

ORDINANCE NO. 7354

AN ORDINANCE making an appropriation of \$118,341 to the Systems Services Fund, from the Systems Services Fund Balance; amending Ordinance 7027, Section 76, as amended.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

SECTION 1. There is hereby approved and adopted an appropriation of \$118,341 to the Systems Services Fund, from the Systems Services Fund Balance. The appropriation will pay for programmer analyst support associated with: (1) design work on Stage IV of the Property Based System (PBS); (2) final testing of PBS Stage III; and (3) preparation of the PBS feasibility study required by council proviso in the 1985 Adopted Budget.

SECTION 2. Ordinance 7027, Section 76, as amended, hereby amended to read as follows:

From the Systems Services Fund there is appropriated for Systems Services ((\$8,922,450)) \$9,040,721

The maximum number of FTE's to be budgeted for the Systems Services shall be: 90

PROVIDED THAT included within the Systems Services budget are funds for 13.5 analyst months to provide a feasibility study on the continuation of the PBS New Development project.

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1 This feasibility study will be conducted in conformance with
2 the recommendations contained in the 1984 County Auditor
3 "Systems Services New Development Audit." The remaining 40.5
4 analyst months requested for this project in 1985 will be
5 funded out of Systems Services Fund Balance contingent upon
6 council approval of the continuation of this project.

7 INTRODUCED AND READ for the first time this 24th
8 day of June, 1985.

9 PASSED this 23rd day of September, 1985.

10 KING COUNTY COUNCIL
11 KING COUNTY, WASHINGTON

12 Bary Grant
13 Chairman

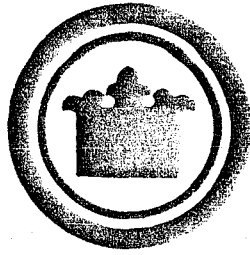
14 ATTEST:

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16 Janeth M. Owens
17 Clerk of the Council

18 APPROVED this 30th day of September, 1985.

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20 Randy R. ...
21 King County Executive

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RUTHE RIDDER
KING COUNTY ASSESSOR

708 King County Administration Building
500 Fourth Avenue
Seattle, Washington 98104-2384

April 2, 1985

Gary Grant, Chairman
King County Council
C O U R T H O U S E

7354

Dear Chairman Grant:

Attached is the feasibility study for PBS Stage IV, in conformance with the 1985 budget ordinance, which states in part: ". . . included within Systems Services budget are funds for 13.5 analyst months to provide a feasibility study on the continuation of the PBS New Development project. This feasibility study will be conducted in conformance with the recommendations contained in the 1984 County Auditor 'Systems Services New Development Audit.' The remaining 40.5 analyst months requested for this project in 1985 will be funded out of Systems Services Fund Balance contingent upon Council approval of the continuation of this project."

The study is limited to PBS Stage IV as described in Section III of this document. It is our intention that Stage IV be the last stage of PBS. In completing Stage IV, we will have implemented all systems included in the 1979 PBS General Design, with the exception of the Assessor's Commercial/Industrial System, and the Finance Department's L.I.D. billing systems.

We wish to point out at the outset that the resource estimates provided in this study are the best we could calculate without performing the review of the existing General Design, and creating a detail design for this stage. Our estimates will be reassessed as those tasks are done. In order to make effective use of the analyst-months requested for 1985, and to avoid layoffs of experienced Systems Services staff, we need to go ahead with the project no later than May 1.

We look forward to your approval of continuation of PBS Stage IV. The benefits to the county are substantial, and failure to proceed jeopardizes the county's ability to collect property tax revenues in coming years.

Questions about the study should be directed to Joan Young, at 344-7426.

Very Truly Yours,

RUTHE RIDDER,
King County Assessor

ROBERT COWAN,
King County Finance Director



PBS STAGE IV FEASIBILITY STUDY

March, 1985

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PBS STAGE IV FEASIBILITY STUDY

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PBS Stage IV Feasibility

I. Executive Summary

This study identifies problems with the 20-year-old computer systems currently used to perform the processes of property tax roll certification, billing, collection and distribution. The study seeks a system solution to meeting property tax administration needs for the next 20 years.

Five solutions to the problems are evaluated:

1. Return to manual processing.
2. Install a vendor package.
3. Develop new systems for microcomputer hardware.
4. Keep with the current system.
5. Continue systems development using the PBS data base design.

These alternatives are weighed against fourteen evaluation criteria, including the risk of producing a late and/or incorrect tax roll. This risk is significant and increasing as legislative changes continue.

Alternatives 1 and 3 are found to be non-feasible.

A suitable package has not been identified, for alternative 2. This alternative is also seen as high-cost because of modifications required to meet legal requirements and to interface with already-developed PBS systems.

Alternative 4 is high-cost because of extensive modifications needed to bring the system into conformance with current requirements. Benefits from alternative 4 do not exist in the areas of improved management information, ease of future maintenance, and future cost savings. Risks of future delay or substantial errors in producing a tax roll remain high with this alternative.

Extension of the PBS system is the recommended course of action. Development cost is offset by savings in high-cost changes needed to existing systems. Benefits include improved management information capabilities, greatly minimized risk of being unable to respond to legislative changes, lower future maintenance costs, and increased efficiency of personnel use. Microcomputers are likely to become part of the design to support and enhance mainframe functions.

Future manpower requirements for completing development of the proposed Stage IV are 219 Systems Services analyst months. A tentative schedule calls for doing the work over a 3 1/2 year period, following approval by the Council of this study. The project is initially divided into 3 segments, with segment I scheduled for completion in September of 1987, segment II in February of 1988, and segment III in

February 1989. The tentative schedule will be refined following completion of the General Design Review and Development Plan tasks, and will also be affected by the timing of approval of the project.

II. Introduction

A. The Property Systems Environment

The King County Office of Finance and the King County Assessor together operate the largest property taxation system of the 39 counties in this state. King County contains 3% of the land area, 25% of the real property parcels, 30% of the population, and 40% of the property value in the State of Washington.

In 1985 King County billed for collection \$625 million in property taxes, of which \$114.3 million went to support the operation and services of King County government. The remaining amounts were distributed to the state (\$201 million), school districts (\$138 million), cities (\$106 million) and other taxing districts (\$65.7 million).

The Assessor and Finance Office make extensive use of main-frame computer systems to assess, bill, and collect these taxes. Computer systems print, and sort for mailing, 595,000 property tax bills annually, and 600,000 revaluation notices every two years. More than 3 billion bytes of tape and disk storage space is required for the data associated with the property taxation task.

Property taxation processes were first partially computerized in 1965. At that time, Property Record Cards that represented the assessment and tax rolls were converted into computerized files, and programs were written to automate the processes of certifying the assessment rolls and calculating, billing, receipting, and distributing taxes. Computerization of these functions was done at that time in response to growing costs for "temporary" staff to produce the tax roll each year. These 1965 systems underwent numerous enhancements in the next five years in the area of controls, edits, balancing, and distribution of value and taxes.

Court decisions in 1969 requiring assessors to revalue all property at least once every four years resulted in further automation in the Assessor's office. State funding assistance was provided for development of computer systems and collection of data that would allow for computer-generated real property value estimates.

In 1973, the 158 file cabinets of Property Record Cards were archived, and the Assessor's microfiche system was developed to provide easy public access to property value, characteristics, and sales information.

B. Property Based Systems (PBS) Background

The major computer systems used for property tax administration since 1965 were developed at different times, often in relative isolation from each other. Problems with data redundancy, system inflexibility, and cumbersome system-to-system interfaces quickly arose as systems were added.

In addition, the years 1970-1975 brought a wealth of property tax legislation (the 106% limit, senior citizens and home improvement exemptions, tax deferrals, current use/open space exemptions, limitations on levy rates) that severely taxed the ability of the existing systems. Production of the tax roll in a timely manner was threatened, and concern began to grow about the adequacy of the property systems.

In 1975, King County officials, department directors, and managers participated in a seminar at Battelle Institute to discuss requirements for property information, and to set the direction for a long range plan to meet those requirements. The seminar participants concluded that there was a need for a comprehensive Property Based System (PBS), and that study should begin immediately to define the project.

The group recognized the need for top management commitment to PBS. A Steering Committee was formed, and a consultant (Group of Associates) was hired to do the analysis. The Steering Committee postulated that the proposed system should be flexible, cost-effective and reliable; should conform to legal mandates, and should not be dependent on key staff to operate. It was a basic assumption that the current systems did not possess these characteristics.

Since the initiation of the PBS project in 1975, many of the computer systems of the Assessor have been redeveloped. A single data base was created from existing computer files, and structured methodology and modern languages were used to write the programs. However, the oldest and most critical portions of the old systems remain in place. These systems, initially scheduled for early redevelopment, could not be attacked because of inability of the Office of Finance to provide staff support from 1980 through 1984. The current proposal would complete the PBS system by integrating these crucial computer functions into the partially developed data base.

A complete history of the PBS project from 1976 to 1985 is contained in Appendix A. Appendix B identifies the scope and benefits of the first three stages of PBS.

III. Scope of Proposed System Changes

The property tax administration functions considered in this study are performed jointly by the Assessor and the Office of Finance. Computer files and programs are (and will continue to be) shared by the two departments. The scope of the study is defined below in terms of: A) Operational Capability B) Data Files.

A. Operational Capability

Systems must perform the following functions:

1. Preparation for Certification of Assessment Roll for Real and Personal Property

- Process changes to Taxing District Boundaries
- Establish Funds and Distribution Structure for Value and Taxes
- Determine Debt Service/Cash Flow Requirements for Junior Taxing Districts.
- Post State-Assessed Valuations
- Calculate New Construction Values
- Calculate Senior Citizen Exemption Values
- Initialize Future Year Assessment Roll.

2. Certification of Assessment Roll

- Summarize and Report Assessed Value within the Levy Structure
- Compute and Report Levy Limitations to Taxing Districts.

3. Calculation of Tax Liabilities

- Determine Levy Rates for Taxing Districts
- Refine Fund Structures Based on District Budgets
- Calculate and Post Taxes for each Parcel
- Certify Tax Roll to Finance Officer
- Print Levy Rate Book.

4. Tax Billing/Receipts

- Print Tax Bills (batch and on-line)
- Process Receipts/Refunds
- Interface Receipts/Refunds to ARMS
- Distribute Receipts to Taxing Districts
- Print Delinquent Tax Bills
- Process Foreclosures/Distraints
- Maintain Daily Tax Accounts Reconciliation
- Purge Paid Tax Data at Year-End
- Produce Year-End Summaries and Detail Reports on Taxes Billed, Paid
- Provide Inquiry Access to Billing/Receipt Data for Accounts.

5. Maintenance of Real Property Data

- Process Changes to Property Boundaries (segregations, merges, plats, etc.)
- Process Assessed Value Changes from Sources other than Revaluation (e.g. Appeals Board changes)
- Maintain Taxpayer Name/Address Records
- Maintain Mortgage Company Taxpayer Records
- Maintain Senior Citizen and Current Use Exemption Information (Partially automated now)
- Maintain Assessed Value in Balance with Levy Structure Totals.
- Provide Inquiry Access to Real Property Data for Parcels.

6. Maintenance of Personal Property Data

- Process Assessed Value Changes for Annual Valuation Cycle.
- Process Tax Roll Changes resulting from Appeals Board Changes etc.
- Maintain Senior Citizen and Head of Household Exemption Information
- Maintain Assessed Value in Balance with Levy Structure Totals.
- Provide Inquiry access to Personal Property Account Data.
- Provide management information and operational support for the annual valuation cycle.

7. Maintenance of Levy Structure

- Balance and Correct Assessed Value Totals within the Levy Structure
- Provide Inquiry Access to Levy Structure Data.

B. Data Files

The following computer files exist in the current system to perform the functions listed above:

- Real Property Master File
- Levy File
- Personal Property Master File
- Mortgage Company File
- Refund File
- Levy Cross-Reference File
- Fund Sequence File.

IV. Statement of the Problem

A. Assumptions

The following assumptions are fundamental to describing property system deficiencies:

1. Ad valorem taxation will remain the primary source of local government revenue.
2. The total number of transactions measured in number of parcels, assessed valuation, and amount of taxes billed will continue to increase. (See Table 1.)
3. Mandatory legislative changes will continue to occur.
4. Significant permanent staffing increases to Departments of Assessments and Finance for the activities shown in Section III of this study will not occur.
5. Increasingly complex information requests from local and state governments will continue to occur.
6. Technological advances will continue in computer hardware, microcomputers, telecommunication networks and application program software development. Systems developed under a DBMS concept are more easily adapted to take advantage of such technological advances.
7. Taxpayer requests for information will continue to grow.
8. The alternative selected must have a useful life of 20 years. (The existing pre-PBS systems have been used for almost 20 years).

B. Nature of the Problems

The property systems considered in this study are now 20 years old. Problems with these systems can be divided into two types:

1. Problems of inadequacy or obsolescence of the original system design.

Requirements for the system have changed since 1965, largely because of legislation. Requirements changes have usually been accommodated in the old system, but often awkwardly and at considerable expense. Some mandated changes have been handled through manual work-arounds because the system changes required were too time-consuming and/or too expensive.

The system, obsolete anyway in terms of technical design and programming language, has not suffered the many patchwork changes gracefully. The originally unstructured design is now all but incomprehensible. Hence, maintenance to the system has become increasingly costly, and, for some situations, impossible.

This situation is the major motivation for redesign. The requesting departments anticipate legislative changes that cannot be accommodated in the current system, and believe that production of correct, timely tax bills is in jeopardy if these changes must be handled in a crisis-response manner.

These anticipated changes, as well as other problems stemming from obsolete design, are described in more detail in part C of this section.

2. Problems of functional inadequacy

The system fails to provide adequate capabilities in various functional areas.

The specific inadequacies are described in part D of this section.

C. Problems of Inadequate Design

1. Limitations imposed by record structure and file structure.

Problems a-e listed below are created by one or both of these limitations:

- The record on the file in question is completely full of data; there is no space left.
- The programs don't allow for an account to have multiple entries for values, dates, or other data.

To force the system to perform the desired functions would require re-structuring the file, and then changing every program that reads it. That approach has been used, at great expense. Two recent examples of seemingly minor changes:

- i) Increasing the precision of the levy rate (millage) from 3 to 5 decimal places required 7 analyst-months of effort because changes to so many programs were necessary. The change was required because the existing level of precision caused excessive rounding errors in tax computations.
- ii) Increasing the size of the assessed value fields in order to accommodate values of \$100,000,000 and above required 6 analyst-months of effort.

Modern software and file design techniques allow such changes to be made with a significantly smaller level of effort.

- a) **Changes to Tax Billing Frequency**
Since 1981 legislation which would allow the payment of taxes in monthly or quarterly installments and interest/penalty in monthly installments has been introduced in the Washington Legislature. This legislation is again proposed in 1985. System change costs have been estimated at 43 analyst-months, and there is no possibility that the work could be accomplished within one year from the passage of such legislation. The probability of enactment of this proposal increases significantly with each increase in tax bills. (In 1985, the average tax per parcel in King County was \$1050, compared to \$775 in 1982, and \$550 in 1973.)
- b) **9-Digit ZIP Code**
The existing property system does not have the flexibility for the Office of Finance or the Assessor to take advantage of the financial incentives for using the nine-digit ZIP code. Although a February, 1985 study by Systems Services found that stand-alone conversion or modification of the present systems would not be cost effective in the first year, there is a definite system life cycle benefit from this conversion done in conjunction with other data base modifications.
- c) **Personal Property Omitted Assessments**
When assessments on personal property have been omitted for some reason, the system requires that a separate, unique account number be established on the tax rolls for each of the prior years (up to three) for collection of back taxes. The result is up to four account numbers for the same personal property taxpayer. The taxpayer receives a tax statement and revalue notice for each account, which must be processed by Assessment and Finance personnel. This additional paperwork occurs for approximately 5000 omit accounts each year.
- d) **Personal Property "Quick-Collects"**
When personal property is sold or transferred after the taxes have been assessed and the tax liability established, a process called "Quick Collect" is used to collect the appropriate tax from the new owner. To do this a new account number is established on the tax roll and a supplemental tax bill goes out. In order to track and reconcile both accounts, a complicated

and time consuming procedure is required. An inordinate amount of work is required to control 1500-2000 quick collect accounts each year.

e) Current Use Exemptions

Several thousand parcels of property in King County have obtained property tax exemptions because of their current use (usually agricultural or open space). The Assessor is required to maintain a record of both current use value, and highest-and-best use value, for the past seven years, so that back taxes can be collected if the property is removed from its exempt status. The current system does not allow for maintenance of two sets of assessed values simultaneously, and hence record-keeping and back-tax calculations are done manually for these properties.

2. Audit Trail Limitations

The present real property audit trail system allows only three changes to the property boundaries for a given parcel in one year.

Two alternatives are currently available if more than three boundary changes need to be made.

The first method involves running two separate programs to change two separate files. A separate source document is needed to change each affected tax roll year, and no audit trail code for these changes is left on the property files. In 1984, 350 such situations occurred.

A second method is to "kill" the existing parcel and establish a new parcel number with the changed data. Again, however, there is no clear audit trail identifying the original parcel number.

The audit trail code in the current system creates other problems because of its multiple uses. The code is used to identify some tax exempt properties, billing-only accounts established to collect back taxes and penalties, jointly-owned properties, and other miscellaneous items. Since the code in these cases performs an identifying function, it cannot be incremented to perform its audit trail function. Hence some accounts have no audit trail at all.

The audit trail code is technically a part of the parcel number, and a further problem arises when it is incremented. In the perception of the taxpayer, the account number is changed with no logical explanation.

3. Management Information Limitations

The system provides no capability for user personnel to generate reports and information, either for internal use, or for support to taxing districts. The Assessor provides information on debt ceilings, cash flow requirements, bond ratings, overlapping debt, and the like to junior taxing districts, and data on high-value accounts to bond rating companies. However, the information is compiled manually. Demands for such information continue to grow, far beyond our capacity to produce it with current methods.

4. Fund Number Limitations

"Artificial" fund numbers must sometimes be established in the property systems for purposes of summarizing value, and these fund numbers are later converted when tax collections are processed through ARMS. Establishment of taxes and collection of taxes are not auditable through the various property and ARMS reports because of these fund number substitutions.

5. Data Redundancy

Data redundancy (maintenance of the same data item, such as parcel number, on several separate computer files) creates two kinds of problems. First, separate "change" transactions must be prepared and input when the redundant piece of data is changed. Clearly this is inefficient use of human resources. Second, the potential for failing to change the data on one or more of the files is very great. The files are then in disagreement; and accuracy of reporting from the non-updated file(s) is affected.

The existing non-PBS files contain many such data redundancies. The PBS files already created, by contrast, use Data Base Management System techniques that eliminate the redundancy problems.

6. Obsolete Programming Language

Main jobstream application programs are written in Basic Assembler Language (BAL). These applications have an unstructured design, and BAL has not been an active KCSS programming language for years. Technical knowledge of this language resides in only two people in Systems Services' Property group, and program maintenance is a severe problem. The program size and complexity, and unstructured program design, limit the user's knowledge of the program's processes and capabilities.

Because of this, requests for new reports, or for transaction logic changes, are hard to satisfy in a reasonable time frame. Response to a legislative or administrative

requirement is equally difficult. In general, BAL programs require two to three times more time to modify than a comparable program in a modern language such as COBOL or NATURAL. In addition, the documentation for these programs is so poor that days of analyst time is spent trying to figure out how the program works.

7. Limitations on Data Availability/Expansion

Additional data elements, such as a common property account indicator and Folio/Area/Subarea, are not available for use in the systems that perform assessing, billing, collecting and distribution of taxes. Lack of this data in a readily useable, automated file necessitates significant manual effort to collect, store and analyze it in relation to other data. Also, future mandatory system changes may dictate that even more data elements be collected. The current system will not accommodate this growth requirement.

D. Functional Inadequacy

1. New Construction and Other Value Reporting

The value of new construction within a taxing district is outside the 106% limit, and directly affects the tax ceiling for that district. The current system provides no means for tracking new construction values (nor total assessed value) by district as values are established. New construction and other value estimates are provided to districts based on hypothetical trends, until reports become available (long after the information could be of value to the district).

2. Annexation Processing

Changes to taxing district boundaries through annexation are processed manually. Parcels and accounts falling within the annexed area are listed by hand, from maps, and data changes are made parcel-by-parcel to all affected systems. Several source documents may be needed for each parcel or account, since systems are not integrated into a single data base.

A major annexation such as the proposed incorporation of Federal Way or expansion of Des Moines would require a monumental manual effort to accomplish. A simplified process is needed to apply boundary changes, establish the funds, determine levy rates and distribute the assessed value and taxes with better control and audit capability.

3. Certification of the Tax Roll

The tax roll certification process, which involves establishing funds and levy rates for each taxing district, calculating taxes for individual accounts and for districts, and producing the levy rate book, is conceptually simple. However, the current system makes the process inordinately cumbersome and error-prone. The existing levy structure is inadequate to describe complexities in tax liabilities that occur when areas are annexed, and property owners take a portion of their former district's bond liabilities with them. Currently, Assessments staff rely on paper records to ensure that these ongoing liability changes are properly accounted for when the annual certification process takes place. The same is true for passage of excess levies. The system does not provide for any record-keeping, and paper records must ensure that levy rates account for levies passed throughout the year.

Certification is therefore dependent on the knowledge of a few key individuals, who must determine and set levy rates in a very short period of time. Additional pressure comes from the frequent delays in receipt of levy ordinances from the various taxing districts, and the inadequate reporting capabilities of the current system. The risk of certifying an incorrect tax roll is high under these circumstances, and the mechanisms for recovery are very limited once the bills are sent.

4. Control of Receipts and Distribution

Two distinct groups of reports are produced each day showing adjustments to taxes billed, paid, or refunded. However, these systems do not report when there is a disparity between the balances. Differences must be manually reconciled when disparities can be identified.

In addition, the grand totals in the property master files and the levy file may balance, yet there can be fund-to-fund out-of-balance conditions between the two files. These discrepancies presently cannot be detected until the ARMS month-end reports are produced.

5. Accounting for Interest and Penalty Payments

The real and personal property master files do not reflect payments of interest and penalties on property taxes. Only taxes billed and paid are accounted for in these systems. Manual actions are required to answer taxpayer questions concerning total sums owed to King County. Likewise, when a refund must be made, manual action is required to research the amount of the total payment satisfying the interest/penalty portion of the bill, vs. the tax liability.

6. Refunds and Other Changes to Prior Years' Tax Rolls

The current system generates tax refunds automatically when current year tax is overpaid. However, all record of value and tax is purged for fully paid accounts at the end of each year. This creates a series of problems when, for instance, a valuation appeal reduces value for a prior year (a frequent occurrence, since the local Board of Equalization is still hearing appeals of 1983 values, and the State appeals board has not yet finished 1982 value cases).

Since overpayment of taxes is not evident to the system after the payment record is purged, refunds are not automatic. The taxpayer must formally petition the county for a refund, and the processing of the refund is manually tracked in the Assessor's office and the Office of Finance. The taxpayer, already annoyed at having had to formally petition for money owed to him, experiences further difficulty in trying to find out the status of his refund.

7. Management of Road Funds

Counties are required by RCW 35.13.270 to redistribute road funds to the appropriate city funds when road funds are received from taxes paid on properties that were annexed to a city after the taxes were levied.

Once the taxes have been levied, the levy code on the property files cannot be changed. Therefore, these road fund collections must be "manually" redistributed. This redistribution is accomplished two times each year - about the first week of June and January. This manual process will continue until the levy code is changed and all accounts paid in full.

The present system cannot be cost effectively modified to provide for redistribution as the taxes are paid for the annexed parcels. This limitation may become a legal issue if large numbers of parcels are annexed and the taxing districts demand earlier transfer of their road funds.

8. Mobile Home Taxation

Assessment, billing and collection of taxes for mobile homes is done within the personal property system. Land on which mobile homes are located is real property, and is assessed and taxed in the real property system. The two systems are not integrated in any way. Mobile home owners receive two tax bills (if they own the land underneath their home).

The situation is likely to be more complex in 1986 if pending legislation is passed to make some mobile homes subject to foreclosure rather than distraint. The existing personal property system does not do foreclosure processing. The existing real property system is not equipped to cope with valuation of mobile homes.

9. Integration of Personal and Real Property Data

Although personal property is clearly located on real property, there is no cross-reference between the two in the existing systems. Annexations, boundary changes, answers to taxpayer questions, etc., all require the manual manipulation of lists to identify impact areas including answering such basic questions as "How much total (Real & Personal) property tax do I owe?" Furthermore, errors in assignment to taxing districts occur because of the lack of cross-reference.

10. Processing Senior Citizen Exemptions

The existing systems do not accommodate the following situations:

Cooperative apartments where one or more owners have senior citizen exemptions. Since there is only one tax account to bill, the value is artificially adjusted so that the proper amount of tax will be collected. However, the payment received is not distributed properly since the system cannot identify what proportion of the payment does not receive the normal distribution to excess levies.

Mobile homes on fee-owned land, where the owner has a senior citizens exemption. Under some circumstances, the individual is allowed a value reduction which may exceed the value of the mobile home. In this case, the additional deduction is to be applied to land value. Currently, the mobile home and the land are in two different computer systems, and the proper adjustments must be made and monitored manually. This is a time-consuming and error-prone process.

Senior citizens who sell their homes in mid-year. These taxpayers are eligible to transfer their exemptions to a new home they purchase. However, the system is not able, at mid-year, to accommodate such a transfer. It therefore bills 2nd-half taxes on the new home at the full rates, and the taxpayer is required to overpay and petition for a refund.

11. Distribution of Timber Excise Tax

Legislation passed in 1984 requires counties to go through a complex process to estimate the amount of timber excise tax that will be received by each taxing district in the coming year, and account for that amount in the property tax levy rate. The current system makes no provision for assisting in this error-prone process, so it is done manually by professional staff.

V. Alternatives and Evaluation

A. Alternatives Summary

Five alternatives are considered in this study. They are:

1. Return to manual processing
2. Install a vendor package
3. Develop new systems for microcomputer hardware
4. Keep the current systems
5. Continue systems development using the PBS data base design.

The following sections describe the evaluation criteria and their application to each alternative. The evaluations are summarized in table form and a recommended alternative is selected.

B. Evaluation Criteria

The five alternatives are evaluated using fourteen criteria which are briefly described in the following paragraphs.

System Life This is the time period for which any solution remains effective.

Risk of Delayed or Incorrect Tax Bills The annual production of the ad valorem property tax statements is the most visible and critical requirement of the Stage IV functions. This process includes the certification of the tax roll by the Department of Assessments and the printing and mailing of tax statements by the Finance Department. There is the risk of loss of investment income, additional interest expense, and lowered bond ratings for many taxing districts if a delay occurs in producing tax statements. Production of an incorrect billing would create a situation from which timely recovery is difficult or impossible.

Staffing Levels The staffing objective is to maintain or reduce staffing levels in the assessment and finance areas included in the Stage IV functions.

Development Costs These are costs associated with the design, coding, and documentation of any new systems development.

Cost Savings These are current costs which would be reduced by the system changes that result in more efficient or more effective operations. A concrete example of a cost savings would be reduced postal rates resulting from the use of "ZIP plus 4" for bulk mailings.

Cost Avoidance This refers to the cost differential to do a specific task using two alternative solutions. An example is the cost differential required to expand the levy rate by an additional digit in the current vs the proposed PBS system,

e.g. 7 analyst months in the current system vs 2 analyst months in the PBS system would result in \$23,040 cost avoidance.

Support Terminal Network This is the requirement for on-line access by the Finance and Assessment Departments to real and personal property data. In addition, there are external users who currently access this data. Alternatives are evaluated to assess their capacity to support the network access as currently provided.

Large Volume Printing Tax statements, revalue notices and personal property affidavits are large volume tasks which must be completed in a timely manner.

Interfaces with Existing Systems Data is transferred from existing residential, commercial and personal property appraisal systems to the Stage IV jobs and from the Stage IV jobs to the ARMS accounting system. These interfaces with existing systems must be maintained.

Accommodate Deferred Requirements Manual procedures have been established in lieu of modifications to existing systems. This is caused by the current system design which results in prohibitive modification costs. An example is the "ZIP plus 4" modification described in section IV. The capacity to accommodate such deferred requirements is an important consideration when evaluating the alternatives.

Maintainability This item refers to the completion time, manpower costs and reliability of modifications that can be accommodated within the system structure. The overall maintainability of the system is influenced by the accuracy and completeness of user, system and program documentation, program coding structure, program language and file design, (i.e. integrated data base vs independent file structure for various subsystems). A system with good user documentation, good system documentation and structured coding in a data base environment requires substantially less maintenance budget than the opposite situation.

Data Storage Adequacy This is the capacity of the alternative to store the essential data elements required for the assessment and finance functions associated with the real and personal property rolls.

Management Information This is the ability to produce timely reports of activity, status, exceptional conditions and summary information related to the maintenance, creation and processing associated with real and personal property assessed values and tax data.

Input Control This is the ability to provide timely control reports to monitor file update transactions. The controls insure data integrity and minimize unauthorized or fraudulent activity relating to assessing, billing and collection functions.

C. Alternatives

Five alternatives are presented in this section. Subsequent sections evaluate these alternatives and recommend the most desirable solution. Each alternative is intended to perform the functions described in Section III - Scope of Proposed System Changes.

1. Return to Manual Processing

With this alternative, clerical staff would replace the computerized functions that determine levy rates, produce tax bills, record tax payments, and distribute funds to the various taxing districts. Appropriate manual procedures would be developed to maintain the real and personal property rolls, to receive data from existing appraisal systems, and to provide input to the ARMS accounting system.

2. Install a Vendor Package

With this alternative, a vendor supplied software package would be purchased by King County. Such a package must include the ability to function in the existing King County mainframe environment, perform the basic functions of this stage, and conform to King County standards of documentation, program language and interface capabilities. King County's Systems Services would modify the purchased programs to their requirements, as well as Assessment and Finance requirements. The final program versions must include resolution of the problems identified in section IV.

3. Develop New Systems for Microcomputer Hardware

With this alternative, King County would purchase necessary microcomputer hardware and operating software to perform the Stage IV functions. The hardware would include a number of computer devices such as the processors, disk storage, keyboards, CRT display screens, and printers and the necessary interconnecting hardware for interfaces to existing mainframe systems outside the scope of stage IV.

Using Finance and Assessment requirements, Systems Services would provide the necessary application programs within the constraints of the hardware selected for this alternative.

4. Keep the Current Systems

With this alternative, the existing systems described in Section III would be retained. Program modifications to meet the essential Finance and Assessment requirements would be made by Systems Services. These systems would be used as long as they could reasonably be expected to perform the functions of this stage.

5. Continue Systems Development Using the PBS Data Base Design

With this alternative, the existing systems and files described in Section III would be replaced. These new systems would follow the PBS General Design and would be compatible with existing PBS systems. This integrated design approach would eliminate many interfacing programs and data redundancies required for the current file structure.

New programs would be written using a modern programming language which is easily maintained and coded. Systems Services has experienced staff who are familiar with the PBS design concept and the programming language that would implement the design. User, system and program documentation would be prepared as part of the development process.

D. Evaluation

The five alternatives are evaluated in this section. The next section includes a table which summarizes the fourteen evaluation criteria as applied to each alternative.

1. Return to Manual Processing

In order to evaluate this alternative, some consideration must be given to the mandatory tasks which all feasible solutions must accomplish. During the first six weeks of each year, bills for approximately 595,000 Real and Personal Property accounts are prepared and mailed to taxpayers. As payments are returned with these statements, they are processed to record the payment and the funds are distributed to the various taxing districts using data currently contained in computer files. Prior to mailing the tax statements, the assessor's office determined the levy rates for the various taxing districts using the assessed value and tax exemption data for each of the 595,000 accounts.

The certification process determines the levy rate and calculates the taxes due from each taxpayer account. This is a complex process which must consider the budget requirements of multiple taxing entities, a variety of taxpayer exemptions and statutory limitations with special consideration given to new construction within each district. This process is further complicated by frequent changes to the taxing district boundaries, the completion of the year end assessment roll and the requirement to mail tax statements at the beginning of each year.

The tax billing, receipting and tax roll certification are fundamental tasks which must be completed in a timely manner in order for a solution to be feasible. The additional constraint of completing these tasks without enormous increases in staffing levels makes a return to manual processing an unfeasible solution.

2. Install a Vendor Package

In 1980, the TACS property system developed by the Burroughs Corporation was studied and found to be unacceptable for King County needs. A current phone survey of 10 counties comparable to King County indicated that all of their systems were developed by their own staff. Volusia County, Florida, which is less than half the size of King County, installed a vendor package four years ago. This required extensive modification to meet their needs and was not designed to operate in a data base environment. San Diego County is currently developing new property systems and prior to beginning this development, eliminated the Volusia County package due to the extensive mod-

ifications required for California law. Interfaces to existing systems, data base design requirements and substantial modifications to conform to Washington State law indicate a vendor supplied package is an unattractive solution due to risks of excessive development costs and questionable benefits.

3. Develop New Systems for Microcomputer Hardware

Any microcomputer alternative would have to satisfy the following requirements:

The systems within the scope of this feasibility study must have the capacity to store and process data for 520,000 Real Property accounts and 110,000 Personal Property accounts. The data storage for these two files is approximately 400 million characters.

The current systems support 78 CRT terminals which access the Real and Personal Property files for King County users. There are 24 additional CRT terminals which access this data for external users such as title companies. The average standard response time requirement is less than 2 seconds.

Annual tax statements for Real and Personal Property accounts are prepared during the first six weeks of each year. The billing tapes for the Real Property statements equate to 300 megabytes of additional storage capacity. Multiple high speed printers are currently required to accomplish this task.

There are additional large volume print jobs associated with the printing of 600,000 real Property Revalue Notices every two years and annually 110,000 Personal Property affidavits and 70,000 Valuation Notifications.

Tax receipts are processed nightly at peak volumes of 90,000 per day.

The currently available microcomputer hardware and software do not have the capacity to handle our minimum requirements as stated in the preceding paragraphs. Accordingly this is not a feasible solution.

4. Keep the Current Systems

Existing systems have been in place 20 years and have had extensive modifications to meet changing statutory and operating requirements. Tax billing, receipting, and levy rate determination are the heart of the property systems and ultimately responsible for the collection of the County's property tax revenues. These systems have become more difficult to maintain over the years due to their

age, non-integrated design and continual modification. In order to extend the useful life to 10 years, substantial modifications would be required to meet the minimum user requirements. The useful life doesn't extend to 20 years, because of inherent deficiencies in the current system design. Modifications to meet minimum user requirements during the next 10 years include rewriting obsolete BAL programs, expanding the real property, personal property and levy files, modifying the real property audit trail function and producing quarterly tax statements.

Even with these modifications, there is a real risk of incorrect or delayed tax statements. The problems identified in section IV-D can not be remedied by modifying the existing systems.

For problems accommodated by existing systems, the long development time presents a problems when faced with requirements which often require a rapid solution. On-going maintenance is accomplished at high cost due to outmoded program structures, non-integrated file design and complicated system interfaces.

5. Continue Systems Development Using the PBS Design

This alternative would replace the existing real and personal property systems for revalue notification, tax billing, receipting and levy rate determination. The resulting systems would be an integrated group of subsystems which would be maintainable and flexible. They would provide a solid foundation to support the operations of Finance and Assessments for 20 years. The existence of an integrated design, proven software and experienced development staff gives this alternative a high probability of success. It requires a commitment of resources to the development tasks which would continue for several years. During the detail design of the various segments of this project, due consideration would be given to the possibility of microcomputer applications for modules which appear suitable for this type of hardware. There are areas within the certification process which may be in this category.

E. Evaluation Summary

Alternative Evaluation Criteria	1. Return to Manual Procedures	2. Install a Vendor Package	3. Develop Microcom- puter Sys- tems	4. Keep the Current Systems**	5. Continue Development Using Data Base Concepts
System Life	Not Applic.	10 Yrs.	Not Applic.	10 Yrs.	20 Yrs.
*Risk of Delayed or Incorrect Tax Bills	High	Medium	High	High	Low
*Probability of Maintaining or Reducing Staff	None	Medium	Medium	Medium	High
Development Cost	Not Applic.	Med/High	High	High	High
Probability of Cost Avoidance	Low	Medium	Low	Low	High
Probability of Cost Savings	None	Unknown	Unknown	Low	Medium
*Support Terminal Network	No	Yes	No	Yes	Yes
*Large Volume Printing	No	Yes	No	Yes	Yes
*Interfaces with Existing Systems	Poor	Poor	Poor	Fair	Excellent
Accommodate Defer- red Requirements	Poor	Fair	Poor	Fair	Excellent
Maintainability	Poor	Good	Fair	Fair	Excellent
*Data Storage Adequacy	Poor	Excellent	Poor	Excellent	Excellent
Management Infor- mation	Poor	Good	Excellent	Poor	Excellent
*Input Control	Not Applic.	Good	Poor	Good	Good
Overall Evaluation	Not Feasible	Risky with Poor Inter- face	Not Feasible	Risky, In- flexible, High Main- tenance	Least Risk, Greatest Benefits Over System Life

*Critical items

**Assuming essential changes are incorporated into the existing systems. The cost-benefit evaluation includes these essential changes.

F. Recommendation

Based on the overall evaluation of the five alternatives, keeping the current systems and continuing with the PBS development are the two likely solutions. Installing a vendor package has too many uncertainties and potentially high costs associated with it. Returning to manual procedures and placing the property systems on microcomputers are not feasible solutions since they can not satisfy the minimum user requirements.

Continuing with the current systems for even 10 years appears to be a risky proposition. The greatest risk lies in delayed or incorrect tax statements due to the inflexibility of the current systems design. The high cost to modify the current system eliminates many enhancements that would contribute to more effective Finance and Assessment operations.

The PBS Design Alternative requires a substantial commitment of new development resources during the next four years. This is offset by reduced maintenance costs, and substantial enhancements that offer the opportunity to recover development cost during the useful life of the system. This design significantly reduces the risk of delayed or incorrect tax statements, accommodates outstanding user requirements, and provides the ability to meet future user requirements.

Looking at the overall benefits of the PBS development points to this as the best solution.

G. Cost-Benefit Evaluation for the Recommended Solution

This cost evaluation gives a useful comparison between the recommended alternative and the continued use of existing systems. It shows a net benefit of more than \$1 million over the next 20 years. This comparison assumes that essential modifications are made to the existing systems as shown in the cost avoidance items. The other items show the development costs for the PBS design and the cost savings using the PBS design. Refer to Appendix C for the Cost Benefit notes. Please see Table 2, page 37 for the schedule of realizing costs and savings.

Cost Savings

- Use of "ZIP Plus 4" for bulk mailings \$107,220
(Note 2)

- Reduced manual processing for quick collects, \$211,080
double assessments and refunds for personal
property accounts
(Note 3)

- Reduced mailing costs for single statements for mobile homes on owner's land and consolidation of personal property omits (Note 4) \$ 99,000
- Reduced processing to reestablish killed parcels, create new parcels for audit trail purposes, manual distribution of post-certification annexation items, and refund processing. (Note 3) \$126,648

Cost Avoidance

- Systems Services - reduced maintenance (Note 5) \$737,280
- Restructure and rewrite programs written in obsolete BAL Code (Note 6) \$143,000
- Expand current file structures and associated programs (Note 7) \$424,000
- Expand the Real Property Audit Trail function (Note 8) \$ 51,000
- Modify the existing systems to produce quarterly tax bills and accept monthly interest and penalty payments (Note 9) \$184,320

Cost-Benefit Summary

Total Development Costs (Note 1)	(\$1,009,152)
Cost Savings	\$ 543,948
Cost Avoidance	<u>\$1,539,600</u>
Net Cost Reduction	<u>\$1,074,396</u>

VI. Tasks and Schedule

A. Tasks

The system development tasks that must be completed to develop PBS Stage IV are as follows:

1. General Design Review

The existing general design was completed in 1979. A review of that General Design is required to verify that the functions, files, fields, systems, subsystems, job-streams and on-line transactions described are appropriate for 1985 user requirements.

2. Stage IV Development Plan

After the general design has been reviewed and modified, a development plan will be prepared. The stage will be divided into logical segments of work for development purposes. The development plan will define the composition of each segment.

3. Detail Design

A detail design phase will be required for each segment specified in the development plan. The detail design phase will produce a formal User Review Document which will include:

- a) the user functions to be developed for the segment
- b) an inventory of batch and on-line jobs for the segment
- c) the data base files and data element definition for the segment
- d) on-line job fact sheets, input-process-output definitions, screen hierarchical diagrams and screen examples and
- e) batch job fact sheets, job input-process-output definitions, and output report layouts.

4. Program Development

A program development phase will be required for each segment specified in the development plan. Program development will include:

- a) a job specification document which includes a job flow chart, program fact sheets, program logic charts and output screen or report examples
- b) test file creation
- c) program coding
- d) user data entry specification and
- e) job testing.

5. System Test/Implementation

A system test and implementation phase will be required for each segment specified in the development plan. This phase will include:

- a) preparing a test plan
- b) preparing system test files and conditions,
- c) systematic testing of each job in the segment
- d) analysis of the output and
- e) job or program modification based on output results.
At the end of the phase, files will be converted and new jobs implemented into the production environment.

B. Schedule

The following planning chart depicts a proposed schedule for Stage IV requiring 219 analyst months and slightly over four years flow time. The schedule was developed using actual work expenditures from prior stages. Actual hours expended were analyzed by task to develop averages for units of work. These averages have been applied to the Stage IV tasks based on the number of jobs and the number of programs currently estimated for the stage. The number of jobs and programs are a 'best guess' based on the jobs defined in the general design and a review of the existing jobs that would be replaced by Stage IV. The exact number of jobs in Stage IV will be determined during the detail design phase.

APPENDIX A: PBS Development History, 1976-1985.

- 1/76 - 12/76 Group of Associates performed an analysis of current systems, and concluded that:
- The current system could not be left as is, nor modified to solve the problems identified.
 - There were no packaged systems available to install.
 - Redevelopment of the existing system was required.
 - Data base software would be the best development tool.
 - Geo-coding would be the logical approach to providing flexible data extraction capabilities.
- (Ten analyst-months of Systems Services time were used in this phase).
- 2/77 - 9/77 Systems Services and representatives from Assessments and Finance defined requirements for the new systems. The product of this phase was a ten-volume Requirements Document, identifying user needs. The Steering Committee approved continuation of the project, and requested that General Design begin. (47 Systems Services a/m's used).
- 10/77 - 1/78 General Design proceeded.
- 2/78 - 7/78 Assessor's Office temporarily withdrew from the project, which was suspended during this time period. (28 Systems Services a/m's used in 1978).
- 8/78 - 11/79 General Design completed. The product of General Design was a document that specified the functions to be performed by the system, the nature of the outputs, relationships among groups of data, and the nature of the hardware and software to be used. (24 Systems Services a/m's).
- 12/79 - 1/80 An implementation plan was developed. Nine development stages were proposed, and a Systems Services staff requirement of 390 man-months over a four-year period was estimated. The first stage was to be real estate sales maintenance/retrieval and name/address maintenance, and was chosen because of its relatively narrow scope and simplicity of requirements. The second stage was to be what is currently proposed as Stage IV.
- 2/80 - 6/80 Detail Design for Stage I (Sales - Name/Address) proceeded.
- 6/80 Finance Office withdrew from the project because of staffing problems.

6/80 - 10/80 Detail Design for Stage I was revised to exclude Finance Office systems. Detail Design was completed, and four development segments were designated. In 1980, 30.2 analyst months were used on PBS, and 15.8 months allocated to PBS were used for enhancements to Finance systems.

11/80 - 2/82 Programming, testing, and implementation for Stage I took place. Three events had a major impact on the project:

- 1) Withdrawal of the Finance Office, resulting in redesign.
- 2) Change of software product for on-line systems from DMS to NATURAL.
- 3) Inclusion of King County Records in the project following legislative action to allow local imposition of an excise tax on real estate sales.

Benefits to the user from Stage I are described in Appendix B.

4/81 - 6/81 Concurrent with Stage I program development was design work on Stage II. Stage II involved creation of a system to assist in appraisal of Personal Property. (The original PBS plan had specified that the central core of property systems (now Stage IV) be next, but participation of the Finance Office was required for this).

7/81 - 6/82 Programming, testing, and implementation of Stage II were completed. Benefits to the user from Stage II are described in Appendix B.

4/82 - 5/82 Stage III, the Assessor's residential system, was begun (the Finance Office was still unable to provide staff to support work on shared systems).

General Design review, and division into 4 development segments, was completed.

7/82 - 10/82 Detail Design for Stage III, segment 1 was done.

11/82 - 6/83 Segment 1 was programmed and implemented.

7/83 - 10/83 Segment 2 Detail Design was done.

10/83 - 3/84 Segment 2 was programmed and unit tested. Implementation was scheduled for after completion of segment 3.

3/84 - 8/84 Detail Design for segment 3 took place.

6/84 The Finance Office indicated readiness to proceed with PBS. Stage III, segment 4 was indefinitely postponed.

7/84 - 2/85 Programming and unit testing for segment 3 were done.

12/84 - 2/85 System testing and user training for Stage III proceeded. Stage III was implemented on March 1, 1985.

APPENDIX B: User benefits for PBS Stages I, II, and III.

Stage I: Real Estate Sales (Implemented February, 1982)

This system captures information from real estate excise tax affidavits (an average of 50,000 are filed with the County each year by sellers of real property). Data is input by Records personnel. Some of the data is subsequently used by Records to maintain control of, and distribute, excise tax receipts for numerous cities, the state and the county. The Assessor's office also uses some of the data (sale price, terms and conditions of sale, buyer/seller data) to provide major support in the revaluation of real property. (Statutes require the Assessor to use sales information, where available, in determining property values). In addition, purchaser names and addresses entered from the affidavits are siphoned off into the old Real Property Master File, and used for updating mailing data for property tax bills and value change notices.

For the Assessor, the new system reduced clerical time spent in determining the validity of a sale, since many logic checks among affidavit data are now done automatically. The Assessor was able to avoid adding clerical staff to this area to catch up on the very large backlog of sales not entered into the old system; in fact, clerical staff for this function was reduced by one person (of four) in 1982. Increased sales volume in 1983 and 1984 resulted in replacing that staff person in 1984.

For Records, the system provided a response to a legislative mandate. The option of meeting the requirement through PBS was one of several considered at the time, and was determined to be cost-effective, and feasible (in the sense of providing the needed services in a timely fashion).

Stage II: Personal Property Appraisal (Implemented June, 1982)

This system automated several previously manual processes performed in the Assessor's Personal Property Division. Appraisal staff were enabled to spend a larger percentage of their time on skilled technical and field work after implementation of Stage II. The result is a more complete Personal Property tax base through more timely discovery of new personal property accounts and more frequent audit of taxpayer reporting.

The major functions performed by the system are:

1. Capture, retention, and display of past years' personal property items and their costs. Each personal property taxpayer files an affidavit annually, listing taxable items (furniture, fixtures, machinery, equipment etc.) along with the year of acquisition, and the cost. Formerly, information provided was not retained in the system, and each year the taxpayer had to write in all the old data, as well as add new items.

Now, affidavits mailed to taxpayers show what was reported last year; the taxpayer has only to add new items and/or cross out those no longer owned. The appraiser does not have to pull old manual files to compare new with prior years' filings when affidavits are returned.

2. Depreciation of item costs
Formerly, appraisers used cost and acquisition year of reported items to manually calculate depreciation, and hence value, of personal property. This is now done within the system itself.

Stage III: Residential Appraisal (Implemented March 1, 1985)

PBS Stage III replaced the Assessor's Property Characteristics System (PCS) developed in 1970-71. That system, and the new one, has a dual orientation, toward (1) controlling and monitoring the process of revaluing residential property, and (2) providing computerized estimates of property value. The system controls and supports the valuation process for 440,000 residential properties.

Benefits to the user are largely qualitative; the major advantages are:

- 1) Visibility of data. The PCS system was a tape system. Property characteristics and value were accessible on microfiche, which could be 1 week to several months out of date. No immediate access to data was available when system problems or taxpayer questions came up. Stage III makes current data available on computer terminals.
- 2) Improved maintainability of the system. The PCS system was written in stream-of-consciousness COBOL. Changes to the program often resulted in unexpected consequences because of a programmer's inability to discern the structure or logic of the system as a whole. Modern programming techniques and data base technology have made the system modular, less affected by data changes, and less dependent on a single key programmer.
- 3) Improved conformance to current office practices. The new system was designed incorporating the flow of work in the office as it has evolved in performing regular cyclical revalue.
- 4) Elimination of the costly Assessor's Microfiche system. Taxpayer access to Assessments data is through computer terminals, rather than microfiche. Annual cost savings are approximately \$20,000 (\$35,000 annual microfiche cost vs. \$15,000 lease costs for 10 terminals and 2 printers to support public access).

APPENDIX C - Cost Benefit Notes

Note 1 - Development Costs

The Systems Services development costs were obtained by multiplying the total analyst months shown in Section VI by the current charge rate for Systems Services. Each analyst month is charged at \$4608 which includes salary, benefits and overhead for Systems Services' program development and maintenance activities. The calculation is 219 analyst months x \$4608 = \$1,009,152.

Note 2 - "ZIP Plus 4" Cost Savings

Cost savings for the "ZIP Plus 4" item are based on Frank Kezele's 2/21/85 feasibility study written to Shelly Yapp, Calvin Hoggard et al. The calculation is \$5361/yr x 20 years = \$107,220.

Note 3 - Staff Efficiencies

Staff efficiency estimates are based on discussions with responsible assessment and finance personnel. The salary rate is based on an office technician I at step 5 whose annual salary + benefits is \$21,108. The calculations are:

1/2 time person x \$21,108 x 20 yrs = \$211,080.

3/10 time person x \$21,108 x 20 yrs = \$126,648.

Note 4 - Reduce Mailing Costs

These reductions are based on eliminating 5000 tax statements for mobile homes and 10000 personal property tax statements and revalue notices which are not required due to consolidation of the omit accounts. The calculation for this savings is:

15000 items x \$.33/item x 20 yrs = \$99,000.

Note 5 - Reduced Programming Maintenance

This savings is due to the reduction of programmer time to perform routine maintenance & system changes. It is estimated that 2/3 of an analyst's time would be eliminated under the PBS design alternative. the calculation is:

2/3 Analyst x 12 mo X \$4608 x 20 yrs = \$737,280.

**Note 6 - Restructure and rewrite the obsolete BAL-coded programs:

<u># Prog</u>	<u>Avg # hrs to rewrite</u>	<u>Tot # hrs/Tot Anal mo</u>	<u>Cost</u>
38	100 (range 50-300)	3800/31	\$143,000

Note 7 - Data Availability/Expansion:

Expand the RPF, PPF and levy record length or build a subsidiary on-line file to hold the new data. The assumption is that the data would be important enough to be needed by every program in the system; therefore, every program would need to be modified to use the new data.

<u>System #</u>	<u>of programs</u>	<u>Avg. hrs for prog mod</u>	<u>Total hrs/anal mo</u>	<u>Cost</u>
Real prop	92	50	4600	38
Pers prop	84	50	4200	35
Levy/Cert	45	50	2250	19
			Total	92* \$424,000

*This is an initial estimate before design is performed. If the design showed that only 50% of the estimated number of programs required revision, the cost avoidance would be \$212,000.

**Note 8 - Expand RPF File Audit Trail Function

There are programs in the system that update the split code audit trail and each would need to be modified. In addition, other programs that read the RPF would need to be modified to recognize the new split code audit trail logic.

	<u># of prog</u>	<u>Avg hrs for prog mod</u>	<u>total hrs/anal mo</u>	<u>Cost</u>
Update	3	50	150	
Access only	50	25	1250	
			Total	1400 11 \$51,000

**Note 9 - Modifications to Produce Quarterly Tax Bills and Account for Interest and Penalty Payments.

40 analyst months x \$4608 = \$184,320.

**Notes 7, 8 & 9 are for modifications to the existing system to provide the minimum essential operating capability described in sections III & IV.

Table 1: King County Property Data, 1966-1990

	1966	1975	1980	1982	1984	1985	Projected 1990
Number of Accounts							
Real	391.1	455.0	492.3	512.8	522.6	526.0 ¹	534.0
Personal	51.1	56.6 ¹	59.7	67.2	68.5	70.5 ¹	80.0
\$ Assessed Value (Billions)	1.8	15.2	24.7	47.9	54.2	56.8 ¹	
\$ Taxes Billed (Millions)	143.0	333.3	359.4	460.8	558.0	625.3	
Number of New Condominiums							
Plats	--	6	43	298	228	118 ²	
Units	--	136	1,577	11,264	5,155	1,078 ²	
Number of							
New Plats	--	136	84	178	164	99 ²	
New Parcels from Platting	--	3,846	2,022	5,880	4,600	2,645 ²	

¹Estimated

²Through March 1, 1985



Table 2: Costs and Benefits of PBS Stage IV Development, 1985-2008

<u>Year</u>	<u>Development Cost</u>	<u>Cost Savings*</u>	<u>Cost Avoidance*</u>
1985	\$142,848	--	--
86	\$271,872	--	\$143,000 ⁶
87	\$299,520	--	\$475,000 ^{7,8}
88	\$276,480	--	\$184,320 ⁹
89	\$18,432	\$27,197 ^{2,3,4}	\$36,864 ⁵
90	--	\$27,197	\$36,864
91	--	\$27,197	\$36,864
92	--	\$27,197	\$36,864
93	--	\$27,197	\$36,864
94	--	\$27,197	\$36,864
95	--	\$27,197	\$36,864
96	--	\$27,197	\$36,864
97	--	\$27,197	\$36,864
98	--	\$27,197	\$36,864
99	--	\$27,197	\$36,864
2000	--	\$27,197	\$36,864
01	--	\$27,197	\$36,864
02	--	\$27,197	\$36,864
03	--	\$27,197	\$36,864
04	--	\$27,197	\$36,864
05	--	\$27,197	\$36,864
06	--	\$27,197	\$36,864
07	--	\$27,197	\$36,864
08	--	\$27,197	\$36,864
Total	\$1,009,152	\$543,940	\$1,539,600

*Superscripts refer to Notes in Appendix C: Cost Benefit Notes. Cost Savings and Cost Avoidance are in comparison to continued use and enhancement of the current system.

