work, Chuck Smith, Yuma Marine Corp Training base, procurement officer) of the construction budget. Test documentation has shown that PIPS can reduce the overhead by at least 80% after award²⁰.

PIPS is the only selection process with documented results on performance. The performance results are much better than any results documented in the US. The Engineering News Record identified that although owners were satisfied with their construction quality, many of them would not hire the contractor again. No contractor sector (general, mechanical, or electrical) received a 'hire back' based on performance of 70 percent or more. Also 42% of the contractors did not finish on time, 33% were over budget, and 13% had litigation pending. No significant improvements have been made in construction performance in the last ten years²¹. In comparison, the results of the PIPS projects at the State of Hawaii (Appendix F) include the following:

1. In two different surveys, percent of users who would select PIPS over low-bid: 95% (Table E3) and 100% (Table F6).
2. Average end of project ratings for PIPS: 9.6 (Appendix F)
3. Finished on time: 98%
4. No contractor generated cost increase change orders: 100%

¹⁷ Office of Federal Procurement Policy, 2000.

¹⁸ See Appendix O for complete list of references.

¹⁹ See Appendix O for complete list of references.

²⁰ Charles Serikawa, 2002.

²¹ Post 2001, Post 1998.

APPENDIX K NATIONAL AND INTERNATIONAL RESULTS OF PIPS

The strong results of PIPS has led to the following:

1. The US Coast Guard is currently negotiating with Arizona State University to license the PIPS program and do prototype testing. PIPS has been modified to fit the conditions of the Federal Acquisition Requirements (FAR).
2. The US Marines have also expressed interest in running the PIPS process. They are reviewing the process and waiting for approval to implement on a prototype project.
3. The State of Utah is using their Value Based Process to procure construction. It is a modified process of PIPS. The major differences are the subjective selection of the contractors, the use of only three to five references, and the elimination of all subcontractor ratings. However, since the modification was made, there has been no documentation of results, prices, or performance ratings.
4. The Dallas Independent School District (DISD) recently ran a test procuring 9 roofs with \$4.5M. It resulted in high performance roofs, different roofing systems, more qualified contractors participating, and a change in contractor attitude on responding to previous nonperformance work. Additionally, the system indirectly affected neighboring school districts because of the contractors desire to get good references. (i.e. the contractors provided free services in order to obtain a better customer relationship). The DISD is now planning on using the process to procure additional roofs and mechanical work.
5. The Federal Aviation Administration (FAA) Air Terminal Business in Washington DC is considering the use of PIPS to solve it's problem with nonperformance. PIPS offers the only proven structure to reduce management functions while improving performance (on-time, within budget, and meeting quality expectations at the same time.)
6. Two other large international entities CEMEX (\$7B in gross sales in 2002) and ARAMCO, the largest oil producing company in Saudi Arabia, are also looking at the process.
7. The most progressive construction research program in the UK, the New Caledonian University Construction Department, is investigating creating a "PBSRG model" in the UK to do research to increase the construction performance in the UK²².
8. The construction group at Reading University has shown interest in starting a research effort which is based on the success of PIPS²³.
9. An independent group in the Netherlands is funding Dean Kashiwagi, to brief an industry and government group on PIPS and the underlying IMT, to see if PIPS can solve their construction delivery problems²⁴.
10. Six refereed papers were accepted in two 2002 UK conferences, COBRA and ARCOM, and were the only papers with documented performance information²⁵.

²² Sommerville, 2002.

²³ Hughes, 2002.

²⁴ Van Baal, 2002.

²⁵ See "Six Refereed Papers" in Appendix O

APPENDIX L CASE STUDIES

University of Hawaii PIPS Case Study

The University of Hawaii implemented the PIPS process on over 35 projects. An analysis of these projects shows that they came in 14% under budget, and 100% (of the complete projects) have finished on time and within the award cost (Table L1).

The following is taken from a document issued by Charlie Serikawa (the University of Hawaii PIPS administrator):

"I'd like to take this opportunity to express my thanks for introducing and educating me in the use of the Performance Information Procurement System (PIPS). In all my years of construction experience, both in the private and the public sector, I have never been more impressed with a procurement process such as the process provided by PIPS. The system promotes a partnering "win-win" scenario between the owner and the contractor that require minimum project management resulting in "on time", "on budget" and "outstanding quality construction". It reduces procurement time, it reduces risk to the owner and consultants, and it recognizes who the experts in construction are and allows the contractors to perform to the best of their abilities. It is a system founded on the basic human principles of honesty, trust and integrity.

I must admit that when I was asked to head the implementation of the PIPS Program at the University of Hawaii, I was very skeptical and believed that this type of procurement system would not work in a public institution. Fortunately, I was wrong. After attending several seminars three features of the system stood out in my mind — the system transfers the risks of construction from the owner to the contractor by relying on the contractor's construction expertise (minimizes control by the owner/consultant), the system has a self-policing effect (post performance rating that affect the contractor's future chances to obtain more work) and the system provides a "best value" product. In addition, the process, via artificial intelligence uses information (past performance, management plan, interview, and price) to select the contractor in lieu of using price as the only criteria. By using this method of selection, the owner greatly reduces his risk and has a reasonable chance of predicting the outcome of the project. The selection process virtually eliminates any construction surprises, namely contractor generated change orders.

At the University of Hawaii sixteen projects have been awarded using this process (one re-flooring of two Gyms; four re-roofing; and eleven exterior painting of buildings on campus). All but two have been completed with outstanding results. The University has experienced no significant increase in job cost; in fact, all but five projects were awarded at costs well below the respective estimated project budgets. Consequently the cumulative cost of all the projects was well within the total budget for all the projects. More importantly, there were no contractor generated change orders, all jobs were completed on or before contract completion date and quality was never compromised. I believe this process has brought back the "pride in construction" as evidenced when I observed that the contractors constantly strived to improve — scheduling, workmanship, communications, and cooperation. From this experience I have concluded that this process results in a quality product without any cost increase. A definite owner-contractor "win-win" scenario

PIPS is the only procurement process in existence today that when used by a Public Agency, provides that agency with a certain confidence that the services procured will be completed in

accordance to the requirements set forth. The PIPS process is fair, equitable and appeals to a contractor who understands his responsibilities and obligations.” - Charles Y. Serikawa, PIPS Program Administrator - University of Hawaii at Manoa²⁶

TABLE L1: Overall Results of the University of Hawaii PIPS Implementation

CRITERIA	OVERALL RESULTS
Total Number of Projects Procured	35
Overall Estimated Budget	\$ 7,061,500
Total Award Cost	\$ 6,085,787
Percent Over/Under Budget	-14%
Percent of Jobs Completed Within Awarded Cost	100%
Percent of Jobs Completed On Time	100%
Average Post Project Rating	9.8

TABLE L2: Results of the University of Hawaii PIPS Painting Projects

CRITERIA	PAINTING AVERAGE
Total Number of Projects Completed	9
Overall Estimated Budget	\$ 2,310,000
Total Award Cost	\$ 1,658,192
Percent Over/Under Budget	-28%
Total Size (SF)	991,221
Number of Different Contractors Awarded Jobs	6
Projects That Were Awarded to Top Prioritized Contractor	8
Projects That Were Awarded to Lowest Bidder	8
Percent of Jobs Completed Within Budget	100%
Percent of Jobs Completed On Time	100%
Percent of Jobs Completed Ahead Of Time	89%
Percent of Projects Where Contractor Performed Additional Work at No Charge	56%
Average Post Project Rating	9.8

Waterproofing the Courthouse Projects

The projects were:

- Kauikeaouli Hale - waterproofing of the walking deck, roof sections, and parapet walls; and miscellaneous interior repairs
- Kapuwaiwa Building – waterproofing exterior walls and parapet/balusters, reroof, and repair interior water-damaged walls.

The understanding of the bidding contractors was clear. The projects were risky, if you cannot deliver, the contractor and manufacturer would be saddled with the risk. Both projects had leaking problems in different parts of the facility, and the user requested the leaking be fixed. Both courthouses were also aged, making the waterproofing prep work more difficult. PWD

²⁶ Serikawa, 2002

required the manufacturers to warranty the work. PWD received joint and several warranties from the contractor and manufacturer on both projects. The original budgets were set without a clear understanding of the scope of work. The same contractor who won these contracts, was called by the State of Hawaii to repair the State Capitol roof, after reroofing had failed to fix the leaking. The same contractor was called to the Kalanimoku building to also repair the leaks after the low-bid award contractor could not fix the leaking as specified and directed by the owner. This waterproofing contractor has also had a high performance track record of waterproofing FAA facilities that were leaking.

APPENDIX M ARTICLES

Backlog of school repairs draws scrutiny

By Johnny Brannon

Advertiser Staff Writer

Posted on: Monday, September 23, 2002

Hawaii's sorry record of repairing crumbling public schools is drawing scrutiny to an often maligned agency that handles a mammoth amount of the state's workload but is not known for innovation and efficiency.

The Department of Accounting and General Services has long been criticized for a sluggish response to school upkeep, embarrassing gaffes on construction projects, questionable awarding of contracts, and an obstinate approach to some routine chores. The department has also had six different leaders in the past eight years.

The Legislature has debated several ways to speed up school repairs by stripping DAGS of those duties and transferring them directly to the Department of Education. Republican gubernatorial candidates backed such an approach, while Democrats called for reforms within the existing system.

Governor Benjamin Cayetano favored the Republicans' method before he was elected in 1994, but said he later backed off after taking a closer look.

"Once I got into office I understood the system better. There are economies of scale, there are efficiencies of having everything centralized," Cayetano said. "I think the current system can be improved, can be streamlined, can be made more efficient, but I would not want to throw it out right now and say the Department of Education should have its own DAGS. I don't know that they'll be able to do a better job."

The state's public schools have a repair backlog that exceeds \$600 million after years of tight budgets. But amid crippling staff shortages and bureaucratic inertia, DAGS has sometimes been unable to quickly put to work what money is available.

Cayetano said procurement rules are part of the problem because work can sometimes grind to a halt when a contractor challenges the award of a job to a competitor.

"This procedure where they file a complaint and everything comes to a stop has caused a great deal of delays," Cayetano said. "I think the process can be better streamlined if some of those things were either eliminated or changed, with the idea that we want to move faster."

On the bright side, the construction of new schools is moving much quicker than before, he said.

"We build schools today in half the time it used to take," Cayetano said. "When I took office it used to take us more than three years to build a school. Today it takes 18 months."

Mary Alice Evans, acting state comptroller and DAGS director, said the department has worked hard to improve its school repair record, and that shifting the chore to another department wouldn't guarantee better results. A continued commitment to pay for needed repairs is the key, she said.

"Moving boxes around on the organizational chart will not result in an increase in funding," Evans said. "In fact, in some cases it could result in a worse situation."

DAGS handles much more than school repair, though. The department's eight divisions oversee the bulk of the state's procurement, design and construction, accounting and auditing, maintenance of state buildings and many other duties.

Though the department includes many hardworking and knowledgeable employees, it has also suffered from a lack of innovative hustle, say many people who have observed the department for years.

It's hard to miss symbols of such sentiment around the Capitol, one of the many buildings DAGS is in charge of.

Every weekday, workers plod around in the large reflecting pools that surround the axis of state government, using noisy pumps to suck up algae and muck that grows back almost immediately.

No one at DAGS tracks the exact cost to taxpayers of the perpetual pool cleaning, though it is widely viewed as an absurdly inefficient boondoggle.

"It's terribly hard to understand why they allow these daily expenses to go on and on, rather than seek a permanent solution to the problem," said Jim Williams, a pool designer and builder who has watched DAGS struggle with the job for three decades. "This is an embarrassment that the seat of our state government should be surrounded by a swamp. Or is it indicative of what we've got?"

The Legislature agreed to appropriate \$360,000 this year to repair leaks in the pools and install a new circulation system, and DAGS is studying how best to try to prevent the algae problem.

Across Punchbowl Street at the Kalanimoku Building, where DAGS has its headquarters, a five-month waterproofing and sidewalk repair job is taking a year longer because a new seal material leaked, threatening a major state database in a basement.

It's unclear whether the problems could have been foreseen, but some department officials say engineers and inspectors are often swamped with work because of staff shortages, making it nearly impossible to scrutinize every job as it progresses.

Leadership continuity has been a problem, too. Cayetano has appointed six different comptrollers to head DAGS during his terms as governor. He said he believes they were well-qualified and did a good job.

The position pays less than \$90,000 per year, and Cayetano said that is low considering the heavy work load and responsibilities that go with the position. Whoever is elected governor in November will be entitled to select a new comptroller when the new administration's cabinet is named.

Evans has worked at DAGS for about two years and was named comptroller last month, when former comptroller Glenn Okimoto left to oversee the state's harbors for the Department of Transportation.

In July, a state hearings officer found that DAGS officials illegally awarded three large school roofing contracts through a new computerized purchasing system that has been under fire for allegedly steering a disproportionate number of jobs to a small group of contractors, and for sometimes inflating costs.

The Performance Information Procurement System is meant to ensure the state gets the best value in contracting, by considering factors other than bid amounts. But some contractors say data that's entered into the system can be manipulated to affect results. An advisory committee has been created to study the PIPS system and submit a report to lawmakers next year.

APPENDIX N LETTERS OF SUPPORT

The following are comments from various DOE end users of PIPS roofing projects:

1. *"I highly recommend this company. Their job performance was more than sufficient. The crew were hard working men, very professional quality work. They started getting things moving as soon as they arrived, stayed after their time to make sure things were safe before leaving. This company (Tory's Roofing) is the best that I've seen that does terrific work. Having the PIPS Program is the best thing that ever happened. This was my second time that I had this company provide us with their quality work. Because I was very pleased we made a luaus for them. Thank you."* Gail Greene, Custodian III - Kahaluu Elementary School – Building C Reroof
2. *"Commendable job. Hard working and committed to providing quality construction needed for roofing projects. Project supervisor kept abreast with every detail. PIPS provided the opportunity for this quality roofing company to be offered the job."* Helene Tom, Principal - Kahaluu Elementary School – Building C Reroof
3. *"Communication and quality of workmanship was exemplary. Job started on time and ended well before timeline. Crew was polite, courteous and kept office staff informed on a daily basis, reviewing work details and timelines. Work areas were clean, classrooms were well respected and kept in good condition, and several areas were redesigned for our benefit (re-positioning of solar panels off the roof-tops and on separate support beams). After the job, the areas were remediated, and returned to their original condition. Overall performance was excellent...During the same time, two other "non performance based" jobs were being started. Once job finished later, and the second is yet to be completed. Neither "non performance based" project had the complexity of this re-roofing project.."* David Hanaike (Vice Principal) - Nuuanu Elementary School – Buildings C, G & H Reroof
4. *"All schools need the PIPS program because it helps the school and the contractor with quality of work. Also, low bid on our football field is still a nightmare."* Willard Gouveia, Head Custodian - Roosevelt High School – Building G Reroof
5. *"I prefer the PIPS program. Contractors do excellent and professional job. Low bid with only one-year warranty is not worth the time. There was an incident in 2001, roofing company cam and did not repair any vents. It sill leaks."* Theola DeCosta - Laie Elementary School – Building B Reroof
6. *"I prefer the PIPS program because it makes companies do better work and are more pleasant to work with. Contractor was very nice and kept area clean. Kept all equipment covered to avoid damage. They also were willing to do repairs and replace grass."* Daryllynn Jaralloa (Head Custodian) - Kalihi Uka Elementary School – Buildings B Reroof
7. *"I would prefer PIPS over Low Bid. Adjustments to work order were easier. Low bid contractor looked for the shorted path, not necessarily what is best for the school."* Bruce Naguwa (Principal) - Kipapa Elementary School – Buildings I Reroof
8. *"Responsive to our need to have job completed on time. PIPS results in providing superior product and service at a fair cost. Low bid process may save money in short term but may not have*

provided reliable service, on time completion and quality product.” J. Vannatta VP - Highlands Intermediate School – Buildings I Reroof

9. *“Prefer PIPS program over low bid system because of a better quality and has a better warranty.”* Alex Ubiadas, Head Custodian - Jefferson Elem school – Reroof buildings C & M

10. *“They informed the office each day of their plan for the following day. Before leaving the work site each day, they cleaned thoroughly.”* They were so professional and their work was excellent. Charlotte White, Principal - Kahaluu Elementary, Building B - Reroof

11. *“I really appreciate the PIPS program over the low bid system, working with the contractor to provide the best service possible, was a gratifying experience. We were able to work out problems on the spot and make adjustments where needed. When we needed an answer to a problem, the contractor worked with the school to come up with the best results. The conversation went two ways not the contractor making all the decisions.”* Bruce Naguwa, Principal - Kipapa Elementary, Building K - Reroof

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