JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

VII. INDUSTRY EDUCATIONAL COURSES - LONG TERM

H. Northwest Center For Education

1. "Contemporary Appraisal Seminar", Sponsored by Executive Seminars in Portland, Oregon on November 14, 1980 and by Northwest Center for Professional Education in Seattle, Washington on November 15, 1980: Program materials included

Index

CONTEMPORARY REAL ESTATE APPRAISAL METHODS

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I. Basic Concepts and Definitions

A. Real estate is a tangible product - defined as artificially delineated space with a fourth dimension of time referenced to a fixed point on the face of the earth.

1. Real estate is a space-time unit, room per night, apartment per month, square foot per year, tennis court hours, or a condominium for two weeks in January at a ski slope.
2. To the space-time abstraction can be added special attributes to house some form of activity.
3. Improvements from survey market to city layouts to structures define space.
4. Legal contracts and precedents define time.
5. Rights of use are defined by public values, court opinions.
6. Private rights to use are those which remain after the public has exercised its rights to control, to tax, or to condemn.

B. A real estate project is cash-cycle business enterprise which combines a space-time product with certain types of management services to meet the needs of a specific user. It is the process of converting space-time needs to money-time dimensions in a cash economy.

1. A real estate business is any business which provides expertise necessary to relate space-time need to money-time requirements and includes architects, brokers, city planners, mortgage bankers, and all other special skills.
2. The true profit centers in real estate are in the delivery of services and cash capital.
3. Equity ownership is the degree to which one enterprise controls or diverts cash from another real estate enterprise.
4. Public has direct ownership to the degree real estate taxes take a percentage of tenant income in excess of service cost.
5. Consumer must view space as a total consumption system involving direct cost, surface cost, transportation cost and negative income of risk.
6. The best real estate project is the one which has the lowest net present value of cost as the sum of cost to the consumer production sector and public sector.

C. The real estate process is the dynamic interaction of three groups, space users (consumers), space producers, and the various public agencies (infrastructures) which provide services and capital to support the consumer needs. (See Exhibit 1)

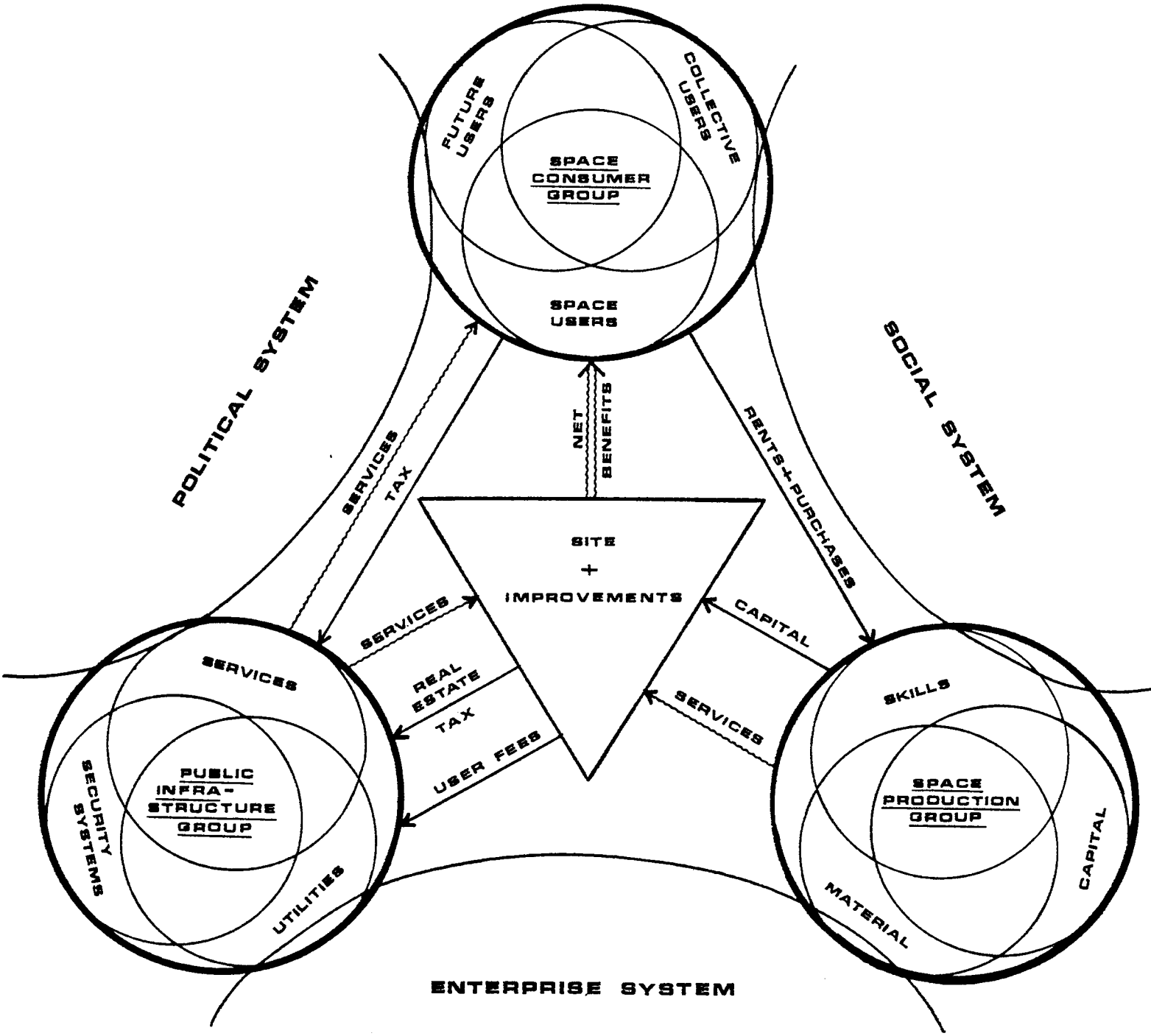
1. Each of these three decision groups represent an enterprise, an organized undertaking. All are cash cycle enterprises constrained by a need for cash solvency, both short and long term.
2. A desirable real estate solution occurs when the process permits maximum satisfaction to the consumer at a price that he can afford within the environmental limits of land while permitting the consumer, producer, and the government cash cycle to achieve solvency - cash break even at a minimum, after full payment for services rendered.
3. Solvency of the total process, not value, is the critical issue.
4. Land is an environmental constraint and not a profit center.
5. Land provides access to a real estate business opportunity and is not the opportunity itself. Real estate business wants to control land to create a captive market for services.

D. Land is the point where demand and supply forces find cash solvency. Location is a manufactured attribute. Site attributes are exploited to create location by analyzing:

1. Static attributes.
2. Legal-political attributes.
3. Linkage attributes.
4. Dynamic attributes.

E. Recognition of the fact that profit maximization must be limited by concerns for physical environment and community priorities for land use has resulted in redefinition of the most basic concept in appraisal; i.e. highest and best use, in the authorized terminology handbook sponsored by the American Institute of Real Estate Appraisers and the Society of Real Estate Appraisers. Compare the 1971 definition with that for 1975:

Highest and best use concept-
"A valuation concept that can be applied to either the land or improvements. It normally is used to mean that use of a parcel of land (without regard to any improvements upon it) that will maximize the owner's wealth by being the most profitable use of the land. The concept of highest and best use can also be applied to a property which has some improvements upon it that have a remaining economic life. In this context, highest and best use can refer to that use of the existing improvements which is most profitable to the owner. It is possible to have two different highest and best uses for the same property: one for the land ignoring the improvements; and another that recognizes the presence of the improvements.:
p. 57, Real Estate Appraisal Principles and Terminology, Second Edition, Society of Real Estate Appraisers 1971.



THE REAL ESTATE PROCESS

"Highest and Best Use: That reasonable and probable use that will support the highest present value, as defined, as of the effective date of the appraisal. Alternatively, that use, from among reasonably probable and legal alternative uses, found to be physically possible, appropriately supported, financially feasible, and which results in highest land value. The definition immediately above applies specifically to the highest and best use of land. It is to be recognized that in cases where a site has existing improvements on it, the highest and best use may very well be determined to be different from the existing use. The existing use will continue, however, unless and until land value in its highest and best use exceeds the total value of the property in its existing use. Implied within these definitions is recognition of the contribution of that specific use to community environment or to community development goals in addition to wealth maximization of individual property owners. Also implied is that the determination of highest and best use results from the appraisers judgement and analytical skill, i.e., that the determined from analysis represents an opinion, not a fact to be found. In appraisal practice, the concept of highest and best use represents the premise upon which value is based. In the context of most probable selling price (market value) another appropriate term to reflect highest and best use would be most probable use. In the context of investment value an alternative term would be most profitable use."
Real Estate Appraisal Terminology, Edited by Byrl H. Boyce, Ph.D. SRPA, Ballinger Publishing Co., Cambridge, Mass. 1975

F. The purchase of a piece of real estate today involves the acceptance of a great many assumptions about the future. Those who take care to validate these assumptions in a period of transition as to public land use control tend to have the most successful investment.

1. Business decisions today make explicit recognition of their assumptions and the need to act under conditions of uncertainty.
2. Business risk is the difference between assumptions about the future and realizations, the proforma budget and the end of the year income statement.
3. Risk management is the control of variance between key assumptions and realizations.
4. An appraisal is a set of assumptions about the future productivity of a property under conditions of uncertainty.

G. The concept of highest and best use of land was a commodity concept which did not consider externalities adequately. It is being replaced be concepts of most fitting use and the concept of most probable use.

1. The most fitting use is that use which is the optimal reconciliation of effective consumer demand, the cost of production, and the fiscal and environmental impact on third parties.
2. Reconciliation involves financial impact analysis on "who pays" and "who benefits" - thus the rash of debate on how to do impact studies.

3. The most probable use will be something less than the most fitting use depending on topical constraints imposed by current political factors, the state of real estate technology, and short term solvency pressures on consumer, producer, or public agency.
4. Most probable use means that an appraisal is first a feasibility study of alternative uses for a site in search of a user, an investor, and in need of public consent.

H. In seeking the most fitting and most probable use, the inner city planner and private property appraiser must interact to determine how community objectives and consumer - production sector solvency can be achieved simultaneously.

1. A real estate decision has only two basic forms. Either a site is in search of a use and consumer with the ability to pay, or a consumer, need or use with a defined ability to pay is seeking some combination of space-time attributes he can afford.
2. The individual consumer with needs and a budget is the drive wheel.
3. The public sector represents the community owned consumer service delivery system, seeking to minimize marginal cost to the consumer and average cost to the community at large.
4. The production sector responds to a derivative demand for engineering and management expertise.

I. Critiquing the form and adequacy of a real estate solution is analogous to the artistic concept of judging the success of an art object by relating form of the solution to the context to which it was created.

1. Context includes those elements which are fixed, given, or objectives and to which any solution must adapt.
2. Form giving elements are those variables within the artists control, i.e. options or alternatives at a particular time.
3. A solution is judged for its correctness or success in terms of the degree of fit of the form proposed to the context.
4. Feasibility analysis is concerned with the degree of fit or the extent of misfit between a proposed course of action and the context within which it must operate or fit.
5. Success therefore depends on how appropriately the problem is defined; testing feasibility depends primarily upon accurate and comprehensive definition of the context.

CONTEMPORARY REAL ESTATE APPRAISAL SEMINAR

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II. A Real Estate Appraisal - A Business Forecast

A. Prof. Richard U. Ratcliff was the first of several urban land economists to critique traditional appraisal in light of current business forecasting methods and techniques. In effect Ratcliff describes an appraisal as a prediction about the price of a future transaction under conditions of uncertainty. Uncertainty is introduced because knowledge of the facts is less than perfect and future conditions unknown.

One approach to forecasting or reaching a decision is by modeling to structure facts and relationships in a manner appropriate to the decision process. Three types of models are common in real estate analysis:

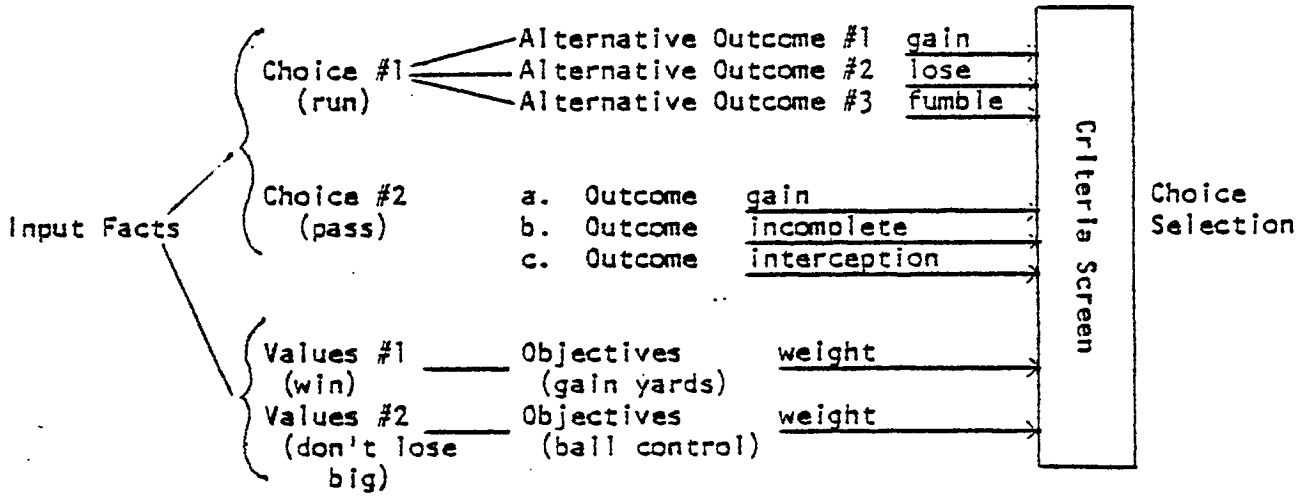
1. Physical models = sand tables to understand site, building mass, and shape.
2. Communication models = flow charts of industrial process or traffic patterns.
3. Abstract or symbolic models = items with mathematical or logic concepts, I/C = V is a symbolic model of the relationship between income productivity.

C. In constructing any decision model there are six basic elements to be considered:

1. The decision to be made or the question to be answered.
2. The data available with which a decision must be made.
3. The theoretical relationships or logical structure which focuses the data on the problem.
4. The interface between the analyst and the requirements of the model.
5. The interface between the results of the model and the decision maker or client and their ability to comprehend and believe (credit ability is always more important than credit in real estate).
6. The relationship between the economic significance of the answer and the cost to acquire the answer by using the model.

D. In general, a decision requires that information be systematically organized to identify choices of action and the alternative outcomes from each choice. (See Diagram #1). At the same time facts help shape general values which in turn lead to explicit objectives, and then specific selection criteria.

Diagram #1



E. The three approaches to value are models of how economic man might price a property to maximize his return and minimize his cost. It represents an historical compromise between three powerful groups in the early 1930's who really had different needs or questions about price.

1. Insurance company lenders wanted to lend less than cost to build - thus they emphasize the cost approach.
2. Real estate brokers wanted to know what they could sell it for today, and therefore emphasize the market comparison approach.
3. The FHA appraisal section was headed by a Michigan professor, Fred Babcock, who believed all property should be valued as a capital budgeting decision, i.e. as the present value of future net returns.
4. To compromise they seized on Marshallian economics which said in the short run the market is out of balance and reveals market price. During the intermediate term, it reflects income value which cannot be forecast for the long run. In the long run, prices have tendency to equal cost of production.

F. Since that time, writers have shown buyers are interested in many things besides maximum profit including minimum risk, compatibility with community, portfolio effects from taxes and diversification as well as subjective, qualitative satisfactions. Therefore, an appraisal model may seem to have the same question - What is the value of property - but in fact it represents multiple questions:

1. What is the nature of the decision to be served by the appraisal benchmark?
2. What is the specific asset for which value is sought?
3. What is the date for which value is relevant?
4. What is the definition of value - theoretical structure - which focuses the data on the problem?

G. Ratcliff points out a variety of value estimates or viewpoints which have significance in the appraisal of any specific property:

1. Vs - value to the owner or user.
2. Vc - cost of constructing a substitute property.
3. Vp - a probabilistic prediction of what the property will sell for.
4. Vo - price at which the property is offered for sale.
5. Vb - bid price by a prospective purchaser.
6. Vt - the price at which the property is actually sold, as an historic fact.

H. The Ratcliff viewpoint is just plain common sense. On page 14 of his text he states his premise:

"The fundamental concepts of value and price which are central to appraisal are at the heart of the social science of economics. Economic goods are valuable because of their utility (productivity) and scarcity. Thus in analyzing the value of a parcel of real estate, the starting point is with its inherent utility - the characteristics and qualities which can make it productive and desirable, and for which people are willing to pay.

"But price is set in the market place. To serve his client's needs, the appraiser seeks to predict the price at which the subject property will probably sell. Viewing the property as a package of potentially productive qualities, the appraiser must predict the outcome of the interaction of the market forces of demand and supply to which the property might be exposed and which could trigger a transaction from which market price will emerge.

"Economics is a behavioral science, descriptive of the economic behavior of people under various conditions. It is the appraiser's task to predict how people, both buyers and sellers, will behave with respect to the subject property when it is exposed for sale. People make values and determine prices."

I. An appraisal as a benchmark for decision requires the appraisal report to reflect the client's purposes for which an appraisal is sought. It is common sense that the more questions that an appraisal can serve, the more business potential there is; fair market value serves only a limited number of issues.

1. For the mortgage lender, the issue is the liquidating value or probability of future cash returns being adequate to repay the loan, interest, and cost, and the distribution of profit centers over time to maintain repayment incentive to the borrower.
2. For the courts eminent domain or assessment appeal, the statement of function leads to the definition of value as the jurisdictional market value.
3. A report for a would-be buyer or seller might lead to the definition of value as investment market value.
4. For most cases the appraiser would seek to determine the most probable selling price.

J. Investment market value is a term coined by Mack Hodges for the present value of future income receipts, considering a specific set of assumptions about the after tax cash flow of property and

requires some general description of the investment standards and tax status of buyers interested in a specific type of property, specifically income investment property. Investment value, which requires some detail about motivations of a probable or specific buyer, is a special case of the broader concept of "most probable sales price." (V_p)

K. Most probable selling price is derivative of the theoretical work of Prof. Richard U. Ratcliff, William Kinnard, Paul Wendt, and others.

1. The quotable definition: "The most probable price is that selling price which is most likely to emerge from a transaction involving the subject property if it were to be exposed for sale in the current market for a reasonable time at terms of sale which are currently predominant for properties of the subject type."
2. This approach makes the point conclusion explicitly a statement of the central tendency (mode, mean, or median) around which a transaction price is likely to fall. Thus it generally supplies a valuation as a range of prices within which a transaction would most likely occur, similar to but not necessarily a concept of statistical standard error. This range will be called a transaction zone.

L. General format of RATGRAM Appraisal follows common sense logic:

1. Define the issue for which the appraisal is sought in order to select the appropriate definition of value.

2. Analyze alternative uses of property to select most probable use as of date of appraisal.

3. Infer from probable use the most probable buyer-type, financial motivations, and negotiation position.

4. Define comparability and test applicability of three alternative approaches.

   a. Preferred method is to infer buyer behavior from completed market transactions.
   b. In the absence of sales, simulate buyer estimation methods and constraints.
   c. Knowing nothing of buyers methods, fallback to normative approaches.

M. In the contemporary approach, note:

1. Any method is judged on the reliability with which it predicts transaction price-not on intellectual elegance-robustness.

2. Buyer-type is generally a class, but it could be a single buyer. The statistical market place assumption does not control.

3. There is no need that buyers be fully informed as the market may provide evidence that prices are being set by ignorance; there is no need that buyers have reasonable choices if the seller is enjoying a monopoly position.
4. Finally it should be noted that the logical development from productivity analysis to selection of the appraisal report structures the form of the report.

III. Since appraisal starts from what is known about a specific piece of property (Productivity Analysis, Chapter 2 in Ratcliff), it is similar to a feasibility report until one has determined the probable use and the probable buyer.

A. Refer to Exhibit 2.

B. The traditional appraisal report always moves from the general to the specific, subject to a series of limiting conditions. Many of these special conditions are professional courtesy to avoid competition with other professions at the same time that one avoids paying the other professions and continues as a lone wolf in appraisal, controlling the customer, a psychological hang-up of real estate brokerage. Thus the appraiser avoids:

1. Engineering factors
2. Finance and taxation matters
3. Title issues, surveys, etc.
4. Legal character of leases, permits, and other contracts

C. At the same time the element of uncertainty, left implicit by a single number conclusion, is hedged by additional limiting conditions including the appraisal practice of ignoring politics, land use administration, and personalities.

1. The practice of using limiting conditions has moved to the point where the appraiser supports consistency based on faulty premises rather than honesty as the reliability of a prediction
2. Nevertheless, all an investor buys is a set of assumptions about future.
3. Since risk is the variance between assumptions and realizations, how can the appraiser evaluate the probable productivity of the property without evaluating all the assumptions which can be made explicit.
4. Thus the transaction zone or range of estimates together with other report writing techniques are intended to provide better methods of recognizing the need for tolerance in the decision process for the conditions of uncertainty which surround the appraisal estimate.

IV. Ratcliff has been most comprehensive in statement of basic appraisal theory, many writers are contributing to the rethinking of the appraisal process and appraisal techniques. A number of selected readings by these other professional and academic critics have been included in the appendix of your workbook.

Exhibit 2

TRADITIONAL APPRAISAL AS A FICTIONAL SET OF FEASIBILITY ASSUMPTIONS

Feasibility Analysis	Appraisal Analysis
Will the project really work for a specific investor?	What would the project sell for if it did work for a typical investor?
1. Objectives - decision standards provided by client decision process a. Maximize spendable cash of total enterprise b. Subjective gratification of specific individual c. Adaptation to enterprise management specialties and weaknesses	1. Objectives - decision standards provided by theoretical framework a. Maximize economic surplus of individual parcel b. Prudent behavior of economic man c. Average management to isolate return to land & capital
2. Aggregate market potential opportunity identification	2. Aggregate market potential business climate
3. Merchandising analysis (Defining competitive edge) and specific user profile	3. Merchandising comparison (Defining standard competitive substitute)
4. Legal-political context a. All legal constraints on site, seller, buyer and user are considered b. What is legal is qualified by what is political	4. Legal-political context a. Lagality assumed b. Limited to site use rather than regulations on probable user as alternative buyers are assumed
5. Physical-technical constraints are examined in terms of what might be	5. Physical-technical constraints are studied as is or in terms of conventional uses
6. Impact on environment and community specifically forecast	6. Impact on environment and community assumed acceptable within existing permitted uses
7. Financing from buyer viewpoint considering all profit centers	7. Financing from lender viewpoint considering only net income line and below
8. Income tax advantages or disadvantages affecting spendable cash	8. Income tax not considered except implicitly recognized in market comparison
9. Actual cash revenues and expenses forecasted for each period of time horizon	9. Revenues and expenses generally normalized and projected on linear trend for standard period
10. Limiting assumptions of solution a. Identification of potential variance and sensitivity of objectives to alternative futures b. Responsibility allocated among sources of expertise c. Budget & purpose of study edits information scope d. Format of analysis determined by structuring of data to lead to desired conslusion or recommendation	10. Limiting assumptions of solution a. Average outcome without qualification as to alternative futures b. Responsibility denied for other areas of expertise c. Date of appraisal edits information scope d. Format of analysis defined by model of fair market value appraisal report

A. Much commentary on appraisal can be divided between those who would just as soon scrap the historical textbooks and language of appraisal (a la Ratcliff and Graaskamp), and those who would simply like to refine present dogma and techniques of appraisal report content (Wendt and Smith).

B. While the rebels attack theory head-on with the romantic notion of toppling the temple of principles built in Chicago, the more pragmatic politicians are realistically chipping away at the stone tablets from within traditional institutions.

C. A few argue that the change in appraisal method represents a shift from deductive logic based on principles to inductive forecasting tools capitalizing on observed behavior. A parody of scientific method versus theory and reason.

D. Some of the other issues in debate relate to the following topics:

1. What is function of appraisal?
   a. Benchmark of value
   b. Predict transaction price under conditions of uncertainty
   c. To answer a question of a client
2. What is the standard of professionalism?
   a. Format (profession vs. institution)
   b. Tools and techniques
   c. Standards of business conduct
   d. Reliability of results
3. What is the frame of reference of real estate productivity?
   a. The parcel
   b. The individual investment interest
   c. The community
   d. The collective interest of society

COFFEE BREAK

CONTEMPORARY REAL ESTATE APPRAISAL REPORT

Suggested Outline
1/1/78

Letter of Transmittal

1. Brief statement of appraisal issue
2. Definition of value applied
3. Value conclusion (qualified by financing, terms of sale, and range of probable transaction zone as appropriate)
4. Sensitivity of conclusion to critical assumptions
5. Property observations or recommendations
6. Incorporation by reference of limiting assumptions and conditions

Table of Contents

List of Exhibits

Digest of Facts, Assumptions, and Conclusions

1. Property type
2. Property location
3. Property ownership
4. Determinant physical attributes
5. Controlling legal-political attributes
6. Pivotal linkage attributes
7. Marketable dynamic attributes
8. Most probable use conclusion
9. Most probable buyer profile assumed
10. Initial probable price prediction and central tendency
11. Adjustment of preliminary value estimate for external factors or market position of parties
12. Testing of corrected probable price for consistency with most probable buyer objectives
13. Final value conclusion and range of error estimate as appropriate

I. Appraisal Problem Assignment

A. Statement of issue or circumstances for which appraisal is intended to serve as a decision benchmark and date of valuation

B. Special problems implicit in property type or issue that affect appraisal methodology and definition of value

C. Special assumptions or instructions that are provided by others

D. Definition of value,which is the objective of appraisal analysis and disciplines appraisal process

1. Selected definition and source
2. Implicit conditions of the definition
3. Assumptions required by relevant legal rulings

E. Definition of legal interests to be appraised

1. Legal description and source
2. Permits, political approvals,and other public use entitlements
3. Fixtures or personalty to be included with sale
4. Specific assets or liabilities excluded as inconsistent with issue or premise of appraisal

II. Property Analysis to Determine Alternative Uses

A. Site Analysis

1. Physical (static) site attributes (size, shape, geology, slope, soil hydrology, etc.)
2. Special site improvements (wells, bulkheads, irrigation systems, parking surfaces with unique salvage or re-use characteristics, etc.)
3. Legal-political attributes (applicable federal, state and local zoning, convenants, easements, special assessments, or other land use codes and ordinances, etc.)
4. Linkages of site (key relationships to networks, populations, or activity centers that might generate need for subject property)
5. Dynamic attributes of site (perceptual responses of people to site in terms of anxiety, visibility, prestige, aesthetics, etc.)
6. Environmental attributes of site as related to off-site systems or impact areas.

B. Improvement Analysis

1. Physical (static) attributes of improvements, cataloged by type, construction, layout, condition, structural flaws, etc.
2. Mechanical attributes (brief statement of heating, ventilating, air conditioning, electrical, plumbing, and fire or safety systems in terms of limitations on use or efficiency)
3. Special structural linkages to off-site elements (tunnels, bridges, adjoining structures, etc.)
4. Legal-political constraints on use of existing improvements (federal, state and local building codes, fire codes, conditional use procedures, neighborhood associations, and inspection liens of record for violations).
5. Dynamic attributes of existing improvements (impressions created by type, bulk, texture, previous uses, past history, or functional efficiency)
6. Current uses and tenancies of improvements, if any
7. Environmental impact attributes of improvements on environs

E. Identification of Alternative Use Scenarios for Subject Property

1. Marketing existing uses of property as is
2. Renovation of existing property and marketing improved space
3. Redirection of existing property to alternative tenancies and uses
4. Replacement of existing improvements or program with new uses

III. Selection of Most Probable Use

A. Comparative Analysis of Alternative Uses

1. Testing and ranking alternative-use strategies for legal-political compatibility
2. Testing alternative-use scenarios for fit to physical property attributes within reasonable cost to cure
3. Selection of scenarios that justify market research

B. Analysis of Effective Demand for Selected Uses

1. Search for rents and income potentials of scenario space-time products
2. Screen and rank market targets
3. Apply income-justified residual investment approach to rank economic power of alternative market scenarios
4. Evaluate marginal revenue, marginal investment risk trade-offs

C. Summary Matrix for Selection of Most Probable Use Scenario

1. Physical fit
2. Legal-political risk
3. Strength of market demand
4. Adequacy of available financing
5. Revenue and cost assumptions risk

IV. Prediction of Price for Subject Property

A. Specification of Most Probable Buyer Type Implied by Most Probable Use

1. Criteria motivations of alternative buyer types
2. Selection of most probable buyer type as basis for prediction of a sales transaction with logic for ranking of alternatives
3. Specification of essential site, improvement, financial, or key decision criteria of principal alternative buyer types

B. Explanation of Appraisal Methodology for Prediction of Probable Purchase Price

1. Preferred method: to infer buyer behavior from actual market transaction and market data available from sales by comparable buyers of acceptable alternative properties
2. In the absence of adequate market sales data, the alternative method selected for simulation of probable buyer decision process
3. If market influence of simulation is impossible, select normative model such as investment value, or cost to replace

C. Search for Comparable Market Sales Transactions

1. Unit of comparison
2. Method of comparison
3. Explanation of search parameters
4. Investigation of sale transaction circumstances
5. Evaluation for comparability
6. Definition of predominant terms of sale
7. Source of comparative adjustments

D. Determination of Suitability of Existing Market Data for Inference of Value for Subject Property

1. Where data is adequate, selection of market comparison method to estimate value
2. Where data is lacking or misleading, selection of alternative valuation method and reasoning
3. Conclusion leads to E or F

E. Simulation of Probable Buyer Decision Process If Market Comparison Approach Is Inconclusive or Impossible

1. Source and explanation of simulation model
2. Schedules of simulation assumptions
3. Range of alternative simulation value predictions (sensitivity analysis)

(OR) F. Selection of Normative Model of Buyer Behavior

1. Investment model
2. Cost-to-replace model
3. Nonquantitative decision models

G. Computation of Most Probable Price and Standard Error of Prediction

H. Correction of Preliminary Value Estimate for External Factors

1. Identification of conditions relative to date of appraisal not present in market comparison assumptions
2. Specification of political contingencies that might upset normal appraisal assumptions of substitution
3. Identification of any violation of conditions in the definition of value by the appraisal methodology
4. Indication of adjustment necessary to preliminary probable price estimate or
5. Explicit statement that no adjustment is necessary

I. Test of Most Probable Price or Value Conclusion by Means of:

1. Comparison to values derived from selected alternative appraisal methodology
2. Demonstration of achievement of objectives of most probable buyer minimum selection criteria
3. Measurement of fit of financial cash requirements to market rents, lender ratios, or other relevant constraints
4. Comparison to decision criteria appropriate to issue (financial ratios required by mortgage lender, comparative assessments of similar property for the tax appeal board, rates of return in alternative investments, construction prices for similar property, or whatever demonstrates consistency with statement of the issue)

V. Appraisal Conclusion and Limiting Conditions

A. Definition of Value and Value Conclusion of the Report

B. Certification of Independent Appraisal Judgment

C. Statement of Limiting Conditions That Establish:

1. Contributions of other professionals on which report relies
2. Facts and forecasting under conditions of uncertainty
3. Critical assumptions provided by the appraiser
4. Assumptions provided by the client
5. Controls on use of appraisal imposed by the appraiser

Appendices

Maps, data sets, only if referred to in the text. These data collections would slow down the reader if included as an exhibit and are secondary to the argument in the body of the report.

Concept of Most Probable Buyer Type/Most Probable Price

V. Ratcliff Theory would place as much emphasis on behavior of prospective buyers or investors as on the operating behavior and characteristics of a property. Appraisal is trying to predict how people, buyer and seller, will behave in the future, converting a decision to a mutually acceptable price.

A. Each party is operating under certain assumptions and constraints:

1. Buyers assume they will have to pay no less than some specific price, that others are bidding for the property, that they cannot afford to pay more than a certain amount of income for shelter or business location, or that a desired use requires a specific set of attributes.
2. Sellers assume buyers see the property in the same way they do, that the property has some inherent value and utility, and that its just a matter of time before some fish can be found to pay the asking price.

B. The definition of value selected by the appraiser also assumes certain motivations for buyer and seller which typically are a matter of convenience for the appraiser but often a significant source of error in the prediction of price. While the wording on fair market value differs slightly, the following conditions are always assumed to prevail:

1. Competitive market conditions.
2. An informed buyer and seller.
3. No undue pressure on either party.
4. "Rational" or prudent economic behavior by both buyer and seller.
5. A reasonable turnover period.
6. Payment consistent with the standards of behavior of the market.
7. Market Value looks at the transaction from the point of view of the buyer.

C. However, a buyer is integrating and comparing a property more to a personal set of needs than to a property alternative which is only roughly similar to another in function and potential.

1. For example, a commercial office building developer seeks a site with a minimum number of construction problems, an optimum shape, and maximum rental value. On the other hand, the committee buying a home office site for an insurance company or bank will emphasize visibility and location at the expense of almost any development cost and despite any reduction in rental value for re-use.
2. A young couple may buy an old house because it is run down and in need of renovation in order that the initial cost is low and the opportunity for creating equity is greatest, while the seller is selling because of irritation with the fit of the structure to his lifestyle or because he has reached the end of his lifecycle in that location.

3. One man's floor is another man's ceiling.
4. Therefore, the eventual sales price at which two parties will agree is arranged within a zone of expectations and requirements reflecting the assumptions of each party. Indeed some transactions are designed so that the final price is determined later based on whose assumptions prove to be more correct in a speculative situation.

D. Both buyer and seller enter negotiations with a subjective value expectation (Vs) which is a constraint in bargaining for the property.

1. "The actual selling price will usually represent a compromise between what the buyer would have paid if necessary and what the seller would have taken as a last resort." p. 13, Ratcliff.
2. Therefore, the appraisal must take more than just the buyer viewpoint of the transaction or the appraisal will not be of a value that reaches the minimum the seller can or would accept.

E. This leads then to the concept of a transaction zone around a point which is the central tendency of bargaining, a point we call most probable price. Notice the assumptions of most probable price may be somewhat more acceptable in terms of pragmatic realism than those of fair market value.

1. Subjective value (Vs) is a figure with which buyers and sellers enter the market as a constraint in the bargaining. The actual selling price will represent a compromise between what the buyer would have paid if necessary and what the seller would have taken as a last resort.
2. In residential work, where there are many sales, the transaction zone may be defined statistically as the standard deviation of the estimate.
3. The possible variance or error in the estimate of probable sales price may be intuitive by the appraiser.
4. The zone may be defined by the logic of bargaining positions. The seller wants to cover his debt and broker fees; the buyer assumes a certain value in a new use less remodeling costs, less a cushion for unexpected costs and profit.
5. In the cast of investment properties, sensitivity analysis may define the range of alternative outcomes.
6. There may be certain conditions which cannot be known by the appraiser but which would change his estimate as to what the buyer or seller would accept; the appraiser may define the transaction zone as the range between optimistic and pessimistic impacts of external events.

F. The important function of the transaction zone is to alert the reader of the report:

1. To the fact that an appraisal value is not a certainty but a prediction of a future hypothetical business event.
2. Present value is the purchase of a set of assumptions about the future and therefore value depends on which set of assumptions the buyer and seller "buy."
3. The reliability of a prediction is important in using probable price as a benchmark for a decision; reliability is less important in assessment than in investment, conservatism more important in lending than in equity investment, etc.

VI. ~~The Two~~ Three Basic Methods of Appraisal

As you know, Ratcliff concludes that most appraisals are concerned with prediction of a future event, a transaction price. Since an appraisal method is a forecasting tool, forecasting is best done with some past experience. Failing that, the best method is simulation of the real estate market process.

A. Given reliable information on past market behavior, the preferred method of appraisal is to process the data, statistically if possible, to derive a prediction of future price behavior under given conditions and with means for estimating the reliability of the prediction.

   1. Statistical prediction if possible.
   2. Statistical rules for definition of a data set at the least.

B. Should market data be unavailable or inconclusive, the appraiser is forced to resort to the second method of appraisal, namely the construction of a real estate market model of factors which reflect his understanding of how buyers and sellers might behave.

   1. The income approach and the cost approach are submodels of how an investor is supposed to behave.
   2. After tax investment models are another submodel of market behavior, but while these may measure demand from the buyer's viewpoint, it may not measure the minimum price expected by the seller who also has a tax model to consider. In using the second approach, the appraiser must be very careful to indicate price on the supply side representing minimum expectations (Vs) of the seller.

C. Should there be no sales and no way to verify how buyers would review the specific property (utility case-rate base or kilowatt production?), then the appraiser falls back to normative methods.

   1. Normative means what the buyer would do if he were as smart as the appraiser and motivated only by a desire to maximize wealth.

   2. The traditional income approach on the cost approach are normative models unless it can be proven buyers behave accordingly.

   3. After tax cash flow models are normative models until it can be shown how these models value property.

VII. Inferring Future Price From Sales Data

A. For residential properties there are often many sales of similar properties so that powerful statistical tools can be brought into play, such as multiple regression, factor analysis, etc. However, the simple average can also lend itself to statistical inference.

B. Dispersion is the variation or scatter of a set of values. Measures of dispersion are needed for the following basic purposes:

1. To gauge the descriptive reliability of averages.
2. To serve as a basis for control of the variability itself (such as rejecting a comparable that lies outside a certain range).
3. To summarize facts, both an average and a measure of dispersion should be presented.

C. When dispersion is small, then the selected average is a typical value in that it closely represents the individual values in the set and it is reliable in that it is a good estimate describing the typical case in the population. It is a useful generalization. Conversely, an average with very great dispersion is not very descriptive of the data set and may be a misleading generalization.

D. Measures of dispersion include:

1. A range
2. The quartile deviation
3. The mean deviation
4. The standard deviation

E. Consider the data on some apartment site land sales in Madison provided in Exhibits 1, 2, and 3. The range is the difference between the largest and smallest values of the variable:

1. $5.60 - $6.50 per square foot of land or 90¢
2. $1970 - $2208 per dwelling unit built or $238
3. $3.72 - $4.23 per square foot of gross building area or 51¢
4. $1226 - $1327 per total number of rooms built or $101

F. Exhibit #3 shows the mean and the standard deviation of the mean.

G. Quartile deviation must be applied to group data which are ranked from high to low. First the data is divided at the median and then each half of the data is split in half once again. Consider the net rentals of older supermarkets under existing leases provided in Exhibit #4.

Exhibit #4

CUMULATIVE FREQUENCY DISTRIBUTIONS
Supermarket Net Rents for 214 Stores in Chain X

(1) New Rent per Square Foot	(2) Number in Class with Lower Limit Shown	(3) Number Earning Less	(4) Number Earning as Much or More
$2.25	2	0	214
2.35	23	2	212
2.45	49	25	189
2.55	63	74	140
2.65	45	137	77
2.75	25	182	32
2.85	3	207	7
2.95	4	210	4
3.05	0	214	0
Total	214	1051	875

H. In the full array of data, the value of Q_1 and Q_3 are found to be $2.50 and $2.70, meaning 1/4 of the properties generate less than $2.50 a square foot and 1/4 exceed $2.70 per square foot while the middle half fall between these values. The quartile deviation is then (2.70 - 2.50)/2 or 10¢, or stated another way the range of the second and third quartile is about 10¢ per square foot.

VIII. When comparable sales have only one dimension, such as net leaseable area or number of rooms, a direct mean and some of the squares dispersion test is possible. However, usually it is necessary to consider a variety of factors and discover how price changes relative to the net differences of each property. Linear regression is one such method.

A. Ratcliff in Chapters 6 and 7 demonstrates a point system which ranks properties and is then weighted by buyers priorities. The weighted points are then compared to unit price. This system may be too elaborate for houses but can be demonstrated on a variety of commercial properties.

B. Consider the evaluation of vacant industrial land in Exhibits 5, 6, and 7.

1. Point system should be kept simple. 1-3-5 indicates below average, average, and above average.
2. If the appraiser is capable of making more careful distinctions between comparable properties, he can use a ten point scale such as 0, 4, 6, 8, 10 for each item, being careful not to change scales.
3. Many small judgments are better than large rough adjustments because of the theory of off-setting errors. Too big a range in scoring implies drastic differences between the worst and the best.

4. Note that Exhibit 7 provides an objective scale for most factors so that the reader can understand the score. The weights in this case were corroborated in the narrative of the report from a 1968 study by Real Estate Research Corporation.

C. All calculations for establishing the "a" and "b" factors for linear regression appear in Exhibit #8 and are charted in Exhibit #9.

D. An example using restaurant sites in Madison is provided in Exhibits 10, 11, and 12.

E. An example of a single family appraisal is provided in Exhibits 13, 14, 15, and 16.

F. A fourth example comparing old store buildings in downtown Madison will be provided in a demonstration appraisal.

EXHIBIT #1

Basic Information of residential Multi-Family Land Sales Comparables

Factors	420 W. Wilson No. 1	219=N. Frances No. 2	102 N. Franklin No. 3	434 W. Mifflin No. 4	427 W. Main No. 5
Sales Price	$ 84,950	$48,000	$86,900	$160,000	$53,000
Sales Date	'73	'72	'72	'72	'72
Type of Deed	WD	WD	WD	WD	WD
Volume and Page	403/510	346/561	334/ 23	337/215	342/113
Grantor	R.A. Paape Co.Inc.	Work of God, Inc.	Brown, Emily	Voss, Rob't	Miller + wife
Grantee	Hillmark,Dev. Corp.	Hillmark Corp.	Courtyard Assoc.	American United Investment	Hillmark Corp.
Land Area	13,068	7,920	15,246	26,400	8,712
Zoning	R-6	R-6	R-6	R-6	R-6

All have city services, sidewalk and street improvements
No adjustment for time required as residential economics would not permit inflation of land prices.

Landmark Research, Inc.

EXHIBIT #2

Vacant Land Market Comparison
Residential Use Land Price: Mean

Comparable Sales

Factors	420 W. Wilson No. 1	219 N. Frances No. 2	102 N. Franklin N. 3	434 W. Mifflin N. 4	427-31 W.Main No. 5	Mean (X) 1-5
Sales Price	$84950	$48000	$86900	$160000	$53000	$432850
Date of Sale	'73	'72	'72	'72	'72	
Land Area (sq.ft.)	13068	7920	15246	26400	8712	71346
No. of Dwelling Units Built	43	24	43	73	24	207
Total Gross Bldg.	20070	12670	24364	43040	10900	111044
Total # Rms Blt.	65.5	38	65.5	130.5	40	339.5
Mean Land Price - $/per:						
1. Square Ft. of Land	$6.50	$6.06	$5.60	$6.06	$6.08	$6.06
2. Dwelling Unit Blt.	$1976	$2000	$2020	$2192	$2208	$2079
3. Total Gross Bldg. Floor Area	$4.23	$3.79	$3.79	$3.72	$4.86	$4.08
4. Total # Rms Blt.	1297	1263	1327	1226	1325	1288

Exhibit 3

Vacant Land Market Comparison
Multi-Family Residential Use Land Price
Mean & Standard Deviation

	Comparable	Land Price/ Comparable Unit	$\bar{X}-X$	$(\bar{X}-X)^2$	Mean Deviation $MD=\frac{\Sigma\bar{X}-X}{n-1}$	Standard Deviation $S=\sqrt{\frac{\Sigma(\bar{X}-X}{n-1}}$
Land Price Per:						
Sq. Ft. of Land	1	$6.50	.44	.19		
(Row #1, Ex. #6)	2	6.06	0	0	$\frac{.92}{4}$	$\sqrt{\frac{.44}{4}}$
	3	5.60	.46	..21		
	4	6.06	0	0		
	5	6.08	.02	.04	$.23	$.33
Total		$30.30	.92	.44		
Mean (sum $\frac{xi's}{n}$)		$ 6.06				
No. of DU Built	1	1976	53	2809		
(Row #2, Ex. #6)	2	2000	29	841	$\frac{433}{4}$	$\sqrt{\frac{62341}{4}}$
	3	2020	9	81		
	4	2192	163	26569		
	5	2208	179	32041	$108	$249.68
Total		$10396	433	62341		
Mean		$ 2079				
Total Gross Bldg.						
Area Built	1	4.23	.15	.02		
	2	3.79	.29	.08	$\frac{1.87}{4}$	$\sqrt{\frac{.92}{4}}$
	3	3.79	.29	.08		
	4	3.72	.36	.13		
	5	4.86	.78	.61	$.465	$.48
Total		$20.39	1.87	.92		
Mean		$ 4.08				
Total No. Rooms Built	1	1297	9	81		
(Row #3, Ex. #6)	2	1263	25	625	$\frac{172}{4}$	$\sqrt{\frac{7440}{4}}$
	3	1327	39	1521		
	4	1226	62	3844		
	5	1325	37	1369	$43	$43.13
Total		$6438	172	7440		
Mean		$1288				

Landmark Research, Inc.

EXHIBIT #5

Industrial Land Sales Selected as Comparables
to MG & E Subject Parcel

		Date of Sale	Price	Public Record	Square Feet	(Acres)	$/Sq. Ft.
1.	MATC	6/8/67	$108,750	Confirmed by MATC Finance Director	152,460	(3.5)	.71
2.	MATC	1/23/67	75,000	Vol.828,p.280	81,828	(1.88)	.92
3.	Gorman	12/20/65	17,500	Vol.436,p.463	21,060	(.48)	.83
4.	Holfman	6/5/64	15,000	Vol.779,p.558	17,050	(.39)	.88
5.	Garrett	5/31/63	12,000	Vol.758,p.226	13,932	(.32)	.86
6.	Madison Transit	1/4/68	55,000	Vol.4,p.358	211,701	(4.86)	.26
7.	Madison Trust	12/28/66	45,000	Vol.828,p.204	67,900	(1.56)	.66
8.	NW Mutual	9/9/66	117,500	Vol.824,p.144	138,521	(3.18)	.85

EXHIBIT #7

Quality Scores & Weight Per Category

		Weight
1.	Size (Marketability Factor) 0 - 1 acre = 5 over 1 - 3 = 4 over 3.5 -10 = 3 over 10 - 20 acre = 2 over 20 acre = 1	20
2.	Accessibility to all areas (in terms of distance and time) 1-5 where 5 = premium + 3 = average	20
3.	Visibility from major artery 1-5	15
4.	Availability of sewer/water at site 1-5	15
5.	Availability of rail 1-5	10
6.	Soils and topography	20
		100%

Exhibit 16

Table of Scores for Comparable Properties

	1	2	3	4	5	6	7	8	Subject
Size	3	4	5	5	5	3	4	4	1
Access	4	4	4	4	4	2	3	3	4
Visibility	5	5	5	5	4	1	1	2	5
Sewer/water	5	5	5	5	5	2	5	5	5
Rail	1	1	1	1	3	1	2	2	4
Soils	2	3	2	2	2	4	5	5	1

Feature	Weight	Weighted Ratings 1	2	3	4	5	6	7	8	Subj
Size	20	60	80	100	100	100	60	80	80	20
Access	20	80	80	80	80	80	40	60	60	80
Visibility	15	75	75	75	75	60	15	15	30	75
Sewer/water	15	75	75	75	75	75	30	75	75	75
Rail	10	10	10	10	10	30	10	20	100	40
Soils	20	40	60	40	40	40	80	100	100	20
Total		340	380	380	380	385	235	350	365	310
Price/Sq. Ft.		.71	.92	.83	.88	.86	.26	.66	.85	

EXHIBIT #8

Least Squares Regression

Model $Y = a - b X$
where Y = estimated land value per square foot
X = weighted quality ratings

Comparables	Y	X	Y^2	X^2	XY
1	.71	340	.504	115600	241.400
2	.92	380	.846	114400	349.600
3	.83	380	.689	114400	315.400
4	.88	380	.774	114400	334.400
5	.86	385	.740	148225	331.100
6	.26	235	.068	55225	61.100
7	.66	350	.436	122500	231.000
8	.85	365	.723	133225	310.250
	Σ=5.97	Σ=2815	Σ=4.779	Σ=1007975	Σ=2174.25

Step 2: Compute mean of Y and mean of X

$$\overline{Y} = \frac{\Sigma Y}{n} = \frac{5.97}{8} = .746$$

$$\overline{X} = \frac{2815}{8} = 351.875$$

Step 3: Compute Σy^2, Σx^2 and Σxy

$$\begin{aligned}\Sigma y^2 &= \Sigma Y^2 - n\,(\overline{Y})^2 \\ &= 4.779 - 8(.746)^2 \\ &= 4.770 - 8(.557) \\ &= 4.779 - 4.452 \\ &= .327\end{aligned}$$

$$\begin{aligned}\Sigma x^2 &= \Sigma X^2 - n(\overline{X})^2 \\ &= 1007975 - 8(351.875)^2 \\ &= 17446.873\end{aligned}$$

$$\begin{aligned}\Sigma xy &= \Sigma XY - n\,\overline{XY} \\ &= 2174.25 - 8(.746)\ (351.875) \\ &= 2184.25 - 2099.99 \\ &= 74.26\end{aligned}$$

Step 4: $b = \frac{\Sigma xy}{x^2} = \frac{74.26}{17446.873} = .04256$

Step 5: $a = \overline{Y} - b\overline{X}$

$= .746 - .004256\ (351.875)$
$= -.7517$

Hence $Y = -.7517 + .004256\ (X)$
$Y_n = -.7517 + .004256\ (310)$

$= .56765$ say .57

Step 6: Compute standard error

$$Sy.x = \sqrt{\frac{\Sigma y^2 - b\Sigma xy}{n-2}}$$

$$= \sqrt{\frac{1327 - .004256\ (74.26)}{8-2}}$$

$$= \sqrt{\frac{.10949}{6}}$$

$$= \sqrt{.001825}$$

$$= .042719 \text{ say } \$.04$$

Step 7: Compute r^2

$$r^2 = \left[\frac{\Sigma xy}{\Sigma x^2\ \Sigma y^2}\right]$$

$$= \left[\frac{74.26}{(17446.873)(.327)}\right]$$

$$= .9665$$

EXHIBIT #10

Basic Information on Restaurant-Commercial Land Sale Comparables

	Barnaby's East	Barnaby's West	Bud's West	Pigs Ear East	Marc's Big Boy South	Marc's Big Boy East
Sales Price	$92,000*	$89,000	$75,700	$91,000	$87,500	$85,000
Sales Date	10-6-70	6-30-70	6-29-71	5-20-72	9-3-69	3-15-68
Type of Deed	Lease with Option	WD	WD	WD	WD	WD
Volume & Page	209-455	184-75	264-173	344-385	130-463	15-108
Grantee	Barnaby's Inc.	Barnaby's Inc.	Clyde Chamberlain	Poole, Inc.	B & G Realty	B & G Realty
Area	38,211	32,900	45,236	141,570	38,327	30,237
Zoning	C-2	C-3-L	C-3-L	M-1	C-2	C-2
Principal Business Frontage	E. Washington Ave.	Mineral Point & Grand Canyon Roads	Odana Rd.	Cottage Grove Road & Atlas Avenue	S. Park Street	E. Washington Ave.
Position on Block	Inside lot	Corner lot	Inside lot	Corner lot	Corner lot	Inside lot

All have city services, Pigs Ear did not have curb and gutter
No adjustment of time required as restaurant economics would not permit inflation of land prices.

EXHIBIT #11

Attribute Point and Weight Comparison
Of Restaurant-Commercial Land Sales and Subject Property

	(See Exhibit #8)	Barnaby's East		Barnaby's West		Bud's West		Pigs Ear East		Marc's Big Boy South		Marc's Big Boy East		Subject	
30	*Site	Points	Wgt'd Pts												
	Shape	5		1		5		3		5		3		5	
	% Usable	3		3		5		5		5		5		1	
	Site Preparation	3		1		5		5		5		5		5	
	Visibility	3		5		5		3		5		3		3	
	Access														
	Left & Right Turn	5		5		5		3		3		3		1	
	Frontage Road	3		5		5		1		5		5		5	
	Total	18		20		25		20		28		24		20	
	Weight		540		600		750		600		840		720		600
50															
	Linkages														
	Traffic Volume	5		5		3		3		5		5		3	
	Supportive Retail/Serv.	5		5		3		1		1		3		1	
	Proximity to Multi-Family Residential	1		5		5		1		3		3		3	
	Proximity to Employm.	3		3		3		1		1		5		3	
	**Interstate-Beltline	2		1		1		3		2		2		1	
	Total	15		18		15		9		12		18		11	
	Weight														
20	Image														
	Development Activity	5		5		3		1		1		3		1	
	Prestige of Street Address	5		5		3		1		3		5		1	
100	Total	10		10		6		2		4		8		2	
			200		200		120		40		80		160		40
	*Scale 1,3,5 Except **		1490		1700		1620		1090		1520		1780		1190

EXHIBIT #12

Determination of Linear Regression
Weighted Mean Value of Land/sf
Commercial-Restaurant

Comparable	1 Land $/sf Yi	2 Total Wgtd. Pts. Xi	3 (Land $/sf)^2 Yi^2	4 (Wgtd.Pts)^2 Xi^2	5 (3 x 4) XiYi
1	$2.40	1490	5.76	2220100	3575
2	2.73	1700	7.45	2890000	4641
3	1.67	1620	2.79	2624000	2705
4	.64	1090	.41	1881000	698
5	2.28	1520	5.20	2310400	3466
6	2.81	1780	7.90	3168400	5002
TOTAL	$12.53	9200	29.51	15093000	20087
Mean	(Y)=$2.09	(X)=1533			

Calculations of Mean,Standard Deviation

$$\text{Sum } y^2 = Y^2 - n(Y)^2$$
$$=(29.51)^2 - 6(2.09)^2$$
$$=845$$

$$\text{Sum } x^2 = X^2 - n(X)^2$$
$$= 1509000 - 6(1533)^2$$
$$= 993366$$

$$\text{Sum } xy = XY - n(x)(Y)$$
$$= 20087 - 6(1533)(2.09)$$
$$= 863$$

$$Y' = a + bX_{subject}$$

$$b = \frac{\text{Sum } xy}{\text{Sum } x^2} = \frac{863}{993366} = .00087$$

$$a = (Y) - b(X) = \$2.09 - .00087(1533)$$

SALES PRICE/SUBJECT SITE

$$Y' = a + bX_{subject}$$
$$= -\$.76 = .00087(1190) = \underline{\$1.80}$$

STANDARD DEVIATION

$$S_{xy} = \frac{\text{Sum } y^2 - b(\text{Sum } xy)}{n-2}$$
$$= \$ \ \underline{.15}$$

EXHIBIT #13

Buyer Characteristics in Dudgeon School Area

1. 636 Crandall Street
Married couple, 27 years old - one year old child - college degrees - salary $10,000 per year
Valued protected play area for child, convenient location on bus line, remodeled kitchen, house with character within price range and possibility to build equity. They are having home rewired and doing minor maintenance required themselves. Financed with a conventional mortgage and second mortgage from state VA
Relative importance of buyer factors reported by interviewer:

Physical condition	10
Interior space	25
Mechanical equipment	10
Location & neighborhood	25
Financial operating burden	25
lot	5
	100

2. 821 Minakwa
26 year old couple, no children - project manager - college degree $10,000 salary.
Primary motivations were: house had more character and value than a new house for the same price, location for bringing up children, mechanicals in good condition and fireplace. Lot was considered a drawback.

3. 3120 Gregory
Man and wife in mid -forties, no children - needed three bedrooms with full dining room and 2-stories high, wanted a two car garage but settled for one, Preferred west side for convenience and more value appreciation.
Purchased house expecting to repaint entire building.
Buyer reported purchase price of $24,000

4. 2455 Mohawk Dr.
Married couple, 27 years old, no children, both work with college educations. Husband gave major weight to structural soundness, neighborhood appeal, and location near bus line and beltline.
Wife gave preference to wooded neighborhood and outdoor yard, and space utilization inside. Mechanical and storage were given only medium emphasis.

5. 645 Sheldon St.
28 year old married couple, no children, college educated.
They preferred home with garage, fireplace, close to bus line, and on west side between campus, square and Hilldale. Wanted garden.
Physical condition was rated highly, exterior appearance was not important. Lot size was more important with mechanical and interior condition less important.

6. 1510 Whenona Drive
Married couple (approximately 30) - 2 children, ages 3 and 5 - college degrees - father, $10,000; wife works as a nurse.
Couple emphasized structural soundness as they expected to remain in house more than 10 years and possibly add a room at the rear. They wanted good sized rooms and visual appeal or character of an older home in a stable neighborhood. Valued location for convenience and stability of value and knew other young couples were moving in with plans to fix up their homes, too. They did not expect mechanical equipment to be modern in an old home and expected to update the kitchen eventually. Off-site factors were taken for granted except for bus which wife used every day for work.

EXHIBIT #14

Features	Weight	821 Minakwa St.	3120 Gregory	645 Sheldon St.	636 Crandell St	628 Crandell St	640 Knicherbock	657 Knicherbock	SUBJECT
		Rating / Weighted Ratings							
Location & Neighborhood	25	2/50	6/150	4/100	2/50	2/50	4/100	4/100	2/50
Lot	5	2/10	4/20	4/20	6/30	4/20	4/20	4/20	4/20
Financial Burden	15	4/60	2/30	4/60	6/90	4/60	4/60	4/60	6/90
Exterior Architecture	15	4/60	4/60	4/60	6/90	6/90	6/90	6/90	4/60
Mechanical	10	2/20	2/20	4/40	6/60	6/60	4/40	4/40	6/60
Physical Condition	10	2/20	4/40	4/40	4/40	4/40	4/40	4/40	4/40
Interior Attractiveness	20	2/40	2/40	4/80	4/80	6/120	6/120	6/120	4/80
TOTAL	100	260	360	400	440	440	470	470	400
PRICE		$26,300	$24,500	$23,800	$22,900	$22,900	$21,900	$21,900	???

Ratcliff Linear Regression

EXHIBIT #15

$$Y = a + bx$$

$$b = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{n(\Sigma x^2) - \Sigma(x)^2}$$

$$a = \frac{Y - b(\Sigma x)}{n}$$

$n = 7$	The number of comparables.
$\Sigma Y = 164{,}200$	The sum of the seven actual prices paid for the comparables. ($26,300) + ($24,500) + ($23,800)...
$(\Sigma y) = 164{,}200$	
$(\Sigma x) = 2840$	The sum of the total weighs for the comparables. (260) + (360) + (400) + (440) + ...
$(\Sigma xy) = 65{,}916{,}000$	(260)(26,300) + (360)(24,500) + ...
$(\Sigma x)(\Sigma y) = 465{,}328{,}000$	(2840)(164,200)
$\Sigma(x)^2 = 8{,}065{,}600$	$(2840)^2$
$(\Sigma x^2) = 1{,}186{,}200$	$(260)^2 + (360)^2 + (400)^2 + (440)^2 +$

$$b = \frac{7(65{,}916{,}000) - (465{,}328{,}000)}{7(1{,}186{,}200) - (8{,}065{,}600)} = -16.467619 \simeq -16.5$$

$$a = \frac{164{,}200 - (-16.5)(2840)}{7} = 30{,}151.428 \simeq \$30{,}151.$$

$$Y = a + bx$$

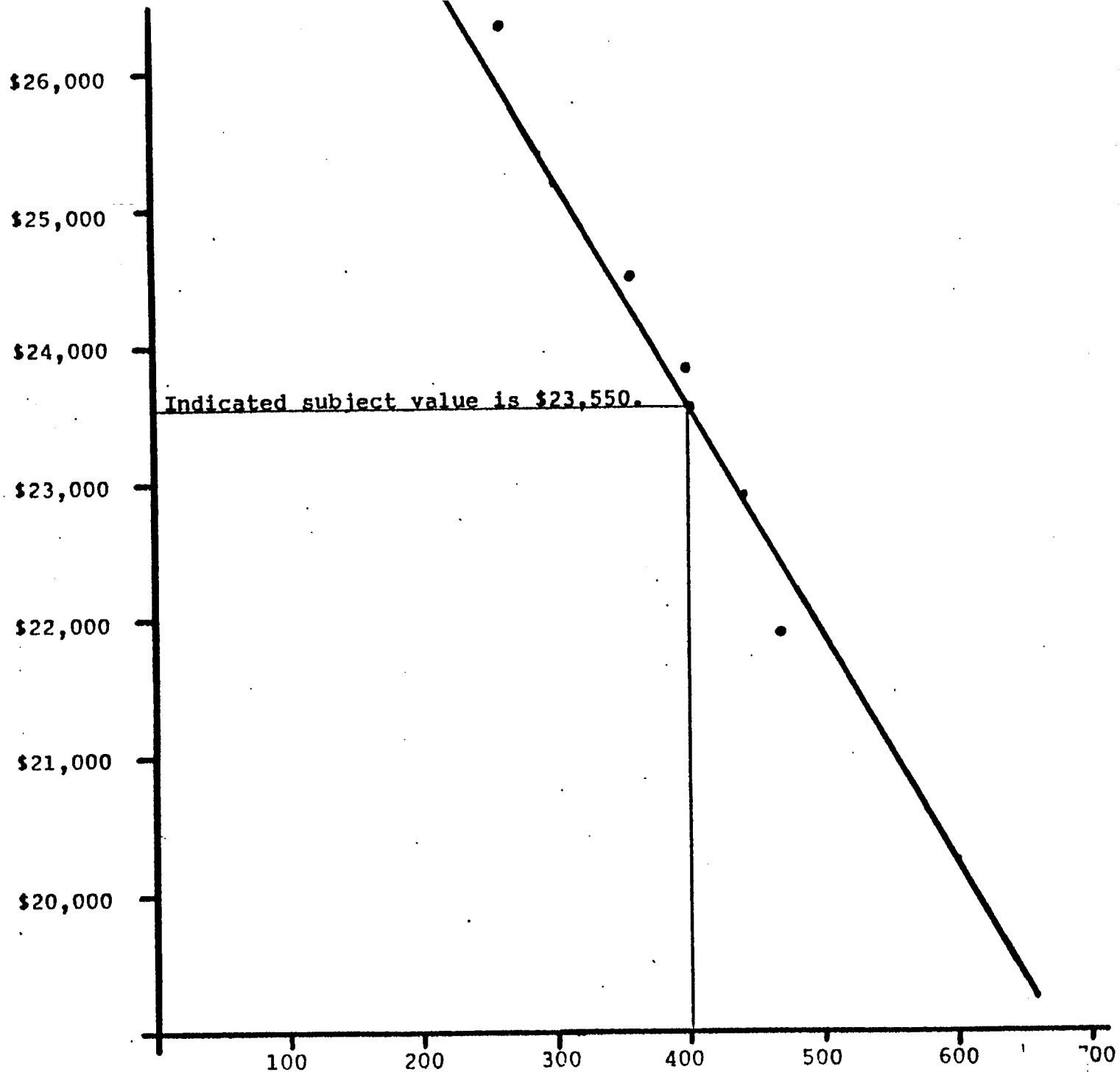
$$Y = 30{,}151 + (-16.5)(x)$$

'x' for the subject property was 400

$$Y = 30{,}151 + (-16.5)(400)$$

$$Y = \$23{,}550$$

EXHIBIT #16


$26,000
$25,000
$24,000
$23,000
$22,000
$21,000
$20,000
Indicated subject value is $23,550.
100
200
300
400
500
600
700

Date of Inspection_____

Name of Inspector_____

VILLAGE OF MAPLE BLUFF
DANE COUNTY
WISCONSIN

SINGLE FAMILY RESIDENTIAL INFORMATION FORM

1. _____ Tax Parcel Number

2. _____ Property Owner

3. _____ Street Number

4. _____ Street Name

LAND DATA

5. _____ Previous Lot Sale Price

6. _____ Previous Lot Sale Date

7. _____ X Geocode

8. _____ Y Geocode

9. _____ Neighborhood Number (01-18)

10. _____ Lot Square Feet (rounded to nearest 500 ft.)

11. _____ Lot Front Feet (rounded to nearest foot)

12. _____ Lot Depth (rounded to nearest foot)

13. _____ Lot Subdividable
(smaller of A, B,
A & B apply only to unplatted-uncertified lots)

0 = No

A = Unplatted Gross Lots = $\frac{\text{Lot area - 40,000 sq.ft.}}{\text{25,000 sq.ft.}}$ (round down to next integer value)

B = Net Additional Lots = $\frac{\text{Lake frontage}}{\text{100 ft.}}$ -1 (round down to next integer value)

CONDITIONS WHICH MUST BE MET:

1. All lots must have no less than 40' of street frontage or a single driveway (apron) easement.

2. Platted vacant lots (within a parcel) will be treated as buildable if, separately or in combination, the total area is $\leq$ 14,000 SF, and conforms to condition #1.

14. _____ Lot Oversized (but not subdividable)
0 = under 65,000 sq.ft.;
1 = oversize lot

15. _____ Lake Access Easement
0 = No; 1 = Yes

16. _____ Shore Quality
3 = inaccessible bluff/Dengel Bay
2 = shallow
1 = mud; 0 = no dominant problem

17. _____ Water Quality
3 = odor; 2 = flotsam; 1 = weeds;
0 = no dominant problem

18. _____ Lake Front Feet
(rounded to nearest foot)

19. _____ Lot on Corner
0 = No; 1 = Yes

20. _____ Lot on Cul-de-sac
0 = No; 1 = Yes

21. _____ Inside Lot
0 = No; 1 = Yes

22. _____ Lot Wooded
0 = Below average (0 to 3 major trees)
1 = Average wooded lot (4 to 7 major trees)
2 = Above average lot (more than 7 major trees)

23. _____ Lot View
0 = Commercial lot or railroad lot
1 = Average view
2 = Golf course or park view
3 = Water average (non-State Capitol view)
4 = Water superior (State Capitol view)

24. _____ Lot Topography
0 = Severe, non-usable slope
1 = Wet pockets
2 = Downsloping lot
3 = Level contour
4 = Upward sloping lot

25. _____ Adverse Influence
0 = None
1 = Contiguous lake easement
2 = Joint driveway
3 = Other (high lines, etc.)
4 = Commercial property
5 = Public property or exposure
6 = Railroad
7 = High traffic
9 = Combination

If lot suffers from two adverse influences, enter the higher value.

SITE IMPROVEMENT DATA

26. _____ Tennis Court

27. _____ Outdoor Pool

28. _____ Patio

29. _____ Storage Shed

30. _____ Boathouse

31. _____ Seawall

32. _____ Indoor Pool

33. _____ Elevator

34. _____ Other Structure Name

35. _____ Other Structure Value

36. _____ Other Structure Name

37. _____ Other Structure Value

38. _____ Special Structures Total
(Sum of columns 26 - 37)

39. _____ Driveway
(score = style, material)

STYLE	MATERIAL
1 = Linear into garage-back into street	1 = Dirt
2 = Linear with turn-around space	2 = Gravel
3 = Circular	3 = Asphalt
4 = Large with parking space and turnaround space	4 = Concrete/Brick
5 = Circular with parking space	

40. _____ Neighborhood Foliage
1 = New and raw
2 = Some mature trees
3 = Shady

41. _____ Landscaping
1 = Little or none
2 = Average
3 = Above average

42. _____ Screening of Back
0 = Little or none
1 = Yes

43. _____ Screening of Front
0 = Little or none
1 = Yes

44. _____ Curb and Gutter
0 = No; 1 = Yes

45. _____ Sidewalk
0 = No; 1 = Yes

IMPROVEMENT DATA

46. _____ Previous Sale Price

47. _____ Previous Sale Date

48. _____ Year Built

49. _____ Era
0 = Pre-1910
1 = 1910-1929
2 = 1930-1949
3 = 1950-1969
4 = 1970 to present

50. _____ Square Feet Living Space

51. _____ Number of Stories
0 = Vacant Lot
1 = 1 Story
1.3 = 1-1/2 Stories
1.6 = Miltilevel
2 = 2 Stories
2.3 = 2-1/2 Stories

52. _____ Roof
(score = style, material)

STYLE	MATERIAL
1 = Gable	1 = Gravel
2 = Hip	2 = Asphalt shingles
3 = Mansard	3 = Wood shake/shingle
4 = Gambrel	4 = Slate shingles
5 = Flat	5 = Tile
6 = Single pitch	6 = Metal

53. _____ Exterior

0 = Concrete block
1 = Wood siding/frame
2 = Stucco
3 = Stained boards/shingles
4 = Aluminum siding
5 = Part masonry/frame
6 = Part masonry/ stained boards
7 = Part masonry/aluminum
8 = Predominantly brick veneer
9 = Predominantly stone

54. _____ Garage Type

0 = None
1 = Carport
2 = 1 car detached
3 = 1 car basement
4 = 1 car attached
5 = 2-3 car detached
6 = 2-3 car basement
7 = 2 car attached, small
8 = 2 car attached, large
9 = 3 car attached

55. _____ Building Style

1 = Cottage
2 = Pre-1940
3 = Standard builder's suburban (Owner custom obsolescence)
4 = Architectural modern
5 = Pre-1940 remodeled
6 = Good builder's suburban/mansion
7 = Architectural contemporary
8 = Architectural traditional
9 = Architectural colonial

56. _____ Basement Type

0 = Slab
1 = Crawl
2 = Partial
3 = Full
4 = Partially exposed (opening on grade at least one side)
5 = Exposed (raised ranch/bilevel- English basement- window sill at grade)

57. _____ Basement Condition

0 = No problem
2 = Mild problem due to seepage/aging
5 = Poor condition or no basement

58. _____ Appearance to Neighbors

1 = Less attractive
2 = Equally attractive
3 = More attractive

59. _____ Quality

0 = Uninhabitable
1 = Major mechanical or structural problems
2 = Interior damage
3 = Exterior maintenance required
4 = Average condition
5 = Well-maintained
6 = Maintained like new
7 = New--standard
8 = New--custom
9 = New--deluxe

60. _____ Enclosed Porch

0 = None	5 = Average glass
1 = Small screen	6 = Large glass
2 = Average screen	7 = Small glass, heated
3 = Large screen	8 = Average glass, heated
4 = Small glass	9 = Large glass, heated

61. _____ Total Number of Rooms

62. _____ Total Number of Bedrooms

63. _____ Total Number of Bathrooms
(sum of bathroom scores)

64. _____ Half
(Score = .5 for each)

65. _____ Three-quarter
(Score = .75 for each)

66. _____ Full
(Score = 1 for each)

67. _____ Bathroom on First Floor
0 = No
1 = Yes

68. _____ Total Number of Fireplaces

69. _____ Living Room
(score = size, layout)

SIZE	LAYOUT
1 = Small	1 = Poor
2 = Moderate	2 = Indifferent
3 = Large	3 = Good

70. _____ Dining Room
0 = None

STYLE
1 = At end of living room
2 = Dining L
3 = Full dining area
4 = Separate room

71. _____ Den/Library/Study

0 = None 2 = Average
1 = Small 3 = Large

72. _____ Kitchen Score

Score = (Size * Type * Work area) + Eating space

73. _____ Kitchen Size

1 = Small
2 = Average
3 = Large

74. _____ Kitchen Type

1 = Single wall 4 = U-shaped
2 = Pullman 5 = L- or U-shaped with island
3 = L-shaped

75. _____ Kitchen Work Area

To calculate kitchen score use:

0 = Obsolete (.5)
1 = Dated (.75)
3 = Modern (1.00)

76. _____ Kitchen Eating Space

To calculate kitchen score use:

0 = None	0
1 = Counter/Stools	.2
2 = Space for table/chairs	.4
3 = Breakfast nook	.6

77. _____ Family Room

(Score = location, size)

0 = None

LOCATION	SIZE
1 = Poor	1 = Small
2 = Adjoining kitchen	2 = Average
3 = Fully separate and well located	3 = Large

78. _____ Recreation Room

0 = None
1 = Yes (Must have fully finished floor, ceiling, and walls)

79. _____ Laundry Area Score

(Score = location * type)

80. _____ Laundry Area Location

LOCATION
1 = Basement
2 = At grade
3 = Second floor

81. _____ Laundry Area Type
0 = None
TYPE
1 = Exposed
2 = Enclosed closet
3 = Separate room

82. _____ Heating System Score
(Score = Fuel * Type)

83. _____ Heating Fuel
FUEL
1 = Electricity
2 = Oil
3 = Gas

84. _____ Heating Type
TYPE
1 = Old hot water - radiators
2 = Old low pressure steam - radiators
3 = Old hot water integrated with water heater
4 = Gravity hot air grills on floor
5 = Hot water-baseboards
6 = Forced hot air
7 = ~~Forced hot air-zoned~~ Hot forced-air/water - zoned
8 = Multiple forced hot air units

85. _____ Electrical Service
AMPERAGE
1 = 30 amp.
2 = 60 amp.
3 = 100 amp.
4 = 125 amp.
5 = 150 amp.
6 = > 150 amp.

86. _____ Water Heater

Score = (Capacity, Fuel)

0 = With hot water heat system

CAPACITY OF UNIT		FUEL
1 = 20 gal.	5 = 75 gal.	1 = Electric
2 = 30 gal.	6 = 100 gal.	2 = Solar
3 = 40 gal.	7 = 100+ gal.	3 = Oil
4 = 50 gal.		4 = Gas

87. _____ Interior Circulation (Traffic pattern)

0 = Poor
1 = Moderately good
2 = Good
3 = Excellent

88. _____ Total Special Features Score

(Sum of all special features points)

SPECIAL FEATURES

1. _____ Front Exterior Entry
(Score = Sum of style and function)

STYLE	FUNCTION
0 = Single door	-1 = Unprotected
1 = Double door	2 = Protected

2. _____ Front Interior Entry
(Score = Sum of points)

-3 = Entrance direct to living room
0 = Vestibule (hall entry)
1 = Foyer (enclosed entry)
2 = Spacious vestibule
3 = Spacious foyer

3. _____ Master Bedroom Suite
(Score = Sum of points)

1 = Extra closet space
2 = Dressing area
3 = Sitting area

4. _____ Living Room Extras
(Score = Sum of points)

-3 = Classical cathedral ceiling
0 = None
1 = Contemporary sloped ceiling, built-in cabinets
2 = Sunken multi-level, special natural illumination, deluxe woodwork

5. _____ Dining Room Extras
(Score = Sum of points)

0 = None
1 = Built-in china cabinet, break front/buffet
2 = Wet bar
3 = Deluxe built-ins

6. _____ Den/Library/Study Extras
(Score = Sum of points)

0 = None
1 = Built-in cabinets
2 = Deluxe woodwork

SPECIAL FEATURES (Continued)

7. _____ Kitchen Extras
(Score = Sum of Points)
0 = None
1 = Each built-in appliance, serving pantry/bar, direct access to outside, grill/BBQ, more than one sink area
-3 = No window
-2 = Below average window area
0 = Average window area
1 = Above average window area

8. _____ Family Room Extras
(Score = Sum of points)
0 = None
1 = Built-in cabinets, deluxe flooring, deluxe paneling, sloped ceiling
2 = Wet bar
5 = Kitchen facilities

9. _____ Number of Special Spaces
(Score = Sum of points)
0 = None
1 = Special woodwork/craft area
2 = Dark room
3 = Sewing, sitting, office areas, partially finished recreation room

10. _____ Recreation Room Extras
(Score = Sum of ponits)
0 = None
1 = Built-in cabinets
2 = Wet bar
5 = Kitchen facilities

11. _____ Household Extras
(Score = Sum of points)
0 = None
1 = Greenhouse - attached at window, special indirect lighting
2 = Security system
3 = Greenhouse - attached and walk-in, sauna
5 = Central air conditioning, grand spiral staircase

VILLAGE OF MAPLE BLUFF, DANE COUNTY
SINGLE-FAMILY RESIDENTIAL TAX INFORMATION FORM
AS OF JANUARY 1, 1980

1	Tax Parcel Number		460111
2	Property Owner		
3	Street Number		
4	Street Name		
5	Previous Lot Sale Price	PLSPRICE	0
6	Previous Lot Sale Date	PLSDATE	0
7	Geocode X	GEO X	0
8	Geocode Y	GEO Y	0
9	Neighborhood Number	NBRHD	5
10	Lot Square Feet	LTSQFT	22500
11	Lot Front Feet	LTFFT	202
12	Lot Depth	LTDPTH	142
13	Lot Subdividable	LOTSDIV	0
14	Lot Oversized	LOTOVSZD	0
15	Lake Access Easement	LKACC	0
16	Shore Quality	SHORE	0
17	Water Quality	WATER	0
18	Lake Front Feet	LKFFT	0
19	Lot on Corner	LTCNR	1
20	Lot on Cul de Sac	LTCUL	0
21	Inside Lot	LTINS	0
22	Lot Wooded	LTWOOD	1
23	Lot View	LTVIEW	1
24	Lot Topo	LTTOPO	3
25	Adverse Influence	ADINF	5
26	Tennis Court	TENCT	0
27	Outdoor Pool	OUTPOOL	0
28	Patio	PATIO	200
29	Storage Shed	STSHD	0
30	Boathouse	BTHSE	0
31	Seawall	SEAWLL	0
32	Indoor Pool	INPOOL	0
33	Elevator	ELEV	0
34	Other Structure Name	STCT1	0
35	Other Structure Value	VALUE1	0
36	Other Structure Name	STCT2	0
37	Other Structure Value	VALUE2	0
38	Special Structures Total	SPCTOT	0
39	Driveway	DRVWY	14
40	Neighborhood Foliage	NBRFOL	3
41	Landscaping	LNDSCP	3
42	Screening of Back	CRBK	0
43	Screening of Front	SCRFT	0
44	Curb Gutter	CRBGTR	0
45	Sidewalk	SIDWLK	0
46	Previous Sale Price	PSPR	0
47	Previous Sale Date	PSDATE	0
48	Year Built	YRBLT	1927
49	Era	ERA	1
50	Sq. Ft. Living Space	SQFTLS	2180
51	Number of Stories	STORIES	3
52	Roof	ROOF	14
53	Exterior	EXTER	4
54	Garage Type	GARAGE	7
55	Building Style	STYLE	8
56	Basement Type	BSMTYP	3
57	Basement Condition	BSMTCND	5
58	Appearance to Neighbors	APPEARS	1
59	Quality	QUALTY	3
60	Enclosed Porch	PORCH	0
61	Total Number Rooms	ROOMS	9
62	Total Number Bedrooms	BDRMS	4
63	Total Number Bathrooms	BATHS	1.75
64	Half	HFBTH	0
65	Three Quarters	THQBTH	1
66	Full	FULLBTH	1
67	On First Floor	BTH1ST	1
68	Total Number Fireplaces	FPLAC	1
69	Living Room	LIVRM	23
70	Dining Room	DINRM	4
71	Den/Library/Study	DEN	1
72	Kitchen Score	KTCHSCR	1.15
73	Kitchen Size	KTCHSZ	1
74	Kitchen Type	KTCHTYPE	1
75	Kitchen Work Area	KTCHWRK	1
76	Kitchen Eating Space	KTCHEAT	2
77	Family Room	FMLYRM	0
78	Recreation Room	RECRM	0
79	Laundry Area Score	LAUNSCR	1
80	Laundry Area Location	LAUNLOC	1
81	Laundry Area Type	LAUNTYP	1
82	Heating System Score	HTGSCR	6
83	Heating Fuel	HTGFUEL	3
84	Heating Type	HTGTYP	2
85	Electrical Service	ELECTSRV	2
86	Water Heater	WTRHTR	44
87	Interior Circulation	INTCIR	1
88	Special Features Score	SPFTSCR	4
89	79 ASSESSMENT	79 ASSES	81,000

1980 PROPERTY CARD - PARCEL 460111

MADISON, WI 5370-

LAND DATA

PREVIOUS LOT SALE PRICE	0
PREVIOUS SALE DATE	0
GEOCODE	0
NEIGHBORHOOD NUMBER	5
LOT SQ. FT.*	22500
LOT FRONT FT.*	202
LOT DEPTH*	142
LOT SUBDIVIDABLE	No
LOT OVERSIZED	No
LAKE ACCESS EASEMENT	No
LAKE FRONT FT.	0
LOT ON CORNER	Yes
LOT ON CUL DE SAC	No
INSIDE LOT	No
LOT WOODED	4 to 7 major trees
LOT VIEW	Average view
LOT TOPOGRAPHY	Level contour
ADVERSE INFLUENCE	Public property

SPECIAL STRUCTURES AND SITE IMPROVEMENTS

TENNIS COURT	0
OUTDOOR POOL	0
PATIO	200
STORAGE SHED	0
BOATHOUSE	0
SEAWALL	0
INDOOR POOL	0
ELEVATOR	0
0	0
0	0
SPECIAL STRUCTURES TOTAL	200
DRIVEWAY	Linear, concrete
NEIGHBORHOOD FOLIAGE	Shady
LANDSCAPING	Average
SCREENING OF BACK	Little or none
SCREENING OF FRONT	Little or none
CURB AND GUTTER	No
SIDEWALK	No

*APPROX. USING VILLAGE MAP

IMPROVEMENT DATA

PREVIOUS SALE PRICE	0
PREVIOUS SALE DATE	0
YEAR BUILT	1927
ERA	1910-1929
SQ. FT. LIVING SPACE	2180
NUMBER OF STORIES	2 Story
BUILDING STYLE	Architectural Traditional
ROOF	Gable,slate shingles
EXTERIOR	Stucco
GARAGE	2 Car attached,small
BASEMENT TYPE	Full
BASEMENT CONDITION	Poor condition
QUALITY	Exterior maintenance required
APPEARANCE TO NEIGHBORS	Less attractive
ENCLOSED PORCH	None
NUMBER OF ROOMS	9
NUMBER OF BEDROOMS	4
NUMBER OF BATHROOMS	1.75
HALF BATHS	0
THREE QUARTER BATHS	1
FULL BATHS	1
BATH ON FIRST FLOOR	Yes
NUMBER OF FIREPLACES	1
LIVING ROOM	Moderate size, good layout
DINING ROOM	Separate room
DEN/LIBRARY/STUDY	Small size
FAMILY ROOM	None
KITCHEN SCORE	1.15
SIZE	Small
TYPE	Single wall
WORK AREA	Dated
EATING SPACE	Space for table/chairs
RECREATION ROOM	No
LAUNDRY AREA SCORE	1
LOCATION	Basement
TYPE	Exposed
HEATING SYSTEM SCORE	6
FUEL	Gas
TYPE	Old low pressure steam
ELECTRICAL SERVICE	60 amp.
WATER HEATER	50 gal., gas
INTERIOR CIRCULATION	Moderately good
SPECIAL FEATURES SCORE	4
LAND	24,500
IMPROVEMENTS	56,500
1979 ASSESSMENT	81,000
LAND	24,500
IMPROVEMENTS	56,500
1980 ASSESSMENT	81,000

FACTOR	TYP	RATE	AVE.	S-DEV.
PSFR	0.	1.00	89213.	22432.
PSDATE	2.	0.05	3347.	1787.
NBRHD	1.	1500.00	750.	1500.
LTSQFT	1.	0.22	2173.	873.
LOTSDIV	1.	15500.00	0.	0.
LOTOVSZD	2.	-0.05	0.	0.
LKACC	1.	100.00	0.	0.
SHORE	2.	-0.02	0.	0.
WATER	2.	-0.02	0.	0.
LKFFT	1.	350.00	0.	0.
LTCNR	1.	-750.00	-750.	0.
LTCUL	1.	500.00	0.	0.
LTWOOD	2.	0.05	1873.	2165.
LTVIEW	2.	0.02	0.	0.
LTTOPO	2.	0.03	0.	0.
ADINF	2.	-0.02	-6796.	5048.
SPCTOT	1.	1.00	0.	163.
ERA	2.	0.02	-749.	866.
SQFTLS	1.	15.00	150.	4963.
STORIES	2.	0.02	0.	0.
EXTER	2.	0.01	964.	1592.
GARAGE	1.	1000.00	1000.	1826.
STYLE	2.	0.01	596.	1971.
BSMTYP	2.	0.01	669.	779.
BSMTCND	2.	-0.02	-4926.	3444.
APPEARS	2.	0.03	-2676.	673.
QUALTY	2.	0.02	-1949.	2389.
PORCH	1.	600.00	-900.	600.
BDRMS	1.	1500.00	0.	1225.
BATHS	1.	4000.00	0.	2000.
FPLAC	1.	750.00	-187.	375.
DINRM	2.	0.02	749.	866.
DEN	1.	1000.00	750.	500.
KTCHSCR	1.	350.00	-814.	955.
FAMRM	1.	100.00	-2150.	1509.
RECRM	1.	2000.00	0.	0.
LAUNSCR	1.	300.00	-450.	714.
HTGSCR	1.	200.00	-1400.	1200.
INTCIR	2.	0.01	-305.	610.
SPFTSCR	1.	200.00	-250.	1310.

AVE ADJUSTED AMT 77930. 6747.
WEIGHTED AVE. 76000.
INDICATED VALUE 76000.

4:46 460115 30 OLD SHORE RD
51:246 4601325.24 372 WOODLAND
23:139 4601212 236 LAKEWOOD BLV
29:159 4601237 122 LAKEWOOD BLV

FACTOR	SUBJECT	4-AMT	ADJ	51-AMT	ADJ	23-AMT	ADJ	29-AMT	ADJ
PSPR	0.00	85000.00	85000.	72850.00	72850.	122000.00	122000.	77000.00	77000.
PSDATE	80.00	78.92	4604.	79.42	2125.	79.75	1525.	78.67	5133.
NBRHD	5.00	5.00	0.	3.00	3000.	5.00	0.	5.00	0.
LTSQFT	22500.00	14000.00	1870.	10500.00	2640.	17500.00	1100.	8500.00	3080.
LOTSDIV	0.00	0.00	0.	0.00	0.	0.00	0.	0.00	0.
LOTOVSZD	0.00	0.00	0.	0.00	0.	0.00	0.	0.00	0.
LKACC	0.00	0.00	0.	0.00	0.	0.00	0.	0.00	0.
SHORE	0.00	0.00	0.	0.00	0.	0.00	0.	0.00	0.
WATER	0.00	0.00	0.	0.00	0.	0.00	0.	0.00	0.
LKFFT	0.00	0.00	0.	0.00	0.	0.00	0.	0.00	0.
LTCNR	1.00	0.00	-750.	0.00	-750.	0.00	-750.	0.00	-750.
LTCUL	0.00	0.00	0.	0.00	0.	0.00	0.	0.00	0.
LTWOOD	1.00	1.00	0.	0.00	3643.	1.00	0.	0.00	3850.
LTVIEW	1.00	1.00	0.	1.00	0.	1.00	0.	1.00	0.
LTTOPO	3.00	3.00	0.	3.00	0.	3.00	0.	3.00	0.
ABINF	5.00	5.00	0.	0.00	-7285.	0.00	-12200.	0.00	-7700.
SPCTOT	200.00	200.00	0.	400.00	-200.	200.00	0.	0.00	200.
ERA	1.00	1.00	0.	2.00	-1457.	1.00	0.	2.00	-1540.
SQFTLS	2180.00	2400.00	-3300.	1960.00	3300.	2500.00	-4800.	1820.00	5400.
STORIES	3.00	3.00	0.	3.00	0.	3.00	0.	3.00	0.
EXTER	4.00	4.00	0.	1.00	2186.	2.00	2440.	5.00	-770.
GARAGE	7.00	8.00	-1000.	4.00	3000.	5.00	2000.	7.00	0.
STYLE	8.00	9.00	-850.	4.00	2914.	9.00	-1220.	6.00	1540.
BSMTYP	3.00	3.00	0.	1.00	1457.	2.00	1220.	3.00	0.
BSMTCND	5.00	2.00	-5100.	0.00	-7285.	2.00	-7320.	5.00	0.
APPEARS	1.00	2.00	-2550.	2.00	-2186.	2.00	-3660.	2.00	-2310.
QUALTY	3.00	3.00	0.	5.00	-2914.	5.00	-4880.	3.00	0.
PORCH	0.00	2.00	-1200.	0.00	0.	2.00	-1200.	2.00	-1200.
BDRMS	4.00	4.00	0.	3.00	1500.	5.00	-1500.	4.00	0.
BATHS	1.75	1.50	1000.	1.50	1000.	2.50	-3000.	1.50	1000.
FPLAC	1.00	1.00	0.	1.00	0.	1.00	0.	2.00	-750.
DINRM	4.00	4.00	0.	3.00	1457.	4.00	0.	3.00	1540.
DEN	1.00	0.00	1000.	1.00	0.	0.00	1000.	0.00	1000.
KTCHSCR	1.15	1.50	-123.	4.90	-1313.	6.60	-1907.	0.90	87.
FAMRM	0.00	32.00	-3200.	22.00	-2200.	32.00	-3200.	0.00	0.
RECRM	0.00	0.00	0.	0.00	0.	0.00	0.	0.00	0.
LAUNSCR	1.00	1.00	0.	6.00	-1500.	2.00	-300.	1.00	0.
HTGSCR	6.00	6.00	0.	18.00	-2400.	10.00	-800.	18.00	-2400.
INTCIR	1.00	1.00	0.	1.00	0.	2.00	-1220.	1.00	0.
SPFTSCR	4.00	6.00	-400.	13.00	-1800.	5.00	-200.	-3.00	1400.
ADJUSTED AMOUNT			75002.		69782.		83128.		83811.
SELECTION INDEX			16662.		21172.		21227.		22803.

4 COMPS SELECTED

```
RUN PROPCD
D.B. Filename? NBLOTS
Output Filename? KB:
Enter <start col>, <num col>, <strt ln>, <end ln>
? 1, 132, 1, 60
Format Code Filename? PROPTY.CRD
10 WITSA::KB65  PROPCD+BASIC    RN       16(16)K+15K     47.6(+18.1)
10 WITSA::KB65  PROPCD+BASIC    DB(11R) 16(16)K+15K     48.6(+1.0)
```

Property card for vacant site

1980 PROPERTY CARD - PARCEL 4401126

LAND DATA

PREVIOUS LOT SALE PRICE	0
PREVIOUS SALE DATE	0
GEOCODE	0
NEIGHBORHOOD NUMBER	7
LOT SQ. FT.*	8400
LOT FRONT FT.*	81
LOT DEPTH*	104
LOT SUBDIVIDABLE	No
LOT OVERSIZED	No
LAKE ACCESS EASEMENT	No
SHORE QUALITY	No dominant problem
WATER QUALITY	No dominant problem
LAKE FRONT FT.	0
LOT ON CORNER	No
LOT ON CUL DE SAC	No
INSIDE LOT	No
LOT WOODED	4 to 7 major trees
LOT VIEW	Average view
LOT TOPOGRAPHY	Level contour
ADVERSE INFLUENCE	None

SPECIAL STRUCTURES AND SITE IMPROVEMENTS

TENNIS COURT	?
OUTDOOR POOL	?
PATIO	?
STORAGE SHED	?
BOATHOUSE	?
SEAWALL	?
INDOOR POOL	?
ELEVATOR	?
?	?
?	?
SPECIAL STRUCTURES TOTAL	0
DRIVEWAY	??
NEIGHBORHOOD FOLIAGE	??
LANDSCAPING	??
SCREENING OF BACK	??
SCREENING OF FRONT	??
CURB AND GUTTER	??
SIDEWALK	??

*APPROX. USING VILLAGE MAP

IMPROVEMENT DATA

PREVIOUS SALE PRICE	?
PREVIOUS SALE DATE	?
YEAR BUILT	?
ERA	?
SQ. FT. LIVING SPACE	?
NUMBER OF STORIES	Vacant Lot
BUILDING STYLE	??
ROOF	
EXTERIOR	??
GARAGE	??
BASEMENT TYPE	?
BASEMENT CONDITION	?
QUALITY	??
APPEARANCE TO NEIGHBORS	?
ENCLOSED PORCH	??
NUMBER OF ROOMS	??
NUMBER OF BEDROOMS	??
NUMBER OF BATHROOMS	??.00
HALF BATHS	??
THREE QUARTER BATHS	??
FULL BATHS	??
BATH ON FIRST FLOOR	?
NUMBER OF FIREPLACES	??
LIVING ROOM	??
DINING ROOM	??
DEN/LIBRARY/STUDY	??
FAMILY ROOM	??
KITCHEN SCORE	???.00
SIZE	??
TYPE	??
WORK AREA	??
EATING SPACE	??
RECREATION ROOM	??
LAUNDRY AREA SCORE	?
LOCATION	?
TYPE	?
HEATING SYSTEM SCORE	??
FUEL	??
TYPE	??
ELECTRICAL SERVICE	??
WATER HEATER	??
INTERIOR CIRCULATION	??
SPECIAL FEATURES SCORE	??

LAND	
IMPROVEMENTS	[illegible]
1979 ASSESSMENT	28,500
LAND	26,000
IMPROVEMENTS	
1980 ASSESSMENT	26,000

```
RUS BB.RETRIE

B.B.FILE TO RETRIEVE DATA FROM >MPBLUF
OUTPUT FILE >
B.B.FILE MPBLUF:  540 RECORDS, 94 COLUMNS.
#A
COLUMN >18
<, >, OR = (WHICH ONE) >>
VALUE >0

#A
COLUMN >51
<, >, OR = (WHICH ONE) >>
VALUE >0
#P
NUMBER OF COLUMNS >12
RPT.COL. 1 >1
RPT.COL. 2 >3
RPT.COL. 3 >4
RPT.COL. 4 >10
RPT.COL. 5 >18
RPT.COL. 6 >50
RPT.COL. 7 >62
RPT.COL. 8 >63
RPT.COL. 9 >88
RPT.COL. 10 >89
RPT.COL. 11 >90
RPT.COL. 12 >91
DELIMITER (MAY BE NULL) >
DO YOU WANT ALLIGNED COLUMNS? >Y
POSITION TO BEGIN COLUMN 1 , TXPARNUM>0
POSITION TO BEGIN COLUMN 2 , STRNUM>13
POSITION TO BEGIN COLUMN 3 , STRNAM>21
POSITION TO BEGIN COLUMN 4 , LTSQFT>39
POSITION TO BEGIN COLUMN 5 , LKFFT>49
POSITION TO BEGIN COLUMN 6 , SQFTLS>59
POSITION TO BEGIN COLUMN 7 , BDRMS>69
POSITION TO BEGIN COLUMN 8 , BATHS>77
POSITION TO BEGIN COLUMN 9 , SPFTSCR>85
POSITION TO BEGIN COLUMN 10 , 79ASSESS>95
POSITION TO BEGIN COLUMN 11 , 80ASSESS>105
POSITION TO BEGIN COLUMN 12 , ZCHANGE>115
```

Creation of list using DB/MPBLUF data file -- ordered by parcel number -- lake properties

Col. 18 = >0 lake front ft.

Col 51 = >0 select only parcels with improvements

TXPARNUM	STRNUM	STRNAM	LTSQFT	LKFFT	SQFTLS	BDRMS	BATHS	SPFTSCR	79ASSESS	80ASSESS	ZCHANGE
46011	43	BURROWS RD	13500	90	1960	4	2.25	7	112000	121000	1.08036
4601100	309	LAKEWOOD BLVD	63500	100	4960	5	3.5	16	107500	234000	2.177
4601101	303	LAKEWOOD BLVD	182000	275	5820	6	5.5	21	324000	339000	1.0463
4601104	81	CAMBRIDGE RD	31000	89	3860	5	4	16	159000	175000	1.1006
4601105	69	CAMBRIDGE RD	59000	260	5750	8	6	21	257000	270000	1.0505
4601106	57	CAMBRIDGE RD	21500	100	2680	5	3.25	10	113000	140000	1.23894
4601107	49	CAMBRIDGE RD	17000	80	4240	5	5.25	17	162000	180000	1.11111
4601108	45	CAMBRIDGE RD	18000	80	3000	4	2.25	4	163000	163000	1
4601109	37	CAMBRIDGE RD	20500	80	2480	3	3.25	8	160000	160000	1
4601110	33	CAMBRIDGE RD	29500	77	3000	5	2.5	4	124000	154500	1.22619
4601111	29	CAMBRIDGE RD	24500	82	2640	6	3.5	10	141500	147000	1.03887
4601112	25	CAMBRIDGE CT	24000	91	3000	4	4.25	13	172000	179000	1.0407
4601113	23	CAMBRIDGE CT	13000	87	2620	4	2.5	7	135000	130000	.962963
4601114	17	CAMBRIDGE CT	87500	475	4440	6	6	16	320000	310000	.96875
4601117	11	CAMBRIDGE RD	15500	30	1780	3	1.5	2	95000	105000	1.10526
4601118	9	CAMBRIDGE RD	16000	78	3000	4	2.75	14	131000	146000	1.1145
4601119	5	CAMBRIDGE RD	14500	78	2340	4	2.75	5	120000	120000	1
4601120	3	CAMBRIDGE RD	17000	70	1580	3	1.5	8	105000	110000	1.04762
4601121	35	BAYSIDE DR	20000	72	2460	4	3	9	130000	141500	1.0885
4601123	27	BAYSIDE DR	19500	75	2900	5	3	7	153000	157500	1.02941
46012	51	BURROWS RD	23500	375	1740	2	1.5	12	142000	155000	1.09155
460120.7	1008	BAY DR	26000	100	2860	5	2.5	6	186000	189000	1.01613

```
4601^C
#G

COLUMN TO GROUP >91
```

```
 I
D.B.FILE MBCPY:  560 RECORDS, 96 COLUMNS.
#P
NUMBER OF COLUMNS >4
RPT.COL. 1 >3
RPT.COL. 2 >4
RPT.COL. 3 >2
RPT.COL. 4 >1
DELIMITER (MAY BE NULL) >
DO YOU WANT ALLIGNED COLUMNS? >Y
POSITION TO BEGIN COLUMN 1 , STRNUM>10
POSITION TO BEGIN COLUMN 2 , STRNAM>15
POSITION TO BEGIN COLUMN 3 , PROPOWN>32
POSITION TO BEGIN COLUMN 4 , TXPARNUM>62
```

Creation of list using DB MBCOPY data file which had been sorted by street name -- all properties included

STRNUM	STRNAM	PROPOWN	TXPARNUM
1008	BAY DR	RAEMISCH,BRUCE & GREG	460120.7
8	BAYSIDE DR	BUTCHER,GORDON G	46019
23	BAYSIDE DR	BACH,FRANCIS H	46017.2
35	BAYSIDE DR	WHIFFEN,JOHN P & LORNA D	4601121
27	BAYSIDE DR	WESTON,JOHN C	4601123
3	BAYSIDE DR	HARPER,ALPHA S	46015
4	BAYSIDE DR	BRUDEN,PHILIP M & PATRICIA I	46018
7	BAYSIDE DR	SHELTON,WILLIAM E & CAROL	46016
15	BAYSIDE DR	FISHER,JEROME	46017
44	BURROWS RD	KLIPSCH,RICHARD W & MARCIA	46013.1
22	BURROWS RD	SHERRY,TOBY E	460112
48	BURROWS RD	BLAKE,PHOEBE	46013
51	BURROWS RD	HAIGHT,NANCY K	46012
43	BURROWS RD	ELA,DOROTHY A	46011
837	BUTTERNUT RD	VOLZ,GORDON	4601398
816	BUTTERNUT RD	TRAVERS,THOMAS G & MARY ANN	4601390
811	BUTTERNUT RD	HOBBINS,MEREDITH L	4601395
911	BUTTERNUT RD	LEIDEL,FREDERICK D	4601349
822	BUTTERNUT RD	SIEBRECHT,HARLAN & DIANE	4601389
840	BUTTERNUT RD	ORR,ELEANOR A	4601387
819	BUTTERNUT RD	BARRY,DAVID S & JANE	4601396
831	BUTTERNUT RD	WITTMEYER,ESTHER E	4601397
704	BUTTERNUT RD	HOLMES,GEORGE E	4601404.1
828	BUTTERNUT RD	STRUCK,VERNON C & GERTRUDE M	4601388
806	BUTTERNUT RD	BREDESON,DUANE	4601392
812	BUTTERNUT RD	VACARRO,JAMES A & SLYVIA	4601391
801	BUTTERNUT RD	BLANCKE,ROSEMARIE	4601468.1
902	BUTTERNUT RD	STEVENS,MYRON	4601362
708	BUTTERNUT RD	BLANCHAR,DONALD W	4601404.2
807	BUTTERNUT RD	HOPKINS,J D	4601394
801	BUTTERNUT RD	BLANCKE,ROSEMARIE	4601393
23	CAMBRIDGE CT	STICHA,PENELOPE G	4601413
23	CAMBRIDGE CT	STICHA,EDWARD H	4601113
29	CAMBRIDGE CT	SUHR,FREDERICK C	4601126
17	CAMBRIDGE CT	WHIFFEN,JAMES D & ARLIS E	4601114
25	CAMBRIDGE CT	FINDORFF,JOHN R	4601112
57	CAMBRIDGE RD	MAUTZ,BERNHARD M JR	4601106
33	CAMBRIDGE RD	MCGUIRE,R T	4601110
3	CAMBRIDGE RD	HARPER,JOHN & NANCY	4601120
92	CAMBRIDGE RD	HART,JOHN R	4601142
81	CAMBRIDGE RD	STEUER,JOSEPH T	4601104
109	CAMBRIDGE RD	HOVDE,RAYMOND	4601173
49	CAMBRIDGE RD	WESTON,CARL B	4601107
68	CAMBRIDGE RD	TORMEY,DR. WESTON	4601147
45	CAMBRIDGE RD	DIMOND,WALDO B	4601108
37	CAMBRIDGE RD	WHIFFEN,JOHN	4601109
29	CAMBRIDGE RD	SUHR,FREDERICK C & MARY E	4601111
118	CAMBRIDGE RD	KRUPP,JOSEPH & CYNTHIA J NEL	4601187
121	CAMBRIDGE RD	FRAZIER,ALBERT F JR	4601171
88	CAMBRIDGE RD	NOURSE,DENNIS	4601144
69	CAMBRIDGE RD	VILAS,H J FRANCIS	4601105
11	CAMBRIDGE RD	JENSEN,KAI	4601117
5	CAMBRIDGE RD	LIZON,ROBERT H & DOROTHY I	4601119
58	CAMBRIDGE RD	OSTBY,BYRON C	4601148
50	CAMBRIDGE RD	VARDA,JOHN P	4601150
38	CAMBRIDGE RD	SCHWARZ,FREDERICK C	4601152

CONTEMPORARY REAL ESTATE APPRAISAL SEMINAR

IX. Investment Purchase Simulation

Investment simulation is useful to select most probable use, predict most probable price, or test the market comparison price prediction for fit to the profile of consumer objectives. Each requires a different level of data for application, depending on the type of property and the sophistication of investor-buyers in the market place.

A. Do not confuse gross rent multipliers, net income multipliers, or market capitalization rates as investment simulation techniques. These are market comparison techniques. Sales price is being related to gross rents, net income, or indirectly to investment.

B. The front door and back door approaches may be considered as the most basic method of investment simulation. Examples are provided in Exhibits 1-3; a second example of this method is provided in the demonstration appraisal case.

1. The back door approach is used primarily to determine the most probable use.
2. The front door approach is used to test a most probable price conclusion determined from the market place.
3. The BFCF model was specifically designed as an after tax test of probable market price.

C. Investment simulation requires proof that the most probable buyer group does in fact think in the format presented so that it is first necessary to define the appropriate simulation model and then define the elements as used by most probable buyers as well as the elements appropriate to the issue.

1. Hotel owners may use house profit to determine the price to be paid for the hotel but fair market value for real estate tax appeals must define the income attributable to real estate.
2. There are indirect controls on price, such as debt cover ratio required by lender, land value per unit allowed by FHA or state housing agencies multiplied by typical loan to value ratio, or recent developments in farm appraisal where computers will convert soil productivity and tillable acres to most probable gross income estimate.
3. Income, expenses, and discount rate must be appropriate to the viewpoint in the probable use-probable investor scenario.

D. The income attributable to real estate may require market rents for fair market value or contract rents and a lease management plan for investment value. However many rental structures are tied to business operations which are identified with the real estate but are not attributable to the real estate but rather to entrepreneurial management such as hotel operations, super regional shopping centers, or sand and gravel operations. It is useful to set up generalized rules which suggest the presence of non-real estate income:

EXHIBIT I

LOAN TO COST RATIO APPROACH

SITE ACQUISTION COST 100,000 — 80,000 sq.ft. land

+

CONSTRUCTION BUDGET 960,000 — 32,000 X $30/sq. ft.

+

INDIRECT COST AND DEVELOPMENT FEES 180,000 — fees, interest, etc.

=

TOTAL CAPITAL BUDGET 1,240,000

× 1- LOAN TO COST RATIO .2	LOAN TO COST RATIO .8
=	=
CASH EQUITY REQUIRED 248,000	MORTGAGE LOAN 992,000
×	×
REQUIRED PRE-TAX CASH DISTRIBUTION RATE 6 %	20 yr. 11½% monthly pay → DEBT SERVICE CONSTANT 127968
=	=
CASH THROW OFF REQUIRED FOR EQUITY 14,880 ▷	141,824 ◁ CASH REQUIRED FOR MORTGAGE LENDER 126,944

▽

NET OPERATING INCOME

+

OPERATING EXPENSES 80,000 — $2.50 X 32,000

+

REAL ESTATE TAXES 32,176

+

CASH REPLACEMENTS 1,000

=

EFFECTIVE GROSS REVENUE REQUIRED 255,000 ▷ — $255,000

+

1- VACANCY LOSS 5 % = .95

=

GROSS POTENTIAL REVENUE = $268,421

+

NET LEASABLE UNITS = 27,200 GLA

=

RENT REQUIRED PER UNIT = $9.87/sq. ft. GLA ◁

Default ratio:

$$\frac{\text{Op. Exp.+R.E. Tax+Debt Ser.}}{\text{Gross Rent}}$$

$$\frac{80{,}000 + 32{,}176 + 126{,}944}{268{,}421} = .89$$

Debt cover ratio:

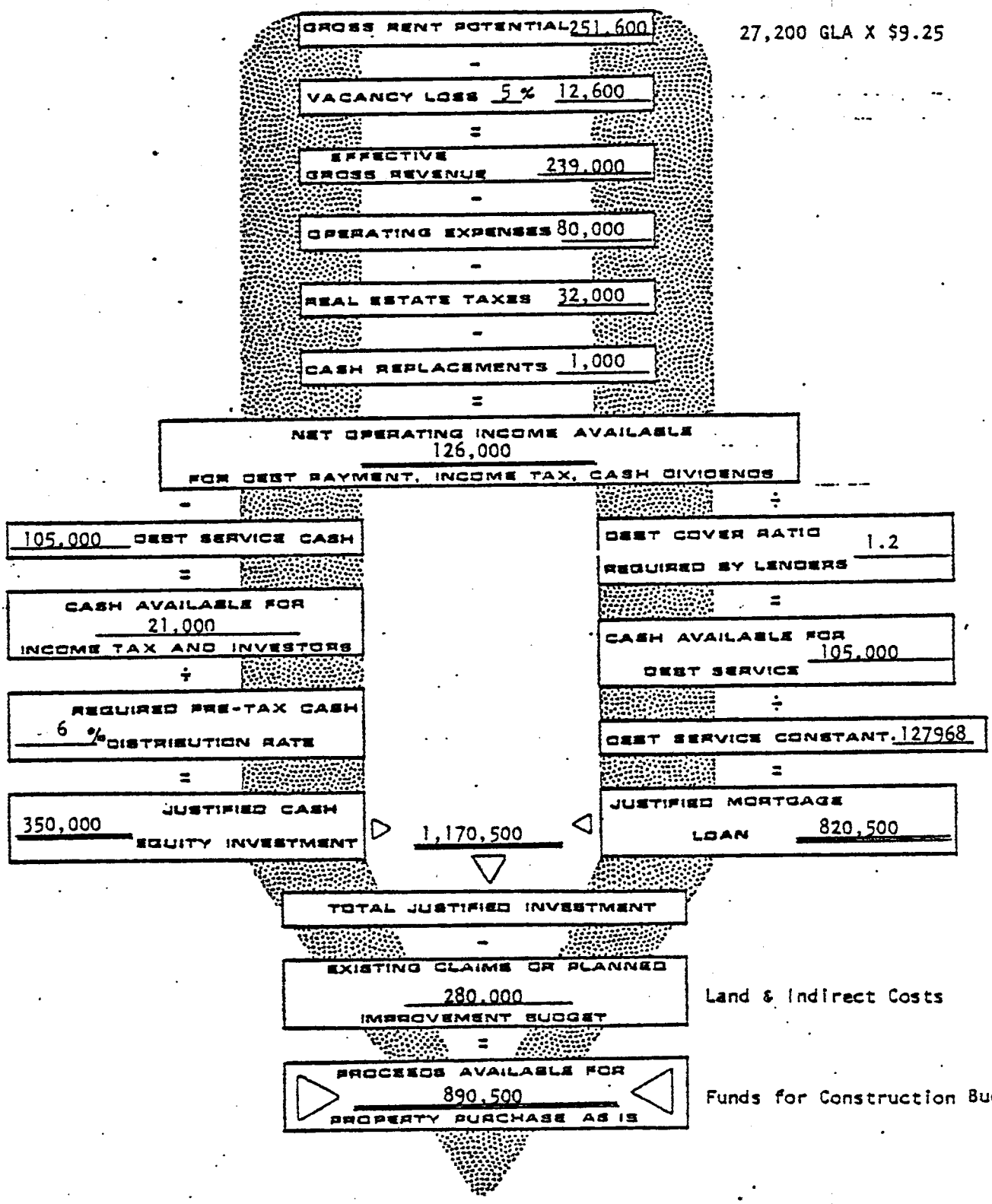
$$\frac{\text{Net Op. Inc.}}{\text{Debt Ser.}}$$

$$\frac{141{,}824}{126{,}944} = 1.11 \text{ (too low)}$$

LENDER'S POINT OF VIEW

EXHIBIT 2

DEBT COVER RATIO APPROACH

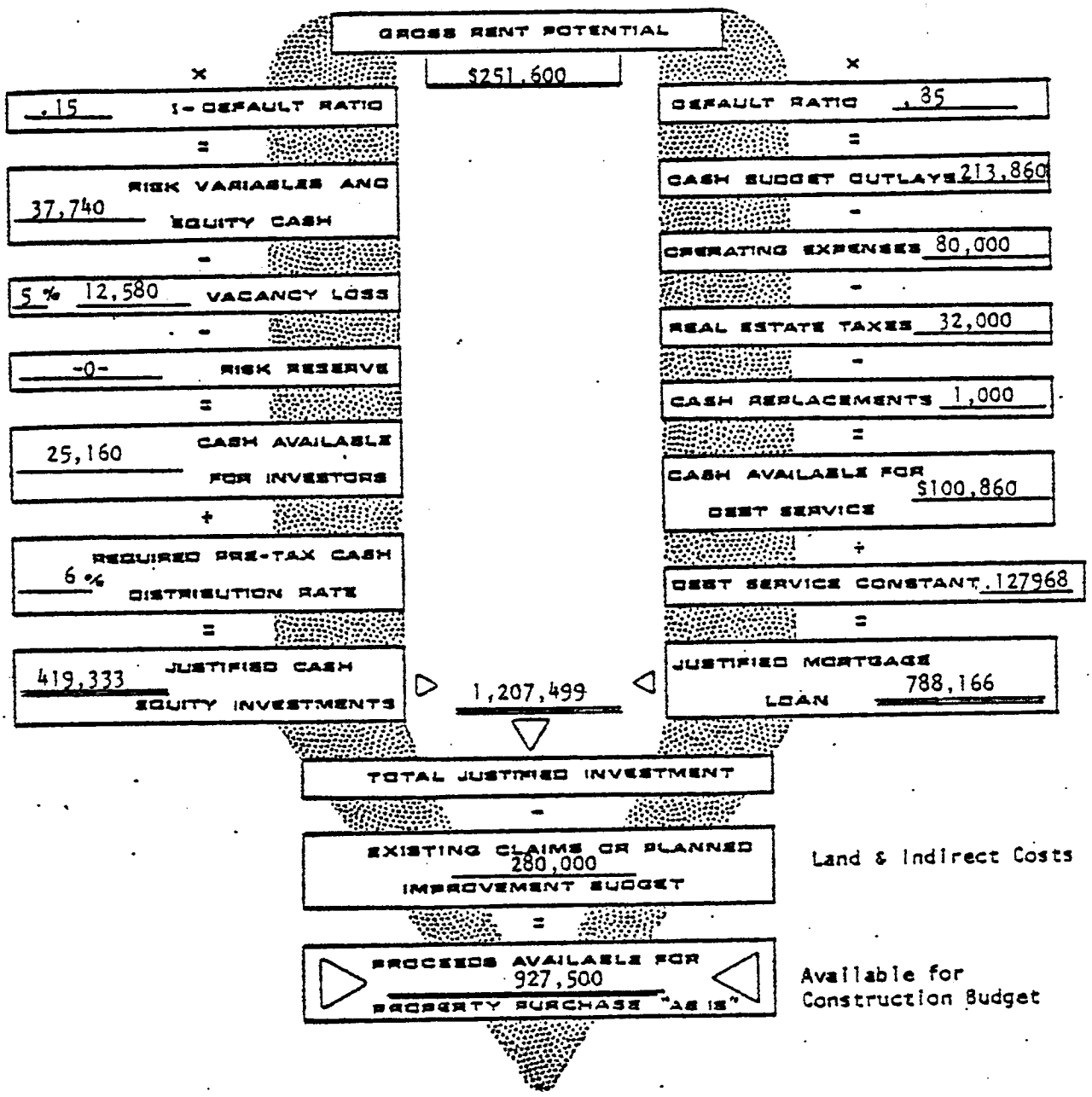


$\frac{890,500}{32,000}$ = $27.80/sq. ft. justified building budget

DEVELOPER'S POINT OF VIEW

EXHIBIT 3

DEFAULT RATIO APPROACH



$37/sq. ft. of gross area for justified bldg. budget

1. Is the income from a retailing, service intensive business or from wholesaling of space (parking ramp vs. ramp operations or John Hancock Observation Deck or floor space rents)?
2. Are entitlements that go with the land point specific or transportable? (permit to build a dam vs. a liquor license)
3. Extraordinary features or services rather than customary (refrigerator stove may be customary but maid service is not)
4. Ancillary rather than integral - such as janitorial service or utilities which could be contracted for from off-site contractors
5. IRS classification as 1250 property or 1231 (real) or 1231 property (personalty).

E. The operating expenses from the history of the building are not necessarily appropriate for a new buyer if the prudent management rule for fair market value or profile of the prospective purchaser for the most probable price may suggest changes in the modus operandi.

1. Currently manually operated elevators may be replaced by automated elevators.
2. Budgets for kilowatt hours and BTU consumption may be modified downward by instituting improved procedure even though the cost per unit may be rising more than most expenses.
3. Accounting systems of many owner occupied buildings are used to hide various items which may be weeded out including salaries to children, rent-a-plant, etc.
4. Sale of a property may trigger reassessment and a whole new real estate tax, which leads to an interesting problem in circular reasoning since income value will be a function of real estate tax and the real estate tax is probably tied to value.
5. It is necessary to read each lease to determine renewal options, the degree to which increased expanses can be passed through, or other concessions which may have been made which will cost money in the future. Ultimately expenses will need to be compared for normal level for that type of building and patterns analyzed.

F. Exhibits 5-6 show the forecast of revenue, expenses, and deductions for non-real estate allocations for a hotel property.

1. Note that the estimate of occupancy is much more difficult than the determination of average rent per room per night.
2. Note that projection for inflation may differ with specific items, such as utilities, labor, and supplies.
3. Note that this appraisal was for a real estate tax appeal so that real estate taxes are not included in expenses.
4. Note that a five year projection is about as far in the future as one cares to go.
5. Except in the case of subdivisions, a short-term projection makes it necessary to have an assumption about real sale price.

G. Discount rates must be chosen that are consistent with the treatment of income and the viewpoint of the appraisal.

Exhibit 4-6

Howard Johnson -
Schedule of Projected Income and Expenses
For the Years Commencing May 1, 1974-78

Period	1974-75	1975-76	1976-77	1977-78	1978-79
Occupancy (163 rooms)	68%	70%	71%	72%	73%
Revenue:					
Available Rooms	59,463	59,400	59,400	59,400	59,400
Occupied Rooms	40,463	41,580	42,174	42,768	43,362
Rate Average[1]	18.89	19.00	19.50	20.00	20.50
Room Revenue	764,450	790,020	822,390	855,360	888,920
Public Room Rental[2]	7,116	7,200	7,200	7,200	7,200
Restaurant Rental[3]	31,500	31,500	31,500	31,500	31,500
Telephone[4]	(14,345)	(14,795)	(15,375)	(15,960)	(16,560)
Other Income[5]	6,113	6,165	6,405	6,650	6,900
Room Service Commissions[6]	1,635	1,850	1,920	1,995	2,070
Total Revenue	796,468	821,940	854,040	886,745	920,030
Operating Expenses:					
Payroll[7]	166,180	164,390	170,808	177,349	184,006
Housekeeping[8]	33,160	33,700	34,200	34,700	35,200
Adm. & Gen.[9]	83,150	85,890	89,250	92,665	96,145
Adv. & Promotion[10]	82,250	82,735	84,704	86,352	88,030
Utilities[11]	66,500	76,030	79,000	82,025	85,100
Repairs & Maintenance[12]	16,550	13,500	13,500	13,500	13,500
Total Operating Expenses	447,790	456,245	471,462	486,591	501,981
House Profit	348,678	365,695	382,578	400,154	418,049
Misc. Interest Income	720	720	720	720	720
Gross Profit	349,398	366,415	383,298	400,874	418,769
Less: Insurance	10,314	9,926	9,926	9,926	9,926
Land Rental[13]	7,680	7,680	7,680	7,680	7,680
Income to Furnishing[14]	64,000	64,000	64,000	64,000	64,000
Income before RE Taxes and Debt Service to Land and Buildings	267,404	284,809	301,692	319,268	337,163

Landmark Research, Inc.

Notes to Exhibit 4-6

1. Rate Average:

   - The average room rate for the year ending April 30, 1975 was $18.89. This was a $.19 increase over the room rate for the period ending April 30, 1974, or about 1%. The increase was due in large part to standardizing room discounts for major clients and for functions requiring a large number of rooms.

2. Public Rooms:

   - For the year ending April 30, 1975 the total dollar volume was $7,116. In comparison, for the year ending December 31, 1974, the total volume was $6,854. Public room rental was not found to be related to the level of occupancy or total revenues, thus it is assumed to be fairly fixed in character.

3. Restaurant Rental:

   - The restaurant is leased to Howard Johnson's for a minimum rent of $31,500, plus 5% of the amount of gross receipts which exceeds 20 times the minimum rental.

4. Telephone:

   - Telephone revenues have averaged 3.4% of room revenues, compared with an industry average of 3.6% (Lodging Industry, by Laventhal, Krekstein, Horwath, and Horwath).
   - Annual equipment lease payment is $12,764.40.
   - Net losses have average 1.8% of revenues. With increased occupancy, losses should not exceed 1.5%, comparable to national averages in Laventhal, Krekstein, Horwath and Horwath.

5. Other Income:

   - Includes valet and laundry, vending sales, sundry sales, and 10% commission on banquet food sales. Vending has averaged 1/2 of 1% of total revenues. The remainder accounts for 1/4 of 1% of total revenues.

6. Room Service Commissions:

   - 2% commission on restaurant bills and room service charged through motel plus 20¢/room service ticket, thus variable with occupancy.

7. Payroll:

   - Actual and target results are 20% of total revenues.

8. Housekeeping:

- Averages have ranged from $33,157 (December 31, 1974 closing) to $33,775 (April 30, 1975 closing), or 4.06% to 4.27% of total revenues. Dollar amounts are fairly constant within a narrower range of occupancies.
- Includes commissions to travel agencies.

9. Administrative and General:

- For the year ending December 31, 1974 the total amount was approximately $82,750, or 10.45% of revenues. The totals are comprised of expenditures the majority of which are variable in nature.
- Includes a 3% fee for management services.

10. Advertising and Promotion:

Schedule

		1975-76
Outdoor Sign		
Sign Co.	$1625.50/mo.	
Advertising Co.	31.50/mo.	
Less: Howard Johnson's share	(275.00/mo.)	
Total	$1377/month X 12 =	$16,524
Promotions		1,500
Publications		7,200
Franchise Fee (5% of gross room receipts plus public room rentals)		39,537
Manager Expense and Promotion		3,475
Miscellaneous Advertising		2,500
Reservation Charge to Howard Johnson		12,000
Total		$82,736

11. Utilities:

- The total is comprised of four elements: electric bulbs, electric current, fuel, and water. The total for the year ending December 31, 1974 was $64,274 or 8.12% of total revenues.
- Interim rate increases by Gas and Electric commenced in June 1975. Electric increased 17.7% while fuel (gas) increased 7.33%. At present, additional proposed increased are being evaluated by the Public Service Commission which would become effective in 1976. Electric increases are proposed to be an additional 14.9% while gas is to increase 4.9%. Beyond 1976, increases are expected to be between 5% and 10% per year for both forms of energy.
- Utilities are not expected to exceed 9.23% of total revenues without a corresponding increase in room rates. Increases in utilities are expected to occur faster than any corresponding increase in room rates, thus it should be some time before the utility expense ratio will stabilize at approximately 9%.
- Year to date totals indicate the projections for 1975-76 are consistent with the above assumptions concerning the room revenue increase lag.

12. Repairs and Maintenance:

- Contracts

Plabocki Sign Repair Contract	$1,060
Westinghouse Elevator Contract	3,336
Pellitteri Wast Removal	738

- Actual for year ending December 31, 1974 was approximately $16,550.
- For the year 1975-76, the year to date totals indicate a decrease in expenditure. Such expenditures should remain fairly constant over the next five years.

13. Land Rent:

Monthly rental charges	$1000
Less: Recovery from leased property	(360)
Net land cost per month	640

14. Furnishings and Other Assets:

Furnishings and Equipment

Furnishings and Equipment	$251,120
Carpeting	60,490
Two Autos	9,480
Signs	9,967
Leasehold Improvements	5,778
Total per Audit	336,835

Factors Attributed to Furnishings

Rate of Return	9.0%
Recapture	10.0%
Personal Property Tax	4.5%

Income Equivalent of Recapture and Return to Equity

336,835 + 336,835(9% X 10 years) = 639,987

639,987 ÷ 10 = 63,999 or 64,000

1. Straight capitalization presumes reserves in expenses for any item replaced before the end of the useful life. The Ellwood discount factor assumes reserves only for items replaced within the protection period.
2. The FHA will provide a discount rate for the 2013 form which integrates the allowable cash on cash return to equity, mortgage insurance and debt service constant at the allowable interest rate.
3. Investment analysis assumes only cash available for distribution is discounted after a decision to internally finance improvements has been reached. Reserves and expense policies must be kept consistent with resale assumptions in the scenario.
4. Viewpoint gets tricky in terms of prudent investor vs. trader vs. institutional investor, all with different opportunity costs of money. Eminent domain appraisal is clearly from the viewpoint of the buyer but net liquidating value is from the viewpoint of the trustees and what he must do to protect himself against charges of waste (prudent man) or delay.

H. Do not rely on overall rates from the market place since these are derivative of particular financing packages or engineered to suit past objectives of the parties

Exhibit 7

MCCLOUD B. HODGES, JR.
REAL ESTATE INVESTMENT, VALUATION AND COUNSELING
410 PINE STREET, SUITE 203
VIENNA, VIRGINIA 22180 703 - 281-5668

October 9, 1980

MEMORANDUM FOR several interested RE appraisers/counselors, trial attorneys and academicians

Enclosed is an expanded and revised list of OARs and assessment/sales ratios which are self explanatory. This list is not a pure (random) sample by statistical rules. On one hand it is much larger than a sample need be, as it covers nearly 70% of all known property sales for the areas described, in the price range above about one-half million dollars, excluding MF apartment properties sold for condo conversion. On the other hand, it is possible that the 30% of investors-purchasers who, thus far, have not cooperated in furnishing data for this survey, may have shown slightly lower average OARs and A/S ratios.

This study, consuming several hundred man-hours in visits to offices of investors and inspections of their properties, was initiated more than two years ago primarily to obtain market data for rebutting several ad valorem tax valuations of properties owned by my clients. But it is now evident, from the specific results of the study and from its sheer coverage, that it ought to serve as the basis for a new educational manuscript advocating modern methods of valuing investment classed property. The "OAR" capitalization method, regardless of how the OAR is derived or constructed, is quite crude, often erroneous, and therefore useless as applied to higher priced property valuations. It was made even more useless during the last year in which many institutional sources of long term, level payment mortgage loans have withdrawn or have changed their lending practices in order to share in part of the inflation-produced cash flow through additional interest and/or future capital gain.

The second enclosure, a revised edition of "Effects of Financing on Price and Value", should explain the main reasons for the variances in OARs shown in the first enclosure: financing and tax shelter. The other reasons for OAR variances are the buyers' anticipated future changes in net income and resale/exchange values. Some properties are expected to produce large profits, or their only profits, in the distant future, while others will be nominally profitable only in the short range. This reduces the "NOI" either as a first year or a "stablized" figure to a position of invalidity in the valuation appraisal practice.

Enclosures

McCLOUD B. HODGES, JR.
REAL ESTATE INVESTMENT, VALUATION AND COUNSELING
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Sample of investment-classed property resales in the Virginia and Maryland suburbs of Washington, D. C., showing the wide variations in the overall capitalization rate (OAR) and in the assessment/sale price ratio. For any property which was not sold for cash above new, market-rate mortgage financing, the price shown is the cash-equivalent price, being the sum of the equity cash and the balances of the mortgage loans after discounting the loans to their estimated cash liquidable values at dates of property sales.

The OAR is based upon the cash-equivalent sales price and the net operating income (NOI) produced in the first year following the date of sale. If a full year had not passed by the date of any datum sale analysis, the NOI is that which was budgeted by the new owners. The assessment/sale price ratio is based upon 100% market value assessment and the cash equivalent sales price. Supporting data for all property sales are contained in a separate, confidential listing with corresponding identification (ID) numbers.

ID	Year of Sale	Kind of Property and Location	Cash Equiv. Price	OAR	Assmt/ Sale
100	1977	Garden apts., Fairfax Co.	440,000	.1298	118%
105	1980	Office Bldg., Fairfax Co.	467,074	.0856	118%
107	1978	Elevator apts., Montgomery Co.	474,389	.0942	148%
110	1978	Elevator Apts., Arlington Co.	559,800	.0857	71%
113	1978	Office Bldg., Montgomery Co.	585,126	.1324	133%
115	1977	Garden apts., Fairfax Co.	589,000	.1091	94%
120	1980	Office Bldg., Fairfax Co.	590,255	.0860	158%
125	1980	Office Bldg., Fairfax Co.	638,975	.1291	229%
130	1976	Garden Apts., Alexandria City	730,058	.1232	77%
132	1978	Office Bldg., Montgomery Co.	746,833	.0818	97%
135	1978	Garden Apts., Fairfax Co.	802,900	.1396	104%
140	1980	Garden Apts., Fairfax Co.	836,857	.0874	96%
141	1977	Garden Apts, Prince Georges Co.	850,000	.1012	87%
142	1978	Office Bld., Montgomery Co.	950,000	.0759	89%
143	1978	Elevator Apts., Prince Georges Co	994,808	.1151	101%
144	1978	Office Bldg., Montgomery Co.	1,010,865	.0868	59%
145	1980	Office Bldg., Fairfax Co.	1,120,209	.0957	112%
147	1979	Garden Apts., Prince Georges Co.	1,159,172	.1267	102%
150	1977	Office Bldg., Fairfax Co.	1,245,200	.1124	106%
155	1976	Garden Apts., Arlington Co.	1,395,000	.1019	103%

ID	Year of Sale	Kind of Property and Location	Cash Equiv. Price	OAR	Assmt/ Sale
157	1977	Shopping Cntr., Montgomery Co.	1,461,500	.0879	98%
160	1976	Garden Apts., Alexandria City	1,577,300	.1065	108%
162	1980	Garden Apts., Ann Arundel Co.	1,638,000	.1416	90%
163	1979	Garden Apts., Prince Georges Co.	1,716,505	.1290	101%
164	1979	Garden Apts., Prince Georges Co.	1,732,107	.1827	144%
166	1978	Office Bldg., Arlington Co.	1,751,835	.0645	90%
168	1976	Garden Apts., Fairfax Co.	1,879,250	.1248	123%
170	1976	Garden Apts., Fairfax Co.	1,960,835	.1140	114%
175	1975	Elevator Apts., Fairfax Co.	1,984,500	.1321	156%
180	1978	Elevator Apts., Falls Church	2,000,000	.0821	91%
184*	1977	Garden Apts., Montgomery Co.	2,113,500	.1192	115%
185	1980	Shopping Center, Fairfax Co.	2,144,706	.1081	125%
190	1975	Elevator Apts., Alexandria City	2,153,606	.0831	137%
195	1978	Garden Apts., Fairfax Co.	2,324,000	.1224	106%
200	1975	Garden Apts., Fairfax Co.	2,375,000	.0950	115%
205	1977	Elevator Apts., Arlington Co.	2,400,000	.0975	66%
210	1980	Office Bldg., Fairfax Co.	2,510,492	.1290	133%
225	1978	Garden Apts., Fairfax Co.	2,569,500	.1068	85%
300	1975	Elevator Apts., Alexandria City	2,558,669	.1234	93%
301**	1979	Garden Apts., Prince Georges Co.	2,960,244	N/A	131%
303	1975	Garden Apts., Alexandria City	2,789,190	.0775	122%
304	1978	Garden Apts., Prince Georges Co.	3,090,639	Neg.	95%
305	1979	Office Bldg., Montgomery Co.	3,100,000	.1221	78%
306	1976	Garden Apts., Fairfax Co.	3,117,300	.1056	165%
307	1977	Garden Apts., Prince Georges Co.	3,125,000	.1070	102%
310	1979	Garden Apts., Alexandria City	3,214,928	.1110	110%
315	1980	Shopping Center, Fairfax Co.	3,765,341	.1093	132%
317*	1977	Garden Apts., Prince Georges Co.	4,000,000	.0810	86%
318	1978	Garden Apts., Prince Georges Co.	4,100,000	.1439	97%
319	1979	Garden Apts., Prince Georges Co.	4,128,173	.0962	98%
320	1975	Garden Apts., Fairfax Co.	4,190,700	.1359	155%
323	1977	Elevator Apts., Montgomery Co.	4,796,255	.0790	154%

* Financed under FHA 223(f) rehabilitation and refinancing program.

** Nominal price shown. No information available on terms of sale or NOI in first year of ownership.

ID	Year of Sale	Kind of Property and Location	Cash Equiv. Price	OAR	Assmt/ Sale
325	1980	Garden Apts., Fairfax Co.	4,871,282	.1316	124%
328*	1978	Garden Apts., Prince Georges Co	5,426,138	.0921	116%
330	1980	Office Bldg Complex, Fairfax Co	5,529,031	.1071	110%
335	1979	Garden Apts., Alexandria City	6,296,800	.1345	113%
340	1980	Office Bldg., Fairfax Co	6,593,267	.1121	154%
344	1979	Garden Apts., Prince Georges Co	6,726,848	.1457	88%
345	1976	Garden Apts., Fairfax Co.	6,735,450	.1161	102%
352	1979	Elevator Apts., Montgomery Co.	8,189,554	Neg.	208%
354	1979	Office Building, Montgomery Co	8,850,000	.0862	120%
355	1979	Office Bldg., Arlington Co.	8,857,450	.0593	128%
360	1978	Office Bldg., Montgomery Co.	10,729,000	.1025	80%
365	1976	Elevator Apts., Fairfax Co.	12,819,124	.0936	99%
375	1978	Office Bldg., Fairfax Co.	14,957,334	.0881	89%
385	1979	Elev. & Gdn. Apts., Prince Geo.	18,866,955	.0674	72%

* Financed under FHA 223(f) rehabilitation and refinancing program.

EFFECT OF FINANCING ON PRICE AND VALUE

WHAT CAN A 4-PERSON PARTNERSHIP PAY FOR A 10-YR. OLD, GOOD QUALITY APARTMENT COMPLEX UNDER 3 DIFFERENT SETS OF FINANCING TERMS ?

FACTORS CONSTANT IN ALL 3 ANALYSES:

- NET INCOME BEFORE R.E. TAXES STARTS AT $350,000 AND RISES ON A 4% SLOPE IN ACTUAL INFLATION $.
- R.E. TAX RATE = .0121; ASSESSED VALUE = SALE PRICE.
- DEPRECIABLE ASSETS = 85% OF PRICE, 25 YR. LIFE, 125% S/L D.B.
- NO MAJOR CAPITAL REPLACEMENTS IN NEXT TEN YEARS.
- RESALE PRICE 10 YEARS LATER = $3,662,000, CASH-TO-SELLERS
- OWNERS WILL REMAIN IN 50% FED. & 5.75% STATE INCOME TAX BRACKET DURING ALL 10 YEARS OF OWNERSHIP.
- OWNERS WANT 18% EQUITY YIELD (I.R.R.) AFTER INCOME TAX.
- 1978 TAX ACT GOVERNS INCOME, GAIN & ADD-ON TAXES.

VARIABLE FACTOR: FINANCING

1ST MTGE	$1,479,786 Asmd. @7½%, 17 More Yrs.	New $1,850,000 @ 13%, 30 Yr. Amort., Ballooning 10 Yrs.	None
2ND MTGE	$1,500,000 DPMM @6% Int. Only, 10 Yrs.	None	
PRICE/VALUE	$ 3 537 073	$ 2 527 098	$ 1 435 046
EQUITY CASH	557 287	677 098	1 435 046
AFTER-TAX CASH FLOW IN YEAR 1	$ 85 460	$ 88 738	$189 003
2	86 244	92 103	193 988
3	87 085	95 555	199 054
4	87 960	99 081	204 196
5	88 849	102 664	209 411
6	89 730	106 289	214 695
7	93 655	112 136	221 293
8	97 373	117 879	227 890
9	100 867	123 503	234 488
10	912 938	1297 106	2905 060
"O.A.R."	.0869	.1264	.2318

"Overall Rate" = Year 1 Net Income After R.E. Taxes ÷ Total Sale Price/Value

10/7/80