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HEURISTIC MODELING
and its application to
FEASIBILITY STUDIES
for
SECTION 236 LOW INCOME HOUSING PROJECTS

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I Introduction

The 1968 Housing and Urban Development Act established section 236 as an assistance program for rental of leased and cooperative housing for low to moderate income families. The program is aimed to satisfy the housing needs of a slightly lower income range than the section 221 (d) (3) program which preceded it. Currently both programs are being merged into section 236 so that all those eligible for assistance under the former program will be eligible under the new program.

Under 236, limited dividend, nonprofit, or cooperative housing sponsors can receive FHA insured mortgage insurance financing for as low as 1% interest and 40 year term, as compared with 221 (d) (3) where 3% interest 40 year mortgages were available.

A nonprofit corporation such as a church, settlement house, labor union, fraternal organization and civic-minded groups can sponsor a nonprofit housing project with 100% mortgage financing. Some or all of these groups, together with business interests, can also combine to create broadly based nonprofit housing corporations to serve as housing sponsors. Special consultants fees and loans are also available to the nonprofit sponsor.

Cooperatives can sponsor projects with 100% mortgage financing and private developers may develop and sell projects as they were previously able to do under 221 (d) (3).

A limited profit or limited dividend sponsor is per-

mitted 6% return on its 10% equity investment in the project. (90% of the project is financed by the mortgage.) Many limited dividend sponsors are corporations formed by developers, builders, and real estate firms specifically to construct 236 projects. The bulk of the information contained in this report was provided by such a sponsor--The Gene B. Glick Company of Indianapolis, Indiana. Because this firm deals predominantly in limited dividend projects rather than non-profit or cooperative ventures, specific information regarding these latter two sponsors was not available. Consequently, this paper will deal only with the limited dividend sponsor. Many of the techniques presented here may, however, be applied with some modifications to other types of sponsors.

Section 236 assistance works this way: The sponsor's commercial mortgage lender obtains an FHA commitment to insure its market interest rate project mortgage. At the same time the commercial mortgage lender receives a commitment from GINNY MAE (FANNY MAE) to receive interest reducing payments for the duration of the project mortgage. These payments are, in effect, the difference between the market interest rate on the project mortgage and the amount of interest which the tenants of the project pay through rentals. Therefore, the difference between market rental and the statutory 25% of income becomes the amount of the subsidy. In all but one case, however, it may not be greater than that provided if the interest rate were 1%. The exception occurs when the project is located in an urban renewal area, as additional rent subsidies are

available.

To become an eligible tenant one must meet the income requirements and one of the following: be a family (two persons related by blood, marriage, or operations of law) or single (at least 62 years of age) or handicapped person (no age requirement).

Income limitations for those who qualify from above are: adjusted income may not exceed 135% of the income applicable to public housing (adjusted income is income of the last 12 months from all sources before taxes but excluding unusual or temporary income. From this amount is subtracted \$300 and earnings for each minor. A 5% reduction is allowed for social security related expenses.) Income must be recertified every two years and rental charges adjusted accordingly. During initial rent up periods only, tenants may be accepted with income above limits but not high enough to pay fair market rental, so long as their income does not exceed 90% of eligible income requirements. At no time may a tenant pay more than fair market rent, nor less than the basic statutory rental or 25% of his income, whichever is greater.

The following information is provided as a guide for testing the financial feasibility of a project. The formulae and check points are not independently determinant; rather they are useful in aiding the developer in making 1) the go--no go decision, and more important in 2) capital budgeting considerations and design factors. Thus, a proposed project may initially be judged not feasible, but after using the

equations to modify land, density, cost per unit factors, the project may produce a handsome rate of return and become feasible. In this sense the set of equations and formulae presented herein comprise a model which can be easily used by the developer. This model is heuristic if properly used. That is "serving to discover" or dealing with the judgemental part of the problem, eg., that part dealing with the definitions of the problem, the selection of strategies to follow, and the formulation of hypotheses and hunches.

(Computers in Business, Sanders, p. 62.)

II Part A--The "Front Door" Model

Traditionally real estate investment alternatives are analyzed in such a manner so as to generate an annual after tax net ~~cash~~ flow, i.e. profit. The nature of the section 236 housing program is such that this traditional view is modified in two respects. One, the owner of a 236 project is limited to a maximum annual ^{CASH} return of 6% on the difference between the project total replacement cost and its mortgage. Two, most 236 projects are owned in fee simple by an individual or else by a limited partnership. These two organizational forms are not taxed as such; the owner(s) earnings are taxed on an individual basis. Because of the limitation on return and the "conduit effect" on earnings, the following two models presented deviate from the normal notion of real estate investment analysis models.

The first model, the "Front Door" model, derives its name from the fact that most projects are initially analyzed from a cost basis, i.e. all costs are known. The costs are matched against revenues and then profitability is assessed. It is essentially an operations oriented model. Its counterpart, the "Back Door" model, presented in Part B, is capital budget oriented. Given expenses, it assumes targets return (6%) and then determines a maximum per unit cost within a limiting context of achievable revenues.

The primary relationship of the "Front Door" model is:

annual revenue \geq operating expenses + allowable annual return, or, $AR \geq OE + AAR$
 where, annual revenue = gross possible basic rents + commercial revenues, or, $AR \geq GPBR + CR$, and

expenses = the ~~of~~ of: administration, operating and maintenance, real estate taxes, property insurance, debt service, replacement reserves, and management fees.

These two elements can be expanded.

The two components of annual revenue are obtained as follows: Gross possible basic rents are computed by summing, for all unit types, the products of the maximum allowable rent per unit type, times the number of each type of dwelling unit in the project. The types are defined by the number of bedrooms in each. The maximum allowable rents per type of unit are compiled by county for all states according to the number of family members. The source of these figures is FHA manual 4400.30, "Regular Income Limits for Section 235 & 236 Housing Programs." Below is a table which can be utilized to compute this annual figure:

Gross Possible Basic Rents

(1) Dwelling unit type (bedrooms)	(2) No. of allowable family members	(3) Max. annual statutory family in- come for max. no. in family (from FHA 4400.30)	(4) Max. allow- able annual rent $1/12 \times$ (3)*	(5) No. of type of D.U. (Pro- ject unit mix)	(6) Total possible rent per D.U. type (4) x (5) x 12 months
1	1 or 2				
2	2,3,4				
3	4,5,6				
4	6,7,8				
5	8,9,10				
Gross possible basic rents (annual) = \$ _____					

The second component of annual revenue, commercial revenue, is mainly monies that come from the operation of coin-op laundries. A conservative value to use, if the project is to have a laundry is \$18 per dwelling unit per year.

The operating expense element of the relationship includes the following:

- 1) Administrative expense includes such items as advertising, office supplies, telephone, local travel, etc. An average value is \$24.00 per dwelling unit per year.
- 2) Operating and maintenance expenses include such items as utility charges, garbage and trash removal, supervisory and janitor payroll, janitor and grounds supplies, repair materials, etc. An average value is \$450.00 per dwelling unit per year.
- 3) Real estate taxes are a function of the locale and may be calculated by multiplying the anticipated assessed valuation in thousands by the mil rate.
- 4) Property insurance averages \$15.00 per dwelling unit per year.
- 5) Replacement reserve is an account required by FHA to accumulate funds necessary to make subsequent capital repairs and improvements. It is usually 0.60% annually, of the site improvements and the building value. An average figure to use is \$60.00 per dwelling unit per year.
- 6) The management fee is the sum allowed to compensate the firm doing the management of the project throughout its life. The following is the expression that has to be used to compute the fee.

$$\text{Mgt. Fee} = [(AASR + GPBR) .995] \times 5.5\%$$

where AASR = annual amount of subsidized rent
 $AASR = M \times SR$
 where M = mortgage amount and SP + subsidy rate

The subsidy rate is simply the difference between the annual

mortgage requirements for a constant-pay mortgage at the 1% ratio and at the 9% rate (8.5 + 0.5% FHA insurance).

(Recall that f , the annual requirement is: $f/\$1.00 = 1 + [(1 + i)^n - 1]^{-1} \times i$, where i = the interest rate and n = the term of the mortgage. f at 1% = .0304273).

- 7) Debt service is self-explanatory. It is simply the annual mortgage requirement times the mortgage value.

The only variable needed to complete the foregoing calculations is the mortgage value. The mortgage can be computed by using the special "saver" formula (courtesy of the Glick Co.), which is:

$$M = R [1.1(TAI + T + I) + L + 4125]$$

where M = mortgage

R = a constant reflecting primarily the duration of interim financing for construction and the duration of FHA insurance on the total construction amount.

TAI = total all improvements, i.e. site improvements + buildings + builders' overhead and profit + architecture design and supervision fees + bond premium. The architectural fees are 3% (design) and 0.7% (supervision) of the sum of site improvements and buildings. Builders' overhead and profit are 1.5% and 10% respectively of the same figure.

T = taxes on land during construction

I = builders' risk (hazard) insurance during construction.

L = land cost (+ profit if desired).

This formula is based on the following assumptions:

- 1) The mortgage is 90% of the total replacement cost.
- 2) Interim financing for construction is 8.5% with the total mortgage commitment being used one-half of the construction period.
- 3) The FHA insurance rate is 0.5% of the mortgage.

- 4) The exam fee is 0.3% of the mortgage.
- 5) FHA inspection fees are 0.5% of the mortgage.
- 6) The financing fee is 2.0% of the mortgage.
- 7) The permanent mortgage is to be placed through FNMA; the charge is 1.75% of the mortgage (1.50% firm fee + .25% (average) standby fee).
- 8) Title and recording costs are 0.17% of the mortgage.
- 9) Legal and organizational costs are 0.75% on the first million dollars of mortgage and .375% on the balance.

The last element of the basic relationship is the allowable return. The maximum is 6% of the difference between the total replacement cost (TRC) of the project and the mortgage (M). The allowable annual return to the project is given by:

$$\begin{aligned} \text{AAR} &= .06(\text{TRC} - \text{M}) \\ \text{where TRC} &= \text{M}/.90 \\ \text{substituting and simplifying, AAR} &= .0066666 \text{ M} \end{aligned}$$

In conclusion, the relationship, $\text{AR} = \text{OE} + \text{AAR}$, must hold true, if a tentative project is to be deemed financially feasible based on the stated assumptions and the inputs of the proposed project. The standard by which one can evaluate the results of using the "Front Door" model is the occupancy rate. Intuitively one realizes the occupancy rate $(\text{OR}) = (\text{OE} + \text{AAR})/\text{AR}$. A feasible project then, by FHA's standards, is one that has an occupancy rate of 95% (.95). The occupancy rate check may be made on a break-even basis, before or after inclusion of the annual allowable return.

The following four guides should be helpful in checking an occupancy rate on a tentative project.

- A. If the computed OR $< .90$ - ~~check~~ check your calculation. It is unlikely that in the "tight" with respect to cost 236 program, one can achieve such an occupancy rate. Errors in math, omissions of costs, or mis-estimates of cost items might have occurred.
- B. If the computed OR is less than .97 but greater than .90, a feasible project exists. Proceed with a more detailed analysis. ($.90 < OR < .97$ is the primary acceptance region).
- C. If the computed OR is greater than .97 but less than 1.00, the project is probably a bust. Some time should possibly be spent in investigating what can be done to drive the OR into the acceptance region.
- D. If the computed OR > 1.00 , the project is not financially feasible.

One last note of caution. The safety margin in a project will be impaired if one evaluates the model by using gross possible basic rents. If the operating costs or taxes, for example, increase before or faster than the prescribed statutory income limits, increase, a project would quickly lose its safety of the occupancy rate or even experience a reduction in the annual allowable return. Therefore, proposed projects should be evaluated using a rent structure wherein the monthly rent per dwelling unit are \$6 to \$12 below the statutory limit.

The maximum annual allowable return should always be sought. Should annual revenues exceed operating expenses by more than the annual allowable return, the excess is placed in a Residual Receipts Fund. This fund, titled to the project, is held and

controlled by FHA. Its ultimate disposition is not yet known. Consequently, the project should be revised to absorb this excess.

The following summary sheet should clarify and aid in project evaluation for financial feasibility.

Summary Form
The "Front Door" Method
Financial Analysis of a 236 Housing Project

AR:			
	Determined annual basic rents	\$ _____	
	Commercial revenue	\$ _____	
(1)	Total annual revenue		\$ _____
OE:			
	Administrative expenses	\$ _____	
	Operating & maintenance expenses	\$ _____	
	Real estate taxes	\$ _____	
	Property insurance	\$ _____	
	Replacement reserve	\$ _____	
	Management fee	\$ _____	
	Debt Service	\$ _____	
(2)	Total operating expenses		\$ _____
	Break-even occupancy (OE/AR) x 100 (no return)		\$ _____
(3)	Net cash flow (no return) ((1) - (2))		\$ _____
(4)	Annual allowable return		\$ _____
	Break-even occupancy with return - ARR		\$ _____
	(OE + AAR/AR) x 100		\$ _____
	Residual receipts ((3) - (4))		\$ _____

Guides

B·E occupancy rate
including ARR

action

OR < .90	check figures
.90 < OR < .97	acceptance region for financial feasibility
.97 < OR < 1.00	further investigation
OR > 1.00	reject proposed project

The derivations of the "saver" formula for calculating the mortgage is as follows:

A. Symbols:

M = mortgage
 TRC = total replacement cost
 TDC = total development cost
 L = land cost
 TAI = total all improvements
 CC = carrying charges
 LO = legal and organizational
 L = land cost
 T = taxes during construction
 I = builders' risk (hazard) insurance

B. Carrying charges include:

T = taxes during construction
 I = hazard insurance
 CF = construction financing
 = $M \times .5 \times .085 \times .25 \text{ NQ}$
 where NQ = number of quarters of financing
 MI = FHA mortgage insurance
 = $.005M \times \text{NY}$
 where NY = number of years
 EF = exam fee = $.003M$
 IF = inspection fee = $.005M$

FF = financing fee = $.02M$
 PF = placement fee with FNMA = $.0175M$
 TRF = title and recording fees = $.0017M$
 total carrying charges = $T + I + (.5M \times .085 \times .25\text{NQ}) + (.005M \times \text{NY}) + .003M + .005M = .02M + .0175M + .0017M$
 total CC = $T + I + (\quad) + (\quad) + .04720$

C. Legal and organization:

LO = $7500 + (M - 1,000,000) \cdot 00375$
 LO = $.00375M + 3750$

D. Derivation; $M = .9\text{TRC}$, $M = [.9 \text{ TDC} + L]$
 $M = .9 [1.1(\text{TAI} + \text{CC} + \text{LO}) + L]$
 $M = .9(1.1)\text{TAI} + .9(1.1)\text{CC} + .9(1.1)\text{LO} + .9L$
 $= .9(1.1)\text{TAI} + [.9(1.1) \{ .5M(.085) \cdot 25\text{NQ} + .005M(\text{NY}) + T + I + .04720M \}] + .9L$
 $\frac{M}{.9} = 1.1(\text{TAI} + T + I) + 1.1 [.5M (.085) \cdot 25\text{NQ} + .005M(\text{NY}) + .04720M] + [.004125M + 4125 + L]$
 $\frac{M}{.9} - (1.1) \cdot .5M (.085) \cdot 25\text{NQ} - (1.1) \cdot .005M(\text{NY}) - (1.1) \cdot .04720M - .004125M = [1.1(\text{TAI} + T + I) + L + 4125]$
 $M \left[\frac{1}{.9} - (1.1) \cdot .5(.085) \cdot 25\text{NQ} - (1.1) \cdot .005(\text{NY}) - (1.1) \cdot .04720 - .004125M \right]$
 $\frac{1}{.9} = [\quad]$

$$MR^{-1} = \text{where } R^{-1} = \begin{bmatrix} " \\ M \\ \frac{1}{9} \dots \end{bmatrix}$$

$$R^{-1} = [1.1111111 - .0116875NQ - .0055NY - .051920 - .004125]$$

$$\frac{1}{R} = [1.0550661 - .0116875NQ - .0055NY]$$

$$R = \frac{1}{1.0550661 - .0116875NQ - .0055NY}$$

solving for R when NY = 1

$$R(NQ = 3) = .985433$$

$$R(NQ = 4) = .997192$$

$$R(NQ = 5) = 1.008951$$

$$R(NQ = 6) = 1.020995$$

when NY = 2

$$R(NQ = 4) = 1.002691$$

$$R(NQ = 5) = 1.014581$$

$$R(NQ = 6) = 1.026756$$

$$R(NQ = 7) = 1.039227$$

solving,

$$\begin{aligned} MR^{-1} &= [1.1(TAI + T + I) + L + 4125] \\ M/R &= \left[\begin{array}{c} " \\ " \end{array} \right] \\ M &= R \left[\begin{array}{c} " \\ " \end{array} \right] \end{aligned}$$

Q.E.D.

III Part B--The "Back Door" Model

This approach to testing the feasibility of a 236 project offers additional checkpoints to insure the validity, soundness and reliability of all assumptions and computations. While the "Front Door" model dwelled on occupancy rate as the critical indicator of feasibility, this approach provides a method for determining per unit cost within the limiting constraint of FHA defined achievable revenues. It is essentially a capital budgeting view. More fully, given expenses of a certain magnitude, it assumes a target return (6%) and then determines a maximum per unit cost which must then fall within the project income as derived from FHA statutory limits.

The basic equation from which the "Back Door" model derives all computations is: rental income must be less than or equal to debt service and expenses minus other special revenue. In algebraic terms:

$$RBAR \geq C_1(.90x) + C_2(PE_2) - C_3(NU)$$

where; RBAR = residential annual rent

*C₁ = mortgage coefficient

x¹ = replacement value

*C₂ = project expense coefficient

PE₂ = administrative expenses (excluding management fee) + maintenance and operating expenses + taxes and insurance + replacement reserve

*C₃ = laundry income coefficient

NU = number of units

*See section at the end of this chapter for derivation of coefficients and overall formula.

All of these inputs are thoroughly explained in the previous chapter, the "Front Door" model. The explanations will not be repeated here. Instead, an actual project will be analyzed

using the above model and figures provided by the Glick Company. This 250 unit project located in St. Louis is scheduled for completion in late 1970.

Schedule 1

assumptions:

number of units	250		
land price	1100/unit		
<u>mix:</u> 1 40%	100		
2 30%	74+1		
3 20%	50		
4 10%	25		
		<u>maximum</u>	<u>\$7 from max.</u>
<u>rents:</u> 2 person		\$118	\$111
4 person		135	128
4 person		135	128
6 person		146	139
<u>gross possible basic rents:</u>		<u>maximum</u>	<u>\$7 from max.</u>
		\$11,800	\$11,100
		9,990	9,472
		6,750	6,400
		3,650	3,745
		\$32,190	\$30,447
		x 12	x 12
		\$386,280	\$365,364

explanations:

1) Mix refers to the number of 1 bedroom walk up or garden type apartments, 2 bedroom walk up, 2 bedroom townhouses with internal stairway and 3 bedroom townhouses. This mix is duplicated in almost every project Glick builds. Also, the architectural renderings, construction, and final projects are almost all identical. This uniformity makes the development of models and standard procedures extremely practical, as each can be applied to any Glick project with minimal alteration. The 74+1 indicates one 2 bedroom walk up apartment used by the manager rent free.

2) Rents are derived from statutory limits as set forth in FHA manual 4400.30, "Regular Income Limits for Section 235 and 236 Housing Program."

a) In order to determine if a particular person falls within these income limitations and is therefore eligible for occupancy, certain adjustments must be made. Basically, 5% of total income + \$300 per child is subtracted from total income to arrive at adjusted gross income. If $\frac{1}{4}$ of this annual figure is less than the FHA statutory limit, the applicant is qualified.

b) Many exceptions to this general rule exist, some determined by FHA national policy and some by local FHA discretionary power. For a detailed explanation of these beyond that contained in the "Introduction" to this paper, the reader is referred to FHA Handbook 442.1, "Rental Housing for Lower Income Families (Section 236)" and local FHA directors.

Schedule 2

<u>income:</u>	<u>maximum</u>	<u>\$7 from max.</u>
gross possible basic rent	\$386,289	\$365,364
laundry & vending @ 1.50	<u>4,500</u>	<u>4,500</u>
total	\$390,870	\$369,864
 <u>expenses:</u>		
admin. (excluding management fee)	\$ 5,042	\$ 5,045
operation & maintenance	113,250	113,250
taxes & insurance	70,750	70,750
finance	112,780	98,177
replacement revenue \$65/unit	16,250	16,250
management fee	<u>33,878</u>	<u>31,034</u>
total:	\$351,953	\$334,556
break-even occupancy	(90.1)	(90.4)
net cash flow	\$ 38,827	\$ 35,304
less: allowable return	<u>24,779</u>	<u>21,570</u>
break-even + allowable return	(96.4)	(96.3)
total residual receipts	\$ 14,045	\$ 13,738

All of the explanations concerning entries and terms on this schedule have been explained fully within the "Front Door" model.

One point should be expanded upon:

1) The last line, "total residual receipts," should approach 0⁺ (from the positive side). This money reverts to a special FHA project fund where ultimate disposition is unknown. The money should be spent in some area, management fee, replacement reserve, construction cost, etc. In order to do this the entire project should be redone until the residual equals 0. The following guidelines are helpful:

a) An increase (or decrease) in building company construction cost of \$100 per unit results in an increase (decrease) in annual unit base rent of \$4.7532 per unit.

b) An increase (decrease) in project expenditures (administrative (excluding management fee) + operating and maintenance + taxes and insurance + replacement reserve) of \$100 per unit, increases (decreases) annual base rent by \$111.3896 per unit.

Example 1

Remembering that rents must be = debt service + administrative expenses - special revenue, let

$$\begin{aligned} x &= \text{total replacement cost} \\ .90x &= \text{mortgage} \end{aligned}$$

$$\begin{aligned} 386,280 &= .04350484(.90x) + 1.1173185(5,045 + 113,250 + \\ &70,750 + 16,250) - 19.106145(250 \\ &\text{replacement cost } x = 4,129,866 \\ &\text{mortgage } .90x = 3,716,879 \text{ or } 14,868/\text{unit} \\ &\text{debt service coefficient} = .0304273 \\ &\text{debt service annually} = \$112,780 \end{aligned}$$

allowable return:

$$\begin{aligned} .10(4,129,866) &= 412,987 \\ &\quad \underline{x \quad .06} \\ &\quad \underline{\$24,779} \end{aligned}$$

to determine management fee:

mortgage	\$3,716,879
subsidy coefficient	x .06262867
amount of subsidy	\$ 232,783
	<u>386,280</u>
	\$ 629,063
.5% vacancy allowance	x .995
market rents	\$ 615,968
management fee %	.055
management fee	<u>\$ 33,878</u>

Integrating these calculations with the basic formula discussed in the "Front Door" approach,

$$M = R 1.1(TAI + T + I) + L + 4125$$

where M = mortgage

R = a constant reflecting duration of interim financing

TAI = total all improvements, i.e. site improvements + building + builder's overhead and profit + architectural design and supervision fee + bond premium

T = taxes on land during construction

I = builders' risk or hazard insurance during construction

L = land cost (+ profit is desired)

and solving for TAI

$$3,716,879 = 1.014581 \cdot 1.1(x + 1,000 + 10,000) + 325,000 + 4125$$

$$x = 11,956/\text{unit} = \text{total improvements}$$

1) This figure reflects cost based on maximum allowable rents. The merit of a safety factor has been fully discussed. This example should be duplicated except that computations based on rent somewhat below maximum, say \$7, should be done.

a) \$200/unit is allowed for profit on land. The model can easily be reworked with this input altered. Land profit is often an excellent place to absorb "residual reserve."

b) Architectural design fees of \$360/unit and architectural supervision fees of \$120, both figures based on experience, should be subtracted from total all improvements to equal the upset price of \$11,476/unit. This is the value which is critical in judging the feasibility of constructing a unit in a given locale.

2) If construction estimates are all known, the "Front Door" model can be used to determine the mortgage necessary. This figure can be compared to the mortgage calculation derived through the "Back Door" model as an additional test of feasibility.

The derivation of the "Back Door" model is as follows:

$$\begin{aligned} \text{annual requirement or loan constant } f &= \\ f/\$1.00 &= 1 + ((1 + i)^n - 1)^{-1} \text{ where } i \text{ is the} \\ &\text{interest rate and } n \text{ the term of the mortgage.} \\ \text{f here, } 1\% \text{ 40 year term} &= .027308457 \\ \text{mortgage } .90 \times .0304273 &= .027308457 \\ \text{equity } .10 \times .06 &= .006 \\ \text{total} &= \frac{.027308457 + .006}{.90} \text{ or } .03331 \end{aligned}$$

$$\begin{aligned} \text{RBAR} &= (.03331\text{RC} + \text{PE}_1)\text{ORR} - 18\text{NU} \\ \text{RBAR} &= (.0331 \frac{\text{M}}{.9} + \text{PE}_2 + (.055)(.95)\text{RMAR})\text{ORR} - 18\text{NU} \end{aligned}$$

where RBAR = residential annual rent
 RC = replacement cost
 PE_1 = adm. exp. (inc. mgt. fee) + maint + op. exp. + taxes + ins. + repl. res.
 PE_2 = " (excluding mgt. fee) "
 NU = number of units
 OR = occupancy rate
 ORR = occupancy rate reciprocal
 M = mortgage
 RMAR = residential market annual rent
 DSR = debt service rate
 SR = subsidy rate

$$\begin{aligned} \text{RBAR} &= (.03701111\text{M} + \text{PE}_2 + .05225(\text{RBAR} + 5))\text{ORR} - 18\text{NU} \\ \text{RBAR} &= (.03701111\text{M} + \text{PE}_2 + .05225 \text{RBAR} + .05225(.06262856\text{M}))\text{ORR} - 18\text{NU} \\ \text{RBAR} &= .05225(\text{ORR})\text{RBAR} + (.03701111\text{M} + .00327234\text{M} + \text{PE}_2)\text{ORR} - 18\text{NU} \\ \text{RBAR}(1 - .05225\text{ORR}) &+ (.04028345\text{M}(\text{ORR})) + \text{PE}_2(\text{ORR}) - 18\text{NU} \\ \text{RBAR} &= \frac{.04028345\text{M}(\text{ORR})}{1 - .05225(\text{ORR})} + \frac{\text{PE}_2(\text{ORR})}{1 - .05225(\text{ORR})} - \frac{18\text{NU}}{1 - .05225(\text{ORR})} \\ \text{RBAR} &= \frac{.04028345}{\text{OR} - .05225}\text{M} + \frac{1}{\text{OR} - .05225}\text{PE}_2 - \frac{18\text{OR}}{\text{OR} - .05225}\text{NU} \end{aligned}$$

Formulae

<u>OR</u>	
94%	$\text{RBAR} \cong .04537702\text{M} + 1.12644326\text{PE}_2 - 19.05941988\text{NU}$
95%	$\text{RBAR} \cong .04487157\text{M} + 1.11389585\text{PE}_2 - 19.04761905\text{NU}$
96%	$\text{RBAR} \cong .04437725\text{M} + 1.10162490\text{PE}_2 - 19.03607822\text{NU}$
97%	$\text{RBAR} \cong .04389371\text{M} + 1.08962136\text{PE}_2 - 19.03607822\text{NU}$
98%	$\text{RBAR} \cong .04342059\text{M} + 1.07787658\text{PE}_2 - 19.01374293\text{NU}$
99%	$\text{RBAR} \cong .04295756\text{M} + 1.06638230\text{PE}_2 - 19.00293255\text{NU}$
100%	$\text{RBAR} \cong .04250430\text{M} + 1.05513057\text{PE}_2 - 18.99235130\text{NU}$

IV Investment Analysis

The foregoing analysis deviates somewhat from the pertinent subjects of economic feasibility analysis and focuses on investment analysis from both the personal investor's vantage point and that of the builder-developer. The figures and examples shown are drawn from a different project, but the relationship to the previous project is close, as the same end product was produced.

The builder-developer of a 236 project often retains a large share of equity. The Glick Company is currently retaining a 51% interest in all projects it develops. This strategy would seem to indicate that 236 developments make lucrative long term investments. Such is the case with Glick. But the economics of developing the project are also highly attractive.

In order to analyze a project from this standpoint, the full service developer must look at the various departments which produce a profit. Land acquisitions, financing, designing, building, legal and organizational and management all contribute to total profitability. The table below indicates the magnitude of some of these profit centers.

<u>Estimate of Profit Contribution</u>					
	engin- eering	sales & mgt.	bldg. co.	total	358 units per unit
gen'l. const. overhead			26,850	26,850	75.00
gen'l. admin. overhead			66,530	66,530	185.84
design-architecture	104,749			104,789	292.60
const. financing fee		27,000		27,000	75.42
financing fee		27,000		27,000	75.42
legal & organ.			21,300	21,300	59.50
off-sit costs			2,132	2,132	6.02
bldg. co. profit--5%			263,255	263,255	735.35
total	104,749	54,000	380,067	538,815	1,505.07

Many of the profit centers shown above exist because FHA permits a certain fee, often based on a per cent of cost. Because Glick builds many units and is able to spread its overhead, benefits accrue in the traditional economics of scale sense. Consequently, each of these profit centers exists only when the developer can perform the service for less than the FHA estimate. This incentive system produces large profits for a highly skilled developer. In addition to these categories, profit is allowable on land, management, bonding, and several other areas. It then behoves the developer to perform as many of these services as possible so long as he can do so for less than the FHA allowable estimate. If he can not perform such services at or below this cost, he will contract with someone who can.

Some expenses are not allowed by FHA. Discount points is one of these. But FHA does allow "fill up" income. This results from early completion of a project and is another incentive type profit. If the developer completes his project on time, the "fill up" income offsets the expense of points, thereby reducing the net loss. It is of the utmost importance, however, that each of the profit centers discussed be viewed as a potential risk area. Each profit is computed on estimates, and the likelihood of meeting all estimated deadlines and costs is always questionable! Each of these profit centers can, therefore, become a loss center; a situation not unknown by the non-expert developer.

The personal investor must view a 236 project as an unusual

investment medium. Like citrus groves and cattle, low income subsidized housing generates large tax losses which are of use to the high income individual. But the 1969 Tax Reform Act eliminated many advantages previously enjoyed by non-housing investments. 236 projects are one of the few investment mediums which still may utilize 200% depreciation methods. For other effects of the new tax law the reader is referred to the excellent handout, "Impact of the Tax Reform Act Upon the Section 236 Limited Dividend Investor Program" prepared for the Glick Company and available through Professor Graaskamp. The table below indicates the investment necessary to build a 235 unit project.

Estimate of Apartment Project Investment

	total	per unit
total all improvements	5,207,698	14,546
fill up income credit	-135,028	-377
land cost--actual	187,000	522
offsite cost	5,200	14
building company profit	<u>263,255</u>	<u>735</u>
total cost	5,528,125	15,441
mortgage	<u>5,247,144</u>	<u>14,656</u>
investment-partnership	\$ 280,981	\$ 784

The extremely low investment figure does not accurately reflect the actual cash outlay. Total cash outlay is lower than \$784 per unit because builder's profit is capitalized rather than expensed. This has the effect of 1) increasing the depreciable basis, 2) increasing the asking price from the investor, as more tax losses are generated, 3) increasing project value. In effect, the total cost to the partnership is \$784 less builder's company profit of \$735, or about \$40 per unit.

The limited partner who owns up to 49% of the project

makes his investment on the basis of value as determined by after tax cash flow. The question the developer must ask himself in determining a selling price is "How much will an investor in a 60 to 70 per cent effective tax bracket pay for the right to receive a) tax losses, b) positive cash flows, c) capital gains generated from the project. Schedule A through D present a detailed cash flow analysis the thrust of which is to answer the question above--determination of an investment value.

V Conclusion

The foregoing models and analyses of the financial mechanics of section 236 have been presented from the viewpoint of a developer, and his opportunity to create a 236 housing project to hold or sell. Regardless of whether or not he elects to hold or sell, the "Front Door" and "Back Door" models are invaluable tools. They create a framework for evaluation from which the developer can decide^{on} the advisability of developing a particular 236 project.

Of fundamental importance to the decision are the investment objectives, organizational structure, technical expertise, and management capability of the developer. Section 236 projects are not "right" for all developers. The benefits of the program must be weighed against the disadvantages.

The prime incentive of the program is its substantial yield and tax shelter resulting from the positive cash flows and negative taxable incomes generated. Of course, this advantage can only be realized by certain developers or eventual purchasers of a 236 project as discussed in Part IV. Diverse in house capability of a developer can also help to create various profit centers before and during construction. Lastly, by participating in the program, a sense of satisfaction and achievement can be earned in providing much needed housing units coordinate with national goals.

The disadvantages are weighty. Tax shelters are only usable or salable in good times. At face value, the 6% maximum allowable return is meager. Tremendous amounts of paper-

work must be processed resulting in large overheads and indirect costs. Flexibility in raising rents to meet rising costs is restrictive. The management of large projects always requires special effort.

The developer who has the ability to neutralize these disadvantages within his set of objectives will find the section 236 housing program quite lucrative and rewarding.

CARRIAGE HOUSE SOUTH
SCHEDULE A

ESTIMATES OF NET TAXABLE LOSS FROM OPERATIONS AND ESTIMATED
CASH FLOW TO INVESTOR - 60% AND 70% EFFECTIVE TAX RATE OF SAVINGS

	YEAR OF OPERATION				
	<u>Fill Up</u>	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
Income:					
Base Rent	\$250,000	\$511,375	\$511,375	\$511,375	\$511,375
Vending	<u>2,130</u>	<u>4,325</u>	<u>4,325</u>	<u>4,325</u>	<u>4,325</u>
Total Income	\$252,130	\$515,700	\$515,700	\$515,700	\$515,700
Expenses:					
Administrative and Operating	\$184,247	\$325,400	\$298,400	\$298,400	\$298,400
Interest	285,140	190,749	136,581	134,811	132,904
Amortization - Financing Fees, Legal & Organi- zational Expense	139,500	3,050	3,050	3,050	3,050
Depreciation	<u>92,883</u>	<u>354,112</u>	<u>303,398</u>	<u>266,761</u>	<u>243,248</u>
Total Expenses	<u>\$701,770</u>	<u>\$873,311</u>	<u>\$741,429</u>	<u>\$703,022</u>	<u>\$677,602</u>
Net Taxable Loss	<u>\$449,640</u>	<u>\$357,611</u>	<u>\$225,729</u>	<u>\$187,322</u>	<u>\$161,902</u>
Cash Flow - Effective Rate of 60%					
Federal Income Tax Reduction	\$269,784	\$214,567	\$135,437	\$112,393	\$ 97,141
Allowable Return	<u>-</u>	<u>34,980</u>	<u>34,980</u>	<u>34,980</u>	<u>34,980</u>
Total Cash Flow	<u>\$269,784</u>	<u>\$249,547</u>	<u>\$170,417</u>	<u>\$147,373</u>	<u>\$132,121</u>
Cumulative Cash Flow	<u>\$269,784</u>	<u>\$519,331</u>	<u>\$689,748</u>	<u>\$837,121</u>	<u>\$969,242</u>
Cash Flow - Effective Rate of 70%					
Federal Income Tax Reduction	\$314,748	\$250,328	\$158,010	\$131,125	\$113,331
Allowable Return	<u>-</u>	<u>34,980</u>	<u>34,980</u>	<u>34,980</u>	<u>34,980</u>
Total Cash Flow	<u>\$314,748</u>	<u>\$285,308</u>	<u>\$192,990</u>	<u>\$166,105</u>	<u>\$148,311</u>
Cumulative Cash Flow	<u>\$314,748</u>	<u>\$600,056</u>	<u>\$793,046</u>	<u>\$959,151</u>	<u>\$1,107,462</u>

<u>5th</u>	<u>6th</u>	<u>7th</u>	<u>8th</u>	<u>9th</u>	<u>10th</u>	<u>Total</u>
\$511,375 <u>4,325</u>	\$511,375 <u>4,325</u>	\$511,375 <u>4,325</u>	\$511,375 <u>4,325</u>	\$511,375 <u>4,325</u>	\$511,375 <u>4,325</u>	\$5,363,750 <u>45,380</u>
\$515,700	\$515,700	\$515,700	\$515,700	\$515,700	\$515,700	\$5,409,130
\$298,400 130,849	\$298,400 128,634	\$298,400 126,247	\$298,400 123,675	\$298,400 120,904	\$298,400 117,917	\$3,195,247 1,628,411
3,050 <u>232,830</u>	3,050 <u>208,320</u>	3,050 <u>193,476</u>	3,050 <u>181,040</u>	3,050 <u>172,576</u>	3,050 <u>160,602</u>	170,000 <u>2,409,246</u>
\$665,129	\$638,404	\$621,173	\$606,165	\$594,930	\$579,969	\$7,402,904
<u>\$149,429</u>	<u>\$122,704</u>	<u>\$105,473</u>	<u>\$ 90,465</u>	<u>\$ 79,230</u>	<u>\$ 64,269</u>	<u>\$1,993,774</u>
\$ 89,658 <u>34,980</u>	\$ 73,622 <u>34,980</u>	\$ 63,284 <u>34,980</u>	\$ 54,279 <u>34,980</u>	\$ 47,538 <u>34,980</u>	\$ 38,561 <u>34,980</u>	\$1,196,264 <u>349,800</u>
<u>\$124,638</u>	<u>\$108,602</u>	<u>\$ 98,264</u>	<u>\$ 89,259</u>	<u>\$ 82,518</u>	<u>\$ 73,541</u>	<u>\$1,546,064</u>
<u>1,093,880</u>	<u>\$1,202,482</u>	<u>\$1,300,746</u>	<u>\$1,390,005</u>	<u>\$1,472,523</u>	<u>\$1,546,064</u>	
\$104,600 <u>34,980</u>	\$ 85,893 <u>34,980</u>	\$ 73,831 <u>34,980</u>	\$ 63,325 <u>34,980</u>	\$ 55,461 <u>34,980</u>	\$ 44,988 <u>34,980</u>	\$1,395,640 <u>349,800</u>
<u>\$139,580</u>	<u>\$120,873</u>	<u>\$108,811</u>	<u>\$ 98,305</u>	<u>\$ 90,441</u>	<u>\$ 79,968</u>	<u>\$1,745,440</u>
<u>1,247,042</u>	<u>\$1,367,915</u>	<u>\$1,476,726</u>	<u>\$1,575,031</u>	<u>\$1,665,472</u>	<u>\$1,745,440</u>	

CARRIAGE HOUSE SOUTH
 SCHEDULE B
 INVESTMENT ON WHICH ESTIMATED CASH FLOW YIELDS
 15.5% RETURN AFTER TAX ASSUMING EFFECTIVE
 RATE OF TAX SAVINGS TO BE 60%

<u>INITIAL INVESTMENT</u>	<u>YEARS INVESTED</u>	<u>15.5%-ANNUAL COMPOUND FACTOR</u>	<u>ANNUAL CASH FLOW (c.1xc.3)</u>	<u>CAPITAL RETURNED</u>	<u>AFTER TAX EARNINGS</u>
\$233,580	1	1.155	\$269,784	\$233,580	\$36,204
187,065	2	1.334	249,547	187,065	62,482
110,590	3	1.541	170,417	110,590	59,827
82,795	4	1.780	147,373	82,795	64,578
64,260	5	2.056	132,121	64,260	67,861
52,480	6	2.375	124,638	52,480	72,158
39,590	7	2.743	108,602	39,590	69,012
31,020	8	3.168	98,264	31,020	67,244
24,395	9	3.659	89,259	24,395	64,864
19,525	10	4.226	82,518	19,525	62,993
<u>15,065</u>	11	4.881	<u>73,541</u>	<u>15,065</u>	<u>58,476</u>
\$860,365			\$1,546,064	\$860,365	\$685,699

CARRIAGE HOUSE SOUTH
 SCHEDULE B
 INVESTMENT ON WHICH ESTIMATED CASH FLOW YIELDS
 20% RETURN AFTER TAX ASSUMING EFFECTIVE
 RATE OF TAX SAVINGS TO BE 70%

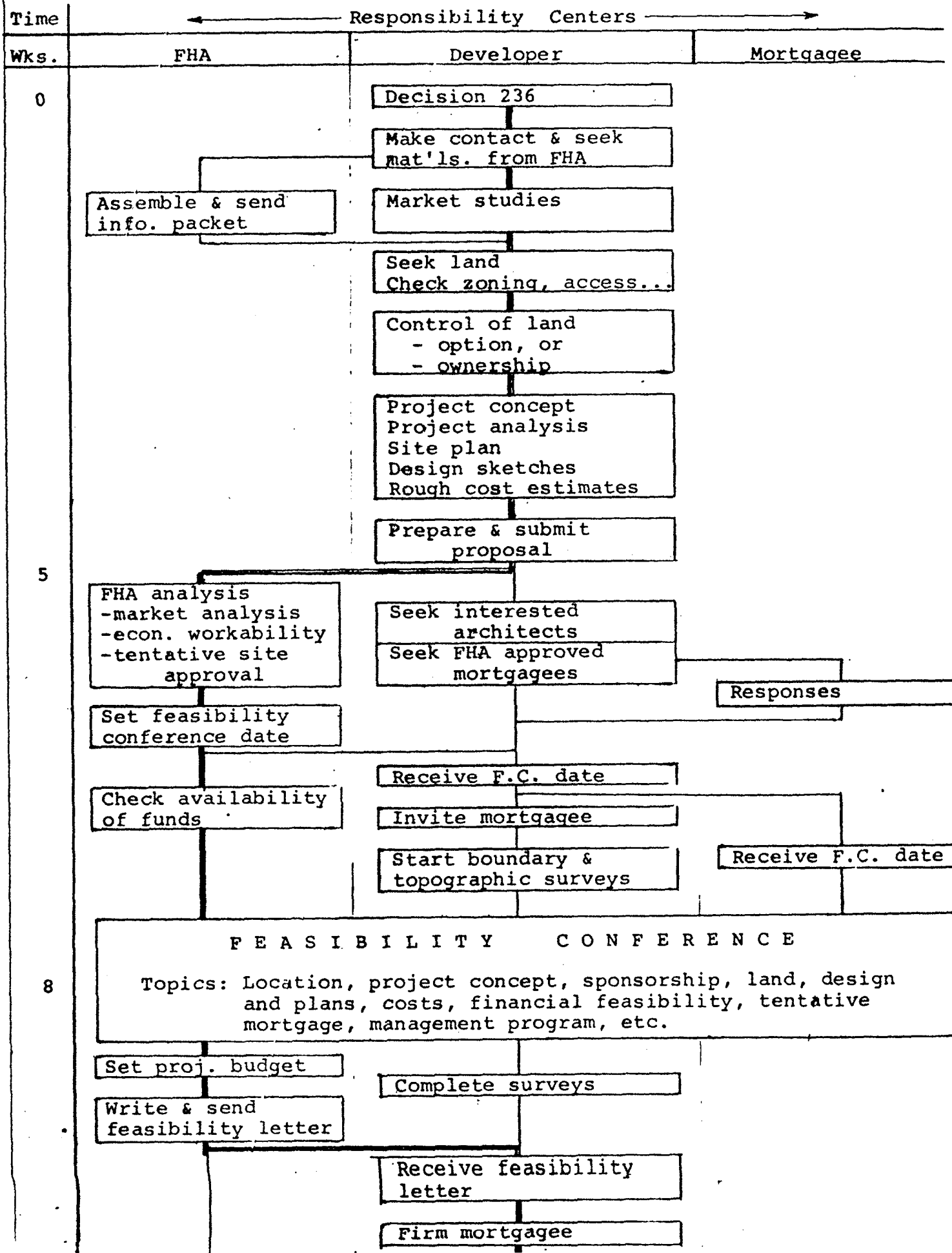
<u>INITIAL INVESTMENT</u>	<u>YEARS INVESTED</u>	<u>20%-ANNUAL COMPOUND FACTOR</u>	<u>ANNUAL CASH FLOW (c.1xc.3)</u>	<u>CAPITAL RETURNED</u>	<u>AFTER TAX EARNINGS</u>
\$262,290	1	1.200	\$314,748	\$262,290	\$52,458
198,130	2	1.440	285,308	198,130	87,178
111,685	3	1.728	192,990	111,685	81,305
80,105	4	2.074	166,105	80,105	86,000
59,605	5	2.488	148,311	59,605	88,706
46,745	6	2.986	139,580	46,745	92,835
33,735	7	3.583	120,873	33,735	87,138
25,305	8	4.300	108,811	25,305	83,506
19,050	9	5.160	98,305	19,050	79,255
14,605	10	6.192	90,441	14,605	75,836
<u>10,760</u>	11	7.430	<u>79,968</u>	<u>10,760</u>	<u>69,208</u>
\$862,015			\$1,745,440	\$862,015	\$883,425

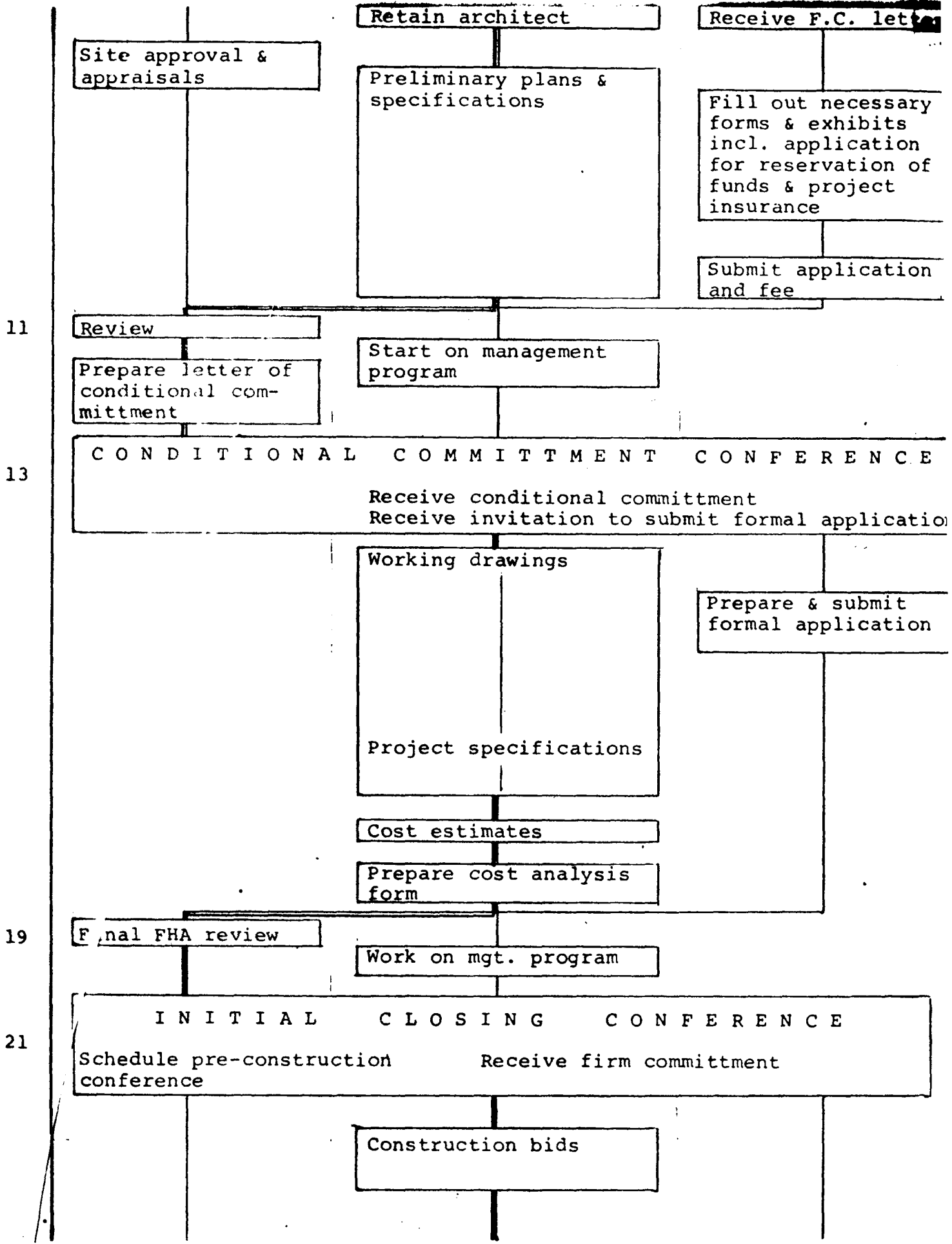
CARRIAGE HOUSE SOUTH
SCHEDULE C
CALCULATIONS OF AFTER TAX CASH PROCEEDS UPON DISPOSITION -
VARIOUS DISPOSITION ASSUMPTIONS

	<u>Mortgage Assumption Only</u>	<u>Mortgage Plus \$550,000</u>	<u>Original Replacement Cost</u>	<u>Original Investment</u>
Proceeds from Sale				
Sale Price	\$4,949,108	\$5,499,108	\$5,830,000	\$6,109,015
Replacement Fund	<u>-</u>	<u>168,745</u>	<u>168,745</u>	<u>168,745</u>
Total Proceeds	\$4,949,108	\$5,667,853	\$5,998,745	\$6,277,760
Disbursement of Funds				
Mortgage Liability Assumed	\$4,949,108	\$4,949,108	\$4,949,108	\$4,949,108
Capital Gain Tax - See Calculations Next Page - Schedule D, Rate of Tax - 25%	<u>370,390</u>	<u>507,890</u>	<u>590,613</u>	<u>660,367</u>
Total Funds Disbursed	\$5,319,498	\$5,456,998	\$5,539,721	\$5,609,475
Net Cash at Disposition	(\$370,390)	\$ 210,855	\$ 459,024	\$ 668,285
Earnings at 20% After Tax (Schedule B-Column 6)	<u>883,425</u>	<u>883,425</u>	<u>883,425</u>	<u>883,425</u>
Total After Tax Earnings on Investment	<u>\$513,035</u>	<u>\$1,094,280</u>	<u>\$1,342,449</u>	<u>\$1,551,710</u>

CARRIAGE HOUSE SOUTH
SCHEDULE D
CAPITAL GAIN CALCULATIONS
FOR CALCULATIONS OF AFTER TAX CASH PROCEEDS UPON DISPOSITION

	<u>Mortgage Assumption Only</u>	<u>Mortgage Plus \$550,000</u>	<u>Original Replacement Cost</u>	<u>Original Investment</u>
Calculation of Capital Gain				
Initial Cash Investment	\$ 862,015	\$ 862,015	\$ 862,015	\$ 862,015
Original Mortgage - Based on an Estimated Replace- ment Cost of \$5,830,000	<u>5,247,000</u>	<u>5,247,000</u>	<u>5,247,000</u>	<u>5,247,000</u>
Beginning Basis	\$6,109,015	\$6,109,015	\$6,109,015	\$6,109,015
Reductions in Basis				
From Tax Loss - Schedule A . From Allowable Return	\$1,993,774	\$1,993,774	\$1,993,774	\$1,993,774
Distribution - Schedule A	349,800	349,800	349,800	349,800
From Mortgage Amortization	<u>297,892</u>	<u>297,892</u>	<u>297,892</u>	<u>297,892</u>
Total Reductions in Basis -- 11 Years	<u>\$2,641,466</u>	<u>\$2,641,466</u>	<u>\$2,641,466</u>	<u>\$2,641,466</u>
Adjusted Basis - End of 11 Years	\$3,467,549	\$3,467,549	\$3,467,549	\$3,467,549
Sale Price	<u>4,949,108</u>	<u>5,499,108</u>	<u>5,830,000</u>	<u>6,109,015</u>
Capital Gain	<u>\$1,481,559</u>	<u>\$2,031,559</u>	<u>\$2,362,451</u>	<u>\$2,641,466</u>
Tax on Gain -				
Rate of Tax - 25%	<u>\$370,390</u>	<u>\$507,890</u>	<u>\$590,613</u>	<u>\$660,367</u>
Rate of Tax - 30%	<u>\$444,468</u>	<u>\$609,468</u>	<u>\$708,735</u>	<u>\$792,440</u>
Rate of Tax - 35%	<u>\$518,546</u>	<u>\$711,045</u>	<u>\$826,858</u>	<u>\$924,513</u>





Retain architect

Receive F.C. letter

Site approval & appraisals

Preliminary plans & specifications

Fill out necessary forms & exhibits incl. application for reservation of funds & project insurance

Submit application and fee

11

Review

Start on management program

Prepare letter of conditional commitment

13

CONDITIONAL COMMITMENT CONFERENCE
 Receive conditional commitment
 Receive invitation to submit formal application

Working drawings
 Project specifications

Prepare & submit formal application

Cost estimates

Prepare cost analysis form

19

Final FHA review

Work on mgt. program

21

INITIAL CLOSING CONFERENCE
 Schedule pre-construction conference
 Receive firm commitment

Construction bids

25

P R E - C O N S T R U C T I O N C O N F .

Municipal plan & spec. approval

Building permit

Finalize const. plans

Construction contracts

26

C O N S T R U C T I O N
(time variable)

FHA inspections
-foundation
-rough-in & utils
-final and acceptance

Manage const. draws

2
w
e
e
k
s

Prepare cost certification

Complete mgt. program

F I N A L C L O S I N G C O N F E R E N C E

Rent up and operation



OFFICE SPACE STUDY
MADISON, WISCONSIN

Supply/Demand Analysis

A+

For: Professor J. A. Grasskamp
Bus. 761

From: William Hatcher
Elvis Eaglin

Date: May 15, 1972



To Al Drawbert and Norb Christopher

Date May 15, 1972

From William Hatcher

Subject Office Space Study

This report is a partial fulfillment of your previous request for; 1) a study of the Madison Office Space Market and; 2) a study of the Madison housing market. It is an analysis of the supply of and demand for commercial office space in the Capitol Square Area and Greater Madison. The Supply and Demand was projected to 1975 which it is felt will be a crucial year. In addition, the various sub-market-areas of office space concentration were looked at separately. It is hoped that this study will provide a basis on which lending decisions concerning commercial office space and the Capitol Square Area can be made.

SUMMARY

- 1) In 1972, in the Capitol Square Area there is approximately 573,200 net rentable square feet of commercial office space available for use. Of this amount 469,570 square feet were in use and 103,630 square feet are vacant, this is a vacancy rate of about 18%.
- 2) It is projected that in 1975 there will be from 770,000 to 830,000 net rentable square feet of office space available for general use in the Capitol Square Area in the City of Madison. This is an increase of about 45% over the 1972 level.
- 3) Employment projections to 1975 in the classifications of finance and service, which are prime indicators of office space demand, indicate a need for 600,000 to 650,000 net rentable square feet of office space at that time.
- 4) Supply and Demand projections indicate a possible vacancy of 170,000 to 180,000 net rentable square feet of office space in 1975, a vacancy rate of approximately 22%.
- 5) Of the professions, Finance and attorneys appear to be a stable force. However, medical related and accountants have showed a marked exodus from the Capitol Square Area since 1965.
- 6) The Hilldale Area showed stability with regard to the number of medical tenants in 1972 comparing to 1964, however, it showed significant growth in non-medical tenants.

- 7) The Far West Side is a new area located on Mineral Point and Odana Roads, Capitol Drive, and Medical Circle. Many of the tenants have moved from the Capital Square Area and are medical related.
- 8) The Far East Side, Monona, and Intermediate Areas, as defined in the report, are stable areas showing respectable growth.
- 9) The State of Wisconsin, with a projected need for 1,081,420 square feet by 1975, has launched into a phased building program to meet its own space needs, utilizing as little privately owned space as possible.

RECOMMENDATIONS

Fact would indicate that steps must be taken to cure the ills of the Capitol Square Area. The following broad based recommendations suggest courses of action to be taken either separately or simultaneously:

- 1) A large volume of the "D" class space (as defined in the report), and a larger than anticipated volume of the "C" class space will have to be demolished as un-competitive or alternative use found for the existing building or razed site. However, there are a certain number of tenants who will rent only in a price range indicative of "C" and "D" class space and there is a question as to whether or not it is feasible to discourage their location in the Capitol Square Area.
- 2) A second course of action is to accomplish in the Capitol Square Area amenities which will once again make it a viable competitor with other growing areas in the city.
- 3) Closely related to the above, the Capitol Square Area must make a promotional effort to attract new and out-of-town business which is locating elsewhere.
- 4) An important consideration is a moratorium on the development of new office space for general use. This

encouragement of development of owner occupied space and discouragement of the development of office space for general use should come from:

- a) City Planning Department;
- b) Commercial Lending decisions;
- c) Chamber of Commerce promotions;
- d) Major Developers;

OUTLINE

- I. PURPOSE
- II. METHOD OF ANALYSIS
- III. SUPPLY OF OFFICE SPACE IN THE CAPITOL SQUARE AREA
- IV. DEMAND FOR OFFICE SPACE
- V. STATE OF WISCONSIN OFFICE SPACE
- VI. EMPLOYMENT AND SPACE NEED PROJECTIONS

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| 02 | Planned Office Space |
| 03 | Employment by Selected Classification and by Location |

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- B. Hilldale Area-1972
- C. Far West Side
- D. Far East Side
- E. Monona Drive Area
- F. Intermediate Area
- G. Madison Area
- H. Tenants who Moved From vs. Total of those who Moved
- I. Proportion of Madison Professional People on the Square

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- I. CAPITOL SQUARE AREA
- II. DIFFERENT MARKET AREAS IN MADISON
- III. PHASING OF STATE OF WISCONSIN OFFICE SPACE

Commercial Office Space Supply/Demand Analysis

Purpose

This report is a market analysis with the purpose to calculate the supply of and demand for commercial office space in the Capitol Square Area. In addition to looking at this one area, it was also found essential to analyze the intermediate and outlying concentrations of office space to determine if the Capitol Square Area is a competitive part of the larger Madison market or if it is a separate submarket with very little direct competition with the intermediate and outlying areas. The supply and demand figures projected to 1975 should become a primary basis for commercial lending decisions involved in office space as well as a tool to aid in the consulting with prospective developers of commercial office space.

Method of Analysis

The analysis begins with the detailed current inventory of the supply of net rentable square feet of office space in the City of Madison Capitol Square Area. The Capitol Square Area for purposes of this report is defined as an area geographically consisting of two blocks on all sides of the Capitol Square but also truncated to some extent to include building such as the Wisconsin Power and Light Building, the New VIP building and the National Guardian Life Building which although somewhat outside this narrowly defined area are within the area which directly competes with the office space located in the Capitol Square Area as we have defined it. (See Map I in Appendix)

For purposes of this analysis, only three classes of office space were considered: A, B, and C class space with the D class being ignored. A class space is space with ample parking, elevator, air conditioning and modern lights. B class space is space which is lacking in either one or two of the items in A class space. C class space is space which is generally obsolete and D class space is space that is fully obsolete.

After the total number of square feet per building was tabulated the amount of owner occupied space in each building was deducted from the total. This left the total space available for general commercial office space use in 1972. The next step was to take this available commercial office space in 1972 and add to it the known constructions plans in the downtown area for commercial office space between 1972 and 1975 and also deduct from that figure the amount of space the owner occupants would expand into between 1972 and 1975. The result of course, is the estimated supply of commercial office space for the year of 1975.

The projections for supply and demand were made to the year 1975 for various reasons. For one reason, the year 1975 is a year in which a majority of the office space in the City of Madison being built at present should be completed and fully occupied with the exception of perhaps the new First Wisconsin National Bank Building. Also the new First Wisconsin National Bank Building should be approaching completion in the year 1975 and would be beginning, or well into, its rent up period which is of course a very critical period for any new office structure.

So in 1975 much of the office space in the construction stage now will have been absorbed by the market and the market should be somewhat stabilized at a specific occupancy level. At the same time, First Wisconsin National Bank will be vacating another very substantial amount of commercial office space in the market. From an ownership position, First Wisconsin National Bank will be left in a position of filling top of the line space in its new building, but also second class space which it vacates in the Tenney Building of which it is of course the owner. It is, therefore, felt that projections should culminate in 1975 since it is felt that this will be a crucial year for the bank and indeed the office building market in the Square Area.

The primary basis for predicting demand for commercial office space on the capitol square area in 1975 will be projected employment figures. These projected figures, of course, will concentrate on the areas of

finance and service industry which will include finance, real estate and insurance and also the various professions. Projections will be made as to total employment in these areas, as to percent of this total employment concentrated in the Capitol Square Area and the space requirements for these professional and service people. From these projected figures, total demand for office space in the capitol square area can be determined. No added demand for privately owned office space by the State of Wisconsin is assumed for the downtown area since the State of Wisconsin has some very elaborate plans well in progress to take care of its own demands for office space in the City of Madison.

With the estimates of 1975 available space in the capitol square area and 1975 space needs in the capitol square area it is possible to judge how much additional space might be absorbed if the estimates are realized. There is, of course, a discussion of the probability of such realization and the possible rate of error.

Supply of Office Space in Capitol Square Area

The current inventory for 1972 of general office space in the Capitol Square Area as defined in this report is presented in Table O-1 of this report. This table summarizes in detail an inventory of all A, B, and C class office space in the Capitol square Area. In all discussions in this report, D class space will be ignored since it is assumed that office space in that class being uncompetitive will be removed from the market in the not-too-distant future. A class office space, of course, consists of space with ample parking, elevator, air conditioning, and modern lighting. B class space lacks either one or two of the items in the A class space. C class space is generally obsolete. The "total amount of space" is indicated on the table and from that amount "owner occupied space" is subtracted along with "vacant space" which yields a figure called "commercial office space in use" in the Capitol Square Area. Adding together the "commercial office space in

use" plus the "vacant space" yields "available commercial office space" which is space above and beyond the owner occupied space available in the Capitol Square Area. The table indicates this space by building and in total. In total in 1972 there were approximately 573,200 net rentable square feet of office space available for commercial use in the Capitol Square Area. Of this total amount, approximately 469,570 net rentable square feet were in use and 103,630 net rentable square feet or 18% of the total was vacant.

Table 0-2 indicates planned office or projected office space in the year 1975 within the Capitol Square Area. It indicates and summarizes the changes in the 1972 available A, B, and C class of commercial office space by 1975. Additions to the current supply of the 1972 available commercial office space are planned or current construction of new office space taking place as indicated in the table in three areas: Commercial State Bank, First Wisconsin National Bank and the new VIP Plaza office building by Wild, Inc. Reductions from the total occur when owner occupants expand into greater use of their building and thus remove part of the space from general commercial office use. Demolition is also a deduction or subtraction from the available supply. The total 1972 available office space is approximately 573,200 net rentable square feet of A, B, and C class office space in the Capitol Square Area. This figure includes vacant space. Additions to this amount of space by way of construction will amount to approximately 320,000 net rentable square feet of space. (This includes a somewhat doubtful item of Commercial State Bank of 50,000 net rentable square feet). Deductions from the supply amount to 64,875 net rentable square feet between now and 1975. These figures indicate total net rentable square feet of A, B, and C class office space available for general use in 1975 to be approximately 828,325 square feet. This is a net increase over 1972 of approximately 255,125 net rentable square feet of A, B, and C class office space or an increase of 44.5% from 1972 to 1975. For working purposes, a range of 770,000 square feet to 830,000 square feet is established to indicate the probable order of the existing supply in 1975. This, of course, is taking into consideration the somewhat doubtful 50,000 net rentable square feet proposed by Commercial State Bank.

Existing Present Office Space Within the Capitol Square Area *

	Existing 1972 **	Owner Occupied	Vacant	Commercial Space in Use	Available Commercial Space
(1) Old AAA Building	2,500	---	---	2,500	2,500
(2) Woolworth Building	5,750		1,200	4,550	5,750
(3) 30 On The Square	65,764	11,044	720	54,000	54,720
(4) First Federal S & L	15,000	9,000		6,000	6,000
(5) Rennebohm	6,400	6,400	---	---	---
(6) Commercial State Bank	21,000	6,000	1,500	13,500	15,000
(7) IBM	18,000	18,000	---	---	---
(8) New AAA	27,000	19,000	500	7,500	8,000
(9) Old Wis. Power and Lt.	63,000	---	16,750	46,250	63,000
(10) Gay Building	37,500	---	3,200	34,300	37,500
(11) Old Anchor S & L	7,200	7,200			
(12) Provident S & L	7,200	2,450	750	4,000	4,750
(13) Building of Commerce	8,610		210	8,400	8,610
(14) Trelfall	8,640		1,500	7,140	8,640
(15) New Anchor	49,360	21,030	1,000	27,330	28,330
(16) Bank of Madison	56,000	32,000	500	23,500	24,000
(17) Insurance & Cantwell Building	56,000	39,700	5,400	10,900	16,300
(18) Tenney Building	73,000	---	9,000	64,000	73,000
(19) First Wis. Bank	51,600	30,000	---	21,600	21,600
(20) 102 N. Hamilton	21,000	---	---	21,000	21,000
(21) Grant	13,600	---	---	13,600	13,600
(22) 214 N. Hamilton	7,500	---	---	7,500	7,500
(23) Nat. Guardian Life	---	---	---	20,000	20,000
(24) New Wis. P & L	160,000	80,000	40,000	40,000	80,000
(25) Old M B & T	15,000	---	15,000	---	15,000
(26) El Esplanade	38,400	---	6,400	32,000	38,400
(27) Total			103,630	469,570	573,200
			18%		

* The "Capitol Square Area" is roughly defined as an area 2 blocks on all sides of the Capitol Square. However, the area is truncated to include the VIP Plaza and the National Guardian Life Building which are 3 blocks out.

** Existing 1972 space is the Net Rentable Area of all A, B, and C class space in the "Capitol Square Area". Owner occupied space is deducted from that figure to arrive at available commercial space.

Classes:

- A = Parking, elevator, air conditioning, modern lights
- B = Lacking either one or two of the items in A
- C = Generally obsolete
- D = Fully obsolete

Planned Office Space Within the Capitol Square Area *

	Available Commercial Space ** 1972	Additions	Substractions	Estimated 1975
(1) Old AAA Building	2,500			2,500
(2) Woolworth Building	5,750			5,750
(3) 30 On The Square	54,720			54,720
(4) First Federal S & L	6,000		3,000 (o)	3,000
(5) Rennebohm	---			---
(6) Commercial State Bank	15,000	50,000 (n)	15,000 (d)	50,000
(7) IBM	---			---
(8) New AAA	8,000		8,000 (o)	
(9) Old Wis. P & L	63,000	---	---	63,000
(10) Gay Building	37,500			37,500
(11) Old Anchor S & L	---			---
(12) Provident S & L	4,750		1,175 (o)	3,575
(13) Building of Commerce	8,610			8,610
(14) Trefall	8,640			8,640
(15) New Anchor	28,330		1,200 (o)	27,130
(16) Bank of Madison	24,000		3,600 (o)	20,400
(17) Insurance and Cantwell Building	16,300		1,300 (o)	15,000
(19) Tenney Building	73,000			73,000
(20) First Wis.	21,600	160,000 (n)	21,600 (d)	160,000
(21) 102 N. Hamilton	21,000			21,000
(22) Grant	13,600			13,600
(23) 214 N. Hamilton	7,500			7,500
(24) Natnional Guardian Life	20,000		6,000 (o)	14,000
(25) New Wis. P & L	80,000		4,000 (o)	76,000
(26) Old M B & T	15,000			15,000
(27) El Esplanade	38,400			38,400
(28) VIP	---	110,000 (n)		110,000
Total	573,200	320,000	64,875	828,325
Net Increases over 1972				44.5%

* The "Capitol Square Area" is defined as 2 blocks on all sides of the Capitol Square, however, trunkated to include VIP Plaza and National Guardian Life which are 3 blocks out.

** Available commercial space is Net Rentable space less owner occupied space. To arrive at the 1975 estimated, new construction is added to available space, and demolition and owner expansion is deducted.

(n) = New construction
(o) = Owner expansion
(d) = Demolition

Footnotes on Tables 0-1 and 0-2:

1. The Old AAA building is located at 102 N. Hamilton Street. First Wisconsin National Bank presently leases the entire amount of net leasable area in the building which amount to 2,500 square feet of office space and 2,500 square feet of basement storage space. It is, of course, anticipated that this office space will be available for general office space use in three years when First Wisconsin National Bank will locate all its operations in its new building.

2. The Woolworth Building presently contributes approximately 5,750 net rentable square feet of general office space to the Madison Market. At present, there are approximately 1,200 square feet in the building vacant.

3. According to Mr. Maddrell, 30 On The Square has approximately 65,764 net rentable square feet in total. Rennebohm Drug Store occupies approximately 11,044 square feet leaving approximately 54,720 square feet for general office use. At present, there are approximately 720 vacant square feet in the building.

4. First Federal Savings and Loan has a total of approximately 15,000 net rentable square feet. Of this amount, the savings and loan operations itself occupies approximately 9,000 square feet and the remaining 6,000 square feet is available for general commercial office space use. It has been estimated by Mr. Mase of First Federal Savings and Loan that the institution will expand into approximately 3,000 net square feet more by 1975 leaving at that time approximately 3,000 feet available for commercial space use.

5. Although in 1964 Rennebohm Drug Store contributed approximately 6,400 net rentable square feet of office space to the total downtown area supply, it has utilized the remainder of its office space and at present is the sole occupant of the building.

6. Presently, out of a total of approximately 21,000 net rentable square feet, Commercial State Bank operations occupies approximately 6,000 square feet. This does not take into consideration the 2,500 square feet utilized by its Time Credit Department next door. Of the remaining approximately 15,000 square feet available for commercial office space use, approximately 1,500 square feet are presently vacant leaving approximately 13,500 square feet of commercial office space in use at present. Commercial State Bank has some very ambitious plans for the future. These plans include the building of an office building which is slated to contribute approximate 150,000 net rentable square feet of office space to the Madison Market. However, upon closer consideration and confidence with the person interviewed, he demonstrated to me that it would probably be a lot more realistic to think in terms of a structure which would have total approximately 50,000 net rentable square feet above and beyond what bank operations would utilize.

7. According to an interview with Mr. Bob Hill of IBM Corporation, IBM fully expects in the very near future to occupy its entire building.
8. The new AAA building on West Washington totals approximately 27,000 net rentable square feet. AAA operations itself occupies approximately 19,000 of these square feet, 500 being vacant leaving approximately 7,500 in use at present and a possibility of 8,000 to be used for commercial office space. According to Mr. Baragin of AAA, AAA intends to occupy all of the space in the building by 1975.
9. The old Wisconsin Power and Light Building contains approximately 63,000 net rentable square feet of office space. Presently, approximately 16,750 of those square feet are vacant leaving approximately 46,250 in use presently for commercial office space.
10. The Gay Building totals approximately 37,500 net rentable square feet. Presently approximately 3,200 of those net rentable square feet are vacant leaving approximately 34,300 square feet in use as commercial office space at present.
11. The Old Anchor Building which consists of approximately 7,200 net rentable square feet has been purchased by Home Savings and Loans and is entirely owner occupied.
12. Provident Savings and Loans consists of approximately 7,200 square feet of which approximately 2,450 is utilized by savings and loan operation. Presently approximately 750 square feet are vacant which leaves approximately 4,000 square feet in commercial office space use. Members of the savings and loan confer that by 1975 they expect to expand into an additional 1,175 feet of the building which would leave approximately 3,575 net rentable square feet for commercial office space use in 1975.
13. The Building of Commerce has approximately 8,610 net rentable square feet with approximately 210 of those being vacant at the present.
14. The Trelfall Building has approximately 8,640 net rentable square feet but with approximately 1,500 being vacant at the present.
15. The New Anchor Savings and Loan Building consists of approximately 49,360 net rentable square feet. Presently Anchor Savings and Loan operations occupies approximately 21,030 of those square feet, 1,000 square feet being vacant leaving approximately 27,330 net rentable square feet on the market. In a conversation with Mr. Leslie of Anchor Savings and Loan he conceded that the savings and loan anticipates expanding into probably another 1,200 square feet of space by 1975 which will leave approximately 27,113 net rentable square feet of space on the market at that time.

16. The Bank of Madison building consists of approximately 56,000 net rentable square feet of which approximately 32,000 is occupied by bank operations and presently there are approximately 500 square feet vacant. The Bank of Madison fully intends to be utilizing 3,600 square feet more in the building by 1975 which will leave approximately 20,400 net rentable square feet on the market.

17. The Insurance and Cantwell buildings in total consist of approximately 56,000 net rentable square feet of space. Of this amount of space, approximately 39,700 net rentable square feet are utilized by the insurance occupant with another 5,400 square feet being left vacant at the time leaving approximately 10,900 square feet of net rentable square space utilized as commercial office space. The occupant intend to utilize perhaps another 1,300 square feet of space by 1975 which will leave approximately 1,500 net rentable square feet on the market at that time.

19. The Tenney Building consists of approximately 73,000 net rentable square feet of office space. Presently there are approximately 9,000 square feet of space vacant leaving for general commercial use approximately 64,000 net rentable square feet. However, it is known that the 9,000 square feet is space that is being held vacant for First Wisconsin National Bank operations while the present First Wisconsin structure on the square is razed to prepare the construction site for the new First Wisconsin National Bank Building.

20. The present First Wisconsin National Bank building consists of approximately 51,600 net rentable square feet of which approximately 30,000 net rentable square feet are occupied by bank operations. This leaves approximately 21,600 rentable square feet on the market in 1972. First Wisconsin National Bank is at present in the process of dehabitating the present structure to prepare the site on which to build a new office and bank operations building consisting in total of approximately 250,000 net rentable square feet. Of that First Wisconsin fully intends to utilize all but approximately 160,000 net rentable square feet which it will offer to the market for commercial office space. The old structure, of course will be demolished.

21. 102 North Hamilton is presently utilized fully by First Wisconsin National Bank as their Operations Building. However, the bank leases the space and the space consists of approximately 21,900 net rentable square feet. This space, of course, while fully utilized now, will be available for commercial office space use somewhere in the vicinity of 1975 since all bank operations will be contained in the new office-bank structure.

22. The Old Grant Building consists of approximately 13,600 net rentable square feet.
23. The office building at 214 N. Hamilton consists of approximately 7,500 net rentable square feet of office space.
24. Although the people interviewed at National Guardian Life Building were very uncooperative it has been disclosed that the building offers approximately 20,000 net rentable square feet of office space for general office use. It is assumed that the insurance operations will probably occupy another 6,000 square feet by 1975 which will leave approximately 14,000 net rentable square feet available for commercial space at that time.
25. The New Wisconsin Power and Light Building was developed by Murdock and its two main tenants are, Wisconsin Power and Light and on the ground floor the Madison Bank and Trust operations. The total structure consists of approximately 160,000 net rentable square feet of office space. Of this total amount of space, Wisconsin Power and Light fully intends to utilize approximately 80,000 net rentable square feet. At present, taking into consideration the amount of space utilized by the Power and Light operations, approximately 40,000 square feet are vacant and approximately 40,000 net rentable square feet are utilized as general commercial office space principally in this case by Madison Bank and Trust. Wisconsin Power and Light fully intends by 1975 to utilize approximate another 4,000 square feet of office space in the building. This would leave approximately 76,000 net rentable square feet of office space available for general use in 1975.
26. The old M B & T building consisting of approximately 15,000 net rentable square feet is at present vacant. It is felt the building will not be demolished by 1975 but will contribute approximately 15,000 net rentable square feet of general office space to the commercial office space market.
27. El Esplanade consists of approximately 38,400 net rentable square feet of space and is presently all utilized except for about 6,400 square feet which is vacant.
28. The VIP Plaza which is now in construction will be completed by 1975 and will contribute approximately 110,000 net rentable square feet of office space to the commercial office space market in the City of Madison.

Demand for Office Space

In this part of the feasibility analysis a general study of the office space market in the Madison area was made to determine if the Central Area competes with the total market or if it was still a sub-market as indicated in Professor Graaskamp and Ratcliff's office study of 1964. The Madison area was broken into the following six sub-areas: 1. the Square, 2. the Hilldale Area, 3. the Far West Side, 4. the Far East Side, 5. the Monona Area and 6. the Intermediate Area. These areas are indicated on Map II in the Appendix. From each area, except for the square, the names of tenants occupying office space were ascertained from the directories of the buildings. All of the tenants occupying office space in the different areas could not be inventoried, since in many areas there were some small office buildings with one or two tenants, scattered throughout the community. Although the Square Area was found to be a sub-market in the 1964 study, the trend has reversed itself in that our findings indicate that the Square Area is competing more and more with the other five areas of Madison.

In arriving at this conclusion, tenants of major office buildings located in the areas indicated before, were checked to determine their locations as of 1965, and also, an analysis of the professional tenants presently inhabiting the Square was performed.

a. The Hilldale office area contains office space located on the following streets: North Midvale, Regent, Price Place and Segoe Road. Of the 143 tenants inventoried in Hilldale, 40 were medical and 103 non-medical. (See Table B; Tables A to I are located in the Appendix). This indicates that the number of non-medical tenants have more than doubled, since the 1964 study indicates 42 medical and 44 non-medical.

Tenants with different 1965 addresses amounted to 51, of which only 6 were medical and 45 non-medical. Of the six medical tenants who moved, that is, who had different addresses, only 1 or 2% of those who moved came from the Square, (Table H) whereas 16 non-medical or 33% of the total tenants with different addresses, came from the Square (Table H). If the tenants who moved from the Square were compared to the total

tenants in the area, the percentages would be much smaller, as shown in Table B, but they were compared to the tenant who had different 1965 address. These tenants are ones who had moved. The study did not consider the tenant who could have moved into the Square after 1965 and then moved to one of the other areas in Madison. Another reason why the tenants who moved from the Square were compared to the total with different addresses is that the total tenants in an area consisted of two more significant groups - the tenant with the same 1965 address and the tenant with no 1965 address. Those with the same addresses were considered as already being established in the area, and those with no addresses as new tenants coming into the area from somewhere else or as a new business being established. In the Hilldale Area, 45 or 31% had the same address in 1965 and 47 tenants, or 33% were new businesses. Therefore, the Hilldale Area showed stability with regard to the medical profession, but experienced tremendous growth in the non-medical profession, pulling 16 tenants from the Square. The one medical tenant who moved from the Square was a dentist and the 16 non-medical were broken into: five insurance-related tenants, one investor, one lawyer, one real estate consultant, one CPA and the other six being miscellaneous tenants.

b. The Far West Side consists of office space located on the following streets: Capitol Drive, Mineral Point Road, Odana Road, Nakoma Road and Medical Circle-Westgate. In this area, the inventory consisted of 59 tenants, of which 39 (66%) were medical and 20 (34%) were non-medical (Table C). The Far West Side is considered to be a relatively new area, with only 8 tenants or 14% having the same 1965 address. New tenants (no 1965 address) were 26 or 44% of the total, with 20 of them being medically related, while only 6 were non-medical. The tenants who moved from the Square consisted of 11, with 7 tenants medical related and 4 tenants non-medical. The above indicates that the Far West Side is attracting more medical related tenants than non-medical. The 11 tenants from the Square make up 44% of the tenants with different 1965 addresses (Table H) and 19% of the total number of tenants inventoried on the West Side. The 7

medical tenants who moved, were divided into; four physicians, one dentist, one clinical psychiatrist, and one medical association. The four non-medical tenants consisted of three insurance-related tenants and Xerox.

c. The Far East Side consists of office space located on the following streets: North Sherman, East Washington across the Yahara River, and Atwood Avenue. This area inventoried at 48 tenants (Table D); 36 medical (75%) and 12 non-medical (25%). The breakdown almost compares proportionately to the breakdown on West Side, the big difference being that tenants with different and same addresses are just the opposite of that for the West Side. Tenants with different 1965 addresses on the East Side totaled 8, compared to 25 tenants for the West Side; whereas the one with the same address totaled 24 compared to 8 for the West Side. This is an indication of less moving to the East Side and also that 50% of the tenants were already located there in 1965. With a total of 8 tenants moving to the East Side, three of them, all physicians, moved from the Square.

d. The Monona Area consists of office space located on Monona Drive. The total number of tenants inventoried was 25, with 22 (88%) being medical-related and only 3 non-medical (Table E). The largest group of tenants found in this area were new ones, with total of 11, where 8 were medical and the remainder non-medical. The group of tenants with the different addresses and those with the same address numbered 7 and both cases they were medical-related. The only tenants to moved from the Square to this area, were two physicians.

e. The Intermediate Area consists of office space located on the following streets: University Avenue, East Washington up to the Yahara River, Park Street, Marshall Court and Fish Hatchery Road. Of 238 tenants inventoried, 170 of them (71%) were medical related and 68 of them (29%) non-medical.

Two important factors indicate the Intermediate Areas as growth areas especially for the medical-related professions. The tenants with different 1965 addresses numbered 82 or 34%, and those with no 1965 address numbered 107 or 45%. This gives a total of 189 tenants or 79% of the

tenants as not being located there in 1965. The big impact is that the majority of these are medical-related. Medical tenants with different 1965 addresses amounted to 59 compared to 23 non-medical. Furthermore, medical tenants with no 1965 addresses amounted to 69 compared to 38 non-medical. This same trend existed for the tenant who moved from the Square; 32 were medical and 11 non-medical. The tenants who moved from the Square were 52% of the total tenants with different addresses (Table H). This can be divided into 39% medical-related and 13% non-medical? numberwise, they were 32 and 11, respectively. The medical group can be broken into twenty-nine physicians, two dentists, and one association. The non-medical group can be broken into seven insurance related companies and four miscellaneous companies. If more information is needed concerning the origins of tenants, it is suggested that one can find the information in the telephone directories prior to 1965. This would be helpful in analyzing the Dean Clinic on Fish Hatchery Road. For example, we found that of the 36 medical people located there, 18 were not listed in 1965 and the other 18 were listed at their present location, with no one moving there from within the Madison Area. The tenants were with the same addresses listed could be further researched to see if Dean Clinic moved there as one group or if it attracted tenants from the Madison Area.

f. The Madison Area, as such, is a composite of the five dominant areas discussed in the preceding sections. A total of 513 tenants were inventoried (Table G). Of this amount, 307 or 60% of them were medical-related and 206 or 40% were non-medical. In all five areas, the medical group outnumbered the non-medical. Medical tenants accounted for 125 of the 207 new tenants with no 1965 addresses that were inventoried; non-medical was only 82. There also was 133 tenants (26%) with the name 1965 addresses. This was broken into 89 for medical and 44 for non-medical. The tenants with different 1965 addresses for the Madison Area, totaled 173 or 34%, with 91 medical and 82 non-medical. A total of 76 tenants, 45 medical and 31 non-medical, moved from the Square. This was 41% of the total - 26% medical and 18% non-medical - for the Madison Area that had different 1965 addresses.

The Intermediate Areas attracted the most tenants from the Square, both numerically and percentage-wise, 43 or 52% respectively (Table H). Furthermore, the Intermediate Areas are attracting the most medical related tenants from the Square; 32 tenants, compared to 7 for the other areas. The Hilldale area seems to be saturated regarding the medical profession, but has experienced tremendous growth regarding the non-medical professions. This area pulled the most non-medical tenants from the Square.

In this analysis we did not attempt to find the reason why the tenants moved from the Square. If one is interested in pursuing this, he can contact the 76 tenants. He may find it a little difficult to get an audience with many of them, since the majority are physicians and their time is limited. But, we did notice in doing the analysis that many tenants moved from one location on the Square, 110 E. Main the Tenney Building. It was further found that 27 tenants moved from this location to the five other areas in Madison. First Wisconsin Bank was encouraging them to move by not renewing leases, and that comparable space was available at a comparable price per square foot, but it cannot be assumed that they did not have another place to locate on the Square. Of the 27 tenants, 22 of them were medical-related and 5 of them were non-medical. The medical tenants moved in the following way: 14 of them to the Intermediate Areas, 7 of them to the Far West Side, and one to the Far East Side. None moved to Hilldale or Monona. Of the 5 non-medical tenants, 3 moved to Hilldale, one to the Far West Side and one to the Intermediate Areas. The above data conforms to the trends that were suggested from the analysis of Tables A to G. That is, the majority of the medical-related tenants moved to the intermediate areas, and the majority of the non-medical tenants moved to Hilldale.

The analysis of the number of professional people (Table I) on the Square indicates that only attorneys have increased in number and have been able to stabilize at the same percentage (75%) as in 1960 and 65. All the other professions on the Square have decreased significantly, only a few remained the same, numberwise, but not percent-wise. There were five architects listed on the Square in 1964, and there are five listed today, but the total listing has increased while the Square listing has remained the same.

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This is almost true for the insurance agents and private companies. Their number on the Square decreased by one, while their number in the city rose by 142. The accounting profession took a drastic turn. Their number on the Square and their proportion to the rest of the city increased readily in the past. In 1964 they numbered 33 on the Square from a total of 41. However today, they number 15 on the Square from a total of 98 in the City.

The exodus of the dentists from the Square has continued, with the physicians and surgeons following suit. The total number of physicians increased from 250 in 1964 to 442 in 1972. At the same time the number on the Square decreased from 77 to 24, a 65% decrease over the eight year period.

State of Wisconsin Office Space

As recently as late 1967 it has been determined that the State of Wisconsin would necessitate more office space immediately or a backlog of unapproved space would continue to grow. Studies were underway at the administrative level of the State government to determine requirements to meet the immediate and long-range needs for State governmental office space especially in view of the reorganization of State agencies brought about by the so-called "Kellett Plan" of early 1966. Surveys at that time indicated that over 200,000 square feet of office space for State agencies was under lease within the close proximity of the Capital. Up until recently the State of Wisconsin spent approximately \$979,003 annually leasing space. State rental quarters in Madison have increased 115% since 1965 despite the occupancy of Hill Farm's 360,000 square feet of floor area in 1966.

In 1968 Charles Luckman Associates did a study for the State of Wisconsin in the City of Madison¹ and its investigations and calculations indicated an immediate need for 397,120 additional square feet of office space. According to them this figure would climb to a total of 1,018,420

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Master Planning Study, Charles Luckman & Associates

square feet by 1975 unless immediate steps were taken to meet the demand for more space. The Charles Luckman study revealed that the annual growth rate for the State of Wisconsin was approximately 6.78% which closely corresponds to the annual growth rate of Madison area state employees per thousand State population which has been established as 6.88%.

The requirements between 1968 and 1975 to house 11,121 State employees is 1,668,150 square feet² By subtracting the total feet in the Wilson Street Building of 649,730 square feet and Hill Farms area from 1975 requirement we arrive at a need to construct 1,018,420 square feet of office space between 1968 and 1975 in order to satisfy requirements by 1975 as projected by the Charles Luckman study.

It has been established by State agencies in the past that it takes approximately four years from the initial approval of a construction program to the ultimate occupancy date. This made it clear in 1968 that it would be necessary to get the building program under way immediately and that the committee and staff realized that the 1968 needed space requirement was not the figure to be considered but that they should budget and construct for the square foot space requirements of the earliest occupancy date of 1973. Therefore as shown by map III in the appendix the Phase I program should be completed by 1975 to fulfill the needs projected to that time. The second part of Phase I should be initiated in 1971-72 to accommodate the space requirements for 1975-76. Again as shown on the map, Phase II of the program would accommodate space needs by the year 1985 and Phase III would accommodate the needs necessary by the year 2000.

Employment and Space Need Projections

As a basis for predicting demand for commercial office space in 1975 we have put a major importance on employment generated from the 1970 Federal Census and rates of growth in the various segments. These projections are based on employment and professional projections, an analysis of employment by geographic areas of the city, trends in land use patterns and interviews with employers and employees in the City Planning

2. Charles Luckman & Associates

Department. In making the employment projections, a standard and widely used and accepted system of classification has been followed. Within this classification two categories are of particular relevance to this supply and demand analysis-Finance and Services. The classification Finance includes insurance and real estate. The classification Services includes business and repair services, personal services, health services, other professional and related services, but excludes educational services. Experience in this field indicates that it may be properly assumed that the demand for general office space by private activities will be closely correlated with the expansion of the number of persons engaged in these two classifications of activity. As will be explained later in the report the key projection is that which relates to professional employment for the Madison community. Observation of historical data suggests and demonstrates consistency in proportion on the Capitol Square and in the ratio of total office space which is occupied by professional offices. With adjustments in these relationships for observed local patterns and trends a prediction of overall office space needs can be derived.

Table No. 0-3 indicates employment by selected classification and by location for 1970 and estimated 1972 and 1975. According to the 1970 Census, finance which includes insurance and real estate and services which include business and repair services, personal services, health services, other professional and related services, total employment of 21,417 persons. At this same time professional persons numbered according to the 1970 Census 2,686 persons or approximately 12.5% of Finance and Service employed people. Data would indicate that the Capitol Square lags behind the City of Madison and the West side in the percentage of growth in some areas of employment. However in total numbers the Capitol Square area enjoys growth of attorneys and financial related activities. At this point in time most knowledgeable people and planners feel (at least hope) that equilibrium has been reached and the Capitol Square area will once again grow at the same or approximately the same rate of growth as many of the other commercial office space centers within the City of Madison. After looking at the data

one feels this may be somewhat of a optimistic assumption but one must take credence in it since these are the people through whose diligence the Capitol Square area can once again present some viable competition to the other commercial areas within the City of Madison. For purposes of this report, then, and for purposes of the projections within this report, it will be assumed that the percent of professional people located on the square will reach equilibrium or be stablized at approximately 45% of the total. To project the 1970 data to 1972 and 1975, "The Summary of the National Planning Association Economic Census to 1976"³ was used. According to the publication Finance and Real Estate as a percent of total employment has varied between 2% and 4% of the total civilian employment force and is expected to grow at an annual rate of approximately 1.5% per annum. Services account for 17% of all employment and is expected to increase by approximately 3.5% annually. Taking into consideration local conditions, the field of Finance is expected to exert a much stronger impact than this on Madison's economy. Madison Area Transportation Study⁴ has projected an annual increase of approximately 340 employees per year in the Finance field which of course includes real estate and insurance. For purposes of this report and the projections in it we have assumed that Finance classification of employment will grow at an average annual rate of approximately 4% and the Service industry will grow at a rate of approximately 3.5% annually from 1970 to 1975. In terms of Table No. 0-3 the Finance and Service industries should employ approximately 22,959 people by 1972 and 25,274 by 1975. Professional people it is assumed will become somewhat less a percentage of the total employment force but will reach an equilibrium or stability at about 11.5% in 1975. For purposes of this report, in 1972 there will be approximately 2,755 professional people and in 1975 there will be approximately 2,906 professional people. As mentioned earlier this report has

3. Madison Area Transportation Study Appendix
4. Madison Area Transportation Study, 1964, City of Madison Planning Dep.

Employment By Selected Classification
and by Location
1970 and Estimated 1972 and 1975

	<u>1970</u> ¹	<u>1972</u> ²	<u>1975</u> ²
Finance ³ and Service ⁴	21,417	22,959	25,274
Professional			
Number ¹	2,686	2,755	2,906
% of Finance & Service	12.5%	12.0%	11.5%
Number on Square	1,208	1,239	1,307
% of Professional on the Square	45%	45%	45%

1. Actual figures from 1970 Federal Census.
2. Estimates based on National projections and local conditions.
3. Finance includes Insurance and Real Estate.
4. Services includes Business and Repair Service; Personal Services, Health Services; Other Professional and related services.

assumed that the Capitol Square area will reach an equilibrium of employing or housing 45% of the professional people employed in the City of Madison. Therefore in 1972 there will be approximately 1,239 professional persons utilizing office space in the square area and in 1975 approximately 1,307 persons.

On the basis of projected supply and demand one can now proceed to estimate the space requirements for the professional people in the Capitol Square Area. The first step in this projection or estimation is to establish a ratio between Capitol Square space occupied by professionals in 1972 and the occupied space of A, B, and C quality classes at that time. There were approximately 1,239 professional persons occupying commercial office space in the Capitol Square area in 1972 and at that time there was an estimated total of 469,570 net rentable square feet of office space in use. This would mean that each professional person occupied approximately 380 net rentable square feet of office space in the Capitol Square area. If this ratio were to persist until 1975 it would indicate that the estimated 1,307 professional persons who would be occupying office space on the square at that time would and could utilize a total of approximately 469,660 net rentable square feet of office space in and by 1975. However, both Charles Luckman and Associates and Real Estate Research Incorporated indicate that there is a trend towards increasing space per office worker, and assuming a reasonable vacancy rate, suggests that perhaps by 1975 one would use a multiplier of approximately 500 square foot per professional office space user which would indicate a need for approximately 653,500 net rentable square feet of office space in 1975. For working purposes in this report we will assume a range of from 600,000 net rentable square feet to 650,000 net rentable square feet in demand. This range allows for variation in the employment projections and in vacancy rates and for error in the space the ratios employed in the calculation.

As aforementioned in this report and for working purposes the supply of office space which has been projected to 1975 is a range from 770,000 net rentable square feet to 830,000 net rentable square feet of

office space. With the projected demand for office space of anywhere from 600,000 net rentable square feet to 650,000 net rentable square feet it becomes obvious that there are from 170,000 to 180,000 net rentable square feet of office space that will be vacant but available for commercial use in 1975. This would mean a vacancy rate of somewhere in the area of 21 to 22% of available space. This fact of course indicates that the Capitol Square area must take definite steps to curb the declining trend in this market.

Four possible alternative courses of action are suggested which may be taken simultaneously or separately but must be pursued:

1. It will be necessary for a large volume of the D class office space in the Capitol Square Area, and perhaps a larger than anticipated amount of the C class space will be demolished simply because it will not be on a competitive basis. However, much of this D and C class space will be maintained because there are some users who will not jump into the higher price space simply because it is available.
2. The second course of action, is to accomplish in the Capitol Square area, in some manner, amenities which will draw the professional people who have been in the past moving out of the Square Area to the intermediate or outlying commercial office space centers.
3. Our third course of action, is to attract the new business and the out-of-town business to the Capitol Square Area rather than to the outlying areas. This of course as aforementioned would necessitate ample parking, traffic patterns, air conditioning, new structures, etc.
4. A fourth alternative of course is a moratorium on all building of office space, by City Planning, and or by Commercial lending abstinence, until equilibrium is reached with a reasonable and livable vacancy rate in terms of commercial office space.

APPENDIX

Table A

ANALYSIS OF ORIGINS OF TENANTS
IN HILLDALE OFFICE AREA - 1964(1)

<u>Item</u>	<u>Number</u>	<u>Per cent</u>
1. Total number of tenants	85	100%
Medical	42	49%
Non-medical	44	51%
2. Tenants with different 1960 addresses--total	61	71%
Medical	31	36%
Non-medical	30	35%
3. Tenants with no 1960 addresses--total	25	29%
Medical	11	13%
Non-medical	14	16%
4. Tenants who moved from Square (Square is defined as including the 200 block of any street which opens onto the Square itself)	10	16%
Medical	3	5%
Non-medical	7	11%
5. Tenants who moved from east side of Madison	4	6%
6. Tenants who might be new businesses. (These two have the word "Hilldale" incorporated; the remaining 23 listings in 1964 not found in 1960 are either medical persons or organizations which may or may not be considered new.)	2	8%

NOTE: Tenants identified from building directory and then located according to 1960 Telephone Directory.

1. Above table taken from an office building study done by Prof. J. A. Graaskamp and Prof. Richard Ratcliff.

Table B

ANALYSIS OF ORIGINS OF TENANTS
IN THE HILLDALE OFFICE AREA - 1972

<u>Item</u>	<u>Number</u>	<u>Per cent</u>
1. Total number of Tenants	143	100%
Medical	40	28%
Non-medical	103	72%
2. Tenants with different 1965 addresses--total	51	35%
Medical	6	4%
Non-medical	45	31%
3. Tenants with same 1965 addresses--total	45	31%
Medical	17	12%
Non-medical	28	19%
4. Tenants with no 1965 address--total	47	33%
Medical	17	12%
Non-medical	30	21%
5. Tenants who moved from the Square as defined in the report.	17	12%
Medical	1	1%
Non-medical	16	11%

NOTE: The Hilldale Office Area contains office space located on the following:

1. North Midvale
2. Regent
3. Price Place
4. Segoe Road

Table C

ANALYSIS OF ORIGINS OF TENANTS
ON THE FAR WEST SIDE

<u>Item</u>	<u>Number</u>	<u>Per cent</u>
1. Total number of tenants	59	100%
Medical	39	66%
Non-medical	20	34%
2. Tenants with different 1965 addresses--total	25	42%
Medical	15	25%
Non-medical	10	17%
3. Tenants with same 1965 addresses--total	8	14%
Medical	4	7%
Non-medical	4	7%
4. Tenants with no 1965 address--total	26	44%
Medical	20	34%
Non-medical	6	10%
5. Tenants who moved from the Square as defined in the report.	11	19%
Medical	7	12%
Non-medical	4	7%

NOTE: The Far West Side consists of office space located on the following:

1. Capitol Drive
2. Mineral Point Road
3. Odana Road
4. Nakoma Road
5. Medical Circle - Westgate

Table D

ANALYSIS OF ORIGINS OF TENANTS
ON THE FAR EAST SIDE

<u>Item</u>	<u>Number</u>	<u>Per cent</u>
1. Total number of tenants	48	100%
Medical	36	75%
Non-medical	12	25%
2. Tenants with different 1965 addresses--total	8	16%
Medical	4	8%
Non-medical	4	8%
3. Tenants with same 1965 addresses--total	24	50%
Medical	19	40%
Non-medical	5	10%
4. Tenants with no 1965 address--total	16	33%
Medical	11	23%
Non-medical	5	10%
5. Tenants who moved from the Square as defined in the report.	3	6%
Medical	3	6%
Non-medical	0	0%

NOTE: The Far East Side consists of office space located on the following:

1. North Sherman
2. E. Washington - across Yahara river
3. Atwood

Table E

ANALYSIS OF ORIGINS OF TENANTS
IN THE MONONA DRIVE AREA

<u>Item</u>	<u>Number</u>	<u>Per cent</u>
1. Total number of tenants	25	100%
Medical	22	88%
Non-medical	3	12%
2. Tenants with different 1965 addresses--total	7	28%
Medical	7	28%
Non-medical	0	0%
3. Tenants with same 1965 addresses--total	7	28%
Medical	7	28%
Non-medical	0	0%
4. Tenants with no 1965 address-- total	11	44%
Medical	8	32%
Non-medical	3	12%
5. Tenants who moved from the Square as defined in the report.	2	8%
Medical	2	8%
Non-medical	0	0%

NOTE: The Monona Area consists of office space located on Monona Avenue.

Table F

ANALYSIS OF ORIGINS OF TENANTS
IN THE INTERMEDIATE AREAS

<u>Items</u>	<u>Number</u>	<u>Per cent</u>
1. Total number of tenants	238	100%
Medical	170	71%
Non-medical	68	29%
2. Tenants with different 1965 addresses--total	82	34%
Medical	59	24%
Non-medical	23	10%
3. Tenants with same 1965 addresses--total	49	21%
Medical	42	18%
Non-medical	7	3%
4. Tenants with no 1965 address--total	107	45%
Medical	69	29%
Non-medical	38	16%
5. Tenants who moved from the Square as defined in the report.	43	18%
Medical	32	13%
Non-medical	11	5%

NOTE: The Intermediate Area consists of office space located on the following:

1. University Avenue
2. E. Washington up to Yahara river
3. Park Street
4. Marshall Court
5. Fish Hatchery Road

Table G

ANALYSIS OF ORIGINS OF TENANTS
IN THE MADISON AREA*

<u>Item</u>	<u>Number</u>	<u>Per cent</u>
1. Total number of tenants	513	100%
Medical	307	60%
Non-medical	206	40%
2. Tenants with different 1965 addresses--total	173	34%
Medical	91	18%
Non-medical	82	16%
3. Tenants with same 1965 addresses--total	133	26%
Medical	89	17%
Non-medical	44	9%
4. Tenants with no 1965 address--total	207	40%
Medical	125	24%
Non-medical	82	16%
5. Tenants who moved from the Square as defined in the report.	76	15%
Medical	45	9%
Non-medical	31	6%

* A composite of the five areas.

Table H

TENANTS WHO MOVED FROM SQUARE VS. TOTAL OF THOSE WHO MOVED

	<u>Hilldale</u>		<u>West Side</u>		<u>East Side</u>		<u>Monona</u>		<u>Intermediate</u>		<u>Total Area</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1. Tenants with different 1965 addresses--total*	51	100	25	100	8	100	7	100	82	100	173	100
Medical	6	12	15	60	4	50	7	100	59	72	91	53
Non-medical	45	88	10	40	4	50	0	0	23	28	82	47
2. Tenants who moved from the square	17	33	11	44	3	38	2	29	43	52	76	44
Medical	1	2	7	28	3	38	2	29	32	39	45	26
Non-medical	16	31	4	16	0	0	0	0	11	13	31	18

* "Tenant with different 1965 addresses" is considered as total of those who moved.

Proportion of Madison Professional People on the Square
by Professions Recognized in the Telephone Directory .

	1951			1960			1972		
	Total Listed	On the Square No.	%	Total Listed	On the Square No.	%	Total Listed	On the Square No.	%
Accountants	20	13	65	41	29	71	98	15	15
Architects	16	7	44	20	6	30	35	5	14
Attorneys	228	202	89	293	241	82	485	366	75
Dentists	112	60	53	120	44	31	146	21	14
Insurance Agents and Private Co.	103	74	72	129	86	67	275	77	28
Investment and Stock Brokers	17	13	76	16	15	94	25	11	44
Physicians and Surgeons	174	96	55	227	99	44	442	24	5
Total	670	465	69	846	520	61	1,506	519	34

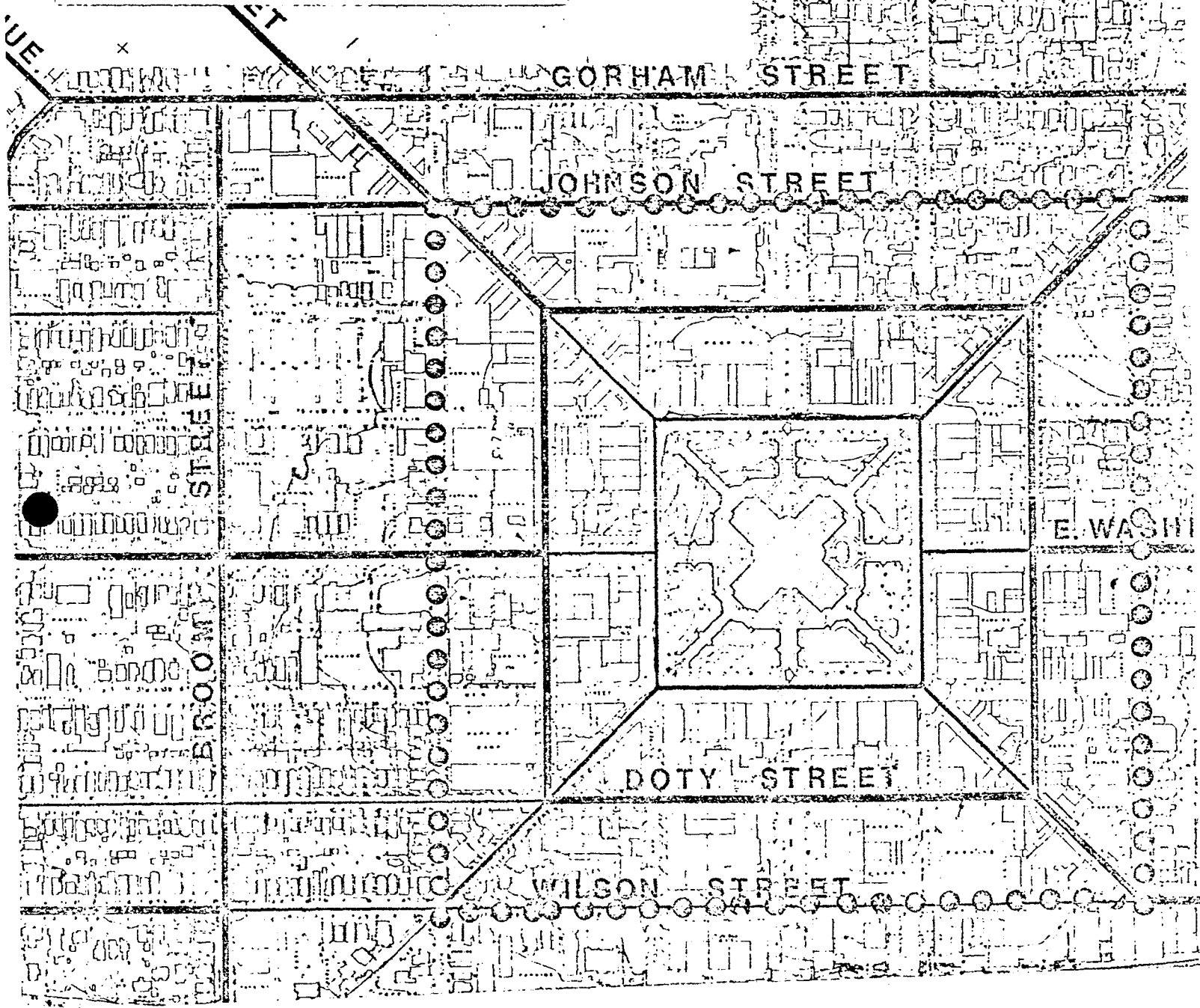
TABLE I

Note: Count breakdown taken from Madison telephone book yellow pages where professional people are identified by name rather than firm.

MAP I

CAPITOL SQUARE AREA

Area Boundary---●●●●●



MAP II

SUBAREAS OF MADISON OFFICE SPACE MARKET

INDEX

- ① HILDALE AREA
- ② FAR WEST SIDE AREA
- ③ MONONA DRIVE AREA

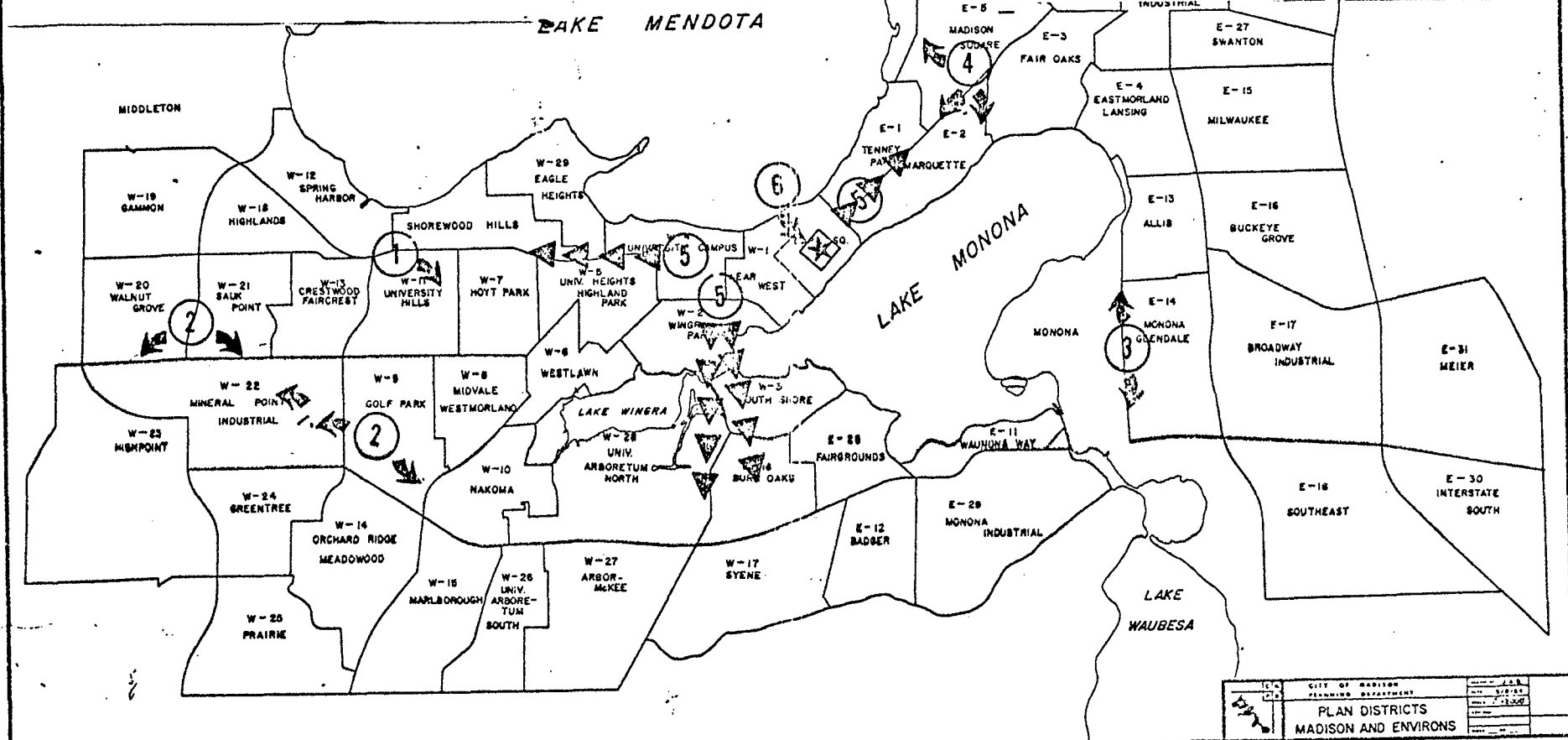
④ FAR EAST SIDE AREA

⑤ INTERMEDIATE

⑥ CAPITOL SQUARE AREA

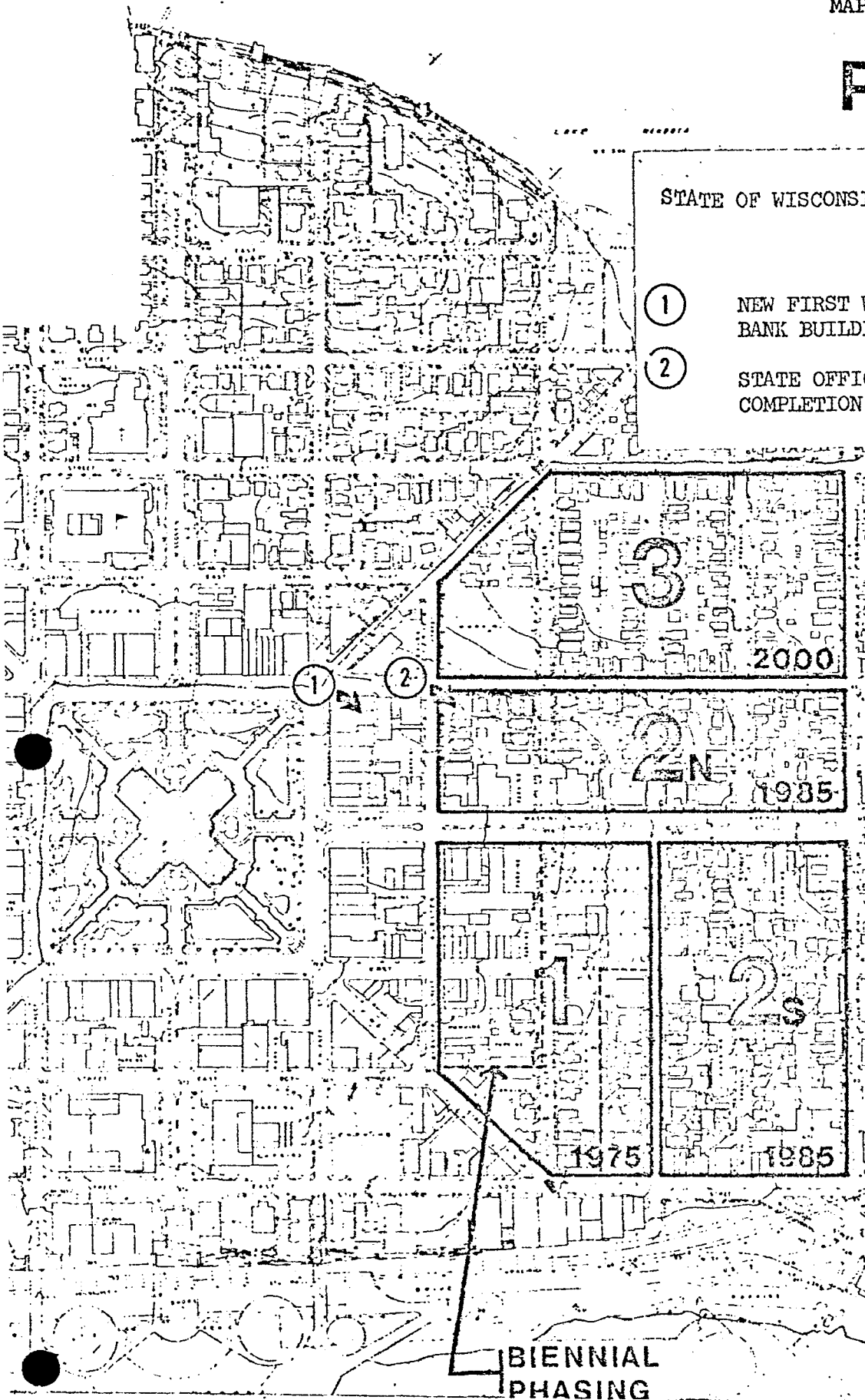
INDIVIDUAL AREAS
INTERMEDIATE AREA DESIGNATION
CAPITOL SQUARE

E-22
INTERSTATE



CITY OF MADISON		PLANNING DEPARTMENT	
PLAN DISTRICTS			
MADISON AND ENVIRONS			

PHASING



STATE OF WISCONSIN OFFICE BUILDING

- ① NEW FIRST WISCONSIN NATIONAL BANK BUILDING
- ② STATE OFFICE BUILDING NEAR COMPLETION

PHASE 1 - 1975
10 ACRES

PHASE 2 - 1985
S - 11 ACRES
N - 8.4 ACRES
19.4 ACRES

PHASE 3 - 2000
15 ACRES

TOTAL USEABLE AREA 45.4 ACRES

(DOES NOT INCLUDE 2.4 ACRES OF SITE ALLOCATED FOR WIDENING OF BLAIR STREET)

BIENNIAL PHASING

