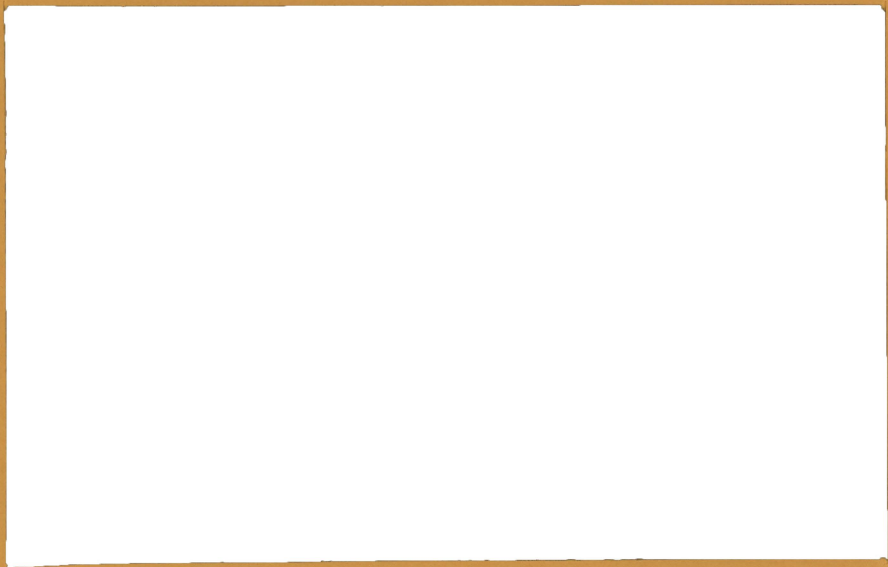MAR 01 1985

NRSHOME

Nursing Home Program

By

Bill Elder
John Kuehn

REPORT 006

**OFFICE OF SOCIAL AND
ECONOMIC DATA ANALYSIS**

**8th Floor Clark Hall
Columbia, MO 65211
314/882-7396**

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Objective

This program produces bed need, cost and tax related estimates for the planning and administration of nursing home facilities. The program is in three parts which may be run in any sequence. Part A develops estimates of nursing home bed need for a county as a whole or for the towns within a county by zipcode areas. Part B develops cost projections for both operating and capital costs. Cost estimates by budget category can be adjusted by economic indices or by user estimates. Part C develops estimates of tax rates required to achieve a subsidized monthly charge per bed that is lower than the estimated cost.

Credits

This program was developed by John Kuehn and Bill Elder at the University of Missouri. It is based on research reported in <u>Nursing Home Feasibility Guide for Local Decisionmakers in the Rural Ozarks</u>, by John Kuehn, Damian Suits, Bob McGill, and Marlys Nelson. Economic Development Division, Economic, Statistics and Cooperative Services U.S. Department of Agriculture, AIB437. Summaries of the above report are also in DH1219 <u>Costs and Funding of Nursing Homes</u> and DM1220 <u>Utilization of Nursing Homes</u> available from your local University of Missouri Extension Service Offices.

Running the Program

The user is presented with menus that direct the execution of the program's three main parts: bed estimates, cost estimates, and tax estimates. Within each part information is requested from the user about options desired and inputs required. The amount of input required will depend on the options you choose and whether you wish to accept the default values already in the program or enter your own. The program will recall from one part to another the last value you used for an estimate, and will ask whether you wish to keep the last value or enter a new one. If requested the program will print instructions and references. Input forms are included here to help organize data you may wish to enter.

Please be sure to read the instructions printed prior to each request for input. Some reponses require whole number and others a decimal point. When entering numbers never use commas or dollar signs.

If an error occurs as a result of input the user will be requested to re-enter the information in the proper format. A default condition will end the program if the same error occur 5 times.

PART A: Nursing Home Bed Need

This procedure estimates the number of potential nursing home residents by county. Remember, actual bed need is the difference between the number of beds estimated for an area and the number of beds already available.

The program will estimate bed need either for the county as a whole or by zip code areas (i.e., towns) within the county. For a county-wide estimate only the number of persons 65 and older in the county is required as input. For estimates by zipcode the program will request the following information from the user:

1.   Number of persons 65 or older in the county
2.   Town name
3.   Zipcode
4.   Number of OASI recipients by zipcode

OASI is Old Age Survivors Insurance, a program of the Social Security Administration. The data used here can be obtained form your area SSA offfice in a table entitled, Cash Benefits In Force (see references section).

rate of 0.055 to calculate bed need. The occupancy rate is a measure of how near the total capacity of the home you expect to normally operate. The utilization rate is an indicator of bed need based on two factors: 1) the proportion of those 65 and older who use nursing homes; and 2) the proportion of nursing home residents who are 65 years old or over. The estimates used in the program are 0.047 and 0.853 respectively, which yield the utilization rate of 0.055. These estimates were obtained from research findings listed in the references. The program will ask if you wish to change these rates, and if you so indicate it will ask you to enter your own estimates.

PART B: Estimates of Annual Costs

This procedure estimates per bed costs for both annual operating expenses such as salaries, utilities, and nursing supplies, as well as captial costs. Current cost estimates are automatically calculated by applying economic indices to base cost data. The program will display for you both the costs and index values loaded into the program. Then you will be asked if you wish to change any of the values. If you ask to change values you will be asked for either a new index value or a new cost per bed estimate.

If you wish to change index values, you will need one or more of the following indices:

1. For nursing supplies, the medical care index
2. For dietary supplies, the food at home index
3. For utilities, the fuel and utilities Index
4. For other operating costs, the Household furnishings and operations index
5. The composite construction cost index
6. The average hourly earnings index for salaries

These indices are published monthly in a report called Survey of Current Business available at your local library. The first four are from the Consumer Price Index.

For the capital cost part of the procedure you will need to provide information about:
1. Startup cost, by estimating the number of months needed to reach planned occupancy.
2. Land costs
3. Interest rate
4. Number of years on loan

PART C: Alternative Sources of Revenue

This part of the program calculates alternative property tax rates needed to lower patient charges to some optimal level specified by the user. You will need to enter:

1. Preferred monthly charge per occupant
2. The county total assessed valuation

The program will indicate the tax rate required to achieve the subsidized monthly cost per occupant requested.

REFERENCES

1. Nursing Home Feasibility Guide for Local Decisionmakers in the Rural Ozarks, by John Kuehn, Damian Suits, Bob McGill, and Marlys K. Nelson. Economic Development Division, Economics, Statistics and Cooperatives Service, U.S. Department of Agriculture. Agriculture Information Bulletin No. 437.

2. Survey of Current Business, U.S. Department of Commerce.

3. Costs and Funding of Nursing Homes, by John Kuehn, Damian Suits, Bob McGill, and James Perry. University of Missouri Extension Division. DM1219.

4. Utilization of Nursing Homes, by John Kuehn, Damian Suits, Bob McGill and James Perry, University of Missouri Extension Division. DM1220.

5. Cash Benefits in Force and Supplemental Security Income Payments by Region, State, District Office, and Zipcode. Available at local Social Security Offices.
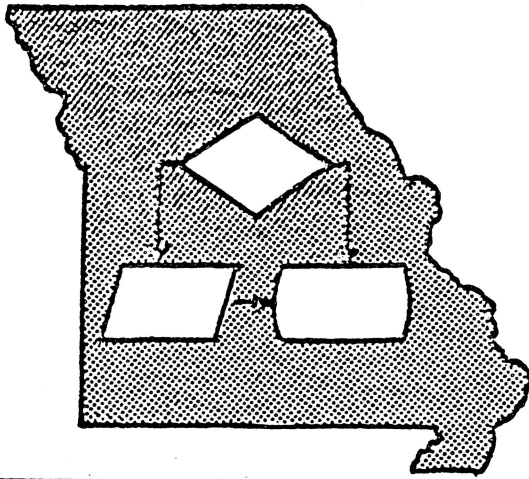
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INPUT FORM FOR PART A
(ESTIMATING NURSING HOME BEDS)

Name of county................... _____

Number of persons 65 or older
in the county................... _____

Town name, Zipcode and OASI recipients (for up to twenty
towns within the county)

TOWN NAME	ZIPCODE	OASI
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
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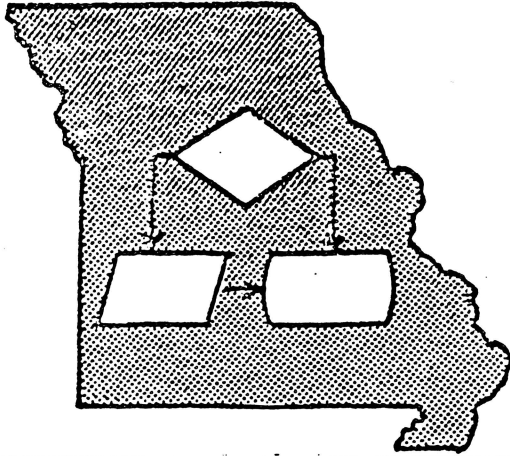
University of Missouri, Lincoln University, U.S. Department of Agriculture and Local University Extension Councils Cooperating

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INPUT FORM FOR PART B
(ESTIMATING NURSING HOME COSTS)

1. Number of Beds........................._____

2. Indices or cost estimates (if values are to be changed)

COST CATEGORY   INDEX   OR   DOLLARS PER BED

SALARIES
NURSING SUPPLIES
DIETARY SUPPLIES
UTILITES
OTHER COSTS
CONSTRUCTION COSTS

3. Number of months estimated to achieve
planned level of occupancy................_____

4. Land cost............................._____

5. Interest rate........................._____

6. Number of years on the loan..........._____

INPUT FORM FOR PART C
ESTIMATING TAX IMPACTS

1. Preferred Monthly Cost per Occupant.._____

2. Area's Total Assessed Valuation......_____

```
UUUU      U UUU
UUUU      U UUU
UUUU      U UUU
UUUU      U UUU
UUUU      U UUU  MMMM    MMMM
UUUU      U UUU MMMM MMM  MMMM
UUUUU    U UUUU MMMM  M   MMMM
 UUUUUUUUUUU    MMMM       MMMM
                MMMM       MMMM
                MMMM       MMMM
                MMMM       MMMM
                MMMM       MMMM
```

UNIVERSITY OF MISSOURI
COOPERATIVE EXTENSION DIVISION

ESTIMATING NURSING HOME OPERATIONS

WHICH PROCEDURE DO YOU WISH TO RUN?

A.   ESTIMATE POTENTIAL BEDS
B.   ESTIMATE COSTS
C.   ESTIMATE TAX IMPACT
D.   NONE. END PROGRAM.

PLEASE SELECT A PROCEDURE AND ENTER THE
CORRESPONDING LETTER   A   B   C   OR D.

ENTER LETTER:A

PART A: ESTIMATING POTENTIAL RESIDENTS
==

WHICH LEVEL DO YOU WISH TO RUN?

A.   COUNTY-WIDE ESTIMATE ONLY
B.   BY ZIP CODE AREAS
C.   PLEASE PRINT DESCRIPTION AGAIN
D.   NONE. PLEASE END PROGRAM

SELECT A LETTER AND ENTER EITHER
A   B   C   OR   D   ENTER LETTER:
:
B

PLEASE ENTER THE NAME OF THE COUNTY:BOONE

PLEASE ENTER THE NUMBER OF PERSONS IN THE

COUNTY AGE 65 AND OLDER. PLEASE ENTER A WHOLE NUMBER
WITHOUT COMMAS:7200

OUR RESEARCH INDICATED THAT THE NURSING
HOME UTILIZATION RATE FOR THE POPULATION AGE 65 AND
OLDER WAS .0470   WE ALSO ESTIMATED THAT .8530 OF
ALL NURSING HOME RESIDENTS ARE AGE 65 AND OLDER.
THUS, THE ADJUSTED UTILIZATION RATE SET IN THIS
PROGRAM IS .0470 DIVIDED BY .8530 OR .0550
SEE THE REFERENCE TO KUEHN, 1980 FOR DETAILS.

WOULD YOU LIKE TO USE THE GENERAL RATES
INDICATED ABOVE OR ENTER YOUR OWN ESTIMATES?

    A.   USE GENERAL ESTIMATES
    B.   ENTER NEW RATES

PLEASE ENTER A OR B :A

WE USE AN OCCUPANCY RATE OF .95 TO
ESTIMATE BED NEED. DO YOU WISH TO :

    A.   USE   .95
    B.   USE SOME OTHER RATE

    PLEASE ENTER A   OR   B :A

THIS PROGRAM CAN ANALYZE UP TO TWENTY
TOWNS WITHIN A COUNTY. HOW MANY DO YOU WISH TO
CONSIDER TODAY?   ENTER THE NUMBER: 8

PLEASE ENTER A TOWN NAME:CENTRALIA

PLEASE ENTER A TOWN NAME:STURGEON

PLEASE ENTER A TOWN NAME:HALLSVILLE

PLEASE ENTER A TOWN NAME:COLUMBIA

PLEASE ENTER A TOWN NAME:HARTSBURG

PLEASE ENTER A TOWN NAME:ASHLAND

PLEASE ENTER A TOWN NAME:HARRISBURG

WE ARE READY TO ENTER ZIPCODES

PLEASE ENTER THE ZIP CODE FOR   CENTRALIA   :65240

PLEASE ENTER THE ZIP CODE FOR   STURGEON   :65284

PLEASE ENTER THE ZIP CODE FOR   HALLSVILLE   :65255

PLEASE ENTER THE ZIP CODE FOR   COLUMBIA   :65201

PLEASE ENTER THE ZIP CODE FOR   HARTSBURG   :65039

PLEASE ENTER THE ZIP CODE FOR   ASHLAND   :65010

PLEASE ENTER THE ZIP CODE FOR   ROCHPORT   :65279

PLEASE ENTER THE ZIP CODE FOR   HARRISBURG   :65256

WE ARE READY TO ENTER OASI RECIPIENTS BY ZIP CODES

       PLEASE USE A WHOLE NUMBER WITHOUT COMMAS

PLEASE ENTER THE NUMBER OF OASI RECIPIENTS FOR:
CENTRALIA   65240
:
950

PLEASE ENTER THE NUMBER OF OASI RECIPIENTS FOR:
STURGEON   65284
:
333

PLEASE ENTER THE NUMBER OF OASI RECIPIENTS FOR:
HALLSVILLE   65255
:
271

PLEASE ENTER THE NUMBER OF OASI RECIPIENTS FOR:

```
COLUMBIA            65201
:
6961



PLEASE ENTER THE NUMBER OF OASI RECIPIENTS FOR:
HARTSBURG          65039
:
180



PLEASE ENTER THE NUMBER OF OASI RECIPIENTS FOR:
ASHLAND            65010
:
339



PLEASE ENTER THE NUMBER OF OASI RECIPIENTS FOR:
ROCHPORT           65279
:
215



PLEASE ENTER THE NUMBER OF OASI RECIPIENTS FOR:
HARRISBURG         65256
:
113
```

IN THIS RUN THE FOLLOWING ESTIMATES WERE USED:

POPULATION 65 AND OVER	7200
UTILIZATION RATE	0.0470
PROPORTION 65 AND OVER IN HOMES	0.8530
ADJUSTED UTILIZATION RATE	0.0550
OCCUPANCY RATE	0.9500

NURSING HOME ESTIMATES FOR COUNTY: BOONE

TOWM NAME	ESTIMATED POPULATION OVER 65	ESTIMATED NURSING RESIDENTS	ESTIMATED BEDS
CENTRALIA	731	40	42
STURGEON	256	14	15
HALLSVILLE	208	11	12
COLUMBIA	5353	294	309
HARTSBURG	138	8	8
ASHLAND	261	14	15
ROCHPORT	165	9	9
HARRISBURG	87	5	5
AREA TOTALS	7200	395	415

WHICH PROCEDURE DO YOU WISH TO RUN?

        A.   ESTIMATE POTENTIAL BEDS
        B.   ESTIMATE COSTS
        C.   ESTIMATE TAX IMPACT
        D.   NONE. END PROGRAM.

PLEASE SELECT A PROCEDURE AND ENTER THE
CORRESPONDING LETTER   A   B   C   OR D.

ENTER LETTER:B

                PART B: ESTIMATING TOTAL ANNUAL COSTS
                =====================================

DO YOU WISH TO:
        A. READ A DESCRIPTION OF THIS PART?
        B. PROCEED DIRECTLY TO ESTIMATES?

        PLEASE ENTER A OR B:B

        PER BED COSTS AND INDEX VALUES NOW LOADED

ITEM NUMBER	COST ITEM	BASE COST ESTIMATES PER BED	CURRENT INDICE	OCTOBER 1978 INDICE	CURRENT ESTIMATES PER BED
1	SALARIES	$4,720	258.30	216.80	$5,623.50
2	NURSING	$190	274.50	224.70	$232.10
3	DIETARY SUPPLY	$748	262.10	215.40	$910.17
4	UTILITIES	$347	285.70	220.10	$450.42
5	OTHER COSTS	$462	211.00	181.90	$535.90
6	CONSTRUCTION	$17,594	228.50	183.10	$21,956.46

        DO YOU WISH TO CHANGE ANY INDEX VALUES
        OR ANY CURRENT COST ESTIMATES?

        PLEASE ENTER YES OR NO:NO

        BASE COSTS AND INDICE VALUES ARE NOW
SET. WE ARE READY TO ESTIMATE TOTAL ANNUAL OPERATING COSTS.

        THE ESTIMATED NUMBER OF BEDS USED
EARLIER WAS   415

(8/81)   21-11

DO YOU WISH TO:

A. USE THE SAME NUMBER FOR COSTS.
B. ENTER A NEW NUMBER.
    PLEASE ENTER A OR B:B

        PLEASE ENTER THE ESTIMATED NUMBER
OF BEDS YOU WISH TO USE FOR ESTIMATING COSTS.
:
60

TOTAL OPERATING COSTS

ITEM NUMBER	COST ITEM	BASE COST ESTIMATES PER BED	CURRENT INDICE	1978 INDICE	CURRENT ESTIMATES PER BED
1	SALARIES	$4,720	258.30	216.80	$5,623.50
2	NURSING	$190	274.50	224.70	$232.10
3	DIETARY SUPPLY	$748	262.10	215.40	$910.17
4	UTILITIES	$347	285.70	220.10	$450.42
5	OTHER COSTS	$462	211.00	181.90	$535.90

        TOTAL OPERATIONS COSTS PER BED $7,752
        NUMBER OF BEDS   60
        TOTAL OPERATION COSTS FOR HOME $465,125.40

    DO YOU WISH TO ESTIMATE CAPITAL COSTS?
    PLEASE ENTER YES OR NO:YES

        WORKING CAPITAL IS OFTEN REQUIRED
TO PAY OPERATING EXPENSES UNTIL PLANNED OCCUPANCY
IS ACHIEVED. THESE STARTUP COSTS CAN BE ESTIMATED BASED
ON THE NUMBER OF MONTHS ANTICIPATED TO REACH THE
HOMES PLANNED OCCUPANCY.

    DO YOU WISH TO:
        A. USE THE STARTUP COST ESTIMATE OF THREE
            MONTHS BUILT INTO THE PROGRAM.
        B. ENTER YOUR OWN ESTIMATE OF STARTUP TIME.

        PLEASE ENTER A OR B:A

    PLEASE ENTER THE COST YOU ESTIMATE FOR
LAND. PLEASE ENTER A WHOLE DOLLAR AMOUNT WITH NO
DOLLAR SIGN OR COMMA.
:
50000

    ENTER THE INTEREST RATE YOU PLAN ON FOR
THE CAPITAL COST. ENTER AS A RATE INCLUDING DECIMAL:.15

HOW MANY YEARS ON THE LOAN? PLEASE ENTER
YEARS AS A WHOLE NUMBER....LESS THAN 45 YRS PLEASE:25

CAPITAL COSTS

CONSTRUCTION COST PER BED	$21,956.46
STARTUP COST PER BED	$968.23
SUBTOTAL PER BED	$22,924.69
NUMBER OF BEDS	60
SUBTOTAL FOR HOME	$1,375,481.40
LAND COSTS	$50,000.00
TOTAL CAPITAL COSTS	$1,425,481.40
AMORTIZATION FACTOR	.154699400

TOTAL ANNUAL CAPITAL COSTS	$220,521.11
TOTAL ANNUAL OPERATING COSTS	$465,125.40

TOTAL ANNUAL COSTS FOR HOME	$685,646.51

THIS IS THE END OF PART B.

WHICH PROCEDURE DO YOU WISH TO RUN?

    A.   ESTIMATE POTENTIAL BEDS
    B.   ESTIMATE COSTS
    C.   ESTIMATE TAX IMPACT
    D.   NONE. END PROGRAM.

PLEASE SELECT A PROCEDURE AND ENTER THE
CORRESPONDING LETTER   A   B   C   OR   D.

ENTER LETTER:C

PART C. ESTIMATING ALTERNATIVE TAX RATES.
===

DO YOU WISH TO:
    A. READ A DESCRIPTION OF THIS PART?
    B. PROCEED DIRECTLY TO ESTIMATES?

    PLEASE ENTER A OR B:B

    THE ESTIMATED NUMBER OF BEDS USED
EARLIER WAS   60

DO YOU WISH TO:

A. USE THE SAME NUMBER FOR TAX RATES.

B.   ENTER A NEW NUMBER.
     PLEASE ENTER A OR B:A

        THE OCCUPANCY RATE USED
EARLIER WAS   0.9500

DO YOU WISH TO:

A.   USE THE SAME NUMBER FOR TAX RATES.
B.   ENTER A NEW NUMBER.
     PLEASE ENTER A OR B:A

        THE TOTAL ANNUAL COST USED
EARLIER WAS $685,646.51

DO YOU WISH TO:

A.   USE THE SAME NUMBER FOR TAX RATES.
B.   ENTER A NEW NUMBER.
     PLEASE ENTER A OR B:A

        IN ORDER TO CALCULATE POSSIBLE TAX RATES
WE WILL NEED THE AREAS TOTAL ASSESSED VALUATION.
PLEASE ENTER THE ASSESSED VALUATION. ONCE AGAIN,
PLEASE DO NOT ENTER A DOLLAR SIGN OR COMMA. ENTER
THE ASSESSED VALUATION AS A WHOLE NUMBER:287000000

        WE CAN NOW COMPUTE THE MONTHLY COST
PER PATIENT WITHOUT TAX REVENUES:

        NUMBER OF BEDS   60
        OCCUPANCY RATE   0.9500
        NUMBER OF OCCUPANTS   57
        TOTAL ANNUAL COST $685,646.51
        ANNUAL COST PER OCCUPANT $12,028.88
        MONTHLY COST PER OCCUPANT $1,002.40

        GIVEN THE ABOVE INFORMATION WE CAN NOW
PROCEED TO DEVELOP ALTERNATIVE PROPERTY TAX RATES
REQUIRED TO LOWER MONTHLY PATIENT CHARGES TO SOME
PREFERRED LEVEL.
FOR EACH PREFERRED MONTHLY CHARGE YOU ENTER, THE
PROGRAM WILL CALCULATE THE TAX REVENUE NEEDED TO
ACHIEVE THAT LEVEL OF REDUCTION AND THE TAX RATE.

        PLEASE ENTER A PREFERRED MONTHLY
PATIENT CHARGE FOR WHICH YOU WOULD LIKE AN
ESTIMATE OF THE TAX REVENUE AND TAX RATE REQUIRED
TO SUPPORT IT. PLEASE ENTER THE AMOUNT AS A
WHOLE NUMBER WITH NO DOLLAR SIGN OR COMMAS.
ENTER PREFERRED MONTHLY CHARGE:500

CALCULATION OF ALTERNATIVE TAX REVENUE

MONTHLY COST PER OCCUPANT $1,002.40
PREFERRED MONTHLY CHARGE $500.00
MONTHLY DIFFERENCE $502.40
ANNUAL DIFFERENCE $6,028.80
NUMBER OF OCCUPANTS   57

REQUIRED ANNUAL TAX REVENUE $343,641.60
TOTAL ASSESSED VALUATION $287,000,000.00

PROPERTY TAX RATE REQUIRED   0.0012

DO YOU WISH TO CONSIDER ANOTHER
PREFERRED MONTHLY CHARGE. PLEASE ENTER YES OR NO:YES

PLEASE ENTER A PREFERRED MONTHLY
PATIENT CHARGE FOR WHICH YOU WOULD LIKE AN
ESTIMATE OF THE TAX REVENUE AND TAX RATE REQUIRED
TO SUPPORT IT. PLEASE ENTER THE AMOUNT AS A
WHOLE NUMBER WITH NO DOLLAR SIGN OR COMMAS.
ENTER PREFERRED MONTHLY CHARGE:300

CALCULATION OF ALTERNATIVE TAX REVENUE

MONTHLY COST PER OCCUPANT $1,002.40
PREFERRED MONTHLY CHARGE $300.00
MONTHLY DIFFERENCE $702.40
ANNUAL DIFFERENCE $8,428.80
NUMBER OF OCCUPANTS   57

REQUIRED ANNUAL TAX REVENUE $480,441.60
TOTAL ASSESSED VALUATION $287,000,000.00

PROPERTY TAX RATE REQUIRED   0.0017

DO YOU WISH TO CONSIDER ANOTHER
PREFERRED MONTHLY CHARGE. PLEASE ENTER YES OR NO:NO

THIS IS THE END OF PART C.

WHICH PROCEDURE DO YOU WISH TO RUN?

A.   ESTIMATE POTENTIAL BEDS
B.   ESTIMATE COSTS

C.   ESTIMATE TAX IMPACT
D.   NONE. END PROGRAM.

PLEASE SELECT A PROCEDURE AND ENTER THE
CORRESPONDING LETTER   A   B   C OR D.

ENTER LETTER:D

THANK YOU FOR USING THE SYSTEM
WE HOPE THAT IT WAS HELPFUL. GOOD BYE.

University Libraries
University of Missouri

Digitization Information Page

Local identifier   Report [number]

Source information

   Format   Book
   Content type   Text with Images
   Source ID   Gift Copy not added to the Collection
   Notes   Printed single-sided;
                              Cover has cut-out showing title on the next page
                              Pages are unbound, stapled on top left;
                              Both front and back covers are orange color (#FF9900)
                              In Report 0006, text cut off on pages "21-3", and "21-16"

   Capture information

   Date captured   October 2019
   Scanner manufacturer   Fujitsu
   Scanner model   fi-7460
   Scanning system software   ScandAll Pro v. 2.1.5 Premium
   Optical resolution   600 dpi
   Color settings   8 bit grayscale
   File types   tiff
   Notes   Cover scanned separately with Opticbook

Derivatives - Access copy

   Compression   Tiff: LZW compression
   Editing software   Adobe Photoshop CC
   Resolution   600 dpi
   Color   8 bit grayscale
   File types   pdf created from tiff
   Notes   Images cropped, straightened, darkened