Employees' Retirement System of the State of Hawaii

Efficiency Study

Final Report

Prepared by

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1 EXECUTIVE SUMMARY

L. R. Wechsler Ltd. (LRWL), under contract to the Employees' Retirement System (ERS) of the State of Hawaii, conducted an efficiency study focused on the "finalization process." The study involved gathering information from HIERS subject matter experts, analyzing that information and, finally, developing a report with recommendations as to how this process can be made more efficient.

The conclusion reached by LRWL is that, although there is room for improvement in the HIERS retirement process, the main factor contributing to the inefficiencies in the "finalization process" is the absence, incompleteness, and/or inaccuracy in the data contained in the V3 system at the time that a member retires. As such, the recommendations made by LRWL focus on:

- Constructing a complete and accurate employment history for all active members
- Cleaning up historical data
- Ensuring that no data gets into the V3 database of record unless it is accurate
- Adding a data structure (school schedules).

Because the data in the system is incomplete, the ERS made a decision to calculate the retirement benefits of teachers and professors outside of the V3 system. Teachers and professors represent 20%-25% of all ERS retirements. By virtue of its recommendations related to data, LRWL has also recommended that the benefit calculations for teachers and professors be done within the V3 system.

In full awareness that it is the employers who own the data on active employees, and because the ERS is dependent on these employers to provide support, both in the cleanup of historical data and in maintaining the integrity of the on-going data, LRWL recommends that ERS develop appropriate tools to assist the employers in performing critical tasks in a more efficient manner. LRWL also recommends that the implementation of these recommendations be accompanied by a change management initiative. These thirteen specific recommendations are summarized below:

- Enhance the PIF (Personnel Information Form) Access Data Base – this database is the temporary repository of PIFs
- Facilitate the Electronic Submission of PIFs by All Employers
- Use V3 Processing to Determine Missing PIFs – allowing construction of complete employment histories
- Clean Up "Lagged Pay" – pay that was put into a pay period other than the pay period in which the pay was actually earned
- Clean Up "Retro Pay" – pay that was paid to (deducted from) a member later than it should have been
- Clean Up Service Purchases – some service purchases have not yet been recorded in the V3 database
- Enhance Work Reporting – need to prevent inaccurate/incomplete data from getting into the operational database
- Provide a Tool to Enter Teacher's (School's) Schedules – necessary for calculating a teacher's pension benefit
- Create a Batch Job to Allocate Teachers Salaries – this is a prerequisite for performing teacher's benefit calculations
- Perform Teachers/Professors Calculations within the V3 System
- Enhance the Process and Provide a Tool for Collecting the Data Needed at the Time of Retirement
- Reconcile Member Contributions.

LRWL estimates these recommendations can be fully implemented within one and a half years, at a cost of approximately $2.4M – including a 20% contingency estimate. LRWL further believes that, as a result of efficiencies gained, the ERS will be able to recover these costs in between three to four years (and benefits would accrue to the ERS beyond that point in time). At the same time, implementation of these recommendations will result in dramatically improved service to participants and the perception of the ERS will be improved – and benefits will continue into the future. The three to four years mentioned above does not attempt to quantify the improvement of service to members and the improved perception of the ERS. Putting a value on these would dramatically shorten the payback period.

While not specifically related to the finalization process analysis and recommendations, LRWL poses a number of additional recommendations it believes will allow the ERS to function in a generally more efficient manner. These recommendations include:

- Project management strategies
  - Complete understanding of the full effect of a project before it is undertaken Projects require strong project management/measurement/communication
  - Projects require full support from upper management
- More effective use of imaging
- Longer-Term Enhanced Service to Members
  - Provision of annual benefit statements
  - Provision of member self-service
  - Enhancing retirement seminars
- Legislative change recommendations
  - Charge interest on members who make up contribution deficiencies
  - Change the Cost to Purchase Professional Development Time
  - Penalize employers for failure to provide data in a timely fashion (LRWL recommends deferring this legislation)

LRWL offers some minor organizational change recommendations.

The return on investment of implementing these recommendations can be seen in four ways:

- Better service to members – more efficient processing, reduced time to receive benefits
- Reduced cost of ERS resources
- Additional financial benefits to the ERS
- Improved perception of the ERS.

2 INTRODUCTION

This section provides introductory material useful in terms of understanding what participants are involved in this project, and in becoming familiar with the terminology used in this report.

2.1 THE EMPLOYEES' RETIREMENT SYSTEM OF THE STATE OF HAWAII

The Employees' Retirement System (ERS) of the State of Hawaii was established in 1926 to provide retirement allowances and other benefits to State and County government employees. The general administration of the ERS functions under the direction of a Board of Trustees, with certain key aspects of administrative control falling under control of the Department of Budget and Finance.

The ERS administers a retirement and survivorship benefits program for state and county government employees; collects retirement contributions from members; provides pre-retirement counseling services; conducts disability hearings and appeals; reviews claims for retirement, disability, and death benefits (and certifies those benefits for payments); processes semi-monthly pension checks to retirees and beneficiaries; accounts for and safeguards assets in the ERS investment portfolio; and invests funds to help finance the system's pension program.

As a state-wide public sector retirement system, ERS functions differently from many other state-wide public sector retirement systems in that while many state-wide public sector retirement systems provide retirement services to a specific sub-set of the work force within a given state (e.g., direct state employees, public school teachers, municipal/local government employees, fire and police, etc.), ERS services the benefits and retirement administration needs of all public sector employees within the State of Hawaii. Providing retirement services across such a diverse range of public sector entities creates a number of significant and unique administrative challenges:

- Variation of technical capability/resources
- Diversity of capability among employers
- Varying rules and calculation algorithms for benefits and eligibility
- Varying contribution rates.

2.2 L. R. WECHSLER, LTD.

Founded in 1981, **L. R. Wechsler, Ltd. (LRWL)**, a Virginia corporation, is a mid-sized consulting practice headquartered in the Washington, DC. LRWL's focuses exclusively on supporting the management and technology consulting needs of Public Employees' and Teachers' Retirement Systems. LRWL has provided such consulting services to nearly 60 public pension clients in over 30 states, and in the District of Columbia, the U.S. Virgin Islands, the Commonwealth of Puerto Rico, and the Bahamas.

2.3 HISTORY OF THE PROJECT

On November 1, 2010, ERS issued an RFP seeking "qualified accounting, auditing and actuarial firm(s) to evaluate the ERS' benefit finalization process and to make recommendations to the ERS for improving the efficiency of the process to meet best practices." On December 2, 2010, L.R. Wechsler, Ltd. (LRWL) submitted a proposal to provide the services as defined in the RFP. On February 17, 2011, the ERS signed a contract with LRWL to provide consulting services. The project, named the "Efficiency Study" began on February 28, 2011.

3 BACKGROUND

This section provides information on the series of events that led up to Efficiency Study.

3.1 THE ERS RETIREMENT PROCESS

Payment of a member retiring from the ERS is done in two steps. The first step, benefit initiation, occurs concurrently with the member's retirement. The ERS, using the data that it has on hand, performs a pension calculation which gives an approximation of the member's benefit. It should be noted that in calculating the initial benefit, the ERS only uses existing data. Using existing data reduces the member's benefit so that, when the final accurate benefit is calculated, the ERS is never in the position of having to take money back from the retirant. During the months following the member's retirement, the ERS accumulates all the data it was missing at the time of the benefit initiation, either from its paper files or from the member's employer, and performs a final, exact calculation of the member's pension benefit. At that time, the ERS pays the member for any pension benefit shortfall that may have occurred between benefit initiation and benefit finalization and, from then on, the member receives, on a monthly basis, the "finalized" benefit amount.

3.2 FINALIZATION BACKLOG

The process discussed above is a labor intensive process, which is heavily dependent on getting the necessary data in order to finalize a benefit. As such, a combination of resource challenges and increases in retirements could result in a situation in which the ERS would be unable to keep up with the demand for its services.

The above scenario did, in fact, occur. The number of retired members who were not finalized steadily increased – creating a "finalization backlog."

A number of factors contributed to the finalization backlog:

- In 1994, the State of Hawaii offered a retirement incentive of two years of additional service. This incentive resulted in a very large number of retirements. 2,925 employees took advantage of this offer.
- In 1999, the ERS was sued by Hawaii teachers disputing the validity of the method being used to calculate their benefit. The teachers won the suit, which made it necessary for the ERS to recalculate many previously-calculated/finalized benefits.
- In 2005, the ERS embarked on the Hybrid Plan project -- the focus on this project drew staff resources away from benefit finalization.
- In May 2005, the ERS embarked on the PMIS project. This project, which replaced the information system that had been used in administering ERS pension plans, required significant ERS resources and, as such, limited the level of staff resources available for benefit finalization.
- In 2009, the ERS offered members who had service in the non-contributory plan, the opportunity to upgrade that service to the hybrid plan, by making a lump sum payment of what the contributions would have been had the member been in the hybrid plan. Approximately 4,000 members took advantage of this opportunity, and many of those members retired soon after upgrading their service.
- The ERS changed the process by which it made initial payments to retiring members. This change involved the transfer of work from technicians to Claims Examiners. This increased workload meant that Claims Examiners (who had previously assisted with finalizations) became less available to assist in performing this function, creating further backlog.

Simply stated, ERS undertook a large number of initiatives in a relatively compressed time period – staff members were stretched in addressing all three initiatives during this time. Looking back, the challenges

involved in meeting these many obligations are responsible, in part, for issues that now need to be addressed.

By 2009, the backlog of retirements awaiting finalization had grown so large the ERS determined that the best means of reducing the backlog would be to contract the work out to vendors whose sole focus would be to address the backlog. To that end, the ERS contracted with KMH LLP and PKF Pacific Hawaii LLP, to assist in the finalization process. These vendors finalized approximately 4,500 benefits at a cost of over $1.5M. The current backlog (as of 9/1/2011) is 933.

3.3 Concern for the Future

While the above-mentioned backlog level of 933 retirements represents a more reasonable number, the ERS remains committed to streamlining the finalization process for a number of reasons:

- The demographics of the ERS membership, like that of almost all pension systems, is such that a large percentage of its membership is either eligible, or will soon be eligible, for retirement. Statistics from ERS' actuary indicate that between twenty and twenty-five percent (20%-25%) of its membership is currently eligible for retirement, and that number could increase to over thirty percent (30%) by fiscal year 2013.
- Current economic conditions within the State of Hawaii are such that any of the employing agencies to which the ERS provides services could again decide to offer retirement incentives.
- The current legislative environment is such that the potential for a reduction in retirement benefits is always a consideration. Depending on the exact nature and timing of any such legislation, the result could be a significant increase in the number of ERS participants opting to retire over a short period of time. It should be noted, here, that the potential for such an occurrence is very real - particularly given that the State of Hawaii legislature is currently considering legislation that would change the benefit multiplier and reduce post-retirement medical benefits for individuals retiring after a set date.
- Independent of the above, the finalization process (as it exists now) is a recurring, resource-intensive process that must be improved.

It is primarily for these reasons that the ERS executive management has concerns regarding its continued ability to keep up with on-going retirement finalizations. As such, ERS executive management, with the approval of its Board, has elected to engage the services of LRWL to assist in exploring options for gaining efficiency within the benefit finalization process.

3.4 Technology

The current system of record for pension administration is V3. This system became the system of record for members in the Hybrid Plan in July 2006 and for all other members in July 2008. V3 is licensed to the ERS by Vitech Systems Group, Inc., which implemented the V3 system under contract to the ERS.

Prior to V3, the system of record was APPX.

4 THE EFFICIENCY STUDY

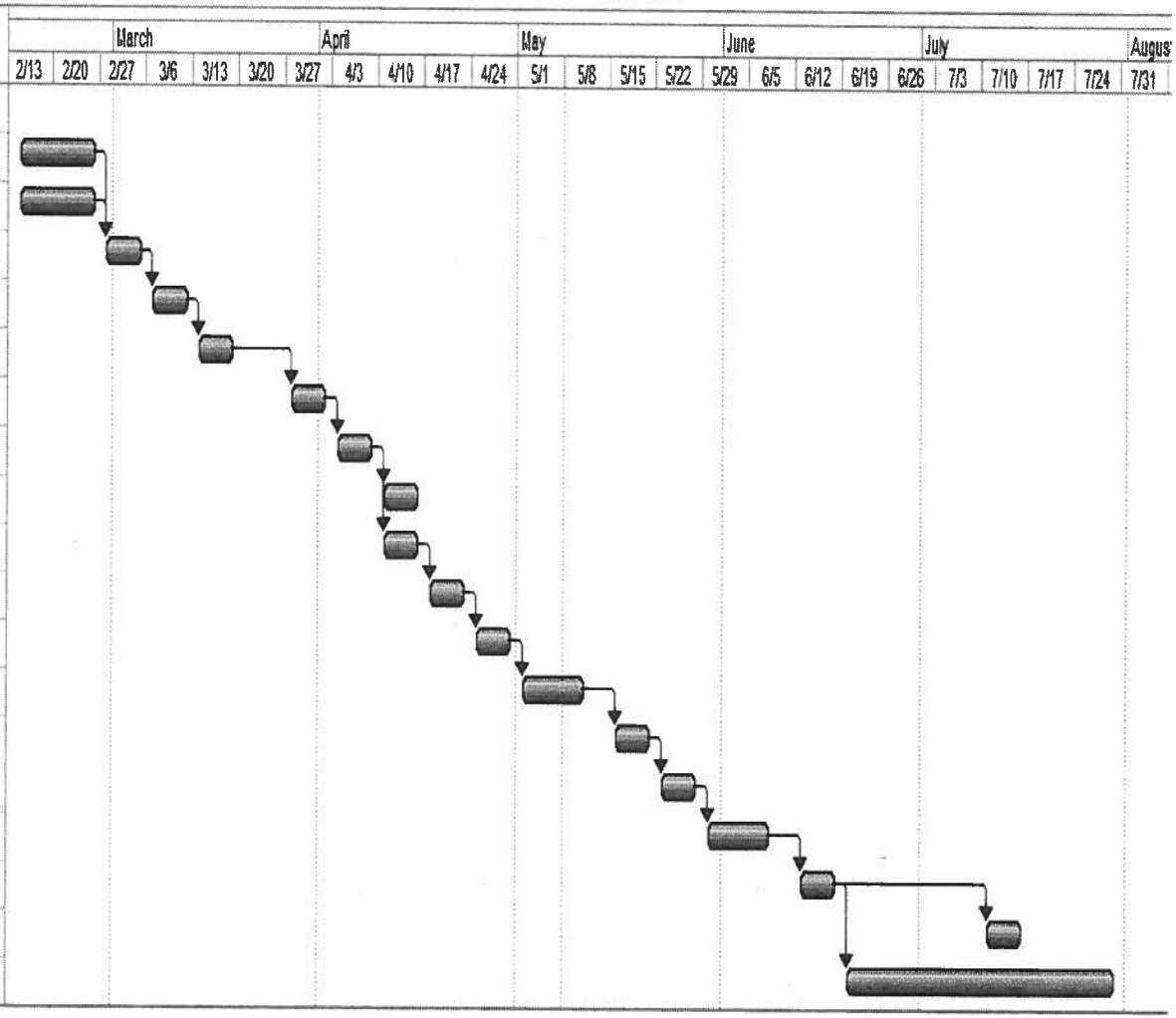
On February 17, 2011, LRWL and the Hawaii ERS entered into a contract whereby LRWL would undertake an efficiency study of the ERS benefit finalization process.

4.1 PROJECT PLAN

Figure 1 is the project plan for the efficiency study.

Figure 1: Efficiency Study Project Plan

ID	Task Name
1	
2	Review/Select Methodology/Tools
3	Reviews Laws/ AG Rulings/Admin. Directives
4	Data Gathering Trip 1
5	Provide minutes of Trip 1
6	HIERS feedback on minutes of trip 1
7	Data Gathering Trip 2
8	Provide Minutes of Trip 2
9	HIERS feedback on minutes of trip 2
10	Data Gathering Trip 3
11	Provide Minutes of Trip 3
12	HIERS feedback on minutes of trip 3
13	Deliver Preliminary Draft Report ("As is" process map)
14	Trip to Review Preliminary Draft
15	HIERS to provide comments on Draft
16	Deliver Final Report ("To be" process map)
17	Trip to Review Final Report
18	Present Findings to Board (Optional)
19	Respond to HIERS Questions as needed



4.2 LRWL Staff and Assignments

The following LRWL staff members took part in conducting the efficiency study:

- Ben Lott, as the Project Director, was responsible for all services and deliverables provided to ERS.
- Leon Wechsler took the lead on all quality assurance activities during the efficiency study.
- Meir Schecter was responsible for all fact finding, analysis, and deliverables preparation on the efficiency study.

4.3 ERS Staff and Assignments

Table 1 lists the ERS staff who took part in the efficiency study.

Table 1: ERS Participants in Efficiency Study

Name	Title	Role
Karl Kaneshiro	Retirement Benefit Manager	Project Lead
Colleen Shibano	Retirement Claims Examiner III	Senior RCE
Martin Mori	Retirement Claims Examiner V – Program Specialist	Finals Team
Amy Nishimura	Information Tech Specialist IV	Computer Project
Gail Onishi	Information Tech Specialist V	Computer Project
Shanna Usami	Retirement Claims Examiner IV	Initial Payments; unused sick leave processing
Neil Matsuura	Retirement Claims Examiner III	Finals Team
Gordon Takahashi	Office Assistant IV	Applications
Marissa Ibrao	Retirement Claims Examiner III	Finals Team
Dana Sugimoto	Retirement Claims Examiner III	Finals Team
Rissa Miyasato	Retirement Claims Examiner III	Finals Team
Donna Curry	Retirement Claims Examiner V	Computer Project
Shelly Kokashikawa	Retirement Claims Examiner III	Work Report
Jovita Baniaga	Retirement Claims Examiner III	Computer Project, Work Report
Weylin Agpaoa	Retirement Claims Examiner III	Work Report
Marleen Nishimiya	Retirement Claims Examiner V - Supervisor	Finals Team
Bert Moriyasu	Computer Programmer IV	Information System Branch
Arlene Tokuda	Staff Service Supervisor	Imaging
Keith Miyamoto	Data Processing System Manager	Computer Project Lead
Jennifer Wong,	Information Tech Specialist IV	Information System Branch
Nenita Morales	Retirement Claims Examiner III	Finals Team
Lori Misaki	Information Tech Specialist IV	Information System Branch

Melanie Iseri	Account Clerk V	Computer Project – Imaging, General Leader
Boomer Henthorne (PKF)	Contractor	Project Lead
Aedward Los Banos (KMH LLP)	Contractor	Project Lead

4.4 DATA GATHERING

LRWL conducted three data gathering trips to Honolulu to meet with members of the ERS staff and to gather pertinent information related to the finalization process. Table 2: lists the meetings held during the data gathering trips.

Table 2: Data Gathering Meetings

Meeting #	Date	Subject (s)	Attendees
1	2/28/2011	Technology Systems	Karl Kaneshiro, Colleen Shibano, Gail Onishi, Amy Nishimura, Martin Mori
2	3/1/2011	Retirement Process	Karl Kaneshiro, Colleen Shibano, Shanna Usami, Gail Onishi, Neil Matsuura, Gordon Takahashi, Martin Mori
3	3/1/2011	Finalization	Marissa Ibrao, Dana Sugimoto, Rissa Miyasato, Colleen Shibano, Shanna Usami, Gail Onishi, Neil Matsuura, Martin Mori
4	3/2/2011	Work Reporting	Karl Kaneshiro, Colleen, Gail Onishi, Amy Nishimura, Martin Mori, Donna Curry, Shelly Kokashikawa, Jovita Baniaga, Weylin Agpaoa
5	3/2/2011	Finalization Vendor #1	Colleen Shibano, Aedward Los Banos (KMH LLP)
6	3/2/2011	Finalization Vendor #2	Colleen Shibano, Boomer Henthorne (PKF)
7	3/28/2011	Various Subjects	Karl Kaneshiro, Colleen Shibano, Marleen Nishimiya, Martin Mori
8	3/28/2011	Potential legislative changes	Karl Kaneshiro
9	3/29/2011	Reporting agencies and PIFs	Colleen Shibano, Marleen Nishimiya, Martin Mori, Jovita Baniaga, Gail Onishi, Bert Moriyasu, Arlene Tokuda, Donna Curry
10	3/29/2011	Imaging	Colleen Shibano, Marleen Nishimiya, Martin Mori, Arlene Tokuda
11	3/30/2011	Vitech, Ad Hoc Reporting, Workflow, Historical Data	Colleen Shibano, Marleen Nishimiya, Keith Miyamoto, Jennifer Wong, Gail Onishi, Amy Nishimura
12	3/30/2011	Organization	Karl Kaneshiro, Colleen Shibano, Marleen Nishimiya

13	4/11/2011	Retro Pay, Lag	Karl Kaneshiro, Martin Mori, Marissa Ibrao, Dana Sugimoto, Rissa Miyasato, Colleen Shibano, Nenita Morales
14	4/12/2011	PIFs	Karl Kaneshiro, Colleen Shibano, Martin Mori, Dana Sugimoto
15	4/12/2011	Purchases	Karl Kaneshiro, Colleen Shibano, Martin Mori, Amy Nishimura
16	4/13/2011	Teachers	Karl Kaneshiro, Colleen Shibano, Martin Mori, Dana Sugimoto, Rissa Miyasato
17	4/14/2011	PIF conversions, Professors	Karl Kaneshiro, Colleen Shibano, Martin Mori, Amy Nishimura, Bert Moriyasu
18	4/14/2011	Work Reporting	Karl Kaneshiro, Colleen Shibano, Martin Mori, Jovita Baniaga

4.5 PROCESS METHODOLOGY

This on-going process involves/involved the following steps:

- Creating a schedule of meetings stipulating attendees, topics, meeting times, etc.
  - Conducting meetings – facilitating discussions and taking notes
  - Drafting meeting notes
  - Submitting meeting notes to attendees for review and comment
  - Updating meeting notes to reflect ERS staff input
  - Organizing notes into logical groupings for presentation herein and for developing recommendations
  - Constructing logical approaches to address recommendations – in this draft recommendation report - albeit with some topics still to be further addressed:
    - Specific to the finalization process
    - Specific to upstream data-related tasks
    - General, in terms of:
      - Project management
      - Possible legislative changes
  - Organizing the recommendations in a table to identify:
    - Expected relative benefits
    - Number of members affected
    - Expected relative difficulty
    - Estimated high level costs
    - High-level schedule
  - After further review and discussion, reordering recommendations, as well as the attributes mentioned above
  - Reviewing and revising the document with the ERS until ready for discussions with Vitech
  - Meeting with Vitech, the V3 vendor, to ensure their understanding of the recommendations and to enable them to provide pricing on the recommendations that they will assist in implementing
  - Reviewing the Vitech approach internally within LRWL
  - Discussing the Vitech pricing with the ERS and determining whether, on a recommendation by recommendation basis, the pricing seemed reasonable and economically justified
  - Revising this draft report – completing it and creating a final report

- Preparing a PowerPoint presentation
- Delivering the presentation to ERS stakeholders.

5 "AS-IS" PROCESS

The scope of work, as outlined in the ERS Request for Proposal (RFP) for the efficiency study, includes the following:

> *The contractor will conduct a diagnostic review of ERS's entire benefit payment process from the initial application for a benefit to the final computation of the benefit and payment of the "finalized benefit. The diagnostic review should include documentation of the ERS retirement and other benefit application and processes and information flows. The processes should be "mapped" to cover the entire membership life cycle from benefit application to payment of the "finalized" benefit. The process maps should include the "as is" and the desired "to be" state. The process maps should highlight key control points, process flow and most importantly, inefficiencies in the key processes.*

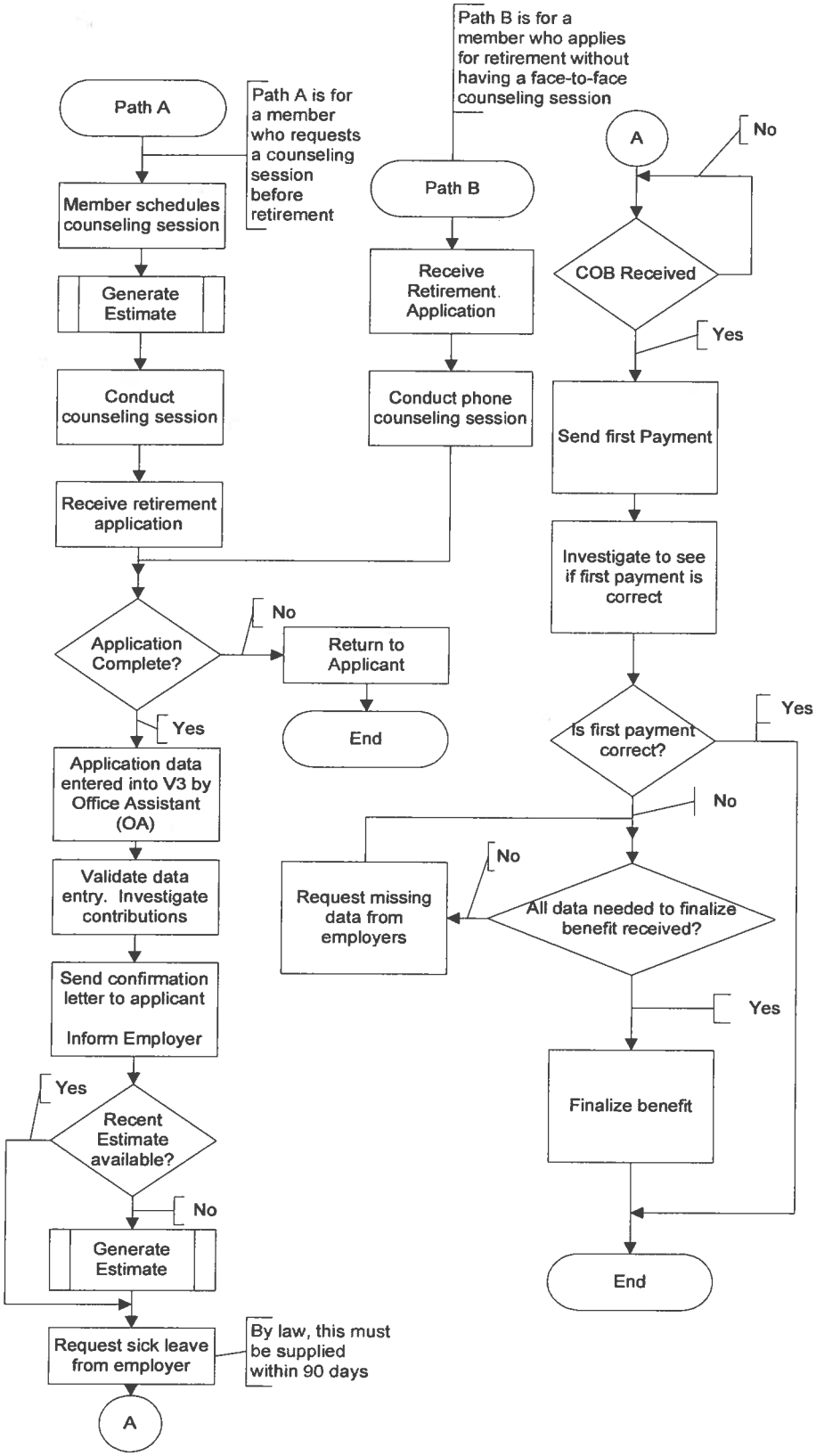
In order to fully understand the issues associated with the "efficiencies" of the ERS benefit finalization process, it would be inadequate to look only at the "entire benefit process" starting with the initial application. Rather, a significant contribution to these inefficiencies occurs during the Work Reporting process (upstream of the finalization process), which allows incomplete and inaccurate data to get into the V3 operational database. This inaccurate/incomplete data has a major impact on the downstream processes – benefit finalization, in particular.

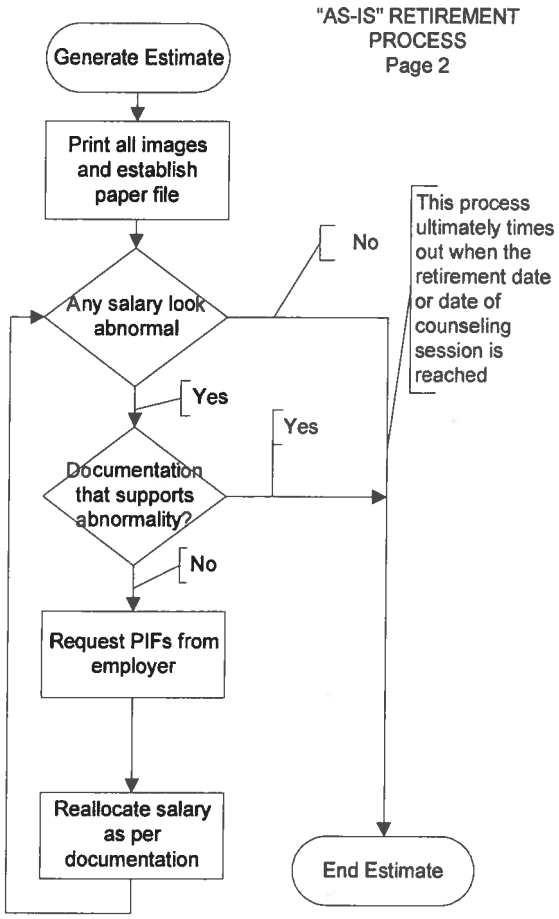
5.1 "As Is" Process Map

Figure 2 is the process map depicting the current process map for the processing of a retirement, from receipt of the retirement application until the finalization of the benefit.

Figure 2: "As Is" Process Map

"AS-IS" RETIREMENT PROCESS
Page 1




"AS-IS" RETIREMENT PROCESS
Page 2
Generate Estimate
Print all images and establish paper file
Any salary look abnormal
No
This process ultimately times out when the retirement date or date of counseling session is reached
Yes
Documentation that supports abnormality?
Yes
No
Request PIFs from employer
Reallocate salary as per documentation
End Estimate

6 OVERVIEW OF FINALIZATION ISSUES

After a total of 18 information gathering meetings between LRWL and ERS staff, it became apparent to LRWL that the following are the two primary sources of inefficiency in the benefit finalization process:

- Data
- Process

Of these two, it appears that data issues are by far the largest contributing factor to finalization inefficiencies – specifically, the absence of necessary data is the largest obstacle, in terms of efficiency issues.

In addition, the process improvements that could substantially impact finalization efficiency are, in effect, the same processes that will ultimately facilitate access to data that is both more accurate, and that is available in a more timely fashion.

6.1 DATA

Table 3 outlines the data issues that affect finalization efficiency:

Table 3: Data Issues that Affect Finalization

No.	Issue	Affected Calculation	Explanation of Issue	Ongoing			
				Historical	One-time	Random	Periodic
1	Employment History	AFC	Employment history is often necessary to correctly accept on-going salary.	X		X	
2	Employment History	Service	Employment history is integral to determining creditable service.	X		X	
3	Retro Pay	AFC	When Retro Pay is received, it needs to be allocated to the correct pay periods. This often requires PIFs (which are not always readily available).	X		X	
4	Retro Pay	Service	(See #3, above). Based on how Retro Pay is allocated, a particular pay period may become either eligible OR ineligible for service credit.	X		X	
5	Lag	AFC	In some cases, it is not known during which pay period the current pay was earned.	X			X

No.	Issue	Affected Calculation	Explanation of Issue	Historical	Ongoing: One-time	Ongoing: Random	Ongoing: Periodic
			Participants who were "lagged" received a one pay-period salary advance. This advance is supposed to be deducted from the last pay period. Sometimes, however, this does not happen.	X	X		
			Occasionally, the last pay check is generated outside of the normal payroll process.	X	X		
6	Lag	Service	(See #5, above). Based on knowing during which pay period the current pay was earned, a particular pay period may be become eligible OR ineligible for service credit.	X			X
7	Days/hours worked	Service	One 'month of service' is determined by the number of days worked; one month credited if 15 calendar days worked in that month. One 'day worked' is determined by the number of hours worked.	X			X
8	Teachers	AFC	A complex calculation often involving projecting salary beyond retirement date.		X		
9	Teachers	Service	Complex issue involving taking into consideration teaching schedules (which have historically varied from school-to-school).		X		
10	Sick Leave	Service	Unused sick leave is to be converted to service at retirement time. However, this information is frequently unavailable.		X		
11	Purchase	Service	In rare cases, service purchase data has not been converted to V3.	X			

No.	Issue	Affected Calculation	Explanation of Issue	Ongoing			
				Historical	One-time	Random	Periodic
12	Gap Period	Service	Participants who were in the process of doing a service purchase during the "gap period" (while transitioning from APPX to V3) might not have received credit for all the service they should have.	X			
13	Contribution Deficiencies	Benefit	To receive a full benefit, participants must have made all contributions.				
			Sometimes contributions are not accurate because a participant was miscoded.	X		X	
			Some participants don't make contributions while on Workers' Comp.	X		X	
14	COB	Eligibility	ERS must receive notice a participant has terminated employment (COB) before a benefit can be paid. Sometimes this notice is not received in a timely fashion.		X		
5	Professor's Reserve	AFC	Professors who started before August 1975 (a number of whom remain) received a "Reserve." At retirement, if the reserve is still present, it is paid to the professor and the necessary contributions are deducted. It is possible that contributions on the reserve may have to be refunded.		X		
6	Non-taxable Amounts	Taxes (could also affect benefit depending on refund option)	Pre-1987, non-taxable contribution amounts have not been fully converted to V3.	X			

Table Legend:

- The first column is a sequence number. As each item is addressed there will be a reference back to this table. For example, "Contribution Deficiencies will be Table 3-13. All 16 data issues are addressed in the report.
- The issue is the name given to the data element
- Affected calculation refers to the calculation that is incorrect if the data issue were not corrected
- Explanation provides a narrative description of the issue
- "Historical" means that the issue is in the historical data
- On-going means the issue is an on-going one. On-going issues can be divided into three categories:
    - One-time, meaning that the issue manifests itself only at retirement
    - Random, meaning that the issue occurs from-time-to-time, with no particular pattern
    - Periodic, meaning the issue occurs at each pay period.

6.2 PROCESS

From a process perspective, there are two areas that contribute to the inefficiencies associated with benefit finalization:

- Work Reporting – Because of lack of resources, data is not dealt with at the time that it is first made available to the ERS
- Communications with employers – During the finalization process, the ERS requests data from employers. These requests often happen later in the retirement process than they should, and they also tend to happen too infrequently.

7 RECOMMENDATIONS

Two basic approaches can be taken to solve the finalization efficiency problem:

- A pure process-based solution essentially moves much of the finalization efforts to an earlier point in the retirement process – making the benefit estimate much more accurate and limiting finalization to the one-time matters of unused sick leave, unused vacation pay, and professors' reserves. Because it would provide an initial payment that is much closer to the actual final payment, and a final payment that follows much more quickly (after the initial payment), a process-based solution would improve service to retiring ERS members. Such a solution would also significantly reduce one-time, non-recurring costs. Nonetheless, for the following reasons, LRWL does not believe this is the best go-forward option for ERS:
  - Inasmuch as this solution simply moves the same effort to an earlier stage in the retirement process, it does not result in lower on-going ERS administrative efforts and costs –it may, in fact, increase these costs, because a small "finalization effort will be necessary to ensure that nothing has changed between the time the benefit estimate is calculated and when the member actually retires.
  - The process remains a burden on resources, and, as such, it leaves the ERS vulnerable to the same issues that caused the large finalization backlog discussed in Section 3.2
  - It perpetuates an environment in which many calculations are done outside of the V3 system (rendering these calculations vulnerable to human error, the issue of non-repeatability, and makes them more difficult to audit).
  - Because this approach only serves to fix the data as retirement time nears, it becomes very difficult for the ERS to provide its members with accurate, annual benefit statements. Annual benefit statements are not only a best practice within the public pension sector, they are also a useful tool in cleaning up data.
- Another option is a solution that enhances capability within the V3 system by combining functional improvements and data cleansing. This solution also involves improved processes and tools to support these functions. Such a solution will improve efficiency and be cost-effective for the ERS *over the long term.* This is the solution that LRWL discusses in this report.

Solving the issues related to benefit finalization focuses on ensuring that when a member retires, all data required to accurately and completely calculate that member's retirement benefit is available to, and resident within, the V3 pension administration system.

As LRWL offers potential solutions and makes recommendations, it is guided by the following best practice principals that we have observed while consulting on close to 60 public retirement projects involving similar efforts:

- The earlier an error (in this case inaccurate and incomplete data) is resolved within a process, the lower the cost of resolving the error -- any data problems need to be fixed before the data goes into the system
- The cost of resolving similar problems, in bulk, is lower than the cost of solving those same problems in a one-at-a-time fashion – simplifying matters for both ERS and its employers
- When it makes sense and is appropriate, have work done by the employer rather than by the ERS. This is not intended merely to off-load effort from the ERS to the employers, but rather as a means of reflecting the fact that the employer (not the ERS) is the 'owner' of data on active employees
- Due to cost concerns, solutions should focus on replacing recurring, labor intensive tasks with non-recurring technical / automated solutions.

The solutions fit into five main categories – each is discussed in the following sub-sections:

- Constructing employment history for all active members
- Cleaning up historical data
- Enhancing the work reporting function so that on-going data is not allowed into the system database unless it is correct
- Enabling the V3 system to perform benefit calculations for Teachers and College Professors (all of which are currently done outside of the system)
- Improving the processes by which the ERS retrieves necessary data at retirement time (such as sick leave, unused vacation pay, and professors' reserves).

Note: Whereby this document makes recommendations and, in many cases, provides significant detail, this detail is not in lieu of a detailed design that should be an integral part of the implementation of each recommendation.

It is the opinion of L.R. Wechsler, Ltd. that when all of the recommendations of this report are fully implemented, the ERS will be in line with industry best practices, and cycle times will be reduced.

7.1 CONSTRUCTING EMPLOYMENT HISTORY

As a prerequisite for any potential solution, it will be necessary that the pension administration system have a complete and accurate employment history for each active member to whom the ERS provides pension administration services. (Table 3-1,2)

Employment history is a collection of employment events that, as a whole, define the employment history of an individual member. Among the employers to whom the ERS provides administrative services, these employment events are reported to the ERS via Personnel Information Forms (PIFs). See Appendix A for a listing of the various employment events reported via PIFs. Some employers provide PIFs electronically, while others use paper forms.

Whereas the legacy system, APPX, viewed a PIF as an independent event, V3 views a PIF as one event in a logical progression of events. For example, within V3, a PIF indicating the end of a Leave Without Pay (LWOP) must be preceded by a PIF indicating the start of a LWOP, and no PIF can be received for a member without having first received a PIF indicating that the particular member has been hired (this is known as an Appointment PIF). If a PIF is received by V3 that it considers to be "illogical," the PIF will be rejected by V3. It should be noted that the V3 concept of employment history (described here) complies with best practices within the retirement industry.

The current situation at the ERS is as follows:

- V3 cannot currently process electronic PIFs.
- The ERS has created access databases (for the purpose of this report, these databases will be called the PIF Access Databases - or PADBs) that contain PIFs that have been received electronically since V3 became the system of record. Each PADB contains one calendar year's PIFs.
- PIFs that have been converted from APPX to V3 reside in the PIF data sheet database. No additional validation or testing against business rules was performed on these PIFs – it was assumed that if they made it into APPX then they were "acceptable" into V3. As explained earlier in this section, APPX views PIFs differently than V3, and as such, it could be reasonably expected that many of the converted PIFs would not pass the business rules testing in V3.
- Paper PIFs are processed based on how time-sensitive they are deemed. When deemed time-sensitive, the PIF is given to a Retirement Claims Examiner (RCE) or an Office Assistant (OA), and the action required by the PIF is entered into V3 - after which the PIF goes into the imaging queue. These PIFs never find their way into the PIF data sheet database. A time-sensitive PIF is not put into the PADB. If the PIF is deemed non-time-sensitive, it goes to the non-time-sensitive imaging queue.

7.1.1 Enhance PADB

The PADB can be a valuable short-term tool for the finalization team who, until the recommendations in this report are fully completed, can use the PADB as a source of employment history. As such, it is recommended that the PADB be enhanced as follows:

Using Microsoft Access screen generation tools, a simple user interface should be created for the PADB. The screen used to view PIFs in APPX should serve as the template for this screen. The user interface should allow the user to do the following:

- Enter an SSN, and then display the earliest PIF (by effective date) for the SSN entered -- and allow the user to view the PIFs for that SSN sequentially (by effective date)
- Enter an SSN and an effective date range, and then display the earliest PIF (by effective date) within the data range specified -- and allow the user to view the PIFs for that SSN sequentially (by effective date)

LRWL believes that this is a relatively minor effort and is not dependent on first combining and sorting the PADBs. It is also an effort that could be undertaken by the ERS IS resources.

It should be noted that this recommendation was verbalized at one of the meetings between the ERS and LRWL and this recommendation has, to an extent, already been implemented.

Benefit: This enhancement will allow the ERS staff to more easily locate a PIF – by finding it in the PADB. Staff will no longer have to search a paper file for these documents. This will help reduce the time it will take to do a finalization

7.1.2 Facilitate the Electronic Submission of PIFs by All Employers

Currently some of the ERS employers submit their PIFs by electronic means and others by paper. The V3 system has the capability of processing electronic PIFs received from the employers in an efficient manner. The process associated with dealing with paper PIFs is much less efficient and prone to manual error. As such, it is to the ERS' benefit to receive all employer-generated PIFs in an electronic format.

Those employers who are currently submitting paper PIFS are doing so because they either don't have a system that is capable of submitting electronic PIFs or don't have the resources to make such a change to their systems. It is therefore recommended that the ERS do whatever it takes to facilitate the electronic submission of PIFs by all of its employers that currently submit PIFs by paper. This "facilitation" can take one of the two forms discussed below:

- Provide support to the employer to enable the employer to provide electronic PIFs to the ERS
- Provide a website for the employers to allow the entry of PIF information.

Benefit to ERS: Best practices would have all data being received from employers received electronically. This reduces errors and speeds up the process. The following two recommendations will allow the ERS to achieve this.

7.1.2.1. SUPPORT TO EMPLOYERS

The support that the ERS could provide to its employers would vary on an employer by employer basis and could take a number of forms:

- Direct technical support – if the specific technical capability required by the employer exists within the ERS and that capability is available, the ERS should consider making that resource available to the employer.
- Financial support – the ERS should provide the employer with the funds necessary to enable the employer to enhance the employer's system to enable the provision of electronic PIFs.

It should be noted that the ability to enable an employer to submit electronic PIFs could take the form of enhancement to an existing employer system or the creation of a stand-alone capability (i.e. an access database).

7.1.2.2. CREATE A WEBSITE TO FACILITATE ELECTRONIC SUBMISSIONS OF PIFS

A secure Website should be created that would allow the ERS' employers to create PIFs online. This Website would allow the employers who currently provide paper PIFs to instead enter this data online. This would create an electronic PIF that could be processed by the ERS in the same way it currently processes PIFs submitted electronically (through the import process and then onto V3 -- or, temporarily, to the PADB).

LRWL believes that this calls for a reasonably moderate effort requiring a detailed design effort. Although this website would need to be able to access the V3 database, this work does not have to be done by Vitech. We note that several of our clients – both those with solutions developed by Vitech and those with solutions developed by other vendors have such capabilities. Leveraging such efforts from other clients might prove cost effective. LRWL also understands that the value of this Website will only be achieved if it is used ("embraced") by the ERS employers. As such, it should be done within the context of a "Change Management" initiative, as discussed in Section 7.8.1 of this report.

7.1.2.3. SUMMARY

The requirement of having a complete and current employment history is basic to a retirement system. PIFs are the vehicle for meeting this requirement at the ERS. As such, the ERS should do whatever is possible to see that its employers have the capability to provide electronic PIFs as expeditiously as possible. It is LRWL's opinion that the implementation of a website could be done much more quickly than the changes to the employers' reporting systems. As such, the ERS should consider a two-tiered approach: First providing a web-site for employers to submit their PIFs followed by support of the enhancement of the employers' reporting systems. Understanding that the website is an interim solution will permit the ERS to implement a simpler website than if it were a long-term solution. Furthermore, the website developed could be used by the ERS to convert the many paper PIFs already submitted by its employers to electronic form (See recommendation 7.1.2.2).

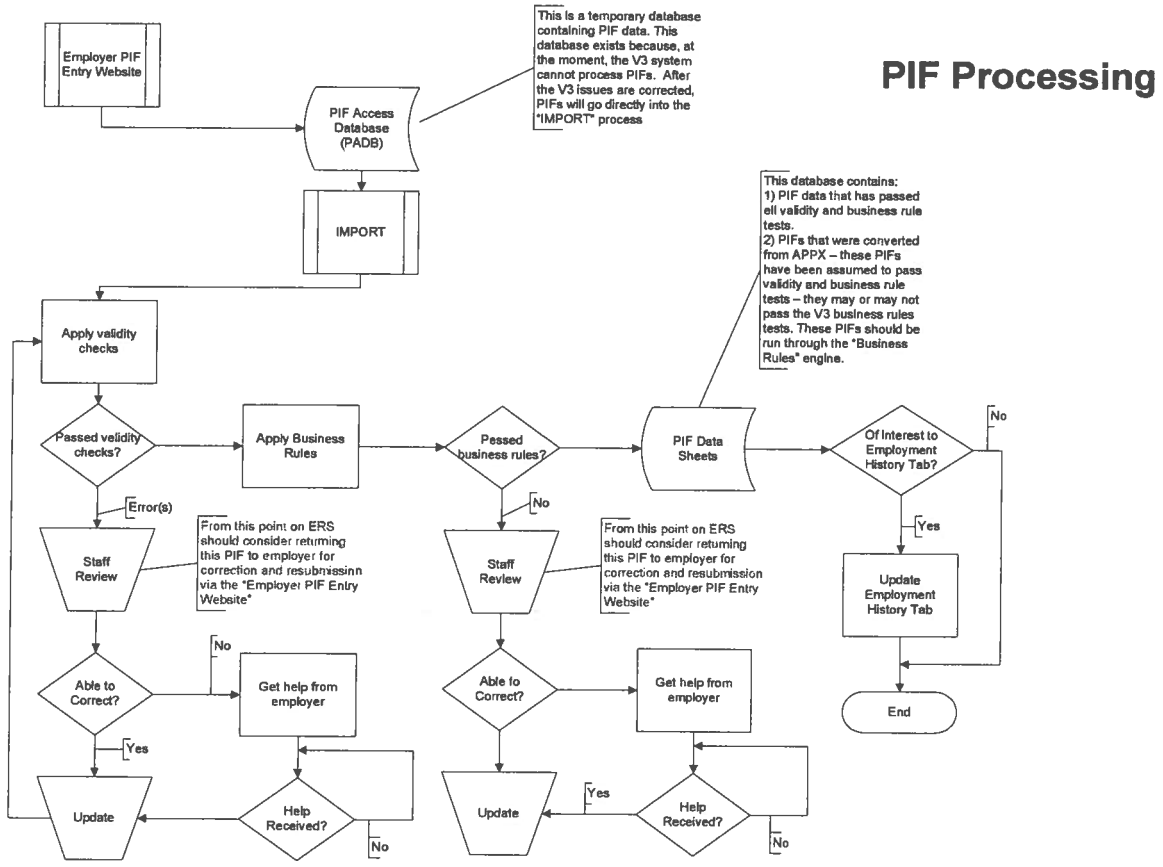
Because of the importance of keeping a complete and accurate employment history within V3, this recommendation should be considered highest priority and should be implemented as quickly as possible.

7.1.3 Use the V3 PIF Processing to Determine Missing PIFs

Figure 3 shows the PIF processing flow as currently implemented in V3. This process can be used to determine missing PIFs and, ultimately, to create a complete employment history. When the issues associated with the V3 system's ability to process PIFs is fully functional, all PIFs stored in the PADB should be run through this process. This will result in a list of invalid PIFs and a list of PIFs that fail the Business Rules – usually indicating a missing PIF.

Although other recommendations (See 7.1.2) emphasize the need to quickly provide the employers with the capability to supply PIFs electronically, it should be noted that there are many PIFs that have been previously submitted to the ERS only in a paper format and have not been converted to any electronic format – they exist only as images. The recommendation provided here assumes that these PIFs be converted to an electronic format (using the tools to be provided to the employers). This is a large undertaking and needs to be assessed and included in the cost of this recommendation. Although this could be accomplished by asking the employers to resubmit these PIFs using the new tools provided, this would likely upset the ERS employers and, as such, is not recommended.

Figure 3: PIF Processing



The result of this effort will be a list of invalid and missing PIFs. Although such an undertaking cannot possibly produce a complete list of missing PIFs (since not all PIFs have logical rules to aid in identifying whether they are indeed 'missing,' e.g., pay changes), this process would be a good starting point for ERS to reach out to its employers for help in creating accurate member employment histories. Throughout the remaining data cleanup process, recommendations will be made as opportunities continue to arise for creating complete, accurate employment histories.

Invalid PIFs should be returned to the employers for correcting and resubmitting, using one of the methods suggested in Section 7.1.2.

This list of missing PIFs can be sorted by employer. Depending on the size of this list, and in an effort to help the employers provide the missing PIFs, the list can be further filtered by a number of other criteria, such as age of member (nearness to retirement).

Each employer, upon receiving the list of missing PIFs, would be expected to find the missing PIFs and submit them to the ERS, either electronically or via one of the methods suggested in Recommendation 7.1.2 (above).

Benefit to ERS: Best practices would be implemented providing a complete and detailed employment history in parallel with an earnings history. The ERS has an earnings history, but a sparse employment

history. This recommendation will help the ERS enhance the employment history. This should also cut down on finalization time as less employment history will have to be reconstructed at or after retirement – a time consuming process many years after the employment was worked.

7.2 CLEANING HISTORICAL DATA

A significant component of making the finalization process more efficient is cleaning the V3 database. In essence, a pension calculation requires two kinds of data:

- Earnings
- Service

As background to the recommendations related to cleaning historical data, it is necessary to understand how data is stored within V3. Essentially there are two streams of data stored in V3: Work History and Pension History:

- Work History (WH): WH is the raw data that is stored in V3 on a pay-period-by-pay-period basis
- Pension History (PH): PH is a month-by-month roll-up of WH. PH is the data that is used by V3 to perform a pension calculation.

From time-to-time it is necessary to change historical data. What should happen is that changes to historical data should be made only in the WH and that the PH should be refreshed whenever the associated WH changes. V3 has the capability to do this. However, there was a period of time before V3, when the ERS made changes to PH directly, without changing the WH. As such, the WH and PH are not in sync. As such, a decision was made that for any data within V3 that was converted from previous systems, the PH be considered the primary source of data and no attempts be made to refresh PH from WH.

This is a significant complication in trying to clean historical data that will have to addressed in the detailed design of this recommendation.

There are two specific problems related to historical earnings data:

- **Lag** – (Table 3-5,6) All employers covered by the ERS pay their employees on a semi-monthly basis. Originally, all employers paid their employees soon after the end of a pay period (within zero to five days). At certain times, certain employers began paying their employees on a lagged basis – that is, soon after the end of the following pay period. The State of Hawaii employers (with the exception of Charter Schools Ceridian) instituted a lag only for employees hired after 7/1/1998. All employees who were employed at the time their employer moved from 'non-lagged' to 'lagged' were provided an advance equal to one pay period (See Appendix B). As of V3 becoming the system of record (Hybrid, July 2006; others, July 2008), all employees other than those of the State of Hawaii are having their salaries put into the proper pay period -- that is, the period during which the salary was earned. For the State of Hawaii, the salary is being put into the pay period immediately prior to the report received from the employer; that is, it is not lagged. As such, employees of the State of Hawaii, whose salaries are lagged, are essentially having their earnings put in the wrong pay period. Prior to V3, the APPX system put all earnings reported by the employers into the immediately-prior pay period (not lagged).
- **Retro Pay**– (Table 3-3,4) Retro Pay is an adjustment to earnings provided to a member in order to correct previous earnings. The two most common causes of retro pay are: 1) an adjustment for a pay raise that is effective retroactively; and, 2) an adjustment for earnings that were incorrectly paid to a member while that member was on LWOP. There is an earnings bucket in the ERS WR format for Retro Pay -- this is where this adjustment should, and most often, does appear. However, certain employers will code Retro Pay as either "other pay" or as an adjustment to "regular pay."

Cleaning up service history involves creating the full employment history (discussed in Section 7.1), as well as ensuring that all service purchases are resident in the V3 database.

Benefit to ERS: The three recommendations below represent cleaning data that has either gotten into the system incorrectly or is missing from the system. Best practices call for all data needed at retirement being in the system at the time of retirement, thus reducing significantly on requests to employers at the time of retirement and simplifying retirement processes, and reducing cycle times.

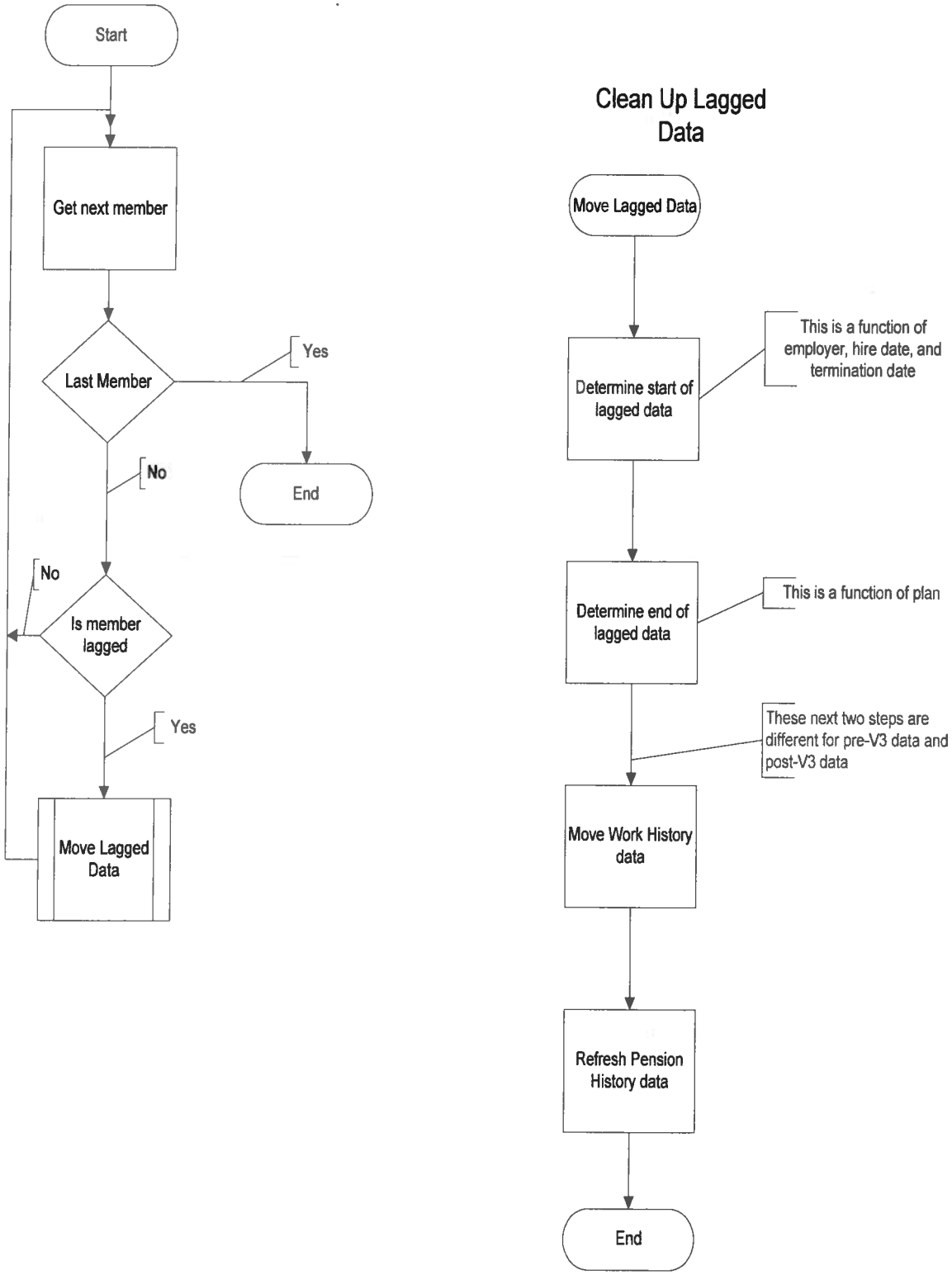
7.2.1 Clean Up Lagged Pay

Cleaning up lagged pay involves putting all earnings data into the proper pay period; that is, the pay period during which the wages were earned.

Before discussing cleaning up lagged pay, it should be noted that the ERS is in the process of implementing a new work reporting format -- 600_V2. This format allows the reporting agency to specify the pay period covered by the received report. Thus, once an employer starts using this format correctly, the V3 system will place all earnings reported into the correct pay period.

The first step in cleaning up lagged pay is to know which members are lagged and which are not; and, for those that are lagged, to know when that lag began. For all employers (other than State of Hawaii employees), this is easily determined. Certain employers are lagged; that is, all employees of that employer are lagged and that lag began on a particular date (see Appendix B). However, for employees of the State of Hawaii, the situation is more complex. Employees hired before July 1, 1998, as well as faculty of UH and Charter School employees paid by Ceridian are not lagged; all others are lagged. Therefore, it is necessary to work with the reporting agencies of the State of Hawaii to determine which employees are lagged, and which are not. **This should be done as soon as possible so that, on a going-forward basis, V3 begins to put pay data into the correct pay period.** Once this is determined, the following, Figure 4, shows the steps for the cleanup of lagged data:

Figure 4: Clean Up Lagged Data



Although the recommendation presented here will, in fact, clean up earnings data for lag, it should be weighed against the advantage that would result for the ERS. This is noted for the following reasons:

- Currently, V3 is placing all members into the correct payroll period except for State of Hawaii members hired after 7/1/1998. For all of these employees, once they have been in V3 for three years (and no later than July 2011), all of the data likely to be used for the AFC calculation will be entered in the correct pay period. As a result of recent furloughs, this may not be precisely accurate but may defer the date at which all AFC data is in V3 correctly. That said, it will happen in the near future.
- In terms of providing accurate annual benefit statements, the fact that earnings information may be offset by one pay period will have little effect of on the benefit calculated.

If this recommendation is not implemented, the ERS will have to test any potential retiree to see whether the AFC covers a time when data was placed in the wrong pay period – if so, it will either have be moved manually, or via the "Move Lagged Data" process (see flow chart with this recommendation).

7.2.2 Clean Up Retro Pay

Cleaning up Retro Pay involves first identifying incidents of Retro Pay, and then distributing the retro pay into the pay periods that require adjustment.

Note: Recommendations for cleaning up Retro Pay transactions assume that LRWL recommendations for constructing accurate employment history have been implemented. This Retro Pay cleanup process also serves as a vehicle for further constructing accurate employment history.

On a member-by-member basis, the earning records need to be scanned, beginning with the oldest and working toward the present. Based on the differences observed between any two adjacent records, pay records can be cleaned up, and missing employment history records can be identified. The recommendation for cleaning up Retro Pay is very similar to the recommendation for Work Reporting. The difference is that the "clean up" involves comparing the data associated with one pay period against the data for the immediately preceding pay period. Work Reporting compares the data stored from the previous Work Report against the data currently being received. Appendix C shows each data field in a work report and describes what PIFs, if any, would be expected when a data field changed. It also indicates what should be done if the PIF is found and what should be done if the PIF is not found. Note: Although this process is intended for Work Reporting, the same process would be used in cleaning up the Retro Pay (except that the SSN and name fields are not used in the Retro Pay data cleanup). Of further note, this process may uncover additional earnings irregularities that will help fill in missing parts of employment history.

7.2.3 Clean Up Service Purchase Data

[Table 3-11,12] Within the ERS, there are three ways that a member can obtain pensionable service beyond their actual employment service:

- Service purchases – contributory or hybrid members purchasing pensionable service (for example, military service)
- Service acquisitions –members acquiring pensionable service (at no cost) (for example, military service) for periods in which they were members of the non-contributory plan.
- Service reinstatements – non-contributory members who have left the employ of an ERS employer (whose service was forfeited), may have that service reinstated on a month-by-month basis, at no cost, after they return to the employ of an ERS employer

For purposes of this recommendation, all of these will be referred to as "service purchases."

Whereby, the V3 system is capturing service purchases on an on-going basis, there is a concern that not all service purchases made prior to V3 have been captured. Currently, the finals team reviews the file of every retiree to determine whether the retiree purchased any service and, if so, whether that purchase was recorded in the system of record at the time of purchase. This labor intensive process is performed, in retrospect, for only a small percentage (approximately 10%) of the ERS retirants. As such, this recommendation is intended to find a systematic way to find identify service purchases.

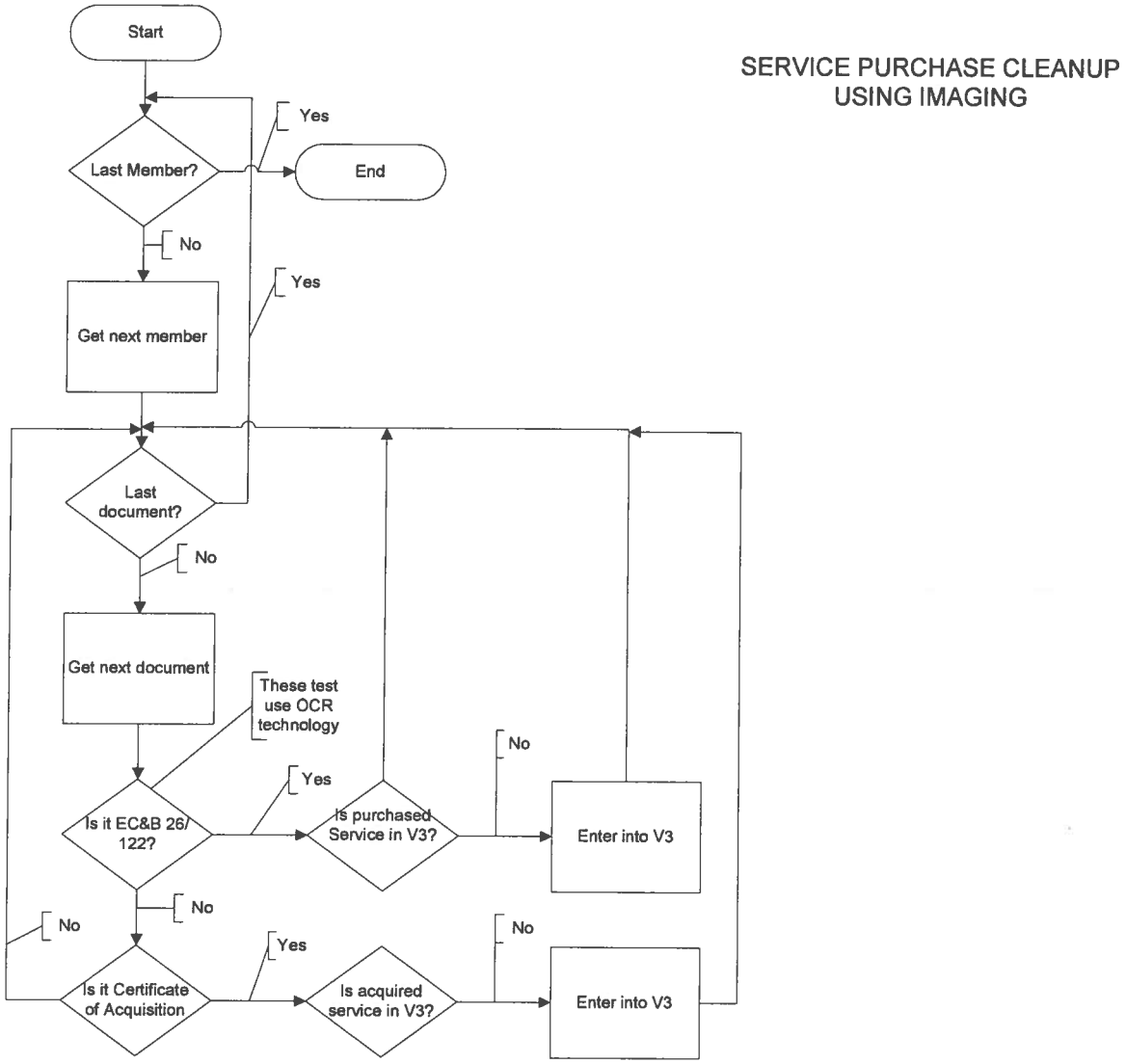
A document, known as an EC&B 26 or 122, should be placed in the file of each member who has purchased service. A document, known as a "Certificate of Acquisition," should be placed in the file of each member who acquired service. All payments for service purchases should have been added to the purchasing member's contributions.

However, there is a concern that purchases that were accompanied by personal check, or purchases accompanied by a check from a financial institution (rollovers), may have been sent to Accounting, for the purpose of recording the payments and that the paperwork accompanying those payments may not have found its way back into the member's file.

As such, here are two means by which service purchases within V3 can be systematically cleaned up. One way would involve going through the images of each member's file using Optical Character Recognition (OCR) technology to look for the forms associated with service purchases. A second way would be as a byproduct of contribution reconciliation – if a member has a greater contribution amount than he ought to have, this might be an indicator that a service purchase was made. Figure 5 shows the flow using the imaging method. Section 7.6 discusses how contribution reconciliation can be used to identify service purchases.

Another way to discover service purchases would be to see if a member's service as calculated from start of State employment until the current date is less that credited service. If this is the case, it is likely that a service purchase was made. This test should also be run at the time of retirement.

Figure 5: Service Purchase Cleanup Using Imaging



7.3 ENHANCE WORK REPORTING

Work Reporting (WR) is the function within the V3 system that accepts data from the ERS-reporting employers. The guiding principal behind any enhancements to the WR function is that, on a going-forward basis, no data will be allowed into the V3 operational database unless it is correct.

As a prerequisite for enhancing work reporting, the V3 database should be enhanced to maintain a database of pending WR records. A WR record will be pended if it doesn't pass the tests documented below. Each member record should also be modified to allow for the addition of data elements that contain a current contribution deficiency amount and the effective date of that deficiency.

Note: V3 currently has the capability to "pend" data on an employee by employee basis; the ERS accounting department can only reconcile contributions after all employees of a particular employer are posted to V3. As such, the interests of the WR group and the accounting department may diverge. Clearly, to the extent that a process can be put in place to expedite the posting of all members, these interests converge. This has to be dealt with when considering the implications of this recommendation.

This would involve:

- On a member-by-member basis, prior to posting the member's data to the V3 database:
  - Ensure that any change in earnings/employer/demographics from the previous pay period is either supported by a PIF or is otherwise explained by the employer and, when supported by a PIF, any necessary actions are taken, such as resolving retro pay issues (Table 3-3,4). See explanation with recommendation to clean Retro Pay (Section 7.2.2) and Appendix C for additional detail.
  - Ensure that all earnings go into the pay period in which they were earned (dealing with "lag" – Table 3: -5,6)). This involves identifying which members within the State of Hawaii are lagged and then putting their earnings into the correct pay period.
  - Confirm that, unless the member is on Workers Comp (WC), the contributions received are the contributions that were expected
  - (For members on WC) 'true-up' the pensionable earnings to the base pay, and calculate and update the contribution deficiency amount in the data base (Table 3-13)
  - Analyzing the current exception/error codes generated by the WR function and deciding what action should be taken on each one

Benefit to ERS: Incorrect data should never be allowed into the V3 system. This recommendation will have ERS clean all data before entering the system. Although this may involve a little more effort on the part of the ERS in the short term (as data is received), in the long term (when processing of retirements occurs), it will significantly reduce the efforts of the ERS and the ERS employers. It will also bring the ERS in to adherence to best practices.

7.4 ENABLING THE V3 SYSTEM TO PERFORM TEACHER/PROFESSOR CALCULATIONS

(Table 3-8,9) Currently, retirement calculations for teachers and professors are done outside of the V3 system using Excel spreadsheets. This is a serious deficiency in terms of what would be considered best practices within the retirement industry. Thus, roughly 20%-25% of all retirement calculations are performed outside of the system of record. As such, LRWL strongly recommends that these calculations be done within the V3 system.

It should be noted that the calculations for teachers and professors are very similar to all other calculations. The challenge with these calculations is to properly record all earnings data and

employment history. For teachers, the recording of earnings data is further complicated by the necessity to calculate a "daily rate" (which requires knowing the schedule in place at each school). Further complicating this is the fact that, from 1996 to 2006, almost every one of the 200+ schools in Hawaii maintained a different schedule – thus, there are roughly 24,000 (discrete) entries that need to be addressed – a large, but not insurmountable number. Fortunately, beginning with the 2006-2007 school year, all schools in Hawaii moved to one of two schedules.

NOTE: Currently, the V3 system is not aware of which school (and perhaps, which track within that school) a teacher is currently working. In order to be able to calculate teachers' pensions, this information will have to be obtained. The ERS currently has this information on paper (imaged) files. The ERS will have to work with DOE to get this information into work reports and into PIFs.

Benefit to ERS: Having a significant number of calculations done outside of the system of record is a serious deviation from best practices, takes additional time, and provides additional opportunities for errors to be introduced. These recommendations will bring the ERS into adherence with best practices and will save significant effort in all teachers and professors retirement processing.

The following recommendations will enable the calculation of teachers/professors benefits within the V3 system:

7.4.1 Create a Tool to Enable the Data Entry of School Calendars.

A data structure must first be created that will hold the school schedules. The structure should be organized by school/track/year/job (teacher, vice-principal, etc.)/monthly schedule. Currently V3 organizes schedules by school/year/monthly schedule.

Currently, V3 has the capability, via a user interface, to enter a schedule, although this functionality has not been tested by the ERS.

A tool should be created within V3 that allows for the import of a schedule from an electronic file (e.g., Excel). It should be noted that there are a small number of schools that are multi-track, and as such, have multiple schedules within each school. For purposes of the schedule data base, each track in these schools should be considered a different school. Furthermore, within all schools there may be a slight difference in the schedules (generally during the first and last month of the school year) between teachers and certain other individuals (vice-principals and health care professionals). This variation in scheduling would also require a separate field in the data base, in order to indicate not only at which school a teacher is employed, but also within which track at that school.

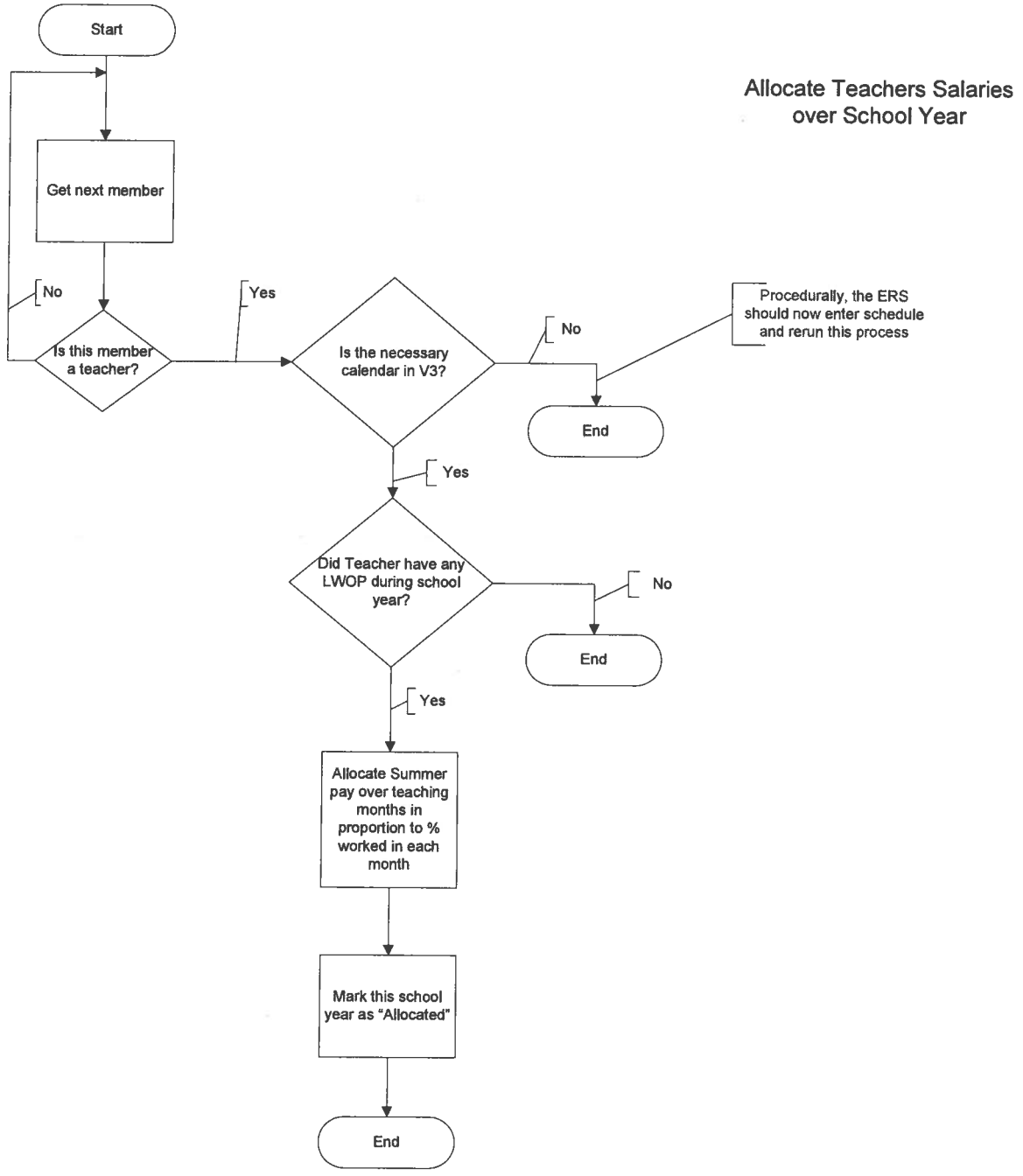
NOTE: See 7.4, above. There are many teaching schedules that must be entered into the V3 system.

7.4.2 Create a Batch Task that Would Run at the End of the School Year to Ensure All Earnings are Allocated Appropriately.

The DOE pays teachers during the summer based on the number of days they worked out of the number of days they were scheduled to work. After the teachers have received their summer pay, it is recommended that a batch process be created within V3 to review each teacher's employment history for the just-concluded school year (and that summer pay then be allocated into the appropriate month). Figure 6 shows the flow for this process. Note: This algorithm would require a file in the database for each teacher, by school year, which could be set to "True" when a teacher's salary has been properly allocated.

V3 has the capability to allocate a teacher's summer pay over the months actually worked. This capability has also not been tested by the ERS. However, V3 is configured to do this only at the time of retirement. This process should be modified to allow the user to run this process on demand. The process should allow the user to specify the school year or range of consecutive years that should be allocated.

Figure 6: Teacher Salary Allocation



For professors, the year end algorithm would work differently. As background, professors work nine months and receive three months of summer pay. The professor's contract year is from August-July. As such, the summer pay is provided as follows: the first pay period in August (this is paid before the start of the school year), the second pay period in May, June, and July. The algorithm would work as follows. The total amount of summer pay (TSP) is determined by adding the summer pay periods: August 1-15 (of

the previous year, May 16-31, June 1-15 and 16-30, and July 1-15 and 16-31. Determine the Total Salary (SAL) for the previous school year: August 16-31, September – April, May 1-15. Allocate the summer pay to pay periods between August 16 and May 15 as follows: Pay of pay period / SAL * TSP. For example, the amount of summer pay allocated to the second pay period of October would be:

Pay (October 16-31) / SAL * TSP

Appendix D shows an example of this algorithm.

In the cases of both teachers and professors, after the earnings are allocated, the pension history will also have to be recalculated.

7.4.3 Program V3 to Perform Any Teacher/Professor Calculations.

If all of the previous recommendations related to Teachers/Professors calculations are implemented, the calculation of a teacher's retirement benefit will be the same as any other retirement calculation NOTE: As pointed out in Section 7.4, above, the V3 system does not have historical data currently included in it as to where a teacher has taught. Getting all this data could be a time cosuming effort. On an interim basis, after Vitech has implemented recommendations 7.4.1 and 7.4.2, the ERS should:

- Test the existing functionality within V3 to enter schedules and allocated teachers
- Enter schedules into V3
- Manually enter teachers employment history into the V3 system
- Calculate teachers' benefits.

7.5 Retrieving Data Needed at Time of Retirement in a More Efficient Fashion and Providing a Tool for Employers

A finite number of data items are necessary at the time of retirement:

- Unused Sick Leave (Table 3-10)
- Vacation payout (for HI-5 members and to ensure that vacation pay is not being used to offset any overpaid salaries)
- COB (a document from the ERS employer confirming the member is no longer working –(Table 3-14)
- Reserve (applies only to professors hired before August, 1975) (Table 3-15)
- Summer pay and any remaining salaries to be paid (due to lagged pay, OT, etc.)

The process for acquiring the necessary "time of retirement" data for each member should be modified to include providing notice to the employer (at the time the member applies for retirement) as to what data will be needed from the employer soon after the member's date of retirement. Reminders regarding upcoming data requirements (on behalf of retiring members) should then be sent out at regular intervals. A screen should be set up within V3to enable the employers to enter the information.

Benefit to ERS: A significant delay in getting calculations done quickly is involved in waiting for employers to provide data needed at the time of retirement. This recommendation will help decrease that length of the delay.

7.6 Reconcile Member Contributions

After all earnings data and all employment history have been cleaned up, a process to reconcile member contributions should be run. This process likely exists in some form within V3. The process would identify contribution deficiencies which could then be reported to the member long before retirement. It

would also identify contribution excesses, which would be a likely indication that a service purchase had been made. It could also "find" employees hired before 1971 who, since 2006, should have been making contributions (on lump sum vacation pay) but have not been; as well as employees hired after 1971 who are eligible for a hi-5 benefit – vacation pay is pensionable) who made contributions (on lump sum vacation pay) prior to 2006.

Benefit to ERS: Currently members often don't find out that they are deficient in their contributions until either immediately before they retire or after their retirement. This causes some members to lose part of their benefit. This is unfair to the member. This recommendation would allow a member to know well before retirement, and decide whether or not to make up the deficiency. In addition, it would eliminate rework by the ERS staff. In conjunction with a recommendation for a legislative change, below (See Section 9.4.1), this will also allow the ERS to charge interest for making up contributions.

7.7 Work That Must be Completed by the ERS Prior to Getting Benefit from Recommendations

Before the ERS can fully benefit from the recommendations presented in this report, it is necessary that the following be done:

7.7.1 Data Entry of Teacher Schedules

The ERS has numerous schedules that exist only on paper. These schedules must be entered into the system

7.7.2 Data Entry of Paper PIFs

There are numerous paper PIFs. These PIFs must be entered into the system.

7.8 Support in Implementing Recommendations

In order to fully benefit from the recommendation presented in this report, it is suggested that the ERS avail themselves of the following support functions:

7.8.1 Change Management

The recommendations suggested by LRWL will drive changes in the way the ERS functions and will also impact how the individual ERS employers will conduct their business with the ERS. It is strongly recommended that the ERS address the "Change Management" issues associated with these recommendations. Unfortunately, all too often the best ideas and best tools have little effect if they are not embraced by those for whom they are intended.

7.8.2 Implementation Oversight

In light of ongoing resource challenges, the ERS should consider engaging an outside third party to manage and monitor the performance of the implementation vendor.

7.9 Cost of Solutions

The following steps were taken to determine the cost of the proposed recommendations:

7.9.1 Meeting With Vitech

On July 27, 2011, a meeting was held among the ERS, Vitech, and LRWL. In the meeting, the above recommendations were discussed with Vitech to ensure that they had a good understanding of the recommendations so as to be able to provide an accurate cost estimate.

7.9.2 Receipt of Cost/Schedule Estimate from Vitech

On August 12, 2011, a proposal was received from Vitech. The details of this estimate are attached as Appendix E. In this document, Vitech estimated the cost of implementing the estimates as 6,900 hours at $185/hour, or $1,276,500. Vitech estimated that it would take approximately nine (9) months to implement these recommendations.

7.9.3 LRWL Analysis of Vitech Estimates

LRWL reviewed the estimates provided by Vitech. It believes that these estimate are reasonable.

However, it recommends that, at this time, recommendation 7.5, "Retrieving Data Needed at Time of Retirement in a More Efficient Fashion and Providing a Tool for Employers" not be implemented. Inasmuch as the ERS has workarounds in place that are not onerous, implementation of this recommendation would not be cost effective. This would save 1,000 hours.
The above reduces the cost to 5,900 hours, or $1,091,500.

LRWL is skeptical of Vitech's ability to implement these recommendations in nine (9) months. We believe it could take up to twice that long. Based on the ERS experience and LRWL's experience on 6 other Vitech projects, we believe a more appropriate estimate would be 1½ years.

7.9.4 Understanding the Full Cost of Implementation

The Vitech costs are only one component of the total cost of implementing the recommendations. Other components are:

- Preliminary work (Entering PIF data and Teachers schedules, see Section 7.7, above; this is assumed to be done by ERS staff with support from third parties
- Change management (Contractor) – See Section 7.8.1
- Implementation Oversight (Contractor) – See Section 7.8.2
- Contingency

Additionally, as suggested in recommendation 7.1.2.1 Support to Employers, it is recommended that the ERS put aside some funds to help the employers provide electronic data.

Table 4 below summarizes the costs:

Table 4: Full Cost of Implementation

Item	Cost
Vitech Costs	$1,091,500
Cost of preliminary work (Contractor)	$300,000
Change management (Contractor)	$75,000
Aid to employers	$200,000

Item	Cost
Subtotal 1	$1,666,500
Implementation Oversight (Contractor)	$333,300
Subtotal 2	$1,999,800
20% Contingency	$399,960
Total	$2,399,760

7.10 SUMMARY OF TECHNOLOGY/PROCESS RECOMMENDATIONS

Table 5 below is a summary of the recommendations and attributes related to each. The costs presented in the table are the original costs as presented by Vitech.

Table 5: Summary of Technology/Process Recommendations

Section #	Title	Relative Benefit (H.M.L)	Relative Difficulty (H.M.L)	Cost (Hours)
7.1.1	Enhance PADB	H	L	0[1]
7.1.2	Website for Employers to Submit PIFs	H	M	2,000
7.1.3	Use PADB to Determine Missing PIFs	H	M	
7.2.1	Clean Up Lagged Pay	H	H	840
7.2.2	Clean Up Retro Pay	H	H	
7.2.3	Clean Up Service Purchase	H	H	700
7.3	Enhancing Work Reporting	H	H	300
7.4.1	Tool for Teacher Schedule Data Entry	H	M	500

[1] This is zero because it has already been implemented by the ERS

Section #	Title	Relative Benefit (H,M,L)	Relative Difficulty (H,M,L)	Cost (Hours)
7.4.2	Batch Job to Allocate Teachers Salaries	H	M	560
7.4.4	Perform Teachers/Professor Calculations in V3	H	H	0[2]
7.5.1	Process for Employer Reporting of Data Needed at Time of Retirement and Tool	M	L	1,000[3]
7.6	Reconcile Member Contributions	H	M	1,000
Total (per Vitech)				6,900
Total (per LRWL)				5,900

[2] Already in V3
[3] LRWL recommends that this not be done

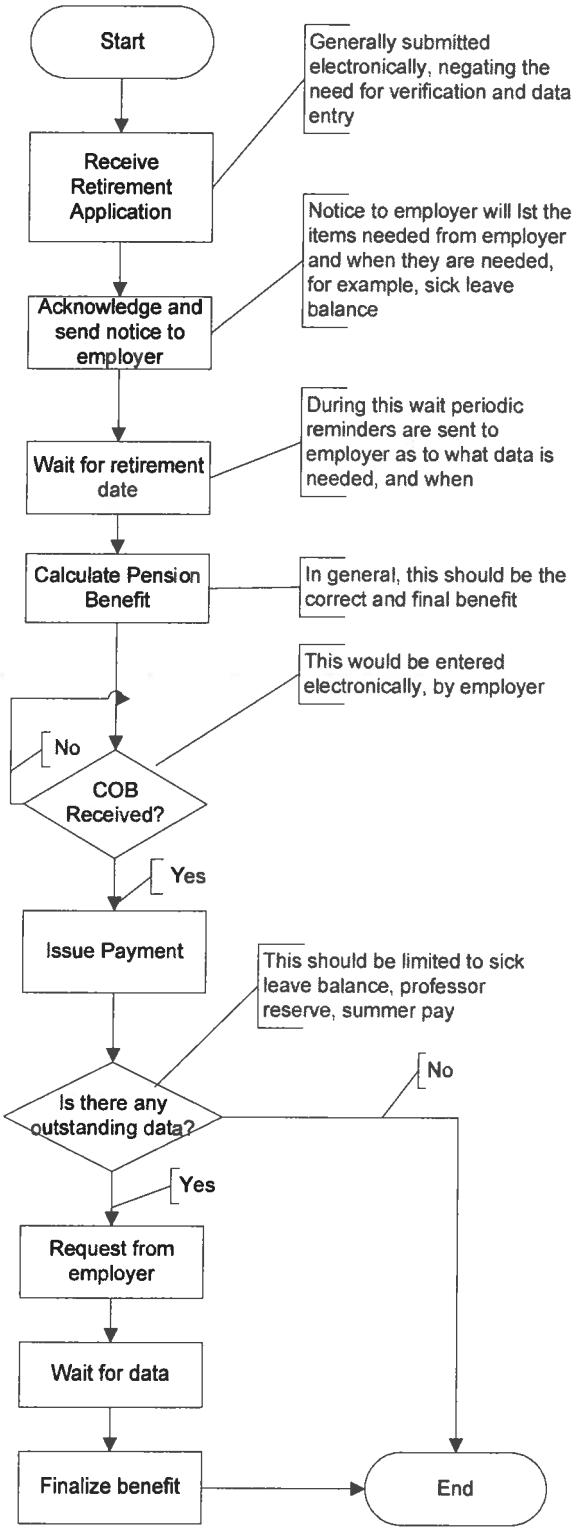
8 "TO BE" PROCESS

After the recommendations suggested by LRWL are in place, the retirement process will change. This section includes a diagram demonstrating these changes, as well as an explanation of the rationale for making these changes.

8.1 "TO BE" PROCESS MAP

Figure 7 depicts the process flow for the retirement process after the recommendations in this report are implemented.

Figure 7: "To Be" Process Map



TO BE" RETIREMENT PROCESS

Assumes all recommendations are implemented

8.2 EXPLANATION OF CHANGES

The explanation of the changes is provided as comments to the "As-is" Process Map, see Section 5.1. To make room for the comments, that process map is divided into three parts:

Figure 8, Figure 9, and Figure 10.

Figure 8: "AS-IS" With Comments: Part 1

"AS-IS" RETIREMENT PROCESS
With comments (1)

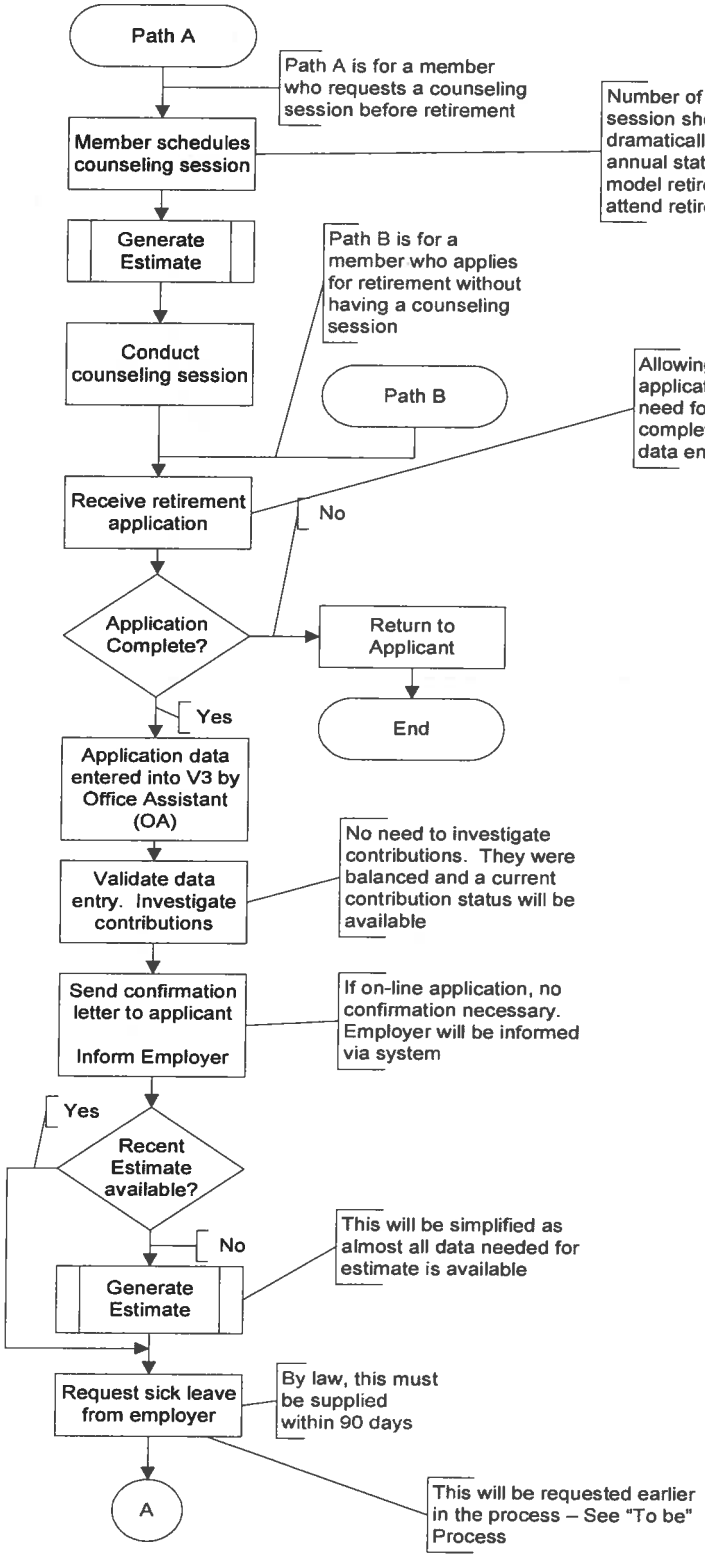


Figure 9: "AS-IS" With Comments: Part 2

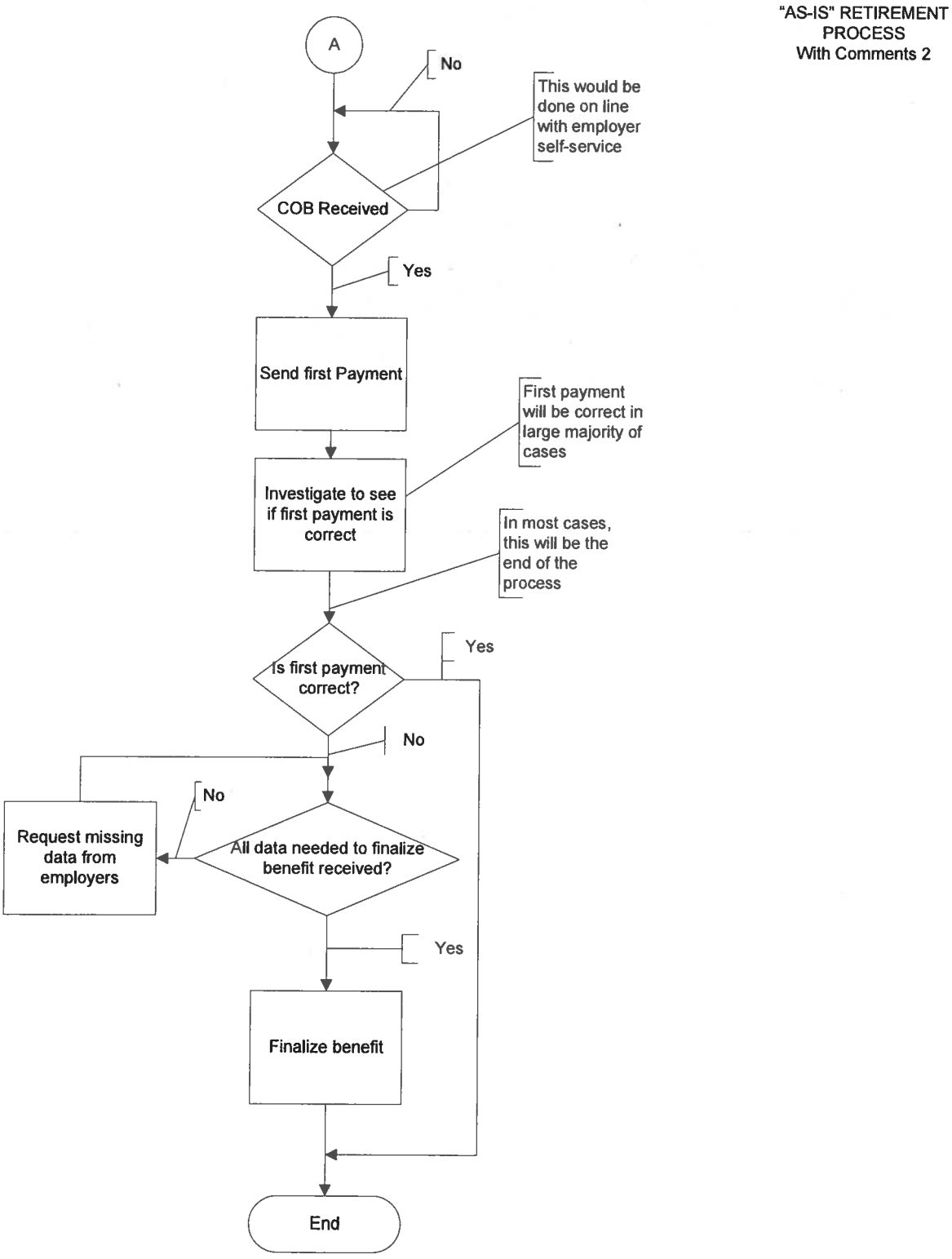
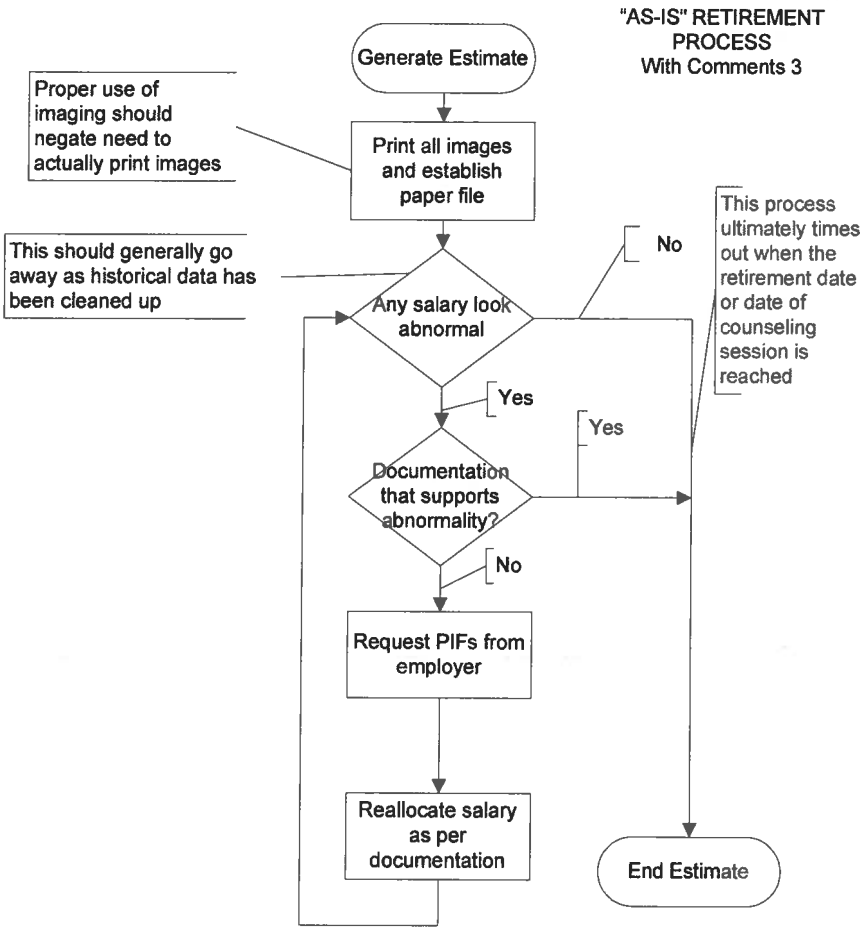


Figure 10: "AS-IS" With Comments: Part 3



9 OTHER RECOMMENDATIONS

While the main thrust of the review focused on making the finalization process more efficient, LRWL observed certain other broader issues. Here, we offer some additional recommendations to the ERS. These recommendations are based on LRWL's understanding of "best practices" within the public sector, and on our observations as to how the ERS' practices align with such industry "best practices."

9.1 PROJECT MANAGEMENT RELATED RECOMMENDATIONS

The following three recommendations are in the area of project management.

9.1.1 Understanding the Full Effects of a Project

Subject matter experts are critical to any technology project. During the implementation of the V3 pension administration system, those subject matter experts included a number of ERS staff members. As such, their participation on the V3 project was critical to its success. That said, internal focus on the V3 project was a contributing factor in the benefit finalization backlog at the ERS.

To some extent, resources that were supporting the V3 project were then unavailable to handle benefit finalization – and vice versa. Although the ERS is far from the first public retirement system to fall victim to "resource issues" during a technology project, doing so certainly does not constitute industry best practice.

LRWL recommends that as the ERS embarks on future projects (and it may be an ideal opportunity to do so, as recommendations of this efficiency study are implemented), the ERS needs to fully assess the true cost of a project. By "true cost" we refer not only the financial cost, but also to the "costs" associated with diverting resources. These "costs" can be much more difficult to accurately assess and, sometimes, can't be fully seen while a project is on-going. Rather, the real cost of diverting staff resources often can only be gauged "downstream" - when problems related to stretching staff too thin can sometimes only be seen in hindsight, i.e., as issues crop up after the fact.

The ERS should consider other ways to deal with issues related to resource allocation - by taking the broad view and ensuring that risk analyses and impact analyses are conducted prior to the start of efforts, as well as during projects execution. In fact, potentially allowing the project to take a little longer, or 'backfilling' for project resources (by hiring temporary staff) may at times make sense.

9.1.2 Project Management/Measurement/Communication

All significant projects undertaken by the ERS should be staffed by a fully dedicated project manager (PM), using accepted project management methodologies. The PM needs to provide a broad-base of retirement experience, a broad-based and varied suite of retirement best practices, IS, IS best practices, ability to plan and manage process, data, and IS activities. The PM should communicate regularly (and frequently) with the ERS upper management, providing metrics as to on-going status of the project as it relates to budget and schedule. Depending on the complexity of the project and the availability of the ERS staff, the ERS should consider PM support from outside of the ERS.

9.1.3 Project Support from Upper Management

The support of upper management is critical to the success of any complex project. For future significant projects undertaken by the ERS, ERS Upper Management should be involved. It is recommended that these projects have a steering committee on which the ERS upper management shall sit. Upper management should also require that the PM provide regular, written project status reports.

9.2 More Effective Use of Imaging

Although the ERS currently has an imaging system into which most of its documents are imaged and available, it is not using these images effectively.

It also appears that key ERS resources have not been thoroughly trained on the imaging system.

LRWL recommends that the ERS enlist outside imaging experts able to review the situation in detail, who could then make recommendations as to how the ERS could use its imaging system more effectively. This review should focus on helping the ERS better understand how imaging can be leveraged to benefit both the ERS and its members. In addition, the review should also offer recommendations regarding how the ERS can obtain the training necessary to optimize use of its imaging capabilities.

9.3 Longer-Term Enhanced Service to Members

There are a number of ways that the ERS can provide better service directly to their members.

9.3.1 Provide Annual Benefit Statement to Active Employees

Annual benefit statements are an ideal way for the ERS to communicate with its members and will result in a great deal of goodwill among the ERS, its membership, and the participating employers.

Most statewide pension systems provide annual benefit statements to members. Although the ERS has tried this in the past, it was a very difficult process. This was primarily because of the inaccuracies in and incompleteness of the system data. However, once the recommendations included in this report have been implemented, the ERS will be in a position to provide its members with an annual benefit statement. Providing an annual benefit statement also gives members the opportunity to review benefit and employment data for accuracy and offer feedback regarding potential data errors. It is surely in the ERS' best interest to learn of data issues -- and make necessary corrections -- as early possible (and well before retirement).

9.3.2 Provide Member Self-Service

Through the V3 system, the ERS can provide some self-service functions to the membership that will accrue significant benefits to the ERS in terms of the members requiring fewer ERS resources. Some examples are:

- The ability for the member to generate a retirement estimate
- The ability for the member to apply for retirement electronically
- The ability for the member to look at benefit payment history

9.3.3 Enhance Retirement Seminars

With the ability of members to generate their own benefit estimates, the need for on-site counseling at the ERS headquarters in Honolulu should go down dramatically. That said, it would be of value to the ERS membership to enhance the retirement seminars it currently conducts by making estimates available to attendees. These seminars could be held periodically in various places throughout the State. They would typically be open to members and their spouse within five years of retirement eligibility. Members would register in advance to attend a seminar and would be provided with a benefit estimate at the seminar.

9.4 Recommendations for Possible Legislation Changes

LRWL recommends that the ERS consider the following legislative changes that reflect both best practices and improvements to the overall environment.

9.4.1 Charge Interest on Contribution Deficiencies

By law, when a member retires and has a contribution deficiency, the member's benefit is reduced. Currently, however, an active member may not be aware that a contribution deficiency exists until very close to retirement – giving the member only a short time to make up the deficiency. Under these circumstances, it would be unfair for the ERS to charge the member interest for making up any deficiency. Many public sector retirement systems do charge interest for such a "buy back." In the future state, once the recommendations in this report have been fully implemented, the ERS will be able to send its members annual statements which will include information on any contribution deficit. This will provide the member with the opportunity to make up any deficiency well before retirement.

The exact details as to the rate and amount of interest to be charged would need to be determined (many systems set the interest as the assumed rate of return on investments, minus interest paid on contributions). The ERS might also consider providing a grace period, beginning from the time that the members receive their first benefit statement.

The ERS should be aware that legislation of this type may necessitate enhancements to the V3 system.

9.4.2 Change Cost of Purchase of Professional Development Time

However, an employee who is granted such time has the option of purchasing that time as creditable service. The purchase price of that service is determined by the amount of contributions the member would have made during the period of Professional Development. This is a significant advantage to the member and a significant disadvantage to the ERS. The member should either be required to make contributions based on the member's salary at the time of the purchase or be charged interest as with a contribution deficiency.

9.4.3 Reinstating/Increasing Incentives for Employers to Supply Data to the ERS in a Timely Fashion

Act 134 permits the ERS to assess penalties to employers who don't respond to ERS requests for data in a timely fashion. However, the penalty of $10/month is such that the cost of collecting the fees is greater than the fees collected. As such, the ERS no longer attempts to collect these fees.

LRWL recommends that the ERS consider a legislative change that would either increase the penalty charged or, alternatively, that would result in the interest currently charged to the ERS, by Act 134, being charged directly to the employer (or that it be shared in a fair manner). Any such legislation also should establish standards across all employers as to how various situations are to be reported. For example, what goes into regular pay, what goes into vacation pay, other pay, etc.? The legislation should also require that data be provided in a timely fashion. The legislation should also require employers to provide sick leave significantly more rapidly than the current ninety (90) days.

LRWL further recommends that the ERS consider the possibility of waiting to introduce this legislation until after the recommendations of this report have been implemented (and the employers have been given the opportunity to cooperate with the ERS). If, after providing the employers with these tools – as well as the necessary training -- it is determined that the employers still are not fully cooperating with the ERS, this legislation should be considered.

9.5 Organization Changes

The Finalization Team is part of the Enrollment, Claims, & Benefit Eligibility (EC&B) department, as are most of the other staff involved in the retirement process. As these recommendations take effect, resources should be shifted from the finalization team. Inasmuch as the work reporting team will play a

greater role in the retirement process, consideration should be given to moving this organization into EC&B.

10 ORDER OF IMPLEMENTATION OF RECOMMENDATIONS

In implementing these recommendations, precedence should be given to those recommendations that involve new data coming into the V3 system - specifically:

- Recommendation 7.1.2 Facilitate the Electronic Submission of PIFs by All Employers
- The ongoing component of recommendation 7.2.1 Clean Up Lagged Pay
- Recommendation 7.3 Enhance Work Reporting.

It is recommended that these recommendations be considered independently of all other recommendations as they will ensure that only valid data get into the system.

11 SUMMARY OF ALL RECOMMENDATIONS

Table 6 is a summary of all recommendations made in this report.

Table 6: Summary of All Recommendations

Section #	Title	Nature of Recommendation
7.1.1	Enhance PADB	Technical/Procedural
7.1.2	Facilitate the Electronic Submission of PIFs by All Employers	Technical/Procedural
7.1.3	Use the V3 PIF Processing to Determine Missing PIFs	Technical/Procedural
7.2.1	Clean Up Lagged Pay	Technical/Procedural
7.2.2	Clean Up Retro Pay	Technical/Procedural
7.2.3	Clean Up Service Purchase Data	Technical/Procedural
7.3	Enhance Work Reporting	Technical/Procedural
7.4.1	Create a Tool to Enable the Data Entry of School Calendars.	Technical/Procedural
7.4.2	Create a Batch Task that Would Run at the End of the School Year to Ensure All Earnings are Allocated Appropriately.	Technical/Procedural
7.4.3	Program V3 to Perform Any Teacher/Professor Calculations.	Technical/Procedural
7.5	Retrieving Data Needed at Time of Retirement in a More Efficient Fashion and Providing a Tool for Employers	Technical/Procedural
7.6	Reconcile Member Contributions	Technical/Procedural
9.1.1	Understanding the Full Effects of a Project	Managerial
9.1.2	Project Management/Measurement/Communication	Managerial
9.1.3	Project Support from Upper Management	Managerial
9.2	More Effective Use of Imaging	Procedural
9.3.1	Provide Annual Benefit Statement to Active Employees	Technical/Procedural
9.3.2	Provide Member Self-Service	Technical
9.3.3	Enhance Retirement Seminars	Technical/Procedural

Section #	Title	Nature of Recommendation
9.4.1	Charge Interest on Contribution Deficiencies	Legislative
9.4.2	Change Cost of Purchase of Professional Development Time	Legislative
9.4.3	Reinstating/Increasing Incentives for Employers to Supply Data to the ERS in a Timely Fashion	Legislative
9.5	Organization Changes	Managerial

12 BENEFITS ANALYSIS AND SUMMARY

There are four categories in which the ERS will accrue benefits by implementing the recommendations contained in this report. The following subsections discuss these categories, and where possible, provides an approach to quantify the benefit to the ERS:

12.1 REDUCED COST OF RESOURCES

ERS could reduce its resource costs in the following ways:

12.1.1 Attrition

Although it is understood that the ERS has no intention in laying-off staff, these recommendations will result in less resources being needed for correcting and catch up activities. The ERS may consider attrition as a way to save money. Specifically, when the recommendations have been implemented, and members receive annual benefit statements, there will be significantly fewer resources needed for counseling. Furthermore there will significant fewer resources needed for benefit calculation and finalization. Although, in the short term, the Work Reporting group may require more resources, in the long term, the net change in resource needs of Work Reporting and Finalization will be a decrease. Staff can be reassigned to higher value work.

Assuming attrition and/or reassignment of one staff member a year over the next three years. Assuming the attrition/reassignment occurs in the middle of the year. It follows that one staff member will be off the payroll for two and a half years, one for one and a half, and one for a half year: on an average 1 and a half years per staff member. Further assume a fully loaded salary of $100,000 a year. That means that the benefit to ERS would be as follows:

3 (Staff members) * $100,000 (fully loaded salary) *1.5 (Average number of years of savings per staff member) = $450,000 over first three years and $300,000 per year, thereafter.

12.1.2 Savings on Finalization Contractors

In light of the fact that the ERS has many members, who are either already eligible to retire or very close to being eligible, and considering the fact that the Hawaii State Legislature is considering pieces of legislation that will make it attractive to retire, it is likely that the ERS will find itself in a similar situation to what recently transpired. That is they will have to procure help from contractors to finalize a backlog of retirements. This is quantified as follows:

50% (probability that this will occur over the next 3 years) * $1.5M (Cost recently incurred by the ERS) = $750,000 over the next three years and $750,000 each three years thereafter.

12.1.3 Savings on Employer Resources

Although not a direct benefit to the ERS, it should be pointed out that in the long term, the resource needs of the employer will also go down. The cost of an employer providing data to the ERS in real time (for example how retro pay should be split) will be significantly less than having to research and provide that data at retirement time - often many years after the fact.

Inasmuch as this is not a direct benefit to the ERS, this is not quantified herein.

12.2 ADDITIONAL FINANCIAL BENEFITS TO THE ERS

After all recommendations have been implemented, the ERS will recognize some additional financial benefits:

12.2.1 Interest on Contribution Deficiencies

Currently, when a member pays the ERS to recover service associated with a contribution deficiency, the member pays no interest. This is as it should be because the member really has no way to know that he has a deficiency and, as such, no opportunity to resolve the deficiency. As such, if the member pays the deficiency the day before retirement, he gets full credit as if he had made the contribution when he was required to – even though the ERS had no use of the member's money. In the future, the member will know of the deficiency when it occurs. As such, he can either make his account whole when the deficiency occurs, or make his account whole at any later time, but would have to pay interest.

Currently, ERS members find out about deficiencies just before they retire and have the option to make their benefit whole by paying the amount of the deficiency. Assuming that on an average there are 200 members a year that retire with a deficiency of, on an average $1,000, and assume that deficiency occurred 10 years in the past. Furthermore, assume that that difference between the interest paid to employees on their contributions and the presumed investment return rate is 5%. Then over three years, the ERS is losing:

600 (200 people per year * 3 years) * $1,000 (amount of deficiency) *50% (simple interest of 5% over 10 years) = $300,000 over 3 years and $100,000 each subsequent year.

12.2.2 Increased Cost of Personal Development Time

Currently a member can take leave for personal development and make himself whole by making the contribution missed (during the personal development time leave) any time before retirement with no interest. This is unfair to the ERS who has had no use of the funds for investment purposes from the time that the leave was taken until the time it is paid back. The ERS should either 1) charge interest for these payments or 2) have the payments based on current salary rather than the salary at the time of the leave.

Assuming 10 people a year buy back Personal Development time with missed contributions averaging $1,000 and assume the development time was 10 years before at 5% interest yields:

30 (10 people per year * 3 years) * $1,000 (amount of deficiency) *50% (simple interest of 5% over 10 years) = $15,000 over 3 years and $5,000 each subsequent year.

12.2.3 Increased Penalties for Non-responsive Employers

Currently, the ERS has the right to require a penalty of employers for not being responsive. However, the penalties are so small that it costs more to collect the fines than the actual fine. As such, the ERS doesn't collect the fines. With these recommendations, the ERS will be helping the employers report electronically. As such, they should be justified in collecting larger fines from the employers – large enough to motivate the employer to abide by Hawaii statutes.

Assumptions: penalties would be $100/member/month. Each month there would be on an average 50 pending requests. Amount of penalties over 3 years:

36 (number of months) * 50 (number of pending requests) * $100 (penalty) = $180,000 over 3 years and $60,000/year thereafter.

12.2.4 Reduced Interest on Finalizations Taking over Six (6) Months

The ERS can reduce the amount of money coming out of its pocket by virtue of Act 134. Because all finalizations will take less than six (6) months, they will no longer have to pay Act 134 interest.

However, if the recommendations are not made, and in light of the fact that the ERS has many members either already eligible to retire or very close to being eligible; and considering the fact that the Hawaii State Legislature is considering pieces of legislation that will make it attractive to retire, it is likely that

the ERS will find itself in a similar situation to what just occurred. That is they will have to procure help from contractors to finalize a backlog of retirements. In this scenario, many finalizations will take over 6 months. This could be quantified as follows:

50% (probability that this will occur over the next 3 years) * $100,000 (Interest incurred per year) = $50,000 over the next three years and $50,000 each three years thereafter.

12.3 Better Service to Members

Note: Although LRWL has made no attempt to quantify the benefit that would accrue to the ERS by providing better service to its member, LRWL believes the benefit to be significant.

Implementing the recommendations in this report will allow the ERS to provide better service to its members in the following ways:

12.3.1 Original Payments Equal Finalized Payment

Currently, in almost all retirements, the amount that the member receives at retirement is less than the amount received at finalization. Although after finalization, the member is made whole for the difference in payments, the member, in the meantime, has no use of his money. And if, as in most cases, the member is finalized within six months, he receives no interest. After the recommendations the member will receive what he is due from the day of retirement.

12.3.2 Annual Benefit Statements

By virtue of supplying annual benefit statements, ERS members will always have a good idea as to what their retirement benefit would be. This is very important to employees.

12.3.3 Able to Fix Benefit Deficiency before Retirement

Many members lose a part of their benefits because they don't know they have a contribution deficiency until the time of retirement or, perhaps, after. The recommendations in this report will allow the member to know well before retirement that there is a contribution deficiency and make up the contribution deficiency well before retirement.

12.4 Improved Perception of the ERS

Note: Although LRWL has made no attempt to quantify the benefit that would accrue to the ERS by an improved perception of the ERS, LRWL believes the benefit to be significant.

As a result of implementing of the recommendations of this report, the ERS will enhance how it is perceived by its peers, its members, its Board of Trustees, and the citizens of the State of Hawaii.

12.4.1 Adherence to Best Practices

These recommendations will allow the ERS to adhere to best practices much more closely than it does now.

12.4.2 Audit Findings Will Be Reduced

State auditor finding should be reduced by virtue of the fact that Teachers and Professors calculations will be done within the V3 system. These represent almost 25% of all calculations and the fact they are no longer being done on a spreadsheet, but rather within the system, should give the auditors more confidence in the accuracy and consistency of these calculations.

12.5 SUMMARY OF BENEFIT ANALYSIS

Figure 11 shows the cumulative effect of the benefit to the ERS as quantified above.

Note that this only includes those areas that have actually been quantified.

It shows that the full cost of the recommendations will be matched by the benefits in 3.5 years. It must be pointed out that this does not include the benefits accrued to the ERS by providing better service to its members and by the improved perception of the ERS. LRWL considers those benefits to be significant, and would result in the ERS recovering its investment sooner.

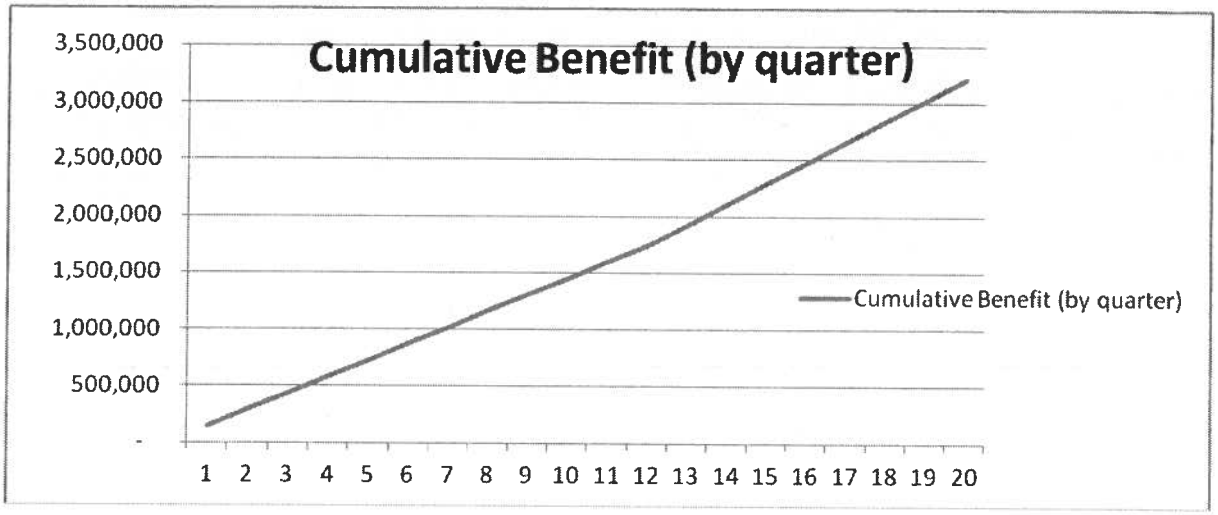


Figure 11: Summary of Benefit Analysis

APPENDICES

APPENDIX A – PIF EVENTS

#	Actions	Description
1	Appointments	Hires, Rehires, Change in Position, Promotion, Demotion, Transfers etc.
2	Demographic Changes	Changes in employee demographics such as name, address, birthdate, marital status etc.
3	Leave of Absence	Start of a leave of absence (generally leave without pay which affects service credits).
4	Return from Leave of Absence	Return from Leave of Absence (generally leave without pay which affects service credits).
5	Pay Changes	Changes in pay rate.
6	Terminations	Terminating employment (resignation, retirement etc).

APPENDIX B – LAG CHART

Payroll Lag

Employer	Lag?	Eff. Date	Comments
State of Hawaii	Yes	7/1/98	a) All State employees hired prior to July 1,1998 have their pay lagged (delayed) by 5 days, however, their salaries are correctly posted to the ledger according to the pay period in which they were earned. See attached for additional details. b) All employees, **except those in Bargaining Unit 7 (BU 07)**, hired on or after July 01, 1998, are lagged one pay period (plus the 5–day period mentioned above). (The State payroll lag was phased in to allow employees time to adjust to the 5-day lag.) Note: Employees in BU 07 (UH Faculty) are currently reported via a separate file (UH electronic file) and can also be identified with the following pay numbers: F54, F58, F68, F94, FF5 Example: (Note: *employee hired on July 1, 1998)

Pay cycle (Payment Date)	Reporting Period (Earned Date)	Hire Date
06/15/98	06/01/98 - 06/15/98	<07/01/98
07/01/98	06/16/98 - 06/30/98	<07/01/98
07/17/98	07/01/98 - 07/15/98	<07/01/98
	07/16/98 - 07/31/98	<07/01/98

			08/03/98	**07/01/98 - 07/15/98**	**>06/30/98***
			08/19/98	08/01/98 - 08/15/98	<07/01/98
				07/16/98 - 07/31/98	**>06/30/98***
			09/04/98	08/16/98 - 08/31/98	<07/01/98
				08/01/98 - 08/15/98	**>06/30/98***
			09/18/98	09/01/98 - 09/15/98	<07/01/98
				08/16/98 - 08/31/98	**>06/30/98***
			10/05/98	09/16/98 - 09/30/98	<07/01/98
				09/01/98 - 09/15/98	**>06/30/98***
			10/20/98	10/01/98 - 10/15/98	<07/01/98
				09/16/98 - 09/30/98	**>06/30/98***

APPENDIX C – WORK REPORTING FIELD-BY-FIELD ANALYSIS

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
1	Record Type	Indicates the type of record being reported.	Not needed [				
2	SSN	The member's Social Security Number without hyphens.	Not Needed - See Comment				SSNs are not stored on a pay period-by-pay period basis. Thus, this check is to test whether an SSN exists in the database. If a PIF had arrived for a demographic change, records would have been merged under the new SSN. If an Appointment PIF had been received, a new record would have been created. As such, this simply means that this SSN does not match a record in the database and requires manual intervention.
3	Last Name	The member's last name. If the member only has had one name, provide the name in this field instead of the First Name.	Demographic - Change of name. Actual change is in comments field. May be an appt. PIF	Has one of the two expected PIFs been sent?	Put new name from WR in DB.	Ask Employer for PIF, but update DB with name from WR.	All of the name fields can be viewed as one field.
4	First Name	The member's first name.	Demographic - Change of name. Actual change is in comments field. May be an appt. PIF	Has one of the two expected PIFs been sent?	Put new name from WR in DB.	Ask Employer for PIF, but update DB with name from WR.	

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
5	Middle Name	The member's middle name. Provide the full middle name if possible. Middle Initial and blank can be accepted if necessary.	Demographic - Change of name. Actual change is in comments field. May be an appt. PIF	Has one of the two expected PIFs been sent?	Put new name from WR in DB.	Ask Employer for PIF, but update DB with name from WR.	
6	Name Suffix Code	The member's name suffix.	Demographic - Change of name. Actual change is in comments field. May be an appt. PIF	Has one of the two expected PIFs been sent?	Put new name from WR in DB.	Ask Employer for PIF, but update DB with name from WR.	
7	Employer Code	Employer Code of the member's employer as defined by ERS.	One of the following: 1) Term - Appt. 2) Transfer 3) LWOP - Appt.	Has one of the supporting PIF/PIF combinations been received?	No action	Pend Record. 1) & 3) If first PIF not received, but Appt. received, contact previous employer. If first PIF received, but Appt. not received, contact new employer. If no PIFs, contact previous employer. 2) Contact previous employer.	

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
8	Billing Location Code	The Billing Location of the member's employer as defined by ERS.	One of the following: 1) Term - Appt. 2) Transfer 3) LWOP - Appt.	Has one of the supporting PIF/PIF combinations been received?	No action	Pend Record.1) & 3) If first PIF not received, but Appt. received, contact previous employer. If first PIF received, but Appt. not received, contact new employer. If no PIFs, contact previous employer. 2) Contact previous employer.	
9	Pay adjustment	Field to be used for specified base pay adjustments. Example: Furlough Adjustments **NOTE: PLEASE CONTACT ERS FOR INSTRUCTIONS PRIOR TO POPULATING FIELD.**	Not Needed				
10	Pay adjustment Type	Field to be used to describe specified base pay adjustment type. Example: Furlough Adjustments **NOTE: PLEASE CONTACT ERS**	Not Needed				

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
		FOR INSTRUCTIONS PRIOR TO POPULATING FIELD.					
11	Pay Number	Reporting Agency specific. Unique number for payroll reporting. Ties the personnel actions to the payroll transactions (Sequence #38 on Personnel File).	Pay number change?	Has PIF been received?	No action	Contact Department	
12	ER Tran Type	Indicates whether the reported transaction is for the current payroll period or is an adjustment to a previous payroll period. Each Reporting Agency needs to submit a separate record for adjustments to prior payroll periods. ERS to discuss with each Reporting Agency.	1) Should be LWOP PIF. 2) Not Needed	Has PIF been received?	No action	Contact Department	

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
13	Retirement Group	The member's Retirement Group as defined by ERS.	One of the following: 1) Term - Appt. 2) Transfer 3) LWOP - Appt. 4) Change in Position	Has one of the supporting PIF/PIF combinations been received?	No action	Pend Record.1) & 3) If first PIF not received, but Appt. received, contact previous employer. If first PIF received, but Appt. not received, contact new employer. If no PIFs, contact previous employer. 2) & 4) Contact previous employer.	

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
			One of the following: 1) Term - Appt. 2) Transfer 3) LWOP - Appt. 4) Change in Position	Has one of the supporting PIF/PIF combinations been received?	No action	Pend Record. 1) & 3) If first PIF not received, but Appt. received, contact previous employer. If first PIF received, but Appt. not received, contact new employer. If no PIFs, contact previous employer. 2) & 4) Contact previous employer.	
14	Retirement Class	The member's Retirement Class as defined by ERS.	One of the following: 1) Term - Appt. 2) Transfer 3) LWOP - Appt. 4) Change in Position	Has one of the supporting PIF/PIF combinations been received?	No action	Pend Record. 1) & 3) If first PIF not received, but Appt. received, contact previous employer. If first PIF received, but Appt. not received, contact new employer. If no PIFs, contact previous employer. 2) & 4) Contact previous employer.	
15	FTE Percent	The member's Full-Time Equivalent percentage.	One of the following: 1) Term - Appt. 2) Transfer 3) LWOP - Appt. 4) Change in Position	Has one of the supporting PIF/PIF combinations been received?	No action	Pend Record. 1) & 3) If first PIF not received, but Appt. received, contact previous employer. If first PIF received, but Appt. not received, contact new employer. If no PIFs, contact previous employer. 2) & 4) Contact previous employer.	

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
16	Contract Type	Used by UH and DOE ONLY. All other reporting agencies will report "12." The number of paid months pro-rated over a twelve-month period.	One of the following: 1) Term - Appt. 2) Transfer 3) LWOP - Appt. 4) Change in Position	Has one of the supporting PIF/PIF combinations been received?	No action	Pend Record.1) & 3) If first PIF not received, but Appt. received, contact previous employer. If first PIF received, but Appt. not received, contact new employer. If no PIFs, contact previous employer. 2) & 4) Contact previous employer.	
17	Pay Rate Code	The member's Pay Rate Code indicates the basis for the Pay Rate field (Sequence #18).	One of the following: 1) Term - Appt. 2) Transfer 3) LWOP - Appt. 4) Change in Position	Has one of the supporting PIF/PIF combinations been received?	No action	Pend Record. 1) & 3) If first PIF not received, but Appt. received, contact previous employer. If first PIF received, but Appt. not received, contact new employer. If no PIFs, contact previous employer. 2) & 4) Contact previous employer	
18	Pay Rate	Semi-monthly Base Pay, Hourly Base Pay or Daily Per Diem; used in conjunction with Pay Rate Code (sequence #17).	One of the following: 1) Term - Appt. 2) Transfer 3) LWOP - Appt. 4) Change in Position	Has one of the supporting PIF/PIF combinations been received?	No action	Pend Record. 1) & 3) If first PIF not received, but Appt. received, contact previous employer. If first PIF received, but Appt. not received, contact new employer. If no PIFs, contact previous employer. 2) & 4) Contact previous employer.	
19	Num of Hours Worked	Number of regular hours worked in the reported payroll period. (Exclude OT, other pay)	Not Needed				

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
20	Standard Work hours in period	Standard number of hours eligible to be worked in a payroll period.	Not Needed				
21	Pay Period End Date	Date indicating the end of the payroll reporting period. Example: Hourly employee works from April 1, 2007 (Earning Period Start Date) to April 15, 2007 (Earning Period End Date). Time sheet paid as part of April 30, 2007 Payroll (Pay Period End Date). Check date (Payment Date) of May 5. Pay Period End Date = April 30, 2007.	Not Needed				

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
22	Earning Period Start Date	Date indicating the first day of the work period being reported. Adjustments must be reported using the correct Earning Period Start Date and Earning Period End. DateExample: Hourly employee works from April 1, 2007 (Earning Period Start Date) to April 15, 2007 (Earning Period End Date). Time sheet paid as part of April 30, 2007 Payroll (Pay Period End Date). Check date (Payment Date) of May 5. Earning Period Start Date = April 1, 2007.	Not Needed				

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
23	Earning Period End Date	Date indicating the last day of the work period being reported. Adjustments must be reported using the correct Earning Period Start Date and Earning Period End Date. Example: Hourly employee works from April 1, 2007 (Earning Period Start Date) to April 15, 2007 (Earning Period End Date). Time sheet paid as part of April 30, 2007 Payroll (Pay Period End Date). Check date (Payment Date) of May 5. Earning Period End Date = April 15, 2007.	Not Needed				
24	Payment Date	The date of the member's check or EFT deposit. Example: Hourly employee works from April 1, 2007 (Earning Period Start Date) to April 15, 2007 (Earning Period End Date). Time sheet paid as part of April 30, 2007 Payroll (Pay Period End Date). Check date (Payment Date) of May 5.	Not Needed				

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
		Payment Date = May 5, 2007.					

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
25	Base Pay	Base Pay is what a salaried employee would earn for the payroll period when working 100% of the time (based on the bargaining unit pay table for their SR rating and step). Base pay should not be adjusted if an employee is on a 1-year sabbatical. **Examples** **Example 1** - Salaried employee whose position is authorized FTE equal to 100%, authorized base pay is $1,000.00, no leave without pay. **Example 2** - Salaried employee whose position is authorized FTE equal to 50%, authorized base pay (at 100%FTE) is $1,000.00, no leave without pay. **Example 3** - Salaried employee whose position is authorized FTE equal to 100%, authorized base pay is $1,000.00, leave without pay adjustment equal to $250.	Payrate PIFViewed in conjunction with regular pay	1) No PIFIn all the below cases there should be a PIF2) Base Pay (BP) = Regular Pay (RP) and FTE remains the same. This means that Change of pay occurred on or before first day of pay period. 3) BP <> RP, FTE remains the same. This means Change of Pay occurred during the pay period.4) BP <> RP, FTE changed. 5) BP changes and nothing else changes	1) Do other validity checks2) No action3) No action4) This is an error5) error	Contact employer	

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
		Example 4 - Professor has a base pay of $1000.00 and an FTE of 100%. Regular pay is $1,000.00. The professor is authorized for Sabbatical Leave. While on sabbatical, the member should be reported with $1,000.00 base pay, a 100% FTE, and a $500.00 sabbatical pay. The regular pay is 0. **Example 5** - Salaried employee whose position is authorized FTE equal to 50%, Authorized base pay is $1,000.00, leave without pay adjustment equal to $250. If FTE % < 100% and Base Pay = Reg Pay, Base Pay does NOT reflect the 100% value of a position, therefore True Base Pay = Base Pay/FTE% FTE% =75% Base Pay = 750 Reg Pay = 750 True Base = 750 /.75 = 1000					

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
26	Gross Pay Amount	Total Semi-Monthly gross pay (Total of all Pay Fields excluding Base Pay): Regular Pay Amount + Vacation Pay Amount+ Workers Comp Pay Amount + Sabbatical Pay Amount + Other Pay Amount + Differential Pay Amount Recurring + Differential Pay Amount Non-Recurring + Retro Pay Amount + Excess Reg Pay = Gross Pay Amount	Not Needed - We look at all the other pay fields independently.				If no pay fields change and there is a LWOP PIF, this is an error and we should tell employer If gross pay and all pay fields = 0, and employee is active, should be LWOP, and there should be a PIF.

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
27	Regular Pay Amount	Based on bargaining unit pay table for SR rating and step, adjusted for FTE, minus any LWOP (Leave Without Pay) salary adjustment. Does not include differential, overtime, vacation pay, excess pay over FTE, etc.	Change of FTE PIF? This would happen when furloughs went into effect. If Regular pay = base pay + recurring differential pay: Not an error, employer should be notified (for purposes of doing this correctly). Sometimes Regular Pay is put into Other pay. This usually occurs when somebody is on WC but the WC claim was delayed. Then, when WC was ultimately approved, employers calculate what is still owed to member (what member received vs. what he should have received), and manipulates the pay fields to end up with the balance in "other." This should be accompanied by an "Industrial Leave" PIF with effective date back to date approved. Amount to be paid is included in PIF.	PIF and			When somebody goes to WC, this should be flagged for manual intervention. Jovita: We have recently implemented a change that if WC is greater than gross, this kicks out.

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
28	Normal AS Contrib Amount	Normal Annuity Savings Contributions = (Gross Pay Amount - Vacation Pay Amount) * retirement contribution rate. Note: Do NOT subtract Vacation Pay Amount from Gross Pay Amount for any member hired before 01/01/1971. Retirement contributions must be paid on vacation pay for members hired prior to 01/01/1971.	Not Needed				
29	Normal AS Tax Ind	Indicates the tax treatment for the Normal AS Ccontributed Amount reported.	Not Needed				
30	Addl AS Type 1	Type of Additional AS Amount 1 being reported. Valid type accepted is for service acquisition via payroll deduction.	Not Needed				
31	Addl AS Amount 1	Additional Annuity Savings Amount 1 is used to indicate the service credit purchase (SCP) amount being reported. Additional AS Amount 1 = Gross Pay Amount *	Not Needed				

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
		retirement contribution rate (SCP).					
32	Addl AS Tax Ind 1	Indicates the tax treatment for the Additional AS Amount 1 reported.	Not Needed				
33	Addl AS Type 2	Type of Additional AS Amount 2 being reported. **Reserved for future use.**	Not Needed				
34	Addl AS Amount 2	Additional Annuity Savings Amount 2 **Reserved for future use.**	Not Needed				
35	Addl AS Tax Ind 2	Indicates the tax treatment for the Additional AS Amount 2 reported. **Reserved for future use.**	Not Needed				

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
36	Vacation Pay Amount	This is the unused Vacation Pay (payment in lieu of vacation) at the time of termination or retirement.	Not Needed				Also can happen when somebody is in a "use or lose" situation. Not pensionable earnings except for individuals hired before 1971. Also allowed before retirement and when transferring employers. Before 2006, contributions were taken on vacation. Now, no contributions are being taken. **Note to self - need to do something about this. DOE sometimes reported summer pay as vacation pay and no contributions were taken**
37	WC Pay Amount	Worker's Compensation Pay Amount being reported while the member is on an industrial leave. **[Note: Normal contributions reported on the WC Pay Amount will be placed in a post tax contributions "bucket"]**	1) When it goes from 0 to non-zero should be PIF 2) From one non-zero value to another – non zero value: interest	Is there a PIF	Manual processing	Ask for PIF	UH WC is administered by a third party that reports to HIERS. Handled manually, including contributions.
38	Sabbatical Leave Pay Amount	The member's compensation while on a sabbatical leave.	Should be PIF indicating Sabbatical	Is there a PIF?	No action	Ask employer for PIF	Used when employee is getting paid half-pay: Sabbatical is either a full year at half-pay or half year as full pay. In the past (Pre-V3) when someone went on Sabbatical, we expected the FTE to change. In V3 FTE is not changed for Sabbatical. Someone on half-pay Sabbatical contributes only on half, but gets full credit. So if not during final 3, gets full service for half contributions. Note to self: This doesn't seem fair.

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
39	Other Pay Amount	All other payments to the member not specifically defined on this layout.	None of the legitimate uses of other should be associated with a PIF, except for (per Jovita) certain bonuses)	For correct uses of other, no PIF, no interest. But there could be PIF for incorrect uses.	If no PIF, no action	If PIF or large change (to be defined – per Jovita, this can be defined as a percentage or fixed amount parameter) handle manually.	This should be in other: Overtime, Comp time pay out at termination, non-recurring differential pay, Temporary Assignment Pay, bonuses, allowances (should not be pensionable – but is because it is put in other and contributions are made) Sometimes (incorrectly), vacation pay out, and retro pay – note: Retro-pay on overtime is correct. Currently, if other is over $5,000 then investigated.
40	Differential Pay Amount Recurring	This is the sum of all recurring differentials paid each payroll period.	Should be PIF	Is there a PIF	If PIF, OK	If no PIF, contact employer	
41	Differential Pay Amount Non-recurring	This is the sum of all differentials (non- recurring) paid for this payroll period.	Not Needed				
42	Retro Pay Type	The type of Retroactive Pay Amount being reported for the payroll period.	Summer Pay - Pay after retirement. If summer pay already exists, is it the same amount. If not, error.				
43	Retro Pay Amount	The total amount of Retroactive Pay being reported for this payroll period.	1) Settlement: Grievance – PIF (cancellation) would reflect nature of grievance 2) Reclassification: Position is reclassified as a different rate – should have PIF		1) Try to figure out, if unable, manual intervention 2) Try to figure out, if unable, manual intervention 3)		Common: Deferred pay raise, LWOP that wasn't picked up in a timely fashion. Settlement retroactive, summer pay, reserve pay, recovery of lagged pay

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
44	Excess Reg Pay Type	Reserved for future use.	Not Needed				
45	Excess Pay Amount	Reserved for future use.	Not Needed				
46	Misc Non-pay Amount Type	Reserved for future use.	Not Needed				
47	Misc Non-pay Amount	Reserved for future use.	Not Needed				
48	Straight-time Pay	Example - Salaried employee whose position is authorized FTE equal to 50%, old base pay (at 100%FTE) is $500.00, no leave without pay. FTE% = 75% Base Pay @ 100% FTE = 1000.00 Old Base = 1000.00 / .75 = 750.00	Not used				
49	Bargaining Unit	Indicates the member's Bargaining Unit.	PIF	Is there a PIF?	No action	Ask employer	

Seq	Field Name	Description	Supporting PIF?	Validity Test	Action: Test Passed	Action: Test Failed	Comments
50	Employer AS	AS contributions paid by employer on behalf of member. Example: Contributions for Serviceman's act, loaned employer, etc. **NOTE: PLEASE CONTACT ERS BEFORE POPULATING THIS FIELD**	Not used				
51	Filler	Reserved for future use.					

APPENDIX D – EXAMPLE OF ALLOCATION OF SUMMER PAY FOR PROFESSORS

Pay Period			Annual Salary	120,000			
			Allocation	New salary		Allocation	New salary
1 Aug. 1-15	5,000.00	Summer Pay			5,000.00 Summer Pay		
2 Aug. 16-31	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
3	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
4	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
5	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
6	5,000.00	Regular Salary	1,666.67	6,666.67	10 days LWOP 3,333.33 Regular Salary	1,111.11	4,444.44
7	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
8	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
9	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
10	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
11	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
12	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
13	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
14	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
15	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
16	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
17	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
18	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
19 May 1-15	5,000.00	Regular Salary	1,666.67	6,666.67	5,000.00 Regular Salary	1,666.67	6,666.67
20 May 16-31	5,000.00	Summer Pay			4,888.89 Summer Pay		
21 Jun. 1-15	5,000.00	Summer Pay			4,888.89 Summer Pay		
22 Jun. 16-30	5,000.00	Summer Pay			4,888.89 Summer Pay		
23 Jul. 1-15	5,000.00	Summer Pay			4,888.89 Summer Pay		
24 Jul. 16-31	5,000.00	Summer Pay			4,888.89 Summer Pay		

Total Regular Salary (SAL)	90,000.00	Regular Salary		Total Regular Salary (SAL)	88,333.33	Regular Salary
Total Summer Pay (TSP)	30,000.00	Summer Pay		Total Summer Pay (TSP)	29,444.44	Summer Pay
Total	120,000.00		120,000.00	Total	117,777.78	117,777.78

APPENDIX E – VITECH COST ESTIMATE

V3 Change Order for Hawaii ERS

CO 2753 – Implement Recommendations - Wechsler Efficiency Study

401 Park Avenue South
New York, NY10016

1 OVERVIEW

The State of Hawaii Employees' Retirement System (ERS) has requested Vitech to review and provide an effort estimate to implement the modifications that have been made by the Efficiency Study Dated August 5, 2011 prepared by L. R. Wechsler, Ltd. (Appendix A and B reflect documents provided by Hawaii ERS to Vitech)

The summary of changes requested is:

1. Personnel Interface File (PIF)
    - Facilitate the Electronic Submission of Personnel Interface File (PIF) by all Employers (7.1.2).
    - Create a rule during the processing of the PIF to error if the employment record being submitted by the employer results in a "missing" employment event (7.1.3).
2. Data Conversion:
    - Update Member Work History to correctly reflect the correct earning periods based on the members pay schedule (7.2.1).
    - Update Member Work History to correctly reflect payments received in a given period are correctly distributed to the correct earning period (7.2.2).
3. Identify missing service credit purchases (7.2.3).
4. Enhance Work Reporting (7.3)
5. Import: Create an import to allow ERS to import Teacher's school schedules (7.4.1).
6. Batch: Modify the Eligible Comp Adjustment Batch to run annually for any teacher and/or professor that is identified as a 9 or 10 month contract employee and redistribute their Eligible Compensation for the month(s) (7.4.2 – 7.4.4).
7. Provide a method that will allow ERS to store/identity information that is required at the time of retirement (7.5.1). This includes the following items:
    - Unused Sick Leave
    - Vacation Payout – Form G2
    - Reserve Pay (Professors prior to 1975)
    - Summer Pay (Teachers/Professors)
8. Provide a method to Reconcile Member Contributions (7.6).

Although there are recommendations made in the Efficiency Report that speak to utilizing V3's employer self service (ESS) module, Hawaii ERS and L. R. Wechsler Ltd has requested that ESS functionality remain out of scope for this cost proposal. Therefore any costs associated to making ESS configuration and/or conversion changes in V3 based on recommendations stated in the Efficiency Report dated June 30, 2011 will not be included.

2 SOLUTION DETAILS

2.1 PERSONNEL INTERFACE FILE (PIF)

#	Assumptions
1	There will be no changes to the PIF format
2	All employers will be submitting an electronic PIF to Hawaii ERS
3	All PIF information prior to July 1989 have been imaged and resides in V3
4	Hawaii ERS is responsible for creating a new workflow if any needed.
5	Deceased and/or Finalized retirees will be excluded
6	Building a process to assist with identifying missing personnel information in the event an employer is unable to submit an electronic PIF is out of scope.
7	The Hawaii ERS will be responsible to data entering information not received electronically. No data conversion effort will be done by Vitech for information residing as Images or documents.
8	Any reference to Employers performing tasks in V3 in section 7.1.2 of the Efficiency Study is out of scope.
9	User entered data will be complete and will follow the electronic format referenced in Attachment B.
10	Vitech will not be responsible for validating user entered or data converted information for the agreed data conversion process outlined in section 2.1.1.

2.1.1 PIF

Hawaii ERS currently has a file format which employers may use to submit personnel information electronically to ERS. The requested enhancements that will be made to the PIF Import will include the recommendations made in section 7.1.2 of the Efficiency Study as it is related to the receipt of an electronic file format as seen in Attachment B. **In order to implement the enhancements required for the PIF there will be 4 key items that will be addressed:**

- Data conversion: Vitech will first delete any PIF records created by old PIF import process and reset the import status of those files to Not Processed. Vitech will then data convert into the new UI any Data Converted data done as a part of the Rollout III implementation and any subsequent user entered data.

- GUI: The UI for the employment tab will be modified to fully utilize the enhancements made in Version 8 of V3.

- Import: Vitech will modify the current import validation and rules for processing. This will include any updates/additions that may be needed to system factor tables needed.

- The PIF Datasheet will be removed from V3. The data stored in the datasheet will be a part of the conversion effort.

2.1.2 Missing Employment Events

The requirement requesting that the V3 application be able to identify missing employment events (7.1.3) is currently handled through the PIF import process on a go forward basis. In order for this process to function successfully across the Hawaii ERS membership, it assumes that all employers will be submitting an electronic PIF to the Hawaii ERS.

Electronic PIFs from employers to Hawaii ERS did not begin until around July 1989. Prior to this, personnel information was submitted via paper to the Hawaii ERS. These documents have been scanned and are viewable under the World >> Member >>Images tab in V3 under the Personnel folder. Vitech will associate any image associated to the Personnel folder to either an existing workflow or another workflow created by Hawaii ERS. This will allow the Hawaii ERS to manage the volume of data/information they are required to enter in the member's employment tab. Deceased members and/or Finalized Retirees will be excluded from this process.

Building a process to assist with identifying missing personnel information in the event that an employer is unable to submit an electronic PIF to the Hawaii ERS is out of scope and therefore not included in this cost proposal.

2.2 DATA CONVERSION

#	Assumptions
1	Data conversion effort will be limited to data converted records or data that is in V3 90 days prior to scheduled conversion date.
2	Changes needed for current processing of data received from Employers is not covered unless otherwise stated in this document.
3	There will be no conversion effort required if the Work History is sourced from any of the 600 Byte Work Report Import formats.
4	No changes will be made to update any of the Work Report Imports based on this recommendation unless otherwise stated in this document.
5	State of Hawaii is the only employer that is impacted by this mixed population of members with different pay schedules.
6	This conversion effort assumes that all Employment history for any member who was employed by the State of Hawaii at any time will have employment record(s) with the correct pay schedule indicator.
7	This conversion effort will be further limited to exclude all members who are deceased and/or finalized.
8	Hawaii ERS will provide the rules and calculations for distributing the Retro Pay. Rules and calculations will be based on information that is in V3.

There are two recommendations being proposed by the Efficiency Report to clean up historical data. The cost proposal for these recommendations are limited to data that was data converted or is in V3 as of 90 days prior to the scheduled conversion date. This cost proposal does not account for any changes needed to current processing of data received by the Hawaii ERS from Employers.

2.2.1 Lagged Pay

Recommendation 7.1.3, which is to "clean up" member work history and put earnings back into the correct periods requires that the Employers provide member specific data to indicate the periods in which a member was paid on time or lagged. The current Work Report Import process defaults the earning period based on Employer if the Employer is submitting the Work Report on the 200 byte Work Report Import or the 637 byte Work Report Import. The 600 Byte Work Report Import and the 600 Byte Work Report Import V.02 allows the employer to submit the correct earning periods. There will be no conversion effort required if the Work History is sourced from any of the 600 Byte Work Report Import formats. No changes will be made to update any of the Work Report Imports based on this recommendation.

The PIF layout has an indicator that identifies a member as being paid on time or lagged. Based on the information provided by the Employer to Hawaii ERS, Vitech will update the original data converted and V3 processed Work History records for the State of Hawaii Employer to the correct earning period based on the effective date and end date of that indicator. State of Hawaii is the only employer that is impacted by this mixed population of members with different pay schedules. This conversion effort will not be needed for any other employer. This conversion effort assumes that all Employment history for any member who was employed by the State of Hawaii at any time will have employment record(s) with the correct pay schedule indicator. This conversion effort will be further limited to exclude all members who are deceased and/or finalized.

2.2.2 Retro Pay

Recommendation 7.2.2, which is to redistribute Retro Pay to the correct earning periods requires that recommendation 7.1.3 is completed in order to distribute the pay for State of Hawaii employees. The current PIF format includes a field that stores the member's pay for a given period. It is assumed that the same information is present for historical periods. Provided that the Hawaii ERS is able to provide the rules and calculations for distributing the Retro Pay, Vitech will update Member Work History with the reallocation of the Pay for data converted records. This conversion effort will be further limited to exclude all members who are deceased and/or finalized.

2.3 Missing Service Credit Purchase (SCP) Data

#	Assumptions
1	All historical PIF data resides in V3
2	Query /Report is a one time event
3	Hawaii ERS is responsible for creating a new workflow if any needed.
4	Deceased and/or Finalized retirees will be excluded

2.3.1 SCP Images

There was only a limited amount of SCP data that was converted from Hawaii ERS' legacy system into V3. The bulk of the data resides as images in V3 as Image type EC&B 26 (Irrevocable Payroll Deduction Authorization Form, Purchase Payment Method Form, or Purchase of Service Payment Form) or EC&B 122 (Lump Sum Payment Form). Vitech will associate any image associated to the SCP folder to either an existing workflow or another workflow created by Hawaii ERS. This will allow the Hawaii ERS to manage the volume of data/information they are required to enter in the SCP Module as a Conversion type.

2.3.2 Leaves and Pension History

For Hawaii ERS, eligibility for SCP is primarily based on specific Leave types. Provided that Employment History is cleaned up (section 2.1), Vitech will develop a Query/Report that will compare Leave Periods and whether there is an associated Legacy SCP record in Pension History. If there is no Legacy SCP service for an associated Leave Period, this report/query can help Hawaii ERS determine whether in some instances the service should be granted. This will be a one time query or report. The report will exclude deceased and/or finalized members. The results of the query can be associated to an existing workflow or any other workflow created by Hawaii ERS.

2.4 ENHANCE WORK REPORTING

#	Assumptions
1	All historical PIF data resides in V3
2	Application changes are limited to the 600 Byte V.02 Import

The recommendations made in section 7.5 of the Efficiency Study will require modification to edit and validation rules performed in both the Work Report Import and the Work History Validation Release Batch. Currently there are 4 versions of the Work Report Import:

- Employer Work Report Import 200 Byte
- Employer Work Report Import 600 Byte
- Employer Work Report Import 600 Byte V.02
- Employer Work Report Import 637 Byte

It is understood by Vitech that the intent is for the Hawaii ERS to phase out all Work Report Import Formats with the exception of the Employer Work Report Import 600 Byte V.02. Therefore the only import that will be considered is the Employer Work Report Import 600 Byte V.02.

The Employer Work Report Import 600 Byte V.02 currently allows for the Employer to report different earning periods based on the individual member and therefore no changes are required for this.

Exception and/or Error conditions already exist in the Work Report Import 600 Byte V.02 for the following:

- The contribution received are the contributions expected
- For members on Worker's comp, 'true up' the pensionable earnings to the base pay and calculate and update the contribution deficiency amount. This data is stored/viewable in the member's participant account.

Modification made to both the import and Work History validation Release batch will be the following:

- Add a validation for the earning period dates reported by the employer based on the Pay Cycle indicator in the Employment tab.
- Any other validations that compare data received from the PIF and the Work Report processing.
- Cleaning up Retro Pay will be external to the Work Report processing. Hawaii ERS will be required to provide the rules and calculations needed to make the evaluation for redistribution of the Retro pay by the creation of a Work Report Adjustment.

- Any other validations required for the Work Report Import processing and/or the Work Report Validation Release Batch will be a joint effort by Vitech and Hawaii ERS. The determined action needed for how to "correct" these additional error/exception conditions is the responsibility of the Hawaii ERS.

2.5 NEW IMPORT: TEACHER'S SCHEDULES

2.5.1 School System Factor Table

Vitech will modify the current School System Factor Table to the following:

Attribute	Description
Personnel Location Code	This is the school specific code associated to a 9 or 10 month contracted teacher.
Year	The calendar year
Month	Numeric value of the month. For example 1 = Jan, 2 = Feb, etc
Days	The number of working days for that month and year and school.

2.5.2 Personnel Location Codes

A new system Factor Table will be created to store all valid Personnel Location Codes and Descriptions that could be submitted by the Employer on the PIF. This new system factor table is required due to the requirements of the Teachers Batch covered in Section 2.6. The Personnel Location System Factor Table will have the following attributes:

Attribute	Description
Personnel Location Code	This is the school specific code associated to a 9 or 10 month contracted teacher.
Personnel Location Desc	Description
Employer Code	V3 Employer Code
Billing Location	V3 Billing Location Code

The School System Factor import will have the following import parameter:

- Effective Date

This import will used to populate this system factor table. The import file will have the following validations:

- If Personnel Location code, Year and Month already exist then Error
- If Month is a value not between 1 and 12 then Error
- If days is a value not between 0 and 31 then Error

- Validate Personnel Location code against Personnel Location System Factor Table. If value does not exist then error.

2.6 MODIFICATIONS TO THE ADJUSTMENT TO ELIGIBLE COMPENSATION BATCH

V3 currently has a batch that is designed to move a member's Eligible compensation value to the appropriate months based on the Job Class Definition. This Batch will be modified and makes the following assumptions:

#	Assumptions
1	This batch will apply to only those teachers/professors who have been identified with a contract type in (9, 10) in their member work history
2	PIF data will have complete historical data in order to determine school location and periods worked.
3	All retroactive pay adjustments have been completed for any impacted members.
4	Batch will be modified to run annually for all impacted members.
5	The calculation that was defined in the Detailed System Design document (Attachment A) applies to all teachers (first byte of group code = 2 and not in UHPA or DAGS – UH billing location) with a contract period = 10.
6	The new calculation as documented in section 7.4.3 of the efficiency study will be used for Professors (Billing Location UHPA and/or DAGS - UH and contract period = 9 and first byte of Group code = 2) eligible compensation distribution.

The Batch parameters for the Adjustment to Eligible Compensation Batch will be modified to include the following:

- Description – User entered
- Scheduled Start Date – Defaults to current Date/Time
- Type: Teacher or Professor
- Period Start
- Period Stop
- SSN (To be used when user wishes to run for a particular person. If null, will run for all for a given type).

2.7 DATA REQUIRED AT THE TIME OF RETIREMENT

There are 5 pieces of information that is needed for members who are retiring. This information is provided to Hawaii ERS at various points during a member's employments. V3 will be modified to store this information and use it during retirement processing if applicable.

#	Description	Enhancement to V3
1	Unused Sick Leave	The employment tab in V3 will be modified to store Sick Leave hours/days once a member terminates employments or transfers from one employer to another. Two fields will be added: o Sick Leave Metric o Shift Hours (24) o Shift Hours (12) o Hours

#	Description	Enhancement to V3
		○ Days ○ Sick Leave Amount Upon Retirement the benefit calculation will use these to calculate the sick leave benefit at the close of each employment period. Service Credit for Shift Hours 24 = ((Hours reported * 2.1)/24)/20 Service Credit for Shift Hours 12 = ((Hours reported * 1.5)/24)/20 Service Credit for Hours = (Hours/8)/20 Service Credit for Days = Days/20 20 days of sick leave earns 1 service credit. Credit is rounded to the whole number. Example: Days = 70 therefore Service Credit = 4 for that termination/transfer event
2	Vacation Payout	Vacation is reported on the final Work Report after a termination, transfer, or retirement. Although the current work report process calculates the due amount on vacation pay based on Hawaii ERS rules, the data converted member work history data may show that contributions were erroneously taken from Vacation Pay. For any member with a membership date prior to 1/1/1971 contributions are allowed from Vacation pay. Members who have a membership date prior to 1/1/1971 are also eligible to take the better of a 3 year AFC or a 5 year AFC. Only the highest vacation pay is used for Pension benefits. ○ If membership date < 1/1/1971 and AFC used is 3 year then all contributions associated to Vacation pay is refunded back to the member ○ If membership date < 1/1/1971 and AFC used is 5 year then all contributions associated to not the highest Vacation pay is refunded back to the member ○ If membership date > 1/1/1971 then all contributions associated to vacation pay is refunded back to the member. Currently the WR import process correctly calculates due amounts for vacation pay based on membership date. The Work Report process also has validations to identify any record that is coming in after a member's retirement date. V3 can be updated to correctly calculate the due amount for any period

#	Description	Enhancement to V3
		with vacation pay reported for data converted periods. Pension can also be updated to calculate the refund amount for vacation pay where contributions on vacation pay are not eligible.
3	COB (Close of Business)	V3 is currently configured to allow users to enter the acceptance of a COB. It is a required proof doc in Pension. Therefore, no additional changes are required for V3.
4	Reserve Pay (Professors prior to 1975)	Reserve Pay is a type of pay that gets paid at the time of retirement. The form that Hawaii ERS sends to the University does not reside in V3. Reserve Pay inquiry is made for all Professors who have a membership date prior to 1975. This document is not required prior to retirement but is required prior to the retirement being finalized. Vitech can assist Hawaii ERS with any bookmarks needed so that this form/document can be generated out of V3. In addition, the Pension process will be modified to require the receipt of the form prior to pension finalization if the member is a professor who has a membership date prior to 1/1/1975.
5	Summer Pay	This is covered under section 2.5 and 2.6 of this document.

2.8 Reconcile Member Contributions

Vitech will allow for a set number of hours for Hawaii ERS to identify requirements for any additional reporting that is needed to assist them with reconciling member contributions.

3 EFFORT ESTIMATE

Vitech estimates that delivering the solution described herein pursuant to the assumptions and considerations in this document will require approximately **6,900** hours of effort.

The table below provides a representative breakdown of hours by each enhancement. This information is presented for analytical purposes.

The estimates include requirements, development, internal testing, onsite testing, UAT support, PM and coordination and deployment activities

This analysis and the **6,900** hours estimate are both based on Vitech's current understanding of related scope and requirements and assume a solution approach consistent with that described in this document. Please note that actual invoices will contain aggregated hours not necessarily broken down into these categories.

No.	Description	Total Est Hrs
2.1	PIF	2,000
2.2	Data Conversion	840
2.3	Missing Service Credit Purchase	700
2.4	Enhance Work Reporting	300
2.5	Teacher's Schedule Import	500
2.6	Modification to the Adjust Eligible Compensation Batch	560
2.7	Data Required at the time of Retirement	1,000
2.8	Reconcile member Contributions	1,000
Total Hours		**6,900**

3.1.1 Estimate Assumptions

Estimates do not include training or documentation.

Estimates assume a single production roll out for all items.

Estimates may vary based on ERS requirement, design, scope and rollout decisions in the course of the effort.

4 TIME ESTIMATE

Vitech estimates that it will require approximately 9 months of calendar time to design, configure and deploy the functional items listed above.

5 COSTS

The services provided under this proposal will be delivered on a time and materials basis at the rate of $185/hr plus expenses.

Additionally in consideration of ERS' acceptance of this proposal, Vitech will not seek any additional maintenance fees as a result of this change. This will be beneficial to ERS as it will eliminate recurring costs that might result from the additional scope set forth in this proposal.

6 OTHER TERMS AND CONDITIONS

1. This is a time and materials estimate only based upon our current interpretation of the needs presented. This is not a fixed price bid and hours related to this order will be billed based upon all actual time worked at the rates indicated herein, plus related expenses.

2. Vitech cannot predict future regulatory changes ERS may have to comply with. Vitech can work with ERS to address any more regulatory changes not covered by the estimate analysis in this document as and when they are explicitly requested by ERS. Such work would be outside the scope of this proposal

3. Vitech assumes that ERS will be responsible for the management and execution of User Acceptance Testing.

4. Unless they are overridden by the terms and conditions from this document, terms from the original Software License, Update Subscription and Service agreement apply.

5. Items not covered in the scope of this project will be billed separately at $185/hr if carried out at the request of ERS.

6. All payments to be received within 30 days of invoicing. If payment not received on time, interest shall accrue at 0.44% per month until the date paid.

7. All travel expenses associated with this work will also be billed at actual cost.

7 ACCEPTANCE

VITECH SYSTEMS GROUP, INC.

Signed by:_____ Date:_____

Name and Title:

ERS

Signed by:_____ Date:_____

Name and Title: