

JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

V. INDUSTRY SEMINARS AND SPEECHES - SHORT TERM

A. Appraisal Organizations

13. 1983

- a. "Real Estate Feasibility Analysis Seminar", sponsored by Houston Chapter 33 AIREA, February 18-19, 1983

SEMINAR REAL ESTATE FEASIBILITY ANALYSIS

Presented By:

**Professor James A. Graaskamp, CRE, SREA
University of Wisconsin, School of Business**

For

**Houston Chapter 33
American Institute of Real Estate Appraisers
Houston Grand Hotel**

February 18-19, 1983

REAL ESTATE FEASIBILITY SEMINAR

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I. Basic Concepts and Definitions

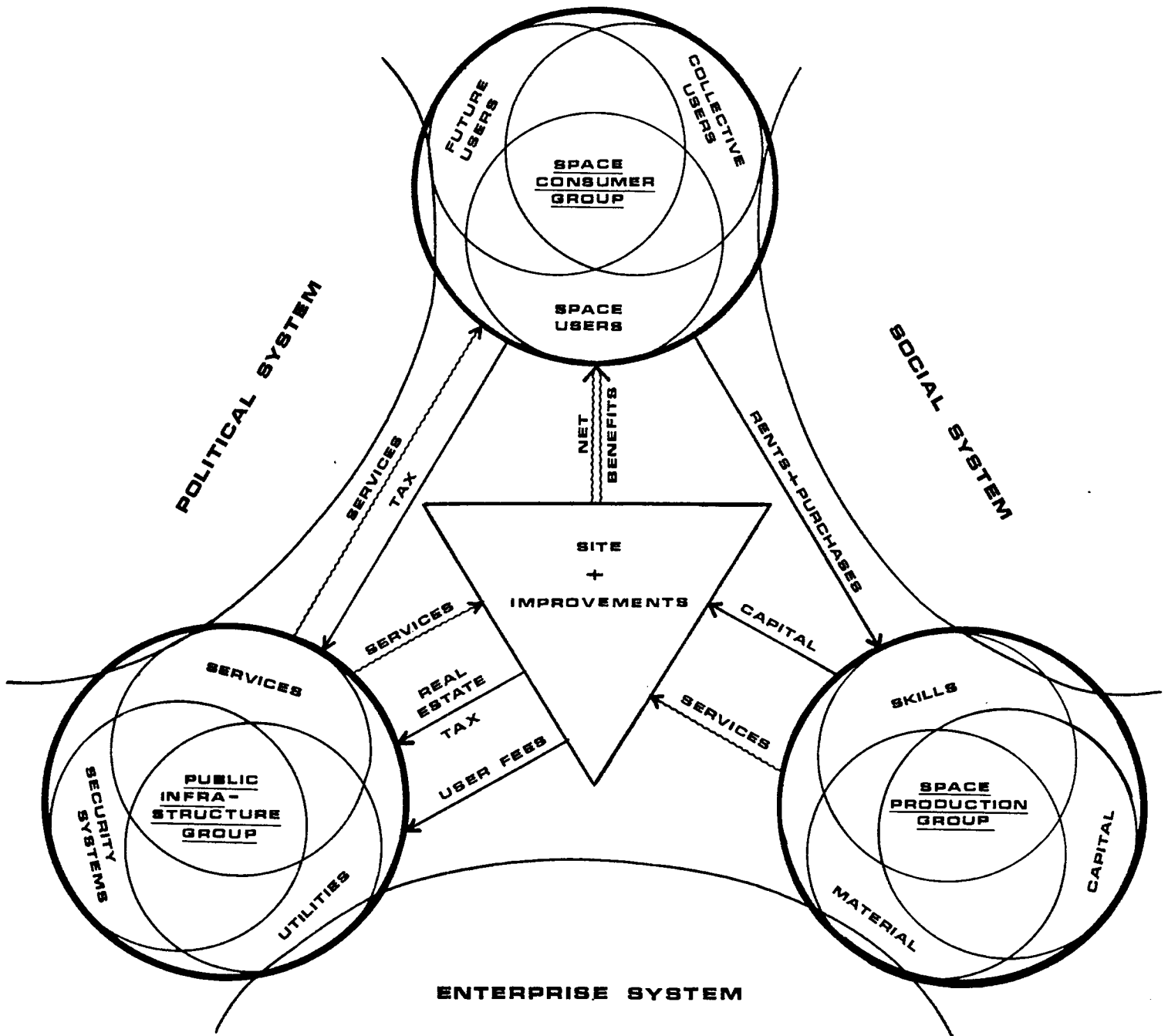
- A. Real estate is a tangible product - defined as artificially delineated space with a fourth dimension of time referenced to a fixed point on the face of the earth.
 - 1. Real estate is a space-time unit, room per night, apartment per month, square foot per year, tennis court hours, or a condominium 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. Money is an energy transfer system.
 - 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 reduce outlays and to increase receipts and include:
 - 1. Physical attributes
 - 2. Legal-political attributes
 - 3. Linkage attributes
 - 4. Dynamic attributes
 - 5. Environmental 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 by 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.
- J. An enterprise is any organized undertaking, and a real estate problem or project always begins from the viewpoint of some enterprise relative to its environment.
1. The systems engineer sees the eventual form of an enterprise, in terms of both its configuration and behavior, as representing a negotiated consensus between two general sources of power--the power of the environment to dictate form and behavior of the organization on one hand and the power of the organization to decide for itself what its characteristics and behavior will be on the other.
 2. The system engineer uses "power of the environment" as a dynamic alternative to the static implications of context and adds dynamic element of behavior to the elective responses of the form giver.

II. Financial Management and Risk Management

Investment is a real estate enterprise as mortgage lender or equity investor is simply buying a set of financial assumptions about the interaction of the project to its context, of the firm to its environment. Real estate analysis is to control the variance between expectations and realizations, between proforma prospects and historical balance sheets and profit and loss statements.

A. Analysis is risk management, control of variance.

B. There are essentially two types of risk exposures:

1. Static risks (uncontrollable, or external events) are those which can only cause a loss due to surprise upset of a plan.
2. Dynamic risks (partially controllable internal events) can produce profit or loss and are best controlled by the finesse of management execution of a plan.

C. Risk evaluation or comparison grows out of the function of risk management for an enterprise.

1. Risk management has two objectives:

- a. First priority - conservation of existing enterprise assets despite surprise events.
- b. Second priority - realization of budgeted expectations despite surprise events.

2. The process of risk management involves systematic and continuous:

- a. Identification of significant exposures to loss
- b. Estimation of potential loss frequency and severity
- c. Identification of alternative methods to avoid loss
- d. Selection of a risk management method
- e. Monitoring execution of risk management plan

3. The risk management process is both a philosophy of inquiry or analysis and a checklist of management concern, which is attempting to answer systematically "WHAT IF...?" questions, to anticipate surprise and to provide for a response or adjustment in advance of the contingency.

D. Identification of significant exposures to loss can begin by using standard business documents as reminders, such as:

1. Review of balance sheet accounts
2. Review of profit and loss statement accounts
3. Review of business organization or function chart
4. Review of elements of financial feasibility analysis

E. Significant has to do with potential loss frequency, loss severity, and degree of uncertainty.

1. Very frequent and minor become expense accounts
2. Less frequent but predicatable and major become reserves or budget allowances.

3. Infrequent, uncertain but very severe become issues of risk management.
 4. A 50/50 probability is the most uncertain outcome.
- F. The alternative methods of avoiding loss which everyone sub-consciously uses include:
1. Eliminate risk exposure
 2. Reduce frequency or severity of loss (diversification or mortgage loan closing process)
 3. Combine risks to increase predictability (reserves for expense)
 4. Shift risk by contract (subcontracts or escalator clauses)
 5. Shift risk by combination (diversification) by contract (insurance)
 6. Limit maximum loss (corporate shell or limited partnership)
 7. Hedging (sale and leaseback, options, contingent sales)
- G. Risk management concepts leads to understanding of the true essence of a mortgage contract and an equity commitment
1. A mortgage is a classic straddle in two markets for the borrower; it is a call on a space-time commodity in a rising market and a put to the lender in a falling market. It is also a straddle in the money market. The mortgage contract is a risk management agreement to provide coverage of static risks and an imperfect straddle on the dynamic risks. Protection for the lender is revenue to the borrower, negative incentives, and salvage.
 2. Equity ownership is the degree to which you can divert cash flow and maintain control within an acceptable level of risk avoidance.

III. Feasibility Analysis

- A. The concept of feasibility is elusive and much abused. Combining the systems concept of enterprise under conditions of uncertainty and the physical design concept of fit leads to the following definition:
- "A real estate project is 'feasible' when the real estate analyst determines that there is a reasonable likelihood of satisfying explicit objectives when a selected course of action is tested for fit to a context of specific constraints and limited resources.
- B. The problem of defining objectives and measuring success depends almost entirely on correctly defining the problem and values of the client.

The majority of enterprises are not solely interested in rate of return on investment or lowest cost.

Most decisions must fit a combination of success 'measures' with each decision maker weighting the overall importance of each item differently. Examples of such measures would be:

1. A check list of physical attributes
2. A check list of critical linkage attributes
3. A check list of dynamic behavioral attributes

4. A check list of attributes or services (given weighted point scores)
 5. Financial ratios measuring risk, such as cash break-even, rate of capital recapture, loan ratios or sensitivity to specified contingencies
 6. Probability distributions of alternative outcomes and standard error of the estimate
 7. Psychological gratifications
 8. Specified legal attributes
 9. Measures of impact on environment
- C. The definition also implies uncertainty - a reasonable likelihood of succeeding. That statement is deliberately short of a statistical probability statement. However, analytical judgments can produce some verbal probability statements (that horse is a nag while the black stallion is an odds on favorite) so that the measures of success should lend themselves to explicit recognition of the degree of uncertainty with which success might be achieved.
- D. The general theory of the management process for any enterprise can be converted to real estate semantics for feasibility:
- | | |
|-------------------------------------|--|
| Values, objectives, policy | Strategic format |
| Search for opportunity alternatives | Market trend analysis |
| Selection of an opportunity | Merchandising target with monopoly character |
| Program to capture opportunity | Legal-political constraints |
| | Ethical-aesthetic constraints |
| | Physical-technical constraints |
| | Financial constraints |
| Construction of program | Project development |
| Operation of program | Property management |
| Monitoring and feedback | Real estate research |
- E. The analyst must also identify and measure or define the limited resources of the client in terms of personnel, expertise, available cash resources, and the time line of expectations and commitment since time available to achieve the solution is often a critical resource and constraint relative to alternative choices.
- F. These basic elements and definitions then lead to a correct title for the report required. Most feasibility reports go wrong on the title page because the analyst did not clearly understand to which elements of context and form his report was to be addressed. Seldom does the analyst do a complete feasibility study as a single report on his own. Components may be provided by others and the sequence of sets may differ in each case depending on how the consultant understands the client. Therefore, a report should be entitled as one of the following:
1. Strategy study: selection of objectives, tactics, and decision criteria.
 2. Market analysis: economic base studies or other related aggregate data review.
 3. Merchandising studies: consumer surveys, competitive property analysis, marketability evaluation, etc.
 4. Legal studies: opinion on potential legal constraints, model contracts or forms of organization, and political briefs.

H. Feasibility analysis is a sub-topic within the generally expanding literature of problem solving. Any Counselor or problem solver is urged to read the following:

1. The Art of Problem Solving, Russell L. Ackoff, John Wiley & Sons, New York, 1978
2. The Complete Problem Solver, John R. Hayes, The Franklin Institute Press, Philadelphia, 1981
3. Strategic Planning in Emerging Companies, Steven C. Brandt, Addison-Wesley Publishing Company, 1981

1. Ackoff subdivides any problem into five types of components:

1. The decision maker--the person or persons faced with the problem, as a group or individual.
2. The controllable variables--those aspects of the problem situation the decision maker can control.
3. The uncontrolled variables--those aspects of the problem situation the decision maker cannot control but those which, together with the controlled variables can effect the outcome of his choice. The uncontrolled variables may be quantitative or qualitative, but together they define the problem environment, in the language of Ackoff, or the context in the language of Christopher Alexander.
4. Constraints imposed from within or without on the values of the controlled and uncontrolled variables. For example, the consumer places a limit on how much he is willing to pay for rent, although rent levels themselves are often set by cost factors beyond his control.
5. The possible outcomes produced jointly by the decision makers choice and the uncontrolled variable.

Ackoff further refines problem solving:

A problem is said to be solved when the decision maker selects those values of the controlled variables which maximize the value of the outcome; that is, when he has optimized. If he selects values of the controlled variables that do not maximize the value of the outcome but produce an outcome that is good enough, he has resolved the problem by satisficing. There is a third possibility: he may dissolve the problem. This is accomplished by changing his values so that the choices available are no longer meaningful. For example, the problem of selecting a new car may be dissolved by deciding that the use of public transportation is better than driving oneself. It may also be dissolved by moving to within walking distance from work so that driving is no longer required. We use "solving" loosely to cover all three alternatives.

Ackoff also points that many problem solvers are reactive responding to the immediate irritation which leads us "to walk into the future facing the past - we move away from, rather than toward something. This often results in unforeseen consequences that are more distasteful than the deficiencies removed." Recall D.D.T. Problem should be proactive by specifying the ideal outcome and looking for ways to move in that direction. "The chances of overlooking relevant consequences are minimized when we formulate a problem in terms of approaching ideals

... focusing on an ideal reveals the relationships between things that can be done in the future and tends to make us feel simultaneously with sets of interacting threats and opportunities, to treat them as a whole, as a system of problems.

From that it is important to learn that:

Planning is dealing with sets of interacting problems

Problem solving is finding alternative routes to approach an ideal solution

Feasibility analysis is testing a specified course of action for its likelihood of fulfilling the ideal

An appraisal is a fictitious feasibility study in which human behavior is assumed to be normative

- J. The Hayes text is a rich collection of problem solving and decision making methods. Hayes believes that problems should be represented with doodles, flow charts, simple diagrams, or other graphics. He sees the problem solving process as correctly representing the goal, correctly specifying the initial state of affairs, correctly specifying the differences between the current state of affairs and the goal, the restrictions in moving toward the goal and operators available to advance affairs to the goal. He defines decision technique for conditions of certainty, uncertainty, or competitive conflict. Hayes develops for strategic viewpoints:
1. The minimax strategy which assumes that "nature is against us" so that the object is to choose the strategy that will minimize the disaster, although it has the unfortunate property that may also eliminate the best possible outcome.
 2. The maxi-max strategy chooses the course of action which could provide the best of the best possible outcomes, but it does not defend you against the possibility of enjoying the worst possible outcome.
 3. The Hurwitz strategy allows a compromise between the pessimistic and the very optimistic strategies above while allowing one to modify the probabilities with a factor for the level of optimism or pessimism of the decision maker.
 4. Minimizing maximum regret strategy may be most significant for real estate investors as in phasing the project or buying standby credit at an exorbitant rate.
- K. Among the strategies discussed by Brandt are those involving in the search for competitive advantage. These are technical superiority, the premium for quality, the ploy of convenient inventory and service, the ploy of price and particularly in real estate the strategy of pace.
- L. Finally in urging you to move toward the literature of problem solving and decision theory, Ackhoff pointed out that educators generally produce only competence, communicativeness, and concern while the characteristics that makes for outstanding managers are courage and creativity. Hayes goes on to define creativity as "A special kind of problem solving, that is the act of solving an ill-defined problem. Ill defined problems are those which require problem solvers to contribute to the definition of the problem from their own resources."

IV. What is the Problem as Perceived by the Client?

The original problem as perceived by the client is seldom the real issue of feasibility analysis that will need to be examined by the analyst.

- A. The appraiser is conditioned to having the client specify the function of the appraisal, such as for fire insurance or eminent domain and then having the client's attorney or the court jurisdiction define the definition of fair market value, the question which the appraiser then begins to answer.
- B. However, the client may ask for an appraisal when he needs a feasibility study. He may ask what he should pay for a piece of property before he has determined that his strategic needs are best met by purchase rather than by leasing by avoiding ownership of additional space altogether (by sub-contracting certain functions of others by the way in which he purchases services and supplies).
 - 1. Since everyone is an expert on real estate the client will probably presume that a certain procedure will be followed.
 - 2. The architect will presume that the real estate expert will show the financial implications of a final design, when in fact the real estate expert should first assist in the pre architectural program of design objectives.
 - 3. Almost every client will overlook some of the basic issues because of the natural bias of his position.
 - 4. The consultant must begin by attempting to discover what is taken for granted and that search will continue to condition his relationship with his client.
- C. When the client first contacts the consultant the question provided by the client will conceal some implicit client preferences and assumptions. The consultant will need to interview his client by asking him explicitly about:
 - 1. His concept as to the "essence" of his business
 - 2. His preferred method of meeting entrepreneurial risk
 - 3. His preferred method of personnel compensation
 - 4. His style of value decision trade-offs between qualitative and quantitative issues.
 - 5. His perception of his risk position and his risk utility "curve."
 - 6. His personal non-business objective.
 - 7. His reasons for being involved with real estate (a simple question revealing in most cases tremendous naivete and lack of indepth preparation by the client).
- D. The client is often skeptical of the ability of the consultant to contribute anything new since he may regard the consultant as one 'who tells him the time by reading the client's own watch.'

1. Moreover, he may be using the consultant to double check another source of information and therefore expects a consultant to begin from scratch as a way of confirming the original source.
2. Nevertheless, the feasibility analyst must eventually extract from the client, preferably in writing, an agreement as to what the stated objectives of the study are and the input which will be provided by others than the analyst.
3. This step will probably only be accomplished after the consultant has come to a better understanding of the real problems faced by the client.

V. What is the Problem as Understood by the Consultant?

The problem as perceived by the client almost always must be converted into a sequence of problems as understood by the consultant. The perceived question of "How much should I pay for the land," may come to be understood as "Why do I need to invest in land"?

- A. The feasibility analyst should be the devil's disciple for in order to define what needs doing, he must first discover what has been done, what assumptions have been made, and whether those who made the assumptions knew what they were doing.
 1. A useful technique is to reverse the question or the alternative in order to have better perspective on the assumed area of solution. If asked to organize a non-profit partnership to create a counseling facility, approach the problem as how to dissolve a partnership of non-profit contributors. If asked the feasibility of restaurant expansion, investigate the possibility of reducing the size of the kitchen instead.
 2. To gain perspective, one creative think system (Synectics) recommends conversion of the familiar to the strange and the strange to the familiar by analogy. Thus any multi-user real estate becomes analagous to a retailing model while any single user real estate decision becomes an industrial location model.
 3. Statement of the problem as a "compressed conflict" by describing it in two words which appear to be mutually exclusive or contradictory may be useful in understanding a problem. For example, customer control as "channeled freedom" or land use control has "fixed state of flux" can then lead to discovery of more remote analogies. Analogies serve as reiliminary models suggesting opportunity areas for a solution.

- B. In search of the real problem as opposed to the initial problem perceived by the client, the analyst should retreat to some basic classification and task identification check-lists. First there are only three alternative feasibility situations:
 1. A site or a project owned by a specific client in search of a market.
 2. An identified market segment or use in search of the site and project to be provided by a specific client.
 3. A specific client desiring to search for an opportunity in real estate enterprise.
- C. Next the analyst must know the viewpoint of the audience for his report, written or oral, because the elements considered important by a mortgage lender may be significantly different than those of a general partner or those of a limited partner or those of a large tenant.
- D. Since there are so many facets to the context of a real estate project and measurement of its success, not to mention the assumptions on which the determination of feasibility depends, it is important to have the client agree on what elements of feasibility are to be provided by which expert or analyst.
 1. Analyst should be an expert on experts
 2. It is useful to include a standard checklist of components with a letter or proposal as that checklist later becomes the really significant portion of the statement of limiting conditions (hold harmless agreements) which are part of the final report.
A sample of one such checklist is provided in Exhibit 2.
- E. With a review of which elements are to be provided by which experts it then becomes possible to assist the client in choosing which report title or titles are properly the responsibility of the real estate analyst. (See 1.360)
- F. With definition of the report expected and the information to be provided by others, the analyst can prepare a budget and a schedule for staging the report so that he and the client can begin to establish priorities both in time and money available for research to define the feasibility assignment on which the analyst is to proceed.
- G. Despite the necessity of defining the assignment in light of the clients problem, it is necessary for the analyst to recall that he is to remain an independent analyst an advocate of his own opinion:

EXHIBIT 2 Feasibility Assignment and Accountability Worksheet
 XYZ Appraisal Company
 xxx Street Anywhere U.S.A.

Name of Client _____ Date _____

Assignment Description _____			
Feasibility Input	Provided by	Approved by	Sequence and date available
1. Definition of questions and strategic objectives			
2. Definition of success criterion			
3. Ranking of criteria by priority			
4. Definition of specific site			
5. Definition of market opportunity			
6. Space user profile			
7. Space consumer preference survey			
8. Space product definition			
9. Aggregate and market forecast and absorption rate			
10. Merchandising capture rate by product mix			
11. Legal and political constraints assumed for user and investor			
12. Site constraints and site development plan			
13. Architectural constraints and plans			
14. Environmental impact assumptions			
15. School district impact assumption			
16. Municipal infrastructure and revenue impact			
17. Aesthetic and social impact			
18. Land cost assumptions			
19. Improvement cost assumptions			
20. Indirect cost assumptions			
21. Operational cash-flow budget assumptions			
22. Income tax liability assumptions			
23. Financing and refinancing assumption			
24. Other			

Accepted by Client _____
 (Date)

Worksheet suggested in part by John Rasmussen, Feasibility Research Group,
 210 Michigan Theater Building, Ann Arbor, Michigan 48108.

VI. Property analysis to determine alternative uses

- A. Elements of analysis are approached as an inductive research problem moving progressively from on-site facts to external conditions. The appraiser needs to examine the following elements in sequence: (See Exhibit 3)
 - 1. Physical attributes of site and improvement.
 - 2. Legal-political constraints on alternative uses.
 - 3. Basic financial parameters of alternative uses.
 - 4. Existence of effective market demand for remaining alternatives.
 - 5. Comparative risk and return evaluation of alternatives for which there may be demand.
- B. A physical analysis of inventory of site and improvement attributes should include the five following subsets:
 - 1. Physical attributes (static) include site dimensions, soils, geology, topography, site improvements and capacity, and on-site flora and fauna.
 - 2. Legal-political attributes include not only zoning and subdividing codes at the local level but also relevant federal, state, or private controls which might direct or restrict site use. As appropriate, the appraiser should note administrative patterns relevant to application of law to use of subject site.

3. Linkage attributes identify relationships of site to networks, populations or activities centers that might generate potential demand for the subject property.
 4. Dynamic attributes are those attributes which exist in the mind of others in terms of status, anxiety, beauty, imagery, sentimentality or other perceptions which attach to the subject property to the degree that these are economically significant.
 5. Environmental attributes of the site concern with off-site natural systems of which the subject property may be a part such as riparian rights, pollution down wind, storm water runoff, etc. Even the shadow cast by the structure off-site may become significant in the era of solar energy. Impacts on others may be perceptual (i.e. dynamic) or fiscal (legal-political) as well.
- C. Static site attributes which begin to narrow the potential market to alternative uses should include both the facts and their implications for productive use in such topic areas as:
1. Size, shape, and lot area
 2. Topography, soils, geology, slope stability, bearing capacity, septic suitability, potential for subsidence, etc.
 3. Water table, wells, streams, ponds, storm water swales, shoreland edges, and bulkhead lines, flood plain designations, etc.
 4. Flora and fauna which enhance marketability or which might cause environmental impact litigation
 5. Concealed utility easements, old foundations, etc.
 6. Existing on-site utility services and capacity
 7. Access points to public thoroughfares or private right-of-ways
 8. Site improvements such as paving, retaining walls, pedestrian paths, culverts, etc.
 9. Landmark attributes or historical site features
- D. An inventory of legal attributes should move from specific site controls imposed by local zoning ordinances to state and federal regulations as well as private controls which may intervene. The appraiser has an obligation to report foreseeable attitudes or future legislation which will affect administration of these ordinances relative to future uses of the site.
1. All alternative setback lines and building envelope interpretations relative to site
 2. Legal uses under applicable zoning and critical limitations of each relative to FAR, bulk, parking requirements, DU count, etc.

3. Special zoning options which may be available at owners option such as rezoning, downzoning, PUD zoning, etc.
4. Special controls imposed by extra-territorial zoning, tax conservancy commitments, subdivision process, urban renewal districts, tax increment districts, etc.
5. Special state or federal constraints under airport approach zone districts, harbor commissions, coastal zones, Office of Environmental Protection Agency, etc.
6. Public attitudes of public commissions for sewer, water, highway, planning, or building administration
7. Public and planning premises of community master plans relative to sprawl, restoration, redevelopment, and other land use priorities as these attitudes will affect administration of the law
8. Existing or impending legislation relative to such matters as:
 - a. Septic tank installation
 - b. Water quality for ground water, water recharge areas, storm water runoff, salt water encroachment, etc.
 - c. Air quality standards relative to use, HVAC performance, micro-climate interference, etc.
 - d. Conservation of environmental edges, prime agricultural land, wet lands
9. Define physical system sub-systems
 - a. Foundation system
 - b. Structural system
 - c. Floor system
 - d. Ceiling system
 - e. Roof system
 - f. Exterior wall system
 - g. Interior wall system
 - h. Horizontal circulation system (privacy, interaction, congestion, confusion)
 - i. Vertical circulation system (handicapped code, cost, economy of scale and height)
10. Delineation of functional systems
 - a. Bay spaces
 - b. Module unit
 - c. Ceiling heights
 - d. Visual codes - such as mass, entrance, claustrophobic signals
11. Public controls on possible alternative special uses such as restaurants, places of public assembly, schools, etc.

Static Attributes

Physical
Legal
Linkage
Environmental

Building Envelope
& Orientation of
Technical Alternatives

Market Attributes

General Market
Patterns

Micro Markets

Neighborhood
Expectations

Future Markets

Possible Alternative
Use Scenarios

* Consumer profiles, price
range, and product description

* Alternative revenue justified
capital budgets and source
structure

Solvency Tests

Justified Private Capital
- Required Capital
Investment
+ Public Capital Subsidy
= Net Private Capital
Exposure

Acceptable Alternative Uses

Infrastructure Tests

Environmental Tolerance

Public Service Capacity

Fiscal Impact

Public Priorities and
Subsidy

Financially Solvent
Most Fitting Use

* Preliminary environmental,
political, and fiscal
constraints

Investment Tests

Investor Limitations
& Objectives

Acceptable Risk Sensitivity
Parameters

Most Probable Use of Site
In Search of Use

* After-tax cash flows,
financial ratios, and
qualitative screens

SITE IN SEARCH OF A USE

EXHIBIT 3

12/1/78

FEASIBILITY OF ALTERNATIVE USES

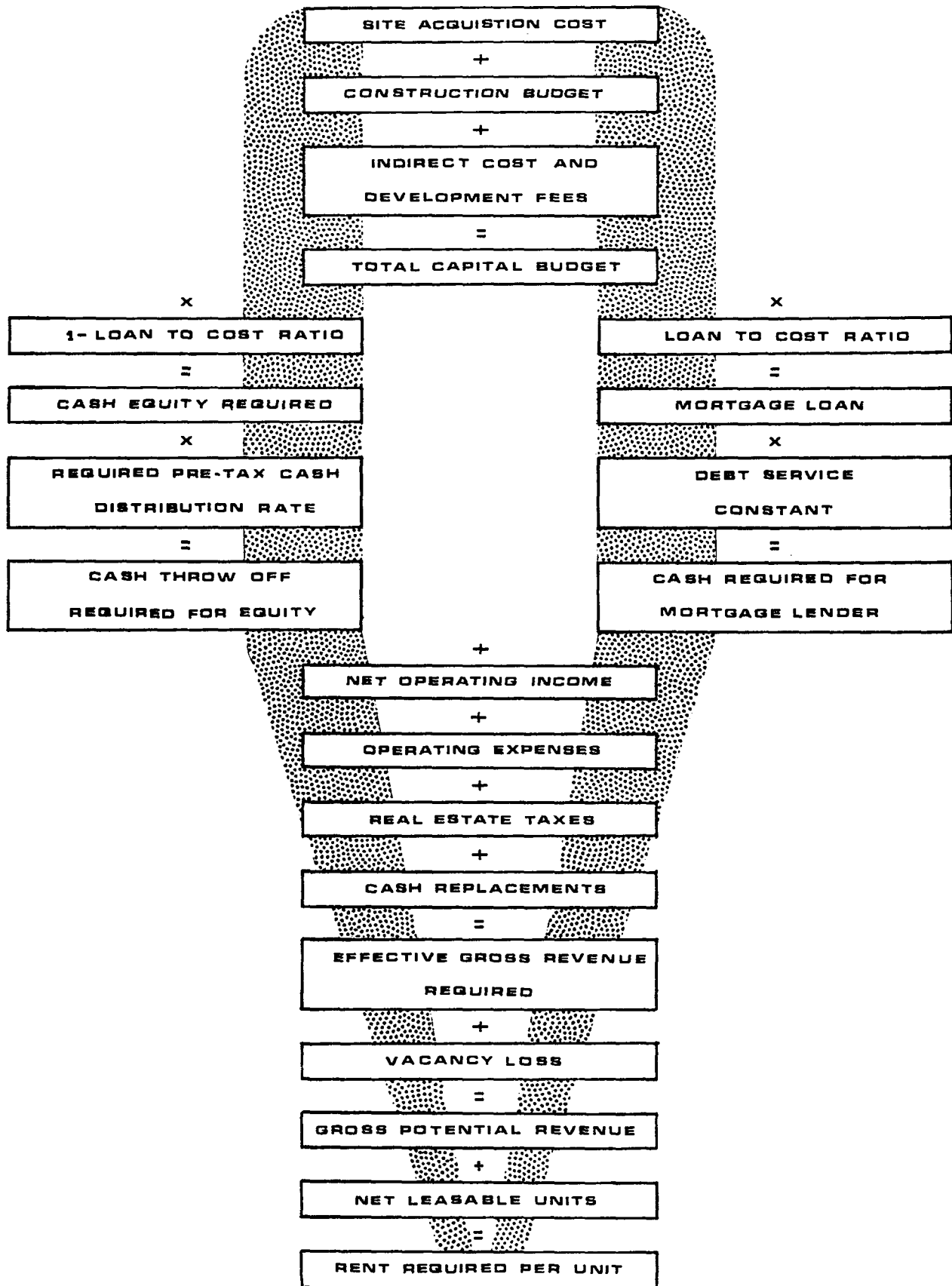
	<u>Scenario 1</u>	<u>Scenario 2</u>	<u>Scenario 3</u>	<u>Scenario 4</u>	<u>Scenario 5</u>	<u>Scenario 6</u>
<u>Feasibility Factor</u>	<u>Return to Former Use</u>	<u>Purchase by Welfare Agency</u>	<u>Conversion to Class B/C Office</u>	<u>Conversion to Apartments with Office on 1st Floor</u>	<u>Conversion to Apartments with Existing Bar</u>	<u>Demolition and Sale of Site</u>
Market Demand Risks	Demand very elastic relative to price unless room rates subsidized by welfare agencies	Welfare agencies lack capital resources to purchase and remodel facilities, given the absence of government funding	Office market becoming more price sensitive; would not accept neighborhood and lack of parking unless rents were lower than necessary to support remodeling	Strong demand for spacious two bedroom units in CBD area	Though there is a strong demand for affordable downtown housing, consumer survey shows tenant reluctance to live above noisy/potentially malodorous bar-restaurant	Soft market for vacant sites which cannot be assembled into larger plot-tage; parking revenues from 20 spaces inadequate to carry clearance costs
Legal/Political Acceptability	Inconsistent with long term City goals for Olin Place	Mixed acceptability as interim use as housing for transient males by some groups; favored by welfare advocates and disfavored by local residents	Neighborhood resistance to increased demand for street parking	Preferred use, given need for downtown housing and political statements by alderpersons for reduction of bar business in residential neighborhoods	Preferred use for housing is compromised by existing bar management agreement	Inconsistent with constituency favoring landmark designation
Technical Construction Problems and Capital Cost Risks	Failure to repair within one year may have jeopardized grandfathered non-conforming building conditions. Otherwise this use has lowest construction risks of Scenarios 1 through 5	Capital costs of renovation to state standards excessive for short term use	Variances needed for parking requirement of 1 stall per 300 SF to 1 stall per 2,500 SF of office space	Spacious apartments with views provide favorable rent/cost per SF ratio--housing code creates more remodeling risk than commercial code	Apartment mix cheapened by retaining existing bar operation--smaller units require more plumbing and bring less favorable rent/cost per SF ratio	None
Relative Investment Power Based Upon Revenue Generation Potential	\$192,765	\$120,380	\$80,331	\$103,220	(\$10,513)	\$13,778
Special Income Tax Advantages or Public Subsidies Available	None	None	Rehabilitation tax credit of 20% for older commercial building conversion plus possible industrial bond financing	Possible historic landmark status for 25% rehabilitation tax credit plus tax incremental financing (TIF) assistance	Possible historic landmark status for 25% rehabilitation tax credit. TIF less likely because increase in tax is smaller	None
Real Estate Tax Consequences to City	Modest increase in assessed value	Loss of \$194,300 tax base with tax-exempt agency as owner	Real estate tax base would be multiplied approximately 3 times the present assessment	Real estate tax base would be multiplied approximately 3 1/2 times the present assessment	Real estate tax base would be multiplied approximately 2 1/2 times the present assessment	Loss of approximately \$140,000 of tax base

- F. Analysis of the static and legal/political attributes of site and structure should be summarized in terms of competitive advantages and disadvantages of plausible alternative uses for costs, pricing, marketing, and political administration of compatibility.
 - 1. Some static attributes may help identify most probable user types (Ex. special display window sizes may be suitable for antique or art display) while attributes will make certain uses unlikely (Ex. floor load limitations of fire proofing weights required of places of public assembly).
 - 2. Some static or legal attributes can provide monopoly advantages because suitability is unique relative to lands all around it, because of exemption from certain regulations, or existing approvals of development plans, including licenses for dredging, building code variances, etc.
 - 3. Some attributes lead to higher cost which the front door approach may reveal as leading to excessive rents or prices.
- G. Linkage attributes relate to subject property to both networks of supporting infra-structure which contributes toward effective demand for the property as economic space time or the supply and demand impact of related activity centers which may interact with the subject property.
 - 1. Analysis moves best from the borders of the subject property outward to expanding zones of potential demand or competitive supply.
 - 2. Utility services are network linkages in terms of:
 - a. Limitations on sewage processing, storm water retention or runoff constraints
 - b. Community energy supplies, priorities, and capacity
 - c. Water processing and chemistry as applicable
 - d. Possible dependency on resources such as wild game and fish, underutilized labor pools, fire department coverage zones, etc.
 - 3. Street, sidewalk, rail, and public transit systems including access points, traffic department controls, etc.
 - 4. Relationship of subject site to contiguous properties, balance of city block, and neighborhood layout pattern.
 - 5. Relationship of subject site to generators of potential needs and uses for the subject site, such as:
 - a. Employment centers
 - b. School system alternatives
 - c. Retail services
 - d. Complimentary existing nearby uses
 - e. Recreational services
 - f. Health care systems
 - g. Security systems
 - h. Waste disposal services

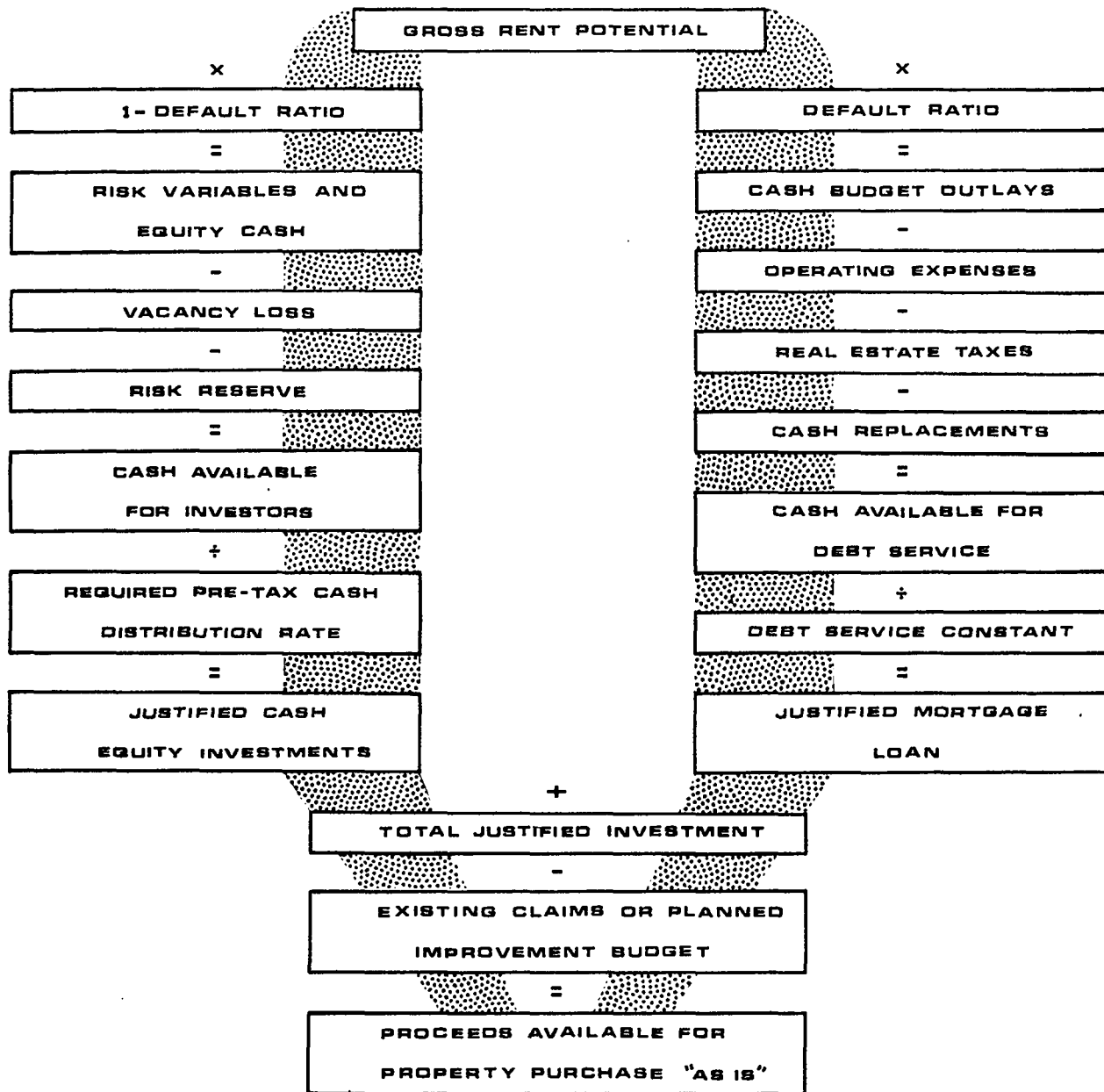
6. Neighborhood demographics (population, age, employment, income, etc.)
 7. Relationship to competitive alternative and estimate of supply of available space, competitive ranking, and exposure of subject site to competitive interception of potential demand.
- H. Dynamic attributes are those characteristics which exist in the minds of the beholder, which are mental or emotional responses which a site or project stimulates and which affect decision making behavior.
1. Image conditioning of the approach zone
 2. Visual factors in terms of prominence of the site, views from the site, potential for controlled sight lines, etc.
 3. Prestige and status
 4. Anxiety factors of access and security
 5. Noise as a function of traffic count (FHA noise pollution manual)
 6. Prevailing air currents and airborne pollution (phosphate plants or sulphite paper mills, for example).
 7. Political images established for a site by the public positions of local politicians or vested interest groups.
 8. Historical community reputation and values attached to the project site and structures.
- I. Environmental attributes of the site recognize that the real estate product today must respond not only to the needs of the individual consumer in the marketplace but to the collective community of consumers represented by the community political administrators. Land use must be sold to both 'markets.' If the proposal won't sell at City Hall, there will be little opportunity to market the product individually. Pre-architectural programs must not only consider physical factors of environmental impact off-site, but in addition:
1. Silhouette of social impact in terms of public perceptions of:
 - a. Displacement of existing residents and neighborhood units
 - b. Contribution to social integration or mobility barriers
 - c. Contribution to land use heterogeneity
 - d. Contribution to regional and community master plans
 2. Fiscal impact on the community where appropriate:
 - a. Direct impact on real estate tax revenues
 - b. Direct impact on other governmental revenue
 - c. Direct impact on incremental government
 - d. Secondary contributions to local government revenues
 - e. Secondary cost burdens created for local communities
 3. Social factors in the ethical environment;

- a. Impact on supply/demand equilibrium
 - b. Stamina of project sponsor in the face of public pressure
 - c. Vulnerability of potential project buyers to secondary political pressures and counter attack
 - d. Potential uses requiring unique political resources or private/public consortiums
- J. For the experienced real estate analyst systematic narrowing of alternative uses from study of the attributes leads to a limited series of alternatives which can then be given a final screening in terms of preliminary financial analysis and effective demand. The analyst may review these attributes to identify alternative uses by emphasizing one or more of the following angles of inquiry.
- 1. Does any site of site attributes suggest a special space/time - to money/time configuration? For example, a high floor area ratio but little parking may suggest a building with a low person occupancy, such as a switchboard building or luxury apartment with minimum number of dwelling units.
 - 2. What attributes of the subject site provide monopoly characteristics or are inferior to alternative sites?
 - 3. What patterns in adjacent or competitive structure represent a trend to which the subject property should adapt?
 - 4. What patterns of use is revealed by transactions in similar properties on nearby locations?
- K. A program of use or reuse can be called a scenario and may be suggested by physical characteristics of the property, contiguous property trends and conditions, or known supply shortages with which the appraiser is familiar.
- L. Ranking of these scenarios for economic power is accomplished by means of the Back Door approach, i.e., the revenue justified investment for the property, as is alternative worksheets for this approach using the default point and the debt cover ratio as the critical conversion of income to capital are provided in Exhibits 4-10.
- M. Economic power has to be qualified in terms of marketing risks and capital budgeting risks of each of the alternative uses before alternative uses can be ranked in summary fashion as in Exhibit 6.
- 1. Note that Exhibit 6 integrates the basic elements of preliminary feasibility analysis.
 - 2. Remaining discussion will emphasize market risk which is the primary cause of misleading appraisal conclusions

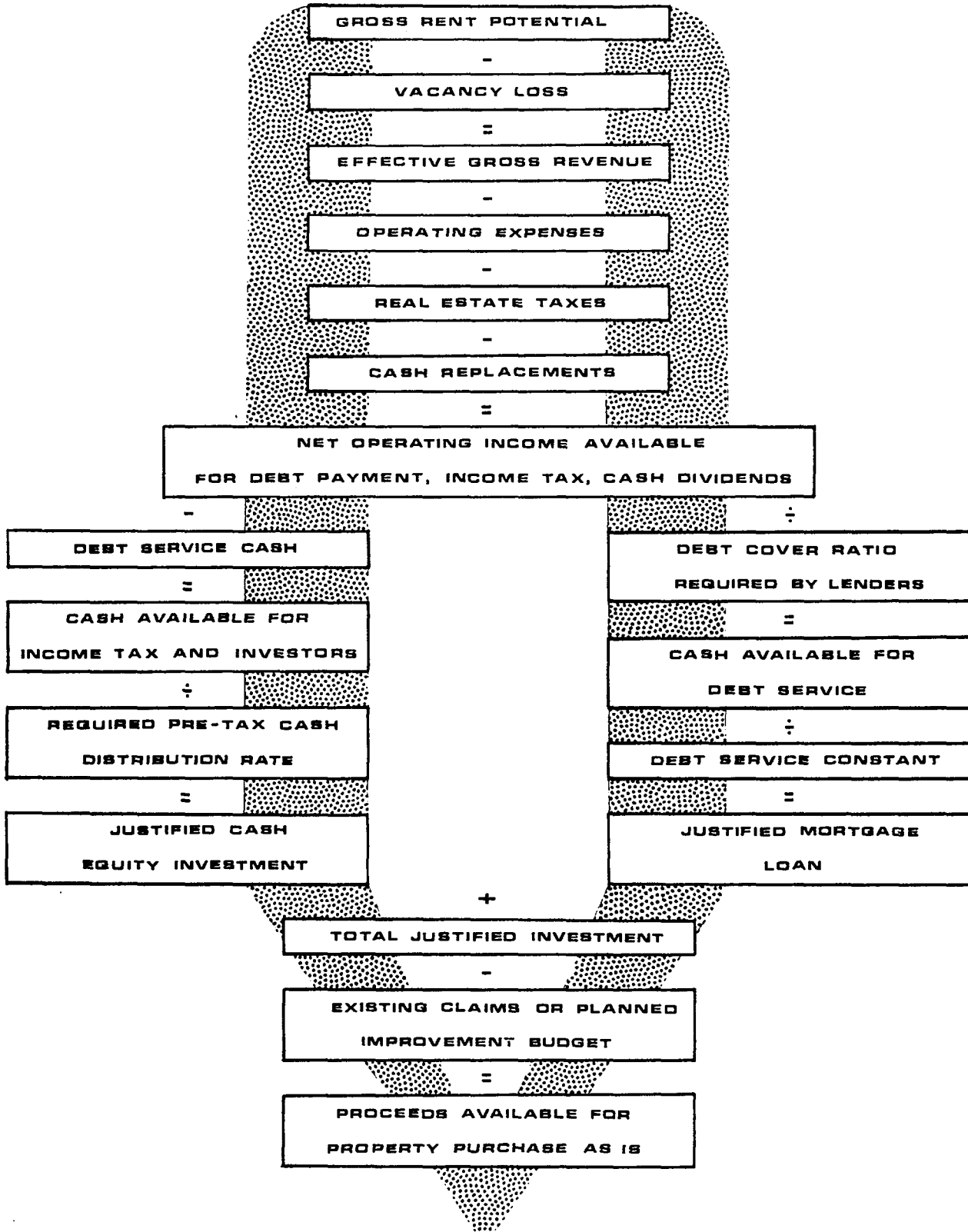
REVENUE REQUIRED BY CAPITAL BUDGET LOAN TO COST RATIO APPROACH



REVENUE JUSTIFIED CAPITAL BUDGET DEFAULT RATIO APPROACH



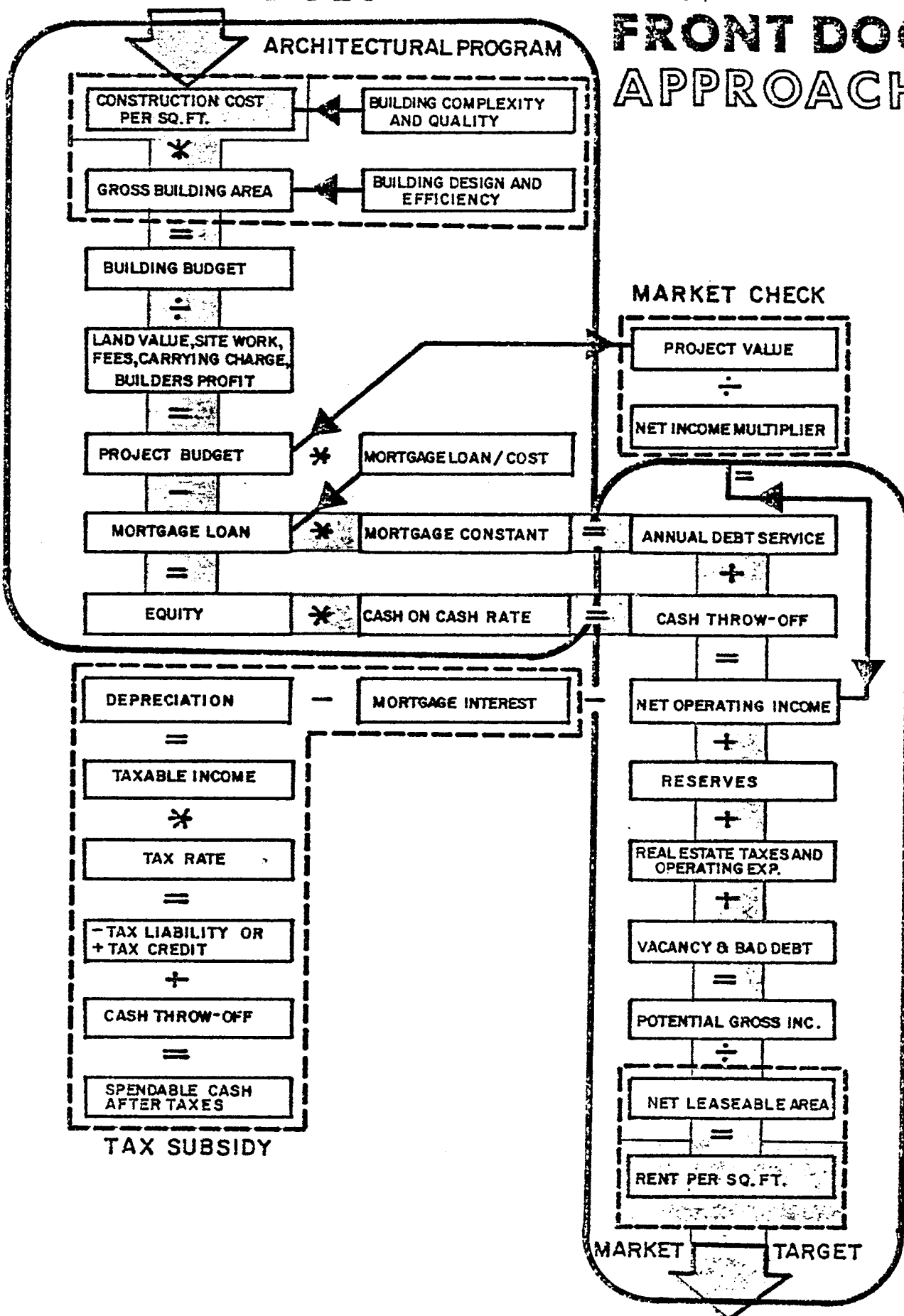
REVENUE JUSTIFIED CAPITAL BUDGET DEBT COVER RATIO APPROACH



CAPITAL BUDGET

Exhibit 7

FRONT DOOR APPROACH



OPERATING BUDGET

Exhibit 8
FRONT DOOR - MINIMUM RENT REQUIRED

\$20/sq. ft.

X

20,000 sq. ft.

=

\$400,000

÷

\$200,000

=

\$600,000

-

(80% LTV)

\$480,000	X	(.1025 constant)	=	\$49,200
-----------	---	------------------	---	----------

+

\$120,000	X	.07	=	\$8,400
-----------	---	-----	---	---------

=

\$57,600

+

\$2,400

+

\$50,000

+

\$6,000

=

\$116,000

90%
NLA

÷

\$18,000

=

\$6.44-6.50/sq. ft.

Default ratio:

$$\frac{\text{Debt service} + \text{expenses}}{\text{Gross rent}}$$

$$\frac{\$49,200 + 50,000}{\$116,000} = 86\%$$

Payback before taxes:

$$\frac{\text{Equity cash investment}}{\text{Equity dividend}}$$

$$\frac{120,000}{8,400} = 14+ \text{ yrs.}$$

Debt cover ratio:

$$\frac{\text{Net operating income}^*}{\text{Debt service}}$$

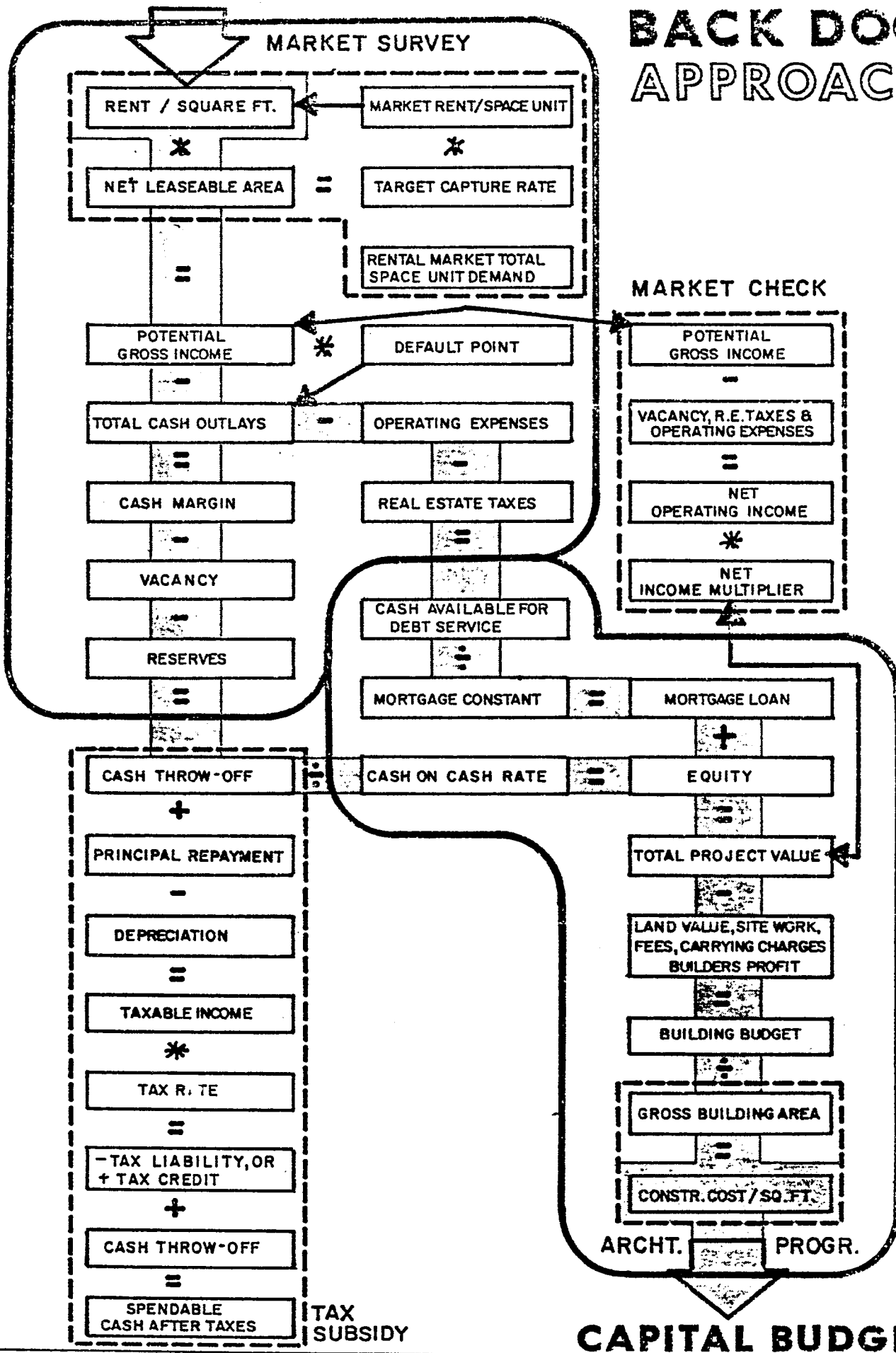
$$\frac{60,000}{49,200} = 1.22$$

* NOI = gross rent - vacancy - expenses

OPERATING BUDGET

Exhibit 9

BACK DOOR APPROACH



\$6.75/sq. ft.			
X			
\$18,000			
=			
\$121,500	.80		
-			
\$97,200	\$26,000		
=	-		
\$24,300	\$24,000		
-	=		
\$6,000			
-			
\$2,400	\$47,200		
=	÷		
	.1025	=	\$460,500
		+	
\$15,900	.12	=	\$132,500
		=	
			\$592,500
			-
			\$200,000
			=
			\$392,500
			÷
			\$20,000
			=
			\$19.625 or
			19.5/sq.ft.

Default ratio =

$$\frac{47,200 + 50,000}{121,500} = .80$$

Payback ratio:

$$\frac{132,500}{15,900} = 8.33 \text{ yrs.}$$

Debt cover ratio:

$$\frac{65,500}{47,200} = 1.39$$

X. Introduction to Financial Analysis

Review of property attributes and identification of alternative uses which have potential for effective demand typically narrows the alternative for further consideration to those where potential revenue can support reasonable capital budget parameters. Initial financial analysis does not involve present value theory but rather progressive refinement of ratios and risk characteristics for consumers, producers, and the public infrastructure. Analysis which follows is concerned with only the private production and finance side of the equation.

A. There are two points of departure for analysis:

1. Given the capital budget, it is necessary to convert to the required rents necessary to support the project and cash return objectives. Specified budgets converted to required rents is often called the front door approach.
2. Given market rent per unit, it is necessary to establish the maximum justified capital budget. Targeted market rents converted to justified investment can be allocated to various development budgets and is called the back door approach.

B. Refer to the front door approach exhibit and example, oversimplified for purposes of illustration.

C. Refer to the back door approach exhibit and example

1. The back door approach is the preferred response to the market although lenders typically enter the scene after the capital budget is set.
 2. Note that the back door approach can be driven by a default ratio or a debt cover ratio which are dynamic risk concepts rather than loan to value ratio which is a static regulatory concept.
- C. The back door approach is the essence of the FHA 2013 form, state housing finance approach to projects where revenue is defined by the FMR rules, or even purchase of an existing property subject to long term rents, renovation, etc.
1. It is possible to detail the back door approach for any type of project by simply setting up tabs in a flow chart fashion as suggested by the example for a 236 project.
 2. Another way to view the flow charts is in the nature of two basic programmable formulas:

$$\text{Gross rent} = \frac{\text{TRC} * \text{LTV} * \text{MC} + (1 - \text{LTV} * \text{CC})}{1 - (\text{ER} + \text{RET} + \text{VR} + \text{RR})}$$

$$\text{Justified project budget} = \frac{\text{GR}}{\frac{\text{LTV} * \text{MC} + (1 - \text{LTV} * \text{CC})}{1 - (\text{ER} + \text{RET} + \text{VR} + \text{RR})}}$$

Where:

TRC = Total replacement cost; LTV = loan to value ratio

MC = mortgage constant; CC = Cash on cash for equity cash

ER = expense ratio; RET = real estate tax ratio

VR = Vacancy ratio; RR = reserve ratio

C. Preliminary financial analysis begins with a variety of ratios which are intended to reveal the tolerance of the project for variance in key assumptions, the ability absorb surprise, as well as dynamic risk. These ratios become the objective of further refinement through sensitivity analysis. Among the important ratios we have used so far are:

1. Absorption rate:

$$\frac{\text{Units sold or leased per period}}{\text{Total supply of units available for sale or lease}} = \text{Absorption rate}$$

2. Capture rate:

$$\frac{\text{Units in specific project sold or leased per period}}{\text{Total competitive units sold or leased per period}} = \text{Capture rate}$$

3. Vacancy ratio:

$$\frac{\text{Space unit} \times \# \text{ of units} \times \text{rental payment periods per year} \times \text{turnover rate} \times \text{rental payments lost} \times \text{rent}}{\# \text{ of units} \times \# \text{ of payments} \times \text{rent per period}} = (\text{gross rent})$$

1-bedroom apartments x 20 x 50% turnover x 1 month lost 1 \$200/mo.

$$\frac{20 \times 50\% \times 1 \times 200}{20 \times 12 \times 200}$$

$$\frac{2000}{48000} = \frac{1}{24} = 4.2\%$$

4. Expense ratio:

$$\frac{\text{Expenses}}{\text{Gross rent}}$$

5. Net income ratio:

$$\frac{\text{Net income}}{\text{Purchase price} + \text{additional costs}} = \text{Overall rate or cap rate (should be = to debt service constant or higher)}$$

6. Debt cover ratio:

$$\frac{\text{Net operating income}}{\text{Debt service}}$$

7. Default ratio:

$$\frac{\text{Operating expenses} + \text{real estate taxes} + \text{short term debt} + \text{interest} + \text{principal payments}}{\text{Gross rent}}$$

CASH FLOW PRO FORMA USING PARAMETER NORMS

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

DATE: 2/14/1977

BLDG: 1

RUN : 1

GROSS SQUARE FEET IN BUILDING: 700.
 BUILDING EFFICIENCY : 85.0 PCT
 NET LEASEABLE SQUARE FOOTAGE : 595.

LAND AND CONSTRUCTION COST : \$ 19500.
 LOAN TO COST RATIO : 75.0 PCT
 ORIGINAL LOAN AMOUNT : \$ 14625.

EQUITY REQUIREMENT : \$ 4875.

PERMANENT INTEREST RATE : 9.000 PCT
 TERM OF LOAN 30. YEARS

ANNUAL DEBT SERVICE : \$ 1412.

ANNUAL DOLLARS

GROSS INCOME : 595. SQ FT AT \$ 6.00 3570.

LESS: VACANCY OF 5.00 PCT 179.

GROSS ADJUSTED INCOME 3392.

PLUS: PARKING INCOME 150.

PLUS: OTHER INCOME 24.

GROSS EFFECTIVE INCOME 3566.

LAND LEASE EXPENSE 100.

OPERATING EXPENSES: 595. SQ FT AT \$ 2.76 1642.

NET OPERATING INCOME 1823.

DEBT SERVICE (9.66 PCT CONSTANT) 1412.

PRO FORMA CASH FLOW 411.

RETURN ON EQUITY 8.43 PERCENT

DEBT SERVICE COVERAGE: 1.291

DEFAULT RATIO : 83.48 PERCENT

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS	PAGE	1 OF 12
SITE : 2000. SQUARE FEET	DATE	2-14-1977
BUILDING : 700. SQUARE FEET	BLDG	1
EFFICIENCY: 85.00 PCT(595. SQ FT)		
LOAN RATIO: 75.00 PCT OF \$ 19500.		
LOAN : \$ 14625.		
EQUITY : \$ 4875.		
FINANCING : 30. YEARS 9.000 PCT		
GTR INCOME: \$ 174. ANNUALLY	RUN	1
EXPENSES : \$ 2.76 PER SQ FT		
LAND LEASE: \$ 100.		

ANNUAL CASH FLOWS

VACANCY ALLOWANCE

	3.00 PCT	4.00 PCT	5.00 PCT	7.00 PCT	10.00 PCT
	-----	-----	-----	-----	-----
RENTAL RATES					
ANNUAL \$/SQ FT					
\$ 4.80	-210.	-239.	-267.	-324.	-410.
\$ 5.40	136.	104.	72.	8.	-89.
\$ 6.00	483.	447.	411.	340.	233.
\$ 6.60	829.	790.	750.	672.	554.
\$ 7.20	1175.	1132.	1089.	1004.	875.

BREAKEVEN RENTAL RATES

VACANCY ALLOWANCE

	3.00 PCT	4.00 PCT	5.00 PCT	7.00 PCT	10.00 PCT
	-----	-----	-----	-----	-----
RENTAL RATES					
ANNUAL \$/SQ FT					
	5.16	5.22	5.27	5.39	5.57

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS		PAGE	2 OF 12
SITE :	2000. SQUARE FEET	DATE	2-14-1977
BUILDING :	700. SQUARE FEET	BLDG	1
EFFICIENCY:	85.00 PCT(595. SQ FT)		
LOAN RATIO:	75.00 PCT OF \$ 19500.		
LOAN :	\$ 14625.		
EQUITY :	\$ 4875.		
FINANCING :	30. YEARS 9.000 PCT		
VACANCY :	5.00 PCT OF LEASEABLE		
GTR INCOME:	\$ 174. ANNUALLY	RUN	1
LAND LEASE:	\$ 100.		

ANNUAL CASH FLOWS

ANNUAL EXPENSE RATES PER SQ FT

\$ 2.40	\$ 2.64	\$ 2.76	\$ 3.00	\$ 3.36
-----	-----	-----	-----	-----

RENTAL RATES ANNUAL \$/SQ FT

\$ 4.80	-53.	-196.	-267.	-410.	-624.
\$ 5.40	286.	143.	72.	-71.	-285.
\$ 6.00	625.	483.	411.	268.	54.
\$ 6.60	965.	822.	750.	608.	393.
\$ 7.20	1304.	1161.	1089.	947.	732.

BREAKEVEN RENTAL RATES

ANNUAL EXPENSE RATES PER SQ FT

\$ 2.40	\$ 2.64	\$ 2.76	\$ 3.00	\$ 3.36
-----	-----	-----	-----	-----

RENTAL RATES ANNUAL \$/SQ FT

4.89	5.15	5.27	5.53	5.90
------	------	------	------	------

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS

PAGE 3 OF 12

SITE : 2000. SQUARE FEET
 BUILDING : 700. SQUARE FEET
 EFFICIENCY: 85.00 PCT(595. SQ FT)
 LOAN RATIO: 75.00 PCT OF \$ 19500.
 LOAN : \$ 14625.
 EQUITY : \$ 4875.
 VACANCY : 5.00 PCT OF LEASEABLE
 GTR INCOME: \$ 174. ANNUALLY
 EXPENSES : \$ 2.76 PER SQ FT
 LAND LEASE: \$ 100.

DATE 2-14-1977
 BLDG 1

RUN 1

ANNUAL CASH FLOWS

FINANCING PARAMETERS

S
 T

30. YEARS	30. YEARS	30. YEARS	30. YEARS	30. YEA
9.00 PCT	9.25 PCT	9.50 PCT	8.50 PCT	8.00 P

RENTAL RATES ANNUAL \$/SQ FT

\$ 4.80	-267.	-299.	-331.	-204.	-143.
\$ 5.40	72.	40.	8.	135.	196.
\$ 6.00	411.	380.	348.	474.	536.
\$ 6.60	750.	719.	687.	813.	875.
\$ 7.20	1089.	1058.	1026.	1152.	1214.

BREAKEVEN RENTAL RATES

FINANCING PARAMETERS

S
 T

30. YEARS	30. YEARS	30. YEARS	30. YEARS	30. YEA
9.00 PCT	9.25 PCT	9.50 PCT	8.50 PCT	8.00 P

RENTAL RATES ANNUAL \$/SQ FT

5.27	5.33	5.39	5.16	5.05
------	------	------	------	------

PR0 FORMA CASH FLOW TABLE

SENSITIVITY APT. DEM0

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS

PAGE 4 OF 12

SITE : 2000. SQUARE FEET
 BUILDING : 700. SQUARE FEET
 LOAN RATIO: 75.00 PCT OF \$ 19500.
 LOAN : \$ 14625.
 EQUITY : \$ 4875.
 FINANCING : 30. YEARS 9.000 PCT
 VACANCY : 5.00 PCT OF LEASEABLE
 QTR INCOME: \$ 174. ANNUALLY
 EXPENSES : \$ 2.76 PER SQ FT
 LAND LEASE: \$ 100.

DATE 2-14-1977
 BLDG 1

RUN 1

ANNUAL CASH FLOWS

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
 LOAN TO COST RATIO

75.00 PCT 80.00 PCT 85.00 PCT 90.00 PCT 95.00 PCT

RENTAL RATES ANNUAL \$/SQ FT

\$ 4.80	-393.	-355.	-330.	-305.	-267.
\$ 5.40	-94.	-44.	-11.	22.	72.
\$ 6.00	205.	267.	308.	349.	411.
\$ 6.60	505.	578.	627.	677.	750.
\$ 7.20	804.	890.	947.	1004.	1089.

BREAKEVEN RENTAL RATES

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
 LOAN TO COST RATIO

75.00 PCT 80.00 PCT 85.00 PCT 90.00 PCT 95.00 PCT

RENTAL RATES ANNUAL \$/SQ FT

5.59	5.49	5.42	5.36	5.27
------	------	------	------	------

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS		PAGE	5 OF 12
SITE :	2000. SQUARE FEET	DATE	2-14-1977
BUILDING :	700. SQUARE FEET	BLDG	1
EFFICIENCY:	85.00 PCT(595. SQ FT)		
FINANCING :	30. YEARS 9.000 PCT		
VACANCY :	5.00 PCT OF LEASEABLE		
GTR INCOME:	\$ 174. ANNUALLY	RUN	1
EXPENSES :	\$ 2.76 PER SQ FT		
LAND LEASE:	\$ 100.		

ANNUAL CASH FLOWS

LOAN TO COST RATIO

75.00 PCT	80.00 PCT	85.00 PCT	90.00 PCT	95.00 PCT
-----	-----	-----	-----	-----

RENTAL RATES ANNUAL \$/SQ FT

\$ 4.80	-267.	-361.	-455.	-550.	-644.
\$ 5.40	72.	-22.	-116.	-210.	-305.
\$ 6.00	411.	317.	223.	129.	35.
\$ 6.60	750.	656.	562.	468.	374.
\$ 7.20	1089.	995.	901.	807.	713.

BREAKEVEN RENTAL RATES

LOAN TO COST RATIO

75.00 PCT	80.00 PCT	85.00 PCT	90.00 PCT	95.00 PCT
-----	-----	-----	-----	-----

RENTAL RATES ANNUAL \$/SQ FT

5.27	5.44	5.61	5.77	5.94
------	------	------	------	------

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS		PAGE	6 OF 12
SITE :	2000. SQUARE FEET	DATE	2-14-1977
BUILDING :	700. SQUARE FEET	BLDG	1
EFFICIENCY:	85.00 PCT(595. SQ FT)		
LOAN RATIO:	75.00 PCT OF \$ 19500.		
LOAN :	\$ 14625.		
EQUITY :	\$ 4875.		
FINANCING :	30. YEARS 9.000 PCT		
REVENUE :	\$ 6.00 PER SQ FT		
GTR INCOME:	\$ 174. ANNUALLY	RUN	1
LAND LEASE:	\$ 100.		

ANNUAL CASH FLOWS

ANNUAL EXPENSE RATES PER SQ FT

\$ 2.40	\$ 2.64	\$ 2.76	\$ 3.00	\$ 3.36
-----	-----	-----	-----	-----

VACANCY RATES

3.00 PCT	697.	554.	483.	340.	126.
4.00 PCT	661.	518.	447.	304.	90.
5.00 PCT	625.	483.	411.	268.	54.
7.00 PCT	554.	411.	340.	197.	-17.
10.00 PCT	447.	304.	233.	90.	-124.

BREAKEVEN RENTAL RATES

ANNUAL EXPENSE RATES PER SQ FT

\$ 2.40	\$ 2.64	\$ 2.76	\$ 3.00	\$ 3.36
-----	-----	-----	-----	-----

VACANCY RATES

3.00 PCT	4.79	5.04	5.16	5.41	5.78
4.00 PCT	4.84	5.09	5.22	5.47	5.84
5.00 PCT	4.89	5.15	5.27	5.53	5.90
7.00 PCT	5.00	5.26	5.39	5.64	6.03
10.00 PCT	5.17	5.43	5.57	5.83	6.23

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS			PAGE	7 OF 12
SITE :	2000. SQUARE FEET	DATE	2-14-1977	
BUILDING :	700. SQUARE FEET	BLDG	1	
EFFICIENCY:	85.00 PCT(595. SQ FT)			
LOAN RATIO:	75.00 PCT OF \$ 19500.			
LOAN :	\$ 14625.			
EQUITY :	\$ 4875.			
REVENUE :	\$ 6.00 PER SQ FT			
GTR INCOME:	\$ 174. ANNUALLY	RUN	1	
EXPENSES :	\$ 2.76 PER SQ FT			
LAND LEASE:	\$ 100.			

ANNUAL CASH FLOWS

FINANCING PARAMETERS					
30. YEARS	30. YEARS	30. YEARS	30. YEARS	30. YEA	
	R				
9.00 PCT	9.25 PCT	9.50 PCT	8.50 PCT	8.00 P	
	C				

VACANCY RATES

3.00 PCT	483.	451.	419.	545.	607.
4.00 PCT	447.	415.	383.	510.	571.
5.00 PCT	411.	380.	348.	474.	536.
7.00 PCT	340.	308.	276.	402.	464.
10.00 PCT	233.	201.	169.	295.	357.

BREAKEVEN RENTAL RATES

FINANCING PARAMETERS					
30. YEARS	30. YEARS	30. YEARS	30. YEARS	30. YEA	
	R				
9.00 PCT	9.25 PCT	9.50 PCT	8.50 PCT	8.00 P	
	C				

VACANCY RATES

3.00 PCT	5.16	5.22	5.27	5.06	4.95
4.00 PCT	5.22	5.27	5.33	5.11	5.00
5.00 PCT	5.27	5.33	5.39	5.16	5.05
7.00 PCT	5.39	5.44	5.50	5.27	5.16
10.00 PCT	5.57	5.62	5.68	5.45	5.33

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS

PAGE 8 OF 12

SITE :	2000. SQUARE FEET	DATE	2-14-1977
BUILDING :	700. SQUARE FEET	BLDG	1
LOAN RATIO:	75.00 PCT OF \$ 19500.		
LOAN :	\$ 14625.		
EQUITY :	\$ 4875.		
FINANCING :	30. YEARS 9.000 PCT		
REVENUE :	\$ 6.00 PER SQ FT		
VACANCY :	5.00 PCT OF LEASEABLE		
GTR INCOME:	\$ 174. ANNUALLY	RUN	1
LAND LEASE:	\$ 100.		

ANNUAL CASH FLOWS

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LOAN TO COST RATIO

75.00 PCT 80.00 PCT 85.00 PCT 90.00 PCT 95.00 PCT

EXPENSE RATES ANNUAL \$/SQ FT

\$ 2.40	394.	464.	510.	556.	625.
\$ 2.64	268.	333.	375.	418.	483.
\$ 2.76	205.	267.	308.	349.	411.
\$ 3.00	79.	136.	174.	212.	268.
\$ 3.36	-110.	-60.	-28.	5.	54.

BREAKEVEN RENTAL RATES

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LOAN TO COST RATIO

75.00 PCT 80.00 PCT 85.00 PCT 90.00 PCT 95.00 PCT

EXPENSE RATES ANNUAL \$/SQ FT

\$ 2.40	5.21	5.11	5.04	4.98	4.89
\$ 2.64	5.46	5.36	5.29	5.23	5.15
\$ 2.76	5.59	5.49	5.42	5.36	5.27
\$ 3.00	5.84	5.74	5.67	5.61	5.53
\$ 3.36	6.22	6.12	6.05	5.99	5.90

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS		PAGE	9 OF 12
SITE :	2000. SQUARE FEET	DATE	2-14-1977
BUILDING :	700. SQUARE FEET	BLDG	1
LOAN RATIO:	75.00 PCT OF \$ 19500.		
LOAN :	\$ 14625.		
EQUITY :	\$ 4875.		
REVENUE :	\$ 6.00 PER SQ FT		
VACANCY :	5.00 PCT OF LEASEABLE		
GTR INCOME:	\$ 174. ANNUALLY	RUN	1
EXPENSES :	\$ 2.76 PER SQ FT		
LAND LEASE:	\$ 100.		

ANNUAL CASH FLOWS

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LOAN TO COST RATIO

75.00 PCT 80.00 PCT 85.00 PCT 90.00 PCT 95.00 PCT

FINANCING

30.YR	9.00PCT	205.	267.	308.	349.	411.
30.YR	9.25PCT	174.	235.	277.	318.	380.
30.YR	9.50PCT	142.	204.	245.	286.	348.
30.YR	8.50PCT	268.	330.	371.	412.	474.
30.YR	8.00PCT	330.	391.	433.	474.	536.

BREAKEVEN RENTAL RATES

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LOAN TO COST RATIO

75.00 PCT 80.00 PCT 85.00 PCT 90.00 PCT 95.00 PCT

FINANCING

30.YR	9.00 PCT	5.59	5.49	5.42	5.36	5.27
30.YR	9.25 PCT	5.65	5.55	5.48	5.42	5.33
30.YR	9.50 PCT	5.72	5.61	5.54	5.48	5.39
30.YR	8.50 PCT	5.46	5.36	5.30	5.24	5.16
30.YR	8.00 PCT	5.34	5.25	5.19	5.13	5.05

PRØ FØRMA CASH FLØW TABLE

SENSITIVITY APT. DEMØ

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS	PAGE	10 OF 12
SITE : 2000. SQUARE FEET	DATE	2-14-1977
BUILDING : 700. SQUARE FEET	BLDG	1
EFFICIENCY: 85.00 PCT(595. SQ FT)		
LOAN RATIO: 75.00 PCT ØF \$ 19500.		
LOAN : \$ 14625.		
EQUITY : \$ 4875.		
FINANCING : 30. YEARS 9.000 PCT		
VACANCY : 5.00 PCT ØF LEASEABLE		
ØTR INCØME: \$ 174. ANNUALLY	RUN	1
EXPENSES : \$ 2.76 PER SQ FT		

ANNUAL CASH FLØWS

LAND LEASE CØST

\$ 100.	\$ 150.	\$ 200.	\$ 250.	\$ 300.
-----	-----	-----	-----	-----

RENTAL RATES ANNUAL \$/SQ FT

\$ 4.80	-267.	-317.	-367.	-417.	-467.
\$ 5.40	72.	22.	-28.	-78.	-128.
\$ 6.00	411.	361.	311.	261.	211.
\$ 6.60	750.	700.	650.	600.	550.
\$ 7.20	1089.	1039.	989.	939.	889.

BREAKEVEN RENTAL RATES

LAND LEASE CØST

\$ 100.	\$ 150.	\$ 200.	\$ 250.	\$ 300.
-----	-----	-----	-----	-----

RENTAL RATES ANNUAL \$/SQ FT

5.27	5.36	5.45	5.54	5.63
------	------	------	------	------

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS

PAGE 11 OF 12

SITE :	2000. SQUARE FEET	DATE	2-14-1977
BUILDING :	700. SQUARE FEET	BLDG	1
EFFICIENCY:	85.00 PCT(595. SQ FT)		
LOAN RATIO:	75.00 PCT OF \$ 19500.		
LOAN :	\$ 14625.		
EQUITY :	\$ 4875.		
FINANCING :	30. YEARS 9.000 PCT		
REVENUE :	\$ 6.00 PER SQ FT		
VACANCY :	5.00 PCT OF LEASEABLE		
GTR INCOME:	\$ 174. ANNUALLY	RUN	1

ANNUAL CASH FLOWS

LAND LEASE COST

\$ 100.	\$ 150.	\$ 200.	\$ 250.	\$ 300.
-----	-----	-----	-----	-----

EXPENSE RATES ANNUAL \$/SQ FT

\$ 2.40	625.	575.	525.	475.	425.
\$ 2.64	483.	433.	383.	333.	283.
\$ 2.76	411.	361.	311.	261.	211.
\$ 3.00	268.	218.	168.	118.	68.
\$ 3.36	54.	4.	-46.	-96.	-146.

BREAKEVEN RENTAL RATES

LAND LEASE COST

\$ 100.	\$ 150.	\$ 200.	\$ 250.	\$ 300.
-----	-----	-----	-----	-----

EXPENSE RATES ANNUAL \$/SQ FT

\$ 2.40	4.89	4.98	5.07	5.16	5.25
\$ 2.64	5.15	5.23	5.32	5.41	5.50
\$ 2.76	5.27	5.36	5.45	5.54	5.63
\$ 3.00	5.53	5.61	5.70	5.79	5.88
\$ 3.36	5.90	5.99	6.08	6.17	6.26

SENSITIVITY TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS	PAGE	12 OF 12
SITE : 2000. SQUARE FEET	DATE	2-14-1977
BUILDING : 700. SQUARE FEET	BLDG	1
EFFICIENCY: 85.00 PCT OF GROSS		
LOAN RATIO: 75.00 PCT OF \$ 19500.		
EQUITY : \$ 4875.		
FINANCING : 30. YEARS 9.000 PCT		
REVENUE : \$ 6.00 PER SQ FT		
VACANCY : 5.00 PCT OF LEASEABLE		
PARK/OTHER: \$ 174. ANNUALLY	RUN	1
EXPENSES : \$ 2.76 PER SQ FT		
LAND LEASE: \$ 100. ANNUALLY		
CONSTRUCTION AND LAND COST 19500.		

EFFECT OF SELECTED CHANGES IN PARAMETERS PARAMETER CHANGE INCREASE IN CASH FLOW

INCREASE BUILDING EFFICIENCY 1 PCT	21.
INCREASE RENTAL RATE \$.10 PER SQ FT	57.
DECREASE VACANCY RATE 1PCT	36.
DECREASE OPERATING RATE \$.10 PER SQ FT	60.
DECREASE PERMANENT RATE .25PCT	31.
DECREASE PERMANENT LOAN TERM BY 1 YEAR	-10.
DECREASE PERMANENT LOAN TERM BY 5 YEARS	-61.
DECREASE THE LOAN RATIO BY 5 PERCENT	94.
DECREASE LAND LEASE BY 10% 100.	

EQUIVALENT EFFECT TO YIELD A \$ 100. INCREASE IN ANNUAL CASH FLOW

INCREASE BUILDING EFFICIENCY BY	4.86 PCT
INCREASE RENT RATE BY \$	0.18 PER SQ FT
DECREASE VACANCY BY	2.80 PCT
DECREASE EXPENSE RATE BY \$	0.17 PER SQ FT
DECREASE PERMANENT RATE BY	0.79 PCT
INCREASE PERMANENT LOAN TERM BY	8.2 YEARS
DECREASE LOAN RATIO BY	5.3 PERCENT
DECREASE LAND LEASE BY \$	100.

8. Loan to value ratio:

$$\frac{\text{Mortgage loan balance}}{\text{Purchase price}}$$

9. Cash on cash:

$$\frac{\text{Net income} - \text{debt service} - \text{reserves} + \text{refinancing surplus}}{\text{Total capital budget} - \text{original mortgage balance}}$$

- D. Understanding the basic ratios leads to manual or data processing of sensitivity ratios; it is important to remember that projecting specific returns is not a forecast for the future; it is intended to be a basis for measuring the tolerance of the financial parameters for variance from the initial assumptions and identifying the thresholds of insolvency or incompatibility with competitive markets. Refer to John Nabors model in Exhibit

- E. If project makes sense before tax, then it is useful to refine analysis for projections over time on an after tax basis.

1. Accounting tabs for after tax income (See Exhibit)
2. Accounting tabs for after tax sale proceeds (See Exhibit)
3. Basic pattern of after tax financial analysis requires a pattern of assumptions (See Exhibit)

- F. After tax spendable cash ratios include:

1. Distributable cash from operations:

$$\begin{aligned} &\text{Cash throwoff} \\ &\quad - \text{income taxes} \\ &\text{Cash from operations} \\ &\quad - \text{reserves} \\ &\quad - \text{repayment of working capital loans} \\ &\hline &= \text{Distributable cash} \end{aligned}$$

2. Spendable cash attributable to real estate:

$$\begin{aligned} &\text{Distributable cash} \\ &\quad + \text{tax savings to other income} \\ &\quad + \text{surplus from refinancing} \\ &\hline &= \text{Spendable cash} \end{aligned}$$

3. After tax sale proceeds:

$$\begin{aligned} &\quad + \text{return of working capital} \\ &\quad + \text{liquidation of sinking funds} \\ &\hline &= \text{cash reversion} \end{aligned}$$

4. Return on net worth B/4 tax:

$$\frac{\text{Cash throwoff} + \text{change in net worth}}{\text{Net worth at end of previous period}}$$

5. Return on net worth after tax:

$$\frac{\text{Spendable cash} + (\text{change in net worth} - \text{change in taxes on sale})}{\text{Net worth at end of previous period} - \text{taxes on sale}}$$

6. Payback ratio:

$$\frac{\text{Cumulative spendable cash}}{\text{Original budget} - \text{original debt} + \text{amount of personal guarantees}}$$

- G. Precise definition of cash returns is critical in the negotiation of participating loans and partnerships

1. Defining effective gross, net income or cash throwoff with a participation loan
2. Defining base number in which general partner will share

HANDBOOK: ORDER FORM

Now that you have had the opportunity to use and evaluate the Real Estate Financial Feasibility Analysis WORKBOOK, you may wish to explore more comprehensively the topic of Project INVESTMENT ANALYSIS. The Real Estate Financial Feasibility Analysis HANDBOOK has been written specifically to quickly and accurately present the steps necessary to complete a Project INVESTMENT ANALYSIS. This 200 page text has been written in the terminology that both a novice and practitioner can easily understand. The HANDBOOK is designed to compliment, reinforce, and elaborates on the COST-BENEFIT analysis systems presented in the WORKBOOK. In addition, a comprehensive index, glossary, and set of compound interest tables are provided for reference. Topics presented in the HANDBOOK include:

1. PROCESS INTRODUCTION:

- The Real Estate Development System
- The Feasibility Analysis Process
- The Analysis Framework
- The Project Cost-Benefit Analysis Process
- Market Justified Cost-Benefit Analysis
- Project Solvency & Financing Justified Cost-Benefit Analysis
- The Transition
- Cash Flow Analysis
- Investment Value Analysis

2. THE OPERATING INCOME STATEMENT:

- Real Estate Market Analysis
- Revenue Generation
- The Lease Commitment
- Operating Expenses

3. INCOME CAPITALIZATION:

- Capitalization in Perpetuity
- Investment Value
- Compound Interest
- Determination of the Discount Rate
- Standard Compound Interest Factors

4. THE CAPITAL BUDGET:

- The Procurement Process
- Capital Cost Components
- Interim Financing
- Life Cycle Cost Analysis
- Total Present Value Cost Approach
- Equivalent Uniform Annual Cost Approach

5. THE MORTGAGE-EQUITY FINANCING PACKAGE:

- Straight Term Mortgage
- Chattel Mortgage
- Amortized Mortgage
- Refinancing Surplus
- Mortgage Debt Service
- Mortgage Constant
- Equity
- Leverage

6. BEFORE AND AFTER TAX CASH FLOWS:

- Cash Throw-off
- Taxable Income Deductions
- Income Tax Liability
- Cash from Operations
- Working Capital Loan
- Distributive Cash After Taxes
- Tax Savings on other Taxable Income
- Refinancing Surplus
- Spendable Cash After Taxes

7. PROCEEDS FROM RESALE & TOTAL INVESTMENT VALUE:

- Resale Price
- Reversion
- Taxes Due at Time of Sale
- Capital Gain Tax
- Total Investment Value

8. EVALUATION OF INVESTMENT PERFORMANCE:

- Before Tax Ratio Analysis
- Default Point
- Before and After Tax Equity Payback
- Rate of Return Indicators
- Investor Preference for Return Measures
- Sensitivity Analysis

9. APPENDIX:

- Cost Benefit Worksheets
- After Tax Equity Investment Value - Problems 1 & 2
- Compound Interest Tables
- Glossary
- Index
- Sources

PLEASE SEND ME:

_____ Copies of the Real Estate Financial Feasibility Analysis HANDBOOK: _____
(@ \$12.00 per Copy, including shipping and handling)

_____ Copies of the Real Estate Financial Feasibility Analysis WORKBOOK: _____
(@ \$ 5.00 per Copy, including shipping and handling)

TOTAL ENCLOSED PAYMENT _____

NAME: _____





ADDRESS: _____

PLEASE SEND PREPAID ORDER TO:

James C. Canestaro, AIA
Post Office Box 194
Blacksburg, Virginia 24060

LEGEND: EVALUATION OF PROJECT COST AND OPERATIONS DATA MANUAL SUITABILITY

LEGEND

	<p>RECOMMENDED:</p> <p><u>COMPLETE DATA</u> CONTENT WHICH HAS A <u>STRONG FIT</u> TO THE FORMAT OF THE MODELS.</p> <p>The data manual provides comprehensive information which can be utilized to best advantage in the format of the decision models under consideration.</p>
	<p>RECOMMENDED WITH RESERVATIONS:</p> <p><u>COMPLETE DATA</u> CONTENT WHICH HAS A <u>WEAK FIT</u> TO THE FORMAT OF THE MODELS.</p> <p>The data manual provides comprehensive information organized into categories which can not be successfully intergrated into the format of the decision models under consideration.</p>
	<p>RECOMMENDED WITH RESERVATIONS:</p> <p><u>INCOMPLETE DATA</u> CONTENT WHICH HAS A <u>STRONG FIT</u> TO THE FORMAT OF THE MODELS.</p> <p>The data manual does not include all the necessary information required by the decision models; but the data categories included can be satisfactorily utilized in the format of the decision models under consideration.</p>
	<p>NOT RECOMMENDED:</p> <p><u>INCOMPLETE DATA</u> CONTENT WHICH HAS A <u>WEAK FIT</u> TO THE FORMAT OF THE MODELS.</p> <p>The data manual does not include all the necessary information required by the decision models; and the data categories included can not be successfully intergrated into the format of the decision models under consideration.</p>

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Comparison of PROJECT COST DATA MANUALS:	X. 2 - 3
Boeckh Building Cost Guide: Commercial	
Boeckh Building Cost Guide: Light Industrial	
Boeckh Building Valuation Manual, Second Edition	
Dodge Building Cost Calculator and Valuation Guide	
Dodge Digest of Building Cost and Specifications	
Dodge Construction Systems Costs	
Dodge Manual for Building Construction , Pricing and Scheduling	
Comparison of PROJECT COST DATA MANUALS: (cont.)	X. 4 - 5
Marshall Valuation Service	
Residential Cost Handbook	
Means Building Construction Cost Data	
Means Building Systems Cost Guide	
Current Construction Costs	
Comparison of PROJECT COST DATA MANUALS: (cont.)	X. 6 - 7
Dollars and Cents of Shopping Centers	
Building Cost File Unit Prices	
Design Cost File	
Engleman's General Construction Cost Guide	
Real Estate Valuation Cost Guide	
Residential Cost Manual	
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Downtown and Suburban Office Building Experience Exchange Report	
Income/Expense Analysis: Apartments	
Expense Analysis: Condominiums, Cooperatives, and Planned Unit Developments	
Income/Expense Analysis: Suburban Office Buildings	
Dollars and Cents of Shopping Centers	
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Boeckh Building Cost Guide: Commercial	
Dodge Building Cost Calculator and Valuation Guide	
Dodge Construction Systems Cost Guide	
Dodge Digest of Building Costs and Specifications	
Residential Cost Handbook	
Marshall Valuation Service	
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Means Building Systems Cost Guide	
Dollars and Cents of Shopping Centers	
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APPENDIX:

SOURCES				CONTENT ORGANIZATION								
NAME OF DATA SOURCE	Publisher's Address	Initial Cost 1st Year	Frequency of Publication	DESCRIPTION OF COST DATA								Uses
				Method	Comparative Unit Sq. Ft. + Cu.Ft.	Unit (Component System)-In-Place	Quantity Survey	Valuation	Initial Estimate	Intermediate Estimate	Detailed Estimate	
BOECKH BUILDING COST GUIDE: COMMERCIAL	E.H.Boeckh Company American Appraisal Associates, Inc. 615 E.Michigan St. Milwaukee, Wisc. 53201	\$18.00	New Edition Published Annually	Yes	No	No	Yes	Yes	No	No	Yes (1a)	
BOECKH BUILDING COST GUIDE: LIGHT INDUSTRIAL	E.H.Boeckh Company American Appraisal Associates, Inc. 615 E.Michigan St. Milwaukee, Wisc. 53201	\$15.00	New Edition Published Annually	Yes	No	No	Yes	Yes	No	No	No (2a)	
BOECKH BUILDING VALUATION MANUAL SECOND ED.	E.H.Boeckh Company American Appraisal Associates, Inc. 615 E.Michigan St. Milwaukee, Wisc. 53201	\$88.00 Includes quarterly up dating of time-location multipliers	\$52.00 Also includes quarterly Up-dating	Yes	Yes (3a)	No	Yes	Yes	Yes	No	Yes	
DODGE BUILDING COST CALCULATOR AND VALUATION GUIDE	Dodge Building Cost Services McGraw-Hill Information Systems Company 1221 Avenue of the Americas New York, N.Y. 10020	\$82.00 Includes three quarterly supplements	\$62.00 Also includes quarterly materials	Yes	No (4a)	No	Yes	Yes	No (4a)	No	Yes (4b)	
DODGE DIGEST OF BUILDING COSTS AND SPECIFICATIONS	Dodge Building Cost Services McGraw-Hill Information Systems Company 1221 Avenue of the Americas New York, N.Y. 10020	\$122.00 Includes semi-annual supplement	\$92.00 Also includes supplement	Yes	No	No	No	Yes	No	No	Yes (5a)	
DODGE CONSTRUCTION SYSTEMS COSTS	Dodge Building Cost Services McGraw-Hill Information Systems Company 1221 Avenue of the Americas New York, N.Y. 10020	\$39.80	New Edition Published Annually	Yes	Yes (6a)	No	No	Yes	Yes	Yes (6b)	Yes	
DODGE MANUAL FOR BUILDING CONSTRUCTION PRICING AND SCHEDULING	Dodge Building Cost Services McGraw-Hill Information Systems Company 1221 Avenue of the Americas New York, N.Y. 10020	\$28.80	New Edition Published Annually	No	No	Yes	No	No	No	Yes	Yes (7a)	

PROJECT ITEMS INCLUDED IN COST DATA						ADJUSTMENTS	
Land Costs	Sitework	General Contractor Overhead & Profit	Architect/Engineer Fee	Construction Financing Costs	Labor Cost Segregated From Material Costs	Location Modifier	Time Modifier
No	No	Yes (1b)	Yes	No	No	Yes	No
No	No	Yes (2b)	Yes	No	No	Yes	No
No (3b)	No (3c)	Yes (3d)	No (3e)	No	No	Yes	Yes
No	No (4c)	Yes/ No (4d)	Yes	No	No	Yes	Yes
No	No (5b)	Yes	No	No	No	Yes	Yes
No	No (6c)	Yes	No	No	Yes (6d)	Yes	No
No	No (7b)	No	No	No	Yes	Yes	No

SELECTED
SPECIAL FEATURES

1a. Comparative unit costs are segregated for air-conditioning, fire protection, & elevators only.
1b. A 5% cost for contingencies is included.

2a. Comparative unit (sq.ft.) costs are given for air conditioning, fire protection, and elevators only.
2b. A 5% cost for contingencies is included.

3a. Unit-in-place costs are given for walls, foundations, framing, floors, floor finish, roof, ceiling finish, partitions, plumbing, HVAC, electrical, fire protection & a large number of miscellaneous equipment and improvements.
3b. Criteria for land valuation is given, but no cost figures are included.
3c. Sitework costs are given for some site improvements.
3d. A 5% cost for contingencies is included.
3e. A separate schedule of architect fees based upon project cost is given.

4a. Unit-in-place costs are given for a few selected miscellaneous items only.
4b. Component depreciation can be calculated from building systems costs given in case histories.
4c. Sitework costs are included in case histories only.
4d. Builder's profit is not included in cost figures; only builder's administrative overhead & supervision.

5a. Comparative unit costs (sq.ft.) are given for structure, plumbing, HVAC, electrical and miscellaneous categories only. Comparative unit costs (sq.ft.) are also given by building systems in 12 case histories.
5b. Segregated sitework costs are included in the case histories only.

6a. Unit-in-Place (systems) costs are given for foundations, superstructures, exterior walls, roofing, partitions, interior wall finish, floor finish, ceilings only; other improvement costs taken from average costs table.
6b. An estimate based on detailed assembly costs would be less detailed than a complete quantity survey based estimate.
6c. Sitework costs are included in average cost section through 1978 edition.
6d. Labor/materials are segregated for unit-in-place systems costs only.

7a. Component depreciation could be calculated from a detailed quantity survey.
7b. Quantity survey sitework costs are included for drainage, utilities, paving & surfacing, landscaping, and site improvements.

SOURCES				CONTENT ORGANIZATION								
NAME OF DATA SOURCE	Publisher's Address	Initial Cost 1st Year	Frequency of Publication	DESCRIPTION OF COST DATA								
				Method	Uses							
				Comparative Unit Sq. Ft. + Cu.Ft.	Unit (Component System)-In-Place	Quantity Survey	Valuation	Initial Estimate	Intermediate Estimate	Detailed Estimate	Calculation of Component Depreciation	
MARSHALL VALUATION SERVICE	Marshall & Swift Publication Co. 1617 Beverly Blvd. Los Angeles, California 90026	\$75.00 Includes monthly supplement	\$65.00 Also includes monthly supplement	Yes	Yes (8a)	No	Yes	Yes	Yes	No	Yes	
RESIDENTIAL COST HANDBOOK	Marshall & Swift Publication Co. 1617 Beverly Blvd. Los Angeles, California 90026	\$33.00 Includes quarterly supplement & up-date services	\$29.00 Includes quarterly supplement & up-date services	Yes	Yes (9a)	No	Yes	Yes	Yes	No	Yes	
BUILDING CONSTRUCTION COST DATA	Robert Snow Means Company, Inc. Construction Consultants and Publishers 100 Construction Plaza Duxbury, Mass. 02332	\$22.50	New Edition Annually	Yes	No (10a)	Yes	No	Yes (10b)	No	Yes	Yes (10c)	
BUILDING SYSTEMS COST GUIDE	Robert Snow Means Company, Inc. Construction Consultants and Publishers 100 Construction Plaza Duxbury, Mass. 02332	\$27.50	New Edition Annually	Yes	Yes	No	No	Yes	Yes	Yes (11a)	Yes (11b)	
CURRENT CONSTRUCTION COSTS	Lee Saylor, Inc. Consulting Cost Engineers 1855 Olympic Blvd., Suite 110 Walnut Creek, California 94596	\$23.95	New Edition Annually	No	No	Yes	No	No	No	Yes (12a)	Yes (12b)	

PROJECT ITEMS INCLUDED IN COST DATA						ADJUSTMENTS	
Land Costs	Sitework	General Contractor Overhead & Profit	Architect/Engineer Fee	Construction Financing Costs	Labor Cost Segregated From Material Costs	Location Modifier	Time Modifier
No	No (8b)	Yes	Yes (8c)	Yes (8d)	No	Yes	Yes
No	No (9b)	Yes	Yes (9c)	Yes (9d)	No	Yes	Yes
No	No (10d)	Yes (10e)	No (10f)	No	Yes (10g)	Yes	Yes (10h)
No	No (11c)	No	No (11d)	No	No (11e)	Yes	Yes (11f)
No	Yes (12c)	Yes	No (12d)	No	Yes	Yes	Yes












SELECTED SPECIAL FEATURES	
8a.	Unit-in-place costs are given for foundations, framing, floors, interior construction, HVAC, electrical, plumbing, fire protection, roofs, walls, refrigeration, conveyances and miscellaneous equipment.
8b.	Sitework costs are given for some site improvements.
8c.	Architect's fees are included in comparative units costs (calculator method), but are not included in unit-in-place (segregated cost method) costs. A schedule of architect's fees based upon project cost is given.
8d.	Included in construction costs are construction financing costs except for discounts & bonuses paid for financing.
9a.	Unit-in-place (components) costs are given for roofs, walls, HVAC, ceilings, floors, electrical, plumbing, & fireplaces.
9b.	Sitework costs are given for some street, utility, and yard improvements.
9c.	Architect's fees are included in comparative unit costs, but are not included in component or unit-in-place costs. A schedule of architect's fees based upon project quality is given.
9d.	Included in construction costs are construction financing costs except for discounts and bonuses paid for financing.
10a.	Selected building components are categorized by trades, with costs given in comparative unit cost section.
10b.	Use comparative unit cost section (sq.ft. and cubic ft. building costs) for quick estimates.
10c.	Component depreciation could be calculated from a detailed quantity survey.
10d.	Quantity survey sitework costs are included for drainage, utilities, roads, walks, fences, playgrounds, fountains, athletic facilities, and landscaping. Segregated sitework costs are given for some building types in comparative unit cost section.
10e.	Builder's (general contractor) overhead & profit must be added to quantity survey costs; comparative unit costs include builder's overhead & profit. A schedule is included for builder's overhead & profit as % of project cost.
10f.	A schedule of architect's & engineer's fees as % of project cost is given in the manual.
10g.	Labor/material costs are segregated in the quantity survey section only.
10h.	Historical cost indexes are included to determine quarterly construction cost changes.
11a.	An estimate based on detailed assembly cost would be less detailed than a complete quantity survey based estimate.
11b.	Component depreciation figures can be compiled from costs given in systems section. In comparative unit cost section, selected building component costs are segregated.
11c.	Sitework systems costs are given for roads, parking lots, utilities. Segregated sitework costs are given for some building types in comparative unit cost section.
11d.	A schedule of architect's fees is given as a % of project cost by building type in manual.
11e.	Installation costs are segregated from material costs for some systems, i.e. walls, doors & windows.
11f.	Historical cost indexes are included to determine quarterly construction cost changes.
12a.	Where a trade requires several types of materials to make a final item (i.e. paving) in-place costs as well as detailed breakdown of costs are included.
12b.	Component depreciation could be calculated from a detailed quantity survey.
12c.	Quantity survey sitework costs are included for utilities, drainage, paving, sidewalks, landscaping, fencing, and athletic facilities.
12d.	On-site construction permits are included in a separate section titled <u>General Conditions</u> .












SOURCES				CONTENT ORGANIZATION							
NAME OF DATA SOURCE	Publisher's Address	Initial Cost 1st Year	Frequency of Publication	DESCRIPTION OF COST DATA							
				Method				Uses			
				Comparative Unit Sq. Ft. + Cu. Ft.	Unit (Component System)-in-Place	Quantity Survey	Valuation	Initial Estimate	Intermediate Estimate	Detailed Estimate	Calculation of Component Depreciation
DOLLAR AND CENTS OF SHOPPING CENTERS	Urban Land Institute 1200 18th St., N.W. Washington, D.C. 20036	\$49.25	New Edition Published Every Three Years	Yes	No	No	No	Yes	No	No	No
BUILDING COST FILE UNIT PRICES 4 editions available: Eastern, Central Southern, Western	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	\$25.95	New Edition Published Annually	No	No	Yes	No	No	No	Yes	Yes (14a)
DESIGN COST FILE	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	\$29.95	New Edition Published Annually	No	Yes	No	No	No (15a)	Yes	Yes (15b)	Yes (15c)
ENGELSMAN'S GENERAL CONSTRUCTION COST GUIDE	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	\$27.50	New Edition Published Annually	No	No	Yes	No	No	No	Yes	Yes (16a)
REAL ESTATE VALUATION COST FILE	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	\$29.95	New Edition Published Annually	Yes	No	No	Yes	Yes	No	No	No
RESIDENTIAL COST MANUAL	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	\$28.95	New Edition Published Annually	Yes (18a)	No	Yes	Yes (18a)	No	No	Yes	Yes (18b)












PROJECT ITEMS INCLUDED IN COST DATA							ADJUSTMENTS		SELECTED SPECIAL FEATURES
Land Costs	Sitework	General Contractor Overhead & Profit	Architect/Engineer Fee	Construction Financing Costs	Labor Cost Segregated From Material Costs		Location Modifier	Time Modifier	
Yes	Yes (13a)	Yes	Yes	Yes	No		No	No	13a. The site improvement cost includes both on-site and off-site improvements.
No	No (14b)	No	No	No	Yes		Yes	No	14a. Component depreciation could be calculated from a detailed quantity survey. 14b. Quantity survey sitework costs are given for drainage, utilities, paving, surfacing, fencing, athletic facilities, retaining walls, and landscaping.
No	No	No	No	No	No		Yes	No	15a. An initial estimate can be made by summing system costs if the building design & systems are well defined. 15b. An estimate based on detailed assembly costs would be less detailed than a complete quantity survey based estimate. 15c. Component depreciation could be calculated from detailed building system costs.
No	No (16b)	No	No	No	Yes		Yes	Yes	16a. Component depreciation could be calculated from a detailed quantity survey. 16b. Quantity survey sitework costs are given for drainage, utilities, paving, athletic facilities, paving, fencing, and landscaping.
No	No (17a)	Yes	Yes	No	No		Yes	No	17a. In Miscellaneous Cost Items section, comparative unit sitework costs are given for athletic facilities, parking, fencing, landscaping, incinerators, paving, and retaining walls.
No	Yes	No (18c)	No (18d)	No	Yes		Yes	No	18a. Part 3: Valuation Section includes comparative unit costs for houses and apartments which are adjusted by shape, height, and size factors. 18b. Component depreciation could be calculated from a detailed quantity survey. 18c. General overhead items are included in a separate schedule for reference. 18d. Architect's and engineer's fees are included as part of general overhead.



SOURCES				Income Categories	Expense Categories	Statistics Used ----- Median Range Average -----
NAME OF DATA SOURCE	Publishers' Address	Initial Cost 1st Year Publication	Frequency of Publication			
DOWNTOWN AND SUBURBAN OFFICE BUILDING EXPERIENCE EXCHANGE REPORT	Building Owners and Managers Association International 1221 Massachusetts Avenue, N.W. Washington, D.C. 20005	\$95.00	New Edition Published Annually	Office Store Storage Special	Variable Operating Fixed Operating Tenant Improvement Allowance Leasing Expense Depreciation	Average
INCOME/EXPENSE ANALYSIS APARTMENTS	Institute of Real Estate Management 430 North Michigan Chicago, Illinois 60611	\$45.00	New Edition Published Annually	Apartments Garage/Parking Store/Office	Administrative Utilities Building Services Maintenance R.E. Taxes Insurance Amenities	Median & Range
EXPENSE ANALYSIS CONDOMINIUMS, COOPERATIVES, AND PLANNED UNIT DEVELOPMENT	Institute of Real Estate Management 430 North Michigan Chicago, Illinois 60611	\$20.00	New Edition Published Annually	None	Administrative Utilities Building Services Maintenance R.E. Taxes Insurance Leased Recreational Facilities	Median & Range
INCOME/EXPENSE ANALYSIS SUBURBAN OFFICE BUILDINGS	Institute of Real Estate Management 430 North Michigan Chicago, Illinois 60611	\$30.00	New Edition Published Annually	Office Storage Retail Parking Escalator Clauses	Administrative Maintenance Utilities R.E. Taxes Insurance	Median & Range
THE DOLLAR AND CENTS OF SHOPPING CENTERS	Urban Land Institute 1200 18th, N.W. Washington, D.C. 20036	\$49.25	New Edition Published Every Three Years	Base Rent Overage Common Area Charges	Maintenance Central Utility System Advertising & Promotion R.E. Taxes Insurance Administrative Depreciation Debt Service	Median & Deciles

CONTENT ORGANIZATION									SELECTED SPECIAL FEATURES	
Vacancy Trend & Occupancy Data	Analysis	Type of Development	Size in Square Feet	Location Categories	Age of Building	Rental or Price Range	Number of Stories	City Size		
Yes	Detailed 1973-77 compared by several attributes National Values	Offices Downtown Suburban including Government & Medical	Yes	City Region Nation	Yes	None	Yes	Yes	1. Economic analysis of office building industry. 2. Operating cost breakdown by region, size, age & height for suburban & downtown offices. 3. Energy analysis for downtown, suburban, & government offices by size, age, region, age, and height. 4. Data summary & operating ratios by organizational category.	
Yes	Detailed 1974-77 by building type National Values	Apartments Lo-Rise 12-24 units Lo-Rise 25+ units Elevator Garden Unfurnished Furnished	No	City Metropolitan Area Region Nation	Yes	Rental Range	No	No	1. Graphic summary of income & expenses by development type. 2. Tenant turnover rates by development type. 3. Summary of distribution of income & expenses by building type expressed in dollars per room & percentage of gross income.	
No	No	Condominiums Cooperatives Planned Unit Developments	No	Metropolitan Area Region	Yes	Price Range	No	No	1. Kinds of amenities furnished by owners association. 2. Breakdown of utility expenses between unit and owners' association by unit price range and building age.	
Yes	1976 & 1977 by regions Regional Values	Offices Suburban	Yes	Metropolitan Area Region Nation	Yes	Rental Range	Yes	No	1. Energy analysis for suburban offices by region and age. 2. Data summary & operating ratios by organizational category. 3. National & regional graphic summary of income, expenses, & total actual collections.	
No	1975 & 1978 by shopping center type National Values	Shopping Centers Super regional Regional Community Neighborhood	Yes	Region Nation	Yes	Yes	No	No	1. Tenant space needs, base rent, sales, & common area charges for 120 types of tenants in each center type. 2. Center operating receipts, expenses, & net operating income as a % of capital costs. 3. Energy sales & distribution methods by center type. 4. Analysis of Operations of enclosed & non-enclosed malls. 5. Analysis of capital costs by center type.	

NAME OF DATA SOURCE	PROJECT DEVELOPMENT CATEGORY	A - DECISION MODELS: INITIAL PROJECT ANALYSIS	
		SUITABILITY FOR USE IN ANALYSIS Content/Fit	COMPARATIVE COSTS - <u>analyzed on the basis of:</u> BUILDING TYPE & SIZE
BOECKH BUILDING VALUATION MANUAL	Apartmt. Office Retail		The data is presented in a form which includes building component descriptions and costs for specific designs. The comprehensive design and cost data is best applied in advanced project analysis.
BOECKH COMMERCIAL BUILDING COST GUIDE	Apartmt. Office Retail		The data requires design decisions on building exterior and ground floor area to select appropriate cost figures. The data applies to intermediate project analysis.
DODGE BUILDING COST CALCULATOR AND VALUATION GUIDE	Apartmt. Office Retail		A limited selection of historical case studies are included for each building category which could prove helpful in identifying initial project costs. The data requires design decision on building exterior and quality class to select appropriate cost figures. The data applies to intermediate project analysis.
DODGE CONSTRUCTION SYSTEMS COST GUIDE	Apartmt. Office Retail		The average building cost section provides a range of construction costs for various project types.
DODGE DIGEST OF BUILDING COSTS AND SPECIFICATIONS	Apartmt. Office Retail Shop.Cntr.		Data requires initial design decisions before comparison with specific case study references. The data applies to intermediate project analysis.
RESIDENTIAL COST HANDBOOK	Apartmt.		The data requires design decisions on building type, size, and quality to select appropriate cost figures. The data applies to intermediate project analysis.
MARSHALL VALUATION SERVICE	Apartmt. Office Retail		The Cost Calculator Method data requires design decisions on building type and quality to select appropriate cost figures.
MEANS BUILDING CONSTRUCTION COST DATA	Apartmt. Office Retail		Section 17 can be very useful for developing initial cost estimates for particular property types.
MEANS BUILDING SYSTEM COST GUIDE	Apartmt. Office Retail		Section 14 can be very useful for developing initial cost estimates for particular property types
DOLLARS AND CENTS OF SHOPPING CENTERS	Shop.Cntr.		A range of average building and project cost data, for different shopping center size categories, appropriate only for the initial project analysis. This manual provides complete project cost data which can be directly used in the Project-to-Building Ratio.
REAL ESTATE VALUATION COST FILE	Apartmt. Office Retail		The data applies to intermediate project analysis. The data requires design decisions on building types, size, and quality to select appropriate cost figures.

B - DECISION MODELS: INTERMEDIATE PROJECT ANALYSIS	
SUITABILITY FOR USE IN ANALYSIS Content/Fit	COMPONENT DESCRIPTION AND QUALITY FACTORS - <u>analyzed on the basis of:</u> BUILDING TYPE, SIZE, AND QUALITY
	The data is presented in a form which includes building component descriptions and costs for specific designs. The comprehensive design and cost data is best applied in advanced project analysis.
	The data scope is limited because building quality is indicated only by exterior facade and ground floor area. The building cost/sq.ft. of ground floor area must be converted to cost/sq.ft. of gross building area when a multi-story building is being analyzed.
	The data allows strong quality typing by exterior facade and quality class description.
	In the Average Building Cost Section, the data includes construction cost ranges that are not related to quality distinctions. The data is most suitable for use in project analysis.
	Data is presented from actual construction contracts for quick reference to similar jobs and specific locations. No definition of building quality is included with case study costs.
	The data allows strong quality typing by floor area and quality class description.
	The cost calculator method data is categorized by structural type and quality characteristics which makes it very appropriate for the intermediate analysis. The segregated cost method requires too many detailed design decisions to be appropriate for the intermediate project analysis models.
	The cost ranges identified in section 17 are not related to quality distinctions. The quantity survey data is so design specific in sections 1-16 that it exceeds the scope of the intermediate and advanced project analysis models.
	The unit-in-place data is so design specific in section 1-12 that it exceeds the scope of the intermediate and advanced project analysis models.
	A range of average building and project cost data, for different shopping center size categories, appropriate only for the initial project analysis. This operations data manual provides only introductory cost data.
	The data allows strong quality typing by component description and quality classification. The data applies to intermediate project analysis.

C - DECISION MODELS: ADVANCED PROJECT ANALYSIS	
SUITABILITY FOR USE IN ANALYSIS Content/Fit	INTER CHANGEABLE COMPONENTS & DESIGN FACTORS - <u>analyzed on the basis of:</u> BUILDING TYPE, SIZE, QUALITY, & ALTERNATIVE COMPONENTS/SYSTEMS
	The segregated cost data allows estimates to be made with a consideration of specific design and cost trade offs. This comprehensive design and cost data best meets the needs of the advanced project analysis models.
	No alternative building components other than building facades are included. The building cost/sq.ft. of ground floor area must be converted to cost/sq.ft. of gross building area when a multi-story building is being analyzed.
	The data includes limited alternative component adjustments for selected items. The data applies to intermediate project analysis.
	The systems data is appropriate for estimating alternative components with the exception of HVAC. The data is most suitable for use in initial project analysis.
	Alternative building component decisions are difficult to establish from comparable based case studies. The data applies to intermediate project analysis.
	The segregated cost data allows estimates to be made with a consideration of specific design and cost trade offs. The data applies to intermediate project analysis.
	The segregated cost data allows estimates to be made with a consideration of specific design and cost trade offs. This data best meets the needs of the advanced project analysis models.
	The quantity survey data is so design specific in sections 1-16 that it exceeds the scope of the intermediate and advanced project analysis models.
	The unit-in-place data is so design specific in sections 1-12 that it exceeds the scope of the intermediate and advanced project analysis models.
	A range of average building and project cost data, for different shopping center size categories, appropriate only for the initial project analysis. This operations data manual provides only introductory cost data.
	The components are arranged into building quality classes and are not individually estimated. This makes the data inappropriate for advanced project analysis.

NAME OF DATA SOURCE	PROJECT DEVELOPMENT CATEGORY	A - DECISION MODELS: INITIAL PROJECT ANALYSIS	
BOMA DOWNTOWN AND SUBURBAN OFFICE BUILDING EXPERIENCE EXCHANGE REPORT	Office Limited Retail	SUITABILITY FOR USE IN ANALYSIS Content/Fit	MARKET REVENUE AND SPACE ALLOCATION
			<p>Average Revenue Data (collected during previous calendar year) is provided for selected downtown and suburban metropolitan areas. Revenue data, in the Downtown and Suburban statistical tables, is organized by building size, age, story height, and city size.</p> <p>All data is presented in cents per square foot of total rentable area (office and retail space), total rentable office area, and actually rented office area.</p> <p>If the proposed project is exclusively rental office space, then select appropriate rental data from the "Office Total" (total rentable office area) column.</p> <p>The total number of buildings and their cumulative square feet of rentable area, included in the statistical tables, are important items to note in determining the usefulness of the data for a particular metropolitan area.</p> <p>Revenue data should be considered only as an advisory number useful in initiating the first project analysis.</p>
IREM INCOME/EXPENSE ANALYSIS APARTMENTS	Apartmt.		<p>Median revenue data (as well as low and high quartile ranges for large sample sizes) are provided for selected metropolitan areas, regions, and age group; as well as organized by furnished and unfurnished apartment buildings. Data is presented for elevator, low rise 12-24 units, low rise 25 or more units, and garden type buildings.</p> <p>The total number of apartment buildings and their cumulative square feet of rentable area included in the statistical tables are important items to note in determining the usefulness of the data for particular metropolitan areas.</p> <p>Revenue data should be considered only as an advisory number useful in initiating the first project analysis.</p>

B - DECISION MODELS: INTERMEDIATE PROJECT ANALYSIS

SUITABILITY
FOR USE IN
ANALYSIS
Content/Fit

MARKET VACANCY AND OPERATING EXPENSE ESTIMATES



The vacancy data included in the "Survey of Office Space Occupancy" is collected from a larger sample of buildings than the downtown and suburban statistical tables. The "Office Space Occupancy" survey provides more reliable indications of vacancy than those found in the data charts organized by city, city size, building size, age, and story height.

The expense line items are averages that should be analyzed individually and adjusted for local market conditions. The summing of all average expense items without adjustment will generate an inflated project operating expense statement.

Expense data, in the Downtown and Suburban Statistical Tables, is organized by building size, age, story height, and city size.

All data is presented in cents per square foot of total rentable area (office and retail space), total rentable office area, and actually rented office area.

If the proposed project is exclusively rental office space, then select appropriate operating expense data from the "Office Total" (total rentable office area) column.

The total number of buildings and their cumulative square feet of rentable area, included in the statistical tables, are important items to note in determining the usefulness of the data for a particular metropolitan area.

This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data. The size and character of the manual survey sample may give incomplete indications of local market supply/demand forces, current lease terms, or particular project management strategies.



The vacancy data included in the "Trend Analysis" section provides an indication of vacancy nationwide by building type. The vacancy data found in the metropolitan statistical tables are samples from selected metropolitan areas. Careful attention should be given to sample size and the number of apartment buildings, apartment units, and rentable square feet before making a judgement about apartment vacancy in a specific metropolitan area. Current, locally collected data for competitive rental space should be used in the intermediate models when possible.

The expense line items are medians, (with low and high quartile ranges for large sample sizes) stated as a percentage of Gross Possible Income and in dollars per square foot of rentable area. This data should be adjusted for local market conditions. The summing of all expense items vertically without adjustment will generate an inflated project operating expense statement.

Be aware that expenses are listed as a percentage of Gross Possible Income. This income includes miscellaneous revenue from garage/parking and store/offices rental. If the proposed project is exclusively rental apartment space, then expenses as a percentage of Gross Possible Income must be adjusted to a Rent-Apartments.

This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data. The size and character of the manual survey sample may give incomplete indications of local market supply/demand forces, current lease terms, or particular project management strategies.

C - DECISION MODELS: ADVANCED PROJECT ANALYSIS

SUITABILITY
FOR USE IN
ANALYSIS
Content/Fit

MARKET VACANCY AND OPERATION EXPENSE VERIFICATION





This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data. The size and character of the manual survey sample may give incomplete indications of local market supply/demand forces, current lease terms, or particular project management strategies.



This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data. The size and character of the manual survey sample may give incomplete indication of local market supply/demand forces, current lease terms, or particular project management strategies.

X. 13

APPENDIX: Evaluation of PROJECT OPERATIONS DATA MANUAL Suitability
Legend: Refer to Page X.1

NAME OF DATA SOURCE	PROJECT DEVELOPMENT CATEGORY	A - DECISION MODELS: INITIAL PROJECT ANALYSIS	
		SUITABILITY FOR USE IN ANALYSIS Content/Fit	MARKET REVENUE AND SPACE ALLOCATION
IREM INCOME/EXPENSE ANALYSIS SUBURBAN OFFICE BUILDINGS	Office		<p>Revenue is presented in dollars per square feet of Gross Area of Building, Gross Rentable Office Area, and Net Rentable Office Area. The appropriate revenue data used in the initial models depends on whether floor areas are to be leased by single or multiple tenants.</p> <p>Median revenue data (and low and high quartile ranges for large sample sizes) is provided for selected suburban metropolitan areas and regions according to building size, age group, rental range, and building type.</p> <p>Revenue data appropriate for the initial project analysis is found under the heading "Income" for the "Offices" line item. Miscellaneous income would be excluded when project design calls for exclusive office rental space.</p> <p>Revenue data should be considered only as an advisory number useful as a starting point for the initial project analysis.</p>
ULI DOLLARS & CENTS OF SHOPPING CENTERS	Shopping Centers		<p>Revenue data (collected every third year) is provided for neighborhood, community, regional, and super regional shopping centers. The revenue data is presented by dollars per square foot of "Gross Leaseable Area" and as a "Percentage of Total Receipts." The revenue data is reported as medians with lower and upper deciles.</p> <p>All data is presented in dollars per square foot of Gross Leasable Area which includes all areas leased by the center owner. (including department stores owned by the center)</p> <p>"Total Operating Receipts" is the appropriate revenue data to use in the initial project analysis model. It is found in the statistical tables by shopping center type, age, and region.</p> <p>Revenue data from the "Operating Results" table should be considered only as an advisory number useful as a starting point for the initial project analysis. In more advanced analysis models, particular tenant composition and the resulting rent structure will give a more accurate indication of possible revenues for the proposed project.</p>

B - DECISION MODELS: INTERMEDIATE PROJECT ANALYSIS

SUITABILITY
FOR USE IN
ANALYSIS
Content/Fit

**MARKET VACANCY AND OPERATING
EXPENSE ESTIMATES**



The vacancy data included in the "Trend Analysis" section provides an indication of suburban office building vacancy nationwide for the year. The vacancy data found in the suburban metropolitan statistical tables is reported as of December 31, of preceeding year. Careful attention should be given to sample size and the number of office buildings and their cumulative square feet of rentable area before making a judgement about office building vacancy in the particular suburban metropolitan area. Current local collected vacancy data for competitive rentable space should be used in the intermediate models when possible.

If the proposed project is exclusively rental office space, then select appropriate operating expense data from the Gross Rentable Office Area or Net Rentable Office area.

The total number of buildings and their cumulative square feet of rentable area included in the statistical tables are important items to note in determining the usefulness of the data for a particular suburban metropolitan area.



Operating expense data (collected every third year) is provided for neighborhood, community, regional, and super regional shopping centers. The expense data is presented by dollars per square foot of "Gross Leasable Area" and as a "Percentage of Total Receipts." The expense data is reported as medians, with lower and higher deciles.

Vacancy data is not included as a segregated item.

Tenant information is given for low and high total rent charges to facilitate estimation of tenant composition and the resulting rent structure for the proposed project in the intermediate analysis.

The specific revenue and expense data for the four shopping center categories is summarized in the "Operating Results" tables. Data is analyzed by region and shopping center age groups.

C - DECISION MODELS: ADVANCED PROJECT ANALYSIS

SUITABILITY
FOR USE IN
ANALYSIS
Content/Fit

**MARKET VACANCY AND OPERATING
EXPENSE VERIFICATION**



This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data for suburban office buildings. The size and character of the manual survey sample may not give adequate indications of local market supply/demand forces, current lease terms, or particular project management strategies.



Debt service is included in the "Operating Results" tables. This data is inappropriate for the advance project analysis models which generate their own annual debt service estimates for the project.

"Detailed Tenant Information Tables", for different center categories, indicate the base rental rate, percentage (overage) rent, and common area charges that equal the total revenue expected per square foot of Gross Leasable Area for each type of possible tenant. The frequency of occupancy and the median size of leased area for different tenants can be found in the "Summary of Tenant Information Tables".

This manual of historical operating revenue and expense data can be used to verify estimates of up-to-date local shopping center revenue and expense data. The size and character of the manual may not give adequate indications of local market supply/demand forces, current lease terms, or particular project management strategies. (These factors are considered in the advanced project analysis process when tenant composition for the center has been tentatively identified.)

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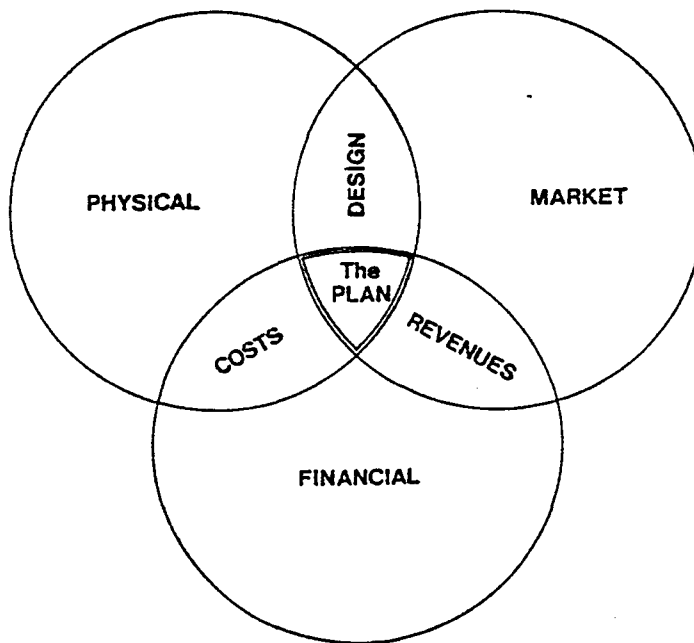
STATEMENT OF PURPOSE

The objective of Project Feasibility Analysis is to:

reduce the risk of uncertainty by stating assumptions completely and explicitly, and

enhance the value of the asset— land— by maximizing the margin between revenues from market opportunities and costs of development.

The process and techniques employed can be used to continuously assess feasibility from undocumented to fully documented assumptions. The level of documentation may vary for each of three categories of input, but each requires consideration as the analysis is undertaken.



INTRODUCTION

The Development Impact Model (DIM) provides a technique for performing a balanced feasibility analysis. It was developed by John Rahenkamp and Associates, Inc., in response to the need for feasibility evaluations which incorporate the social and political externalities affecting the feasibility of a proposed project. By recognizing the real and growing power of local political forces and environmental values as well as the need for a reasonable rate of return, the DIM measures the true feasibility of a particular project from the developer's and also the community's point of view.

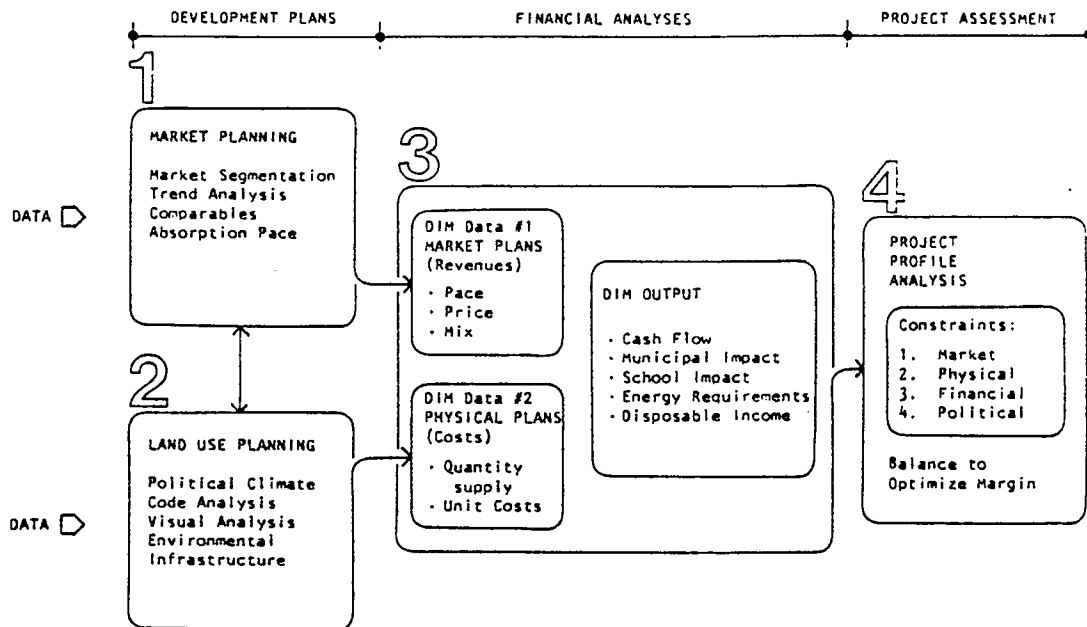
Essentially, the model identifies existing capacities of physical and fiscal systems, the projected demands resulting from the proposed project, and the resulting costs or benefits. It calculates not only front end expenses and bottom line profit, but it may also calculate the development's impact on local educational and municipal support systems. This information provides the developer and/or the community with a balanced measure of feasibility, political and environmental as well as financial. Since this information is objective as well as extensive, it should establish a sound basis for proper project approval or rezoning decisions.

Furthermore, the DIM is a computerized system utilizing the speed of the computer to deal with the numerous factor items and the vast range of possible combinations and permutations. Manual calculations of possible alternatives may take weeks, forcing decision-makers to act on incomplete information. In contrast, the computer offers the critical advantage of simulating available options quickly and performing continuous runs as criteria change either in the community's or developer's requirements.

It must be recognized that the value of a DIM feasibility evaluation is directly related to the accuracy and completeness of the basic data input. Each DIM analysis pertains only to the individual project and requires site-specific information. Much of the required data is usually already held by the developer or immediately available to him. The cost of a DIM feasibility analysis will obviously vary significantly depending on the amount of in-house research and data gathering required. If the information is provided directly by the developer in an appropriate form, the DIM evaluation costs are appreciably reduced.

The schematic diagram on the following page indicates the framework in which a feasibility analysis is carried out. Careful attention must be given to each of the three categories of project parameters depending upon the political/market/physical situation of a specific property. Once a minimum level of data is acquired and synthesized, gaming with critical variables can be accomplished quickly to develop an optimum project profile.

PROJECT FEASIBILITY ANALYSIS



The sections following discuss the kinds and character of analysis required prior to establishing data inputs to DIM. The level of detail of each separate analysis will depend upon that element's criticality for project approval, both from public officials and the developer initiating the evaluation.

The third section contains a project checklist itemizing the information supplied by a developer. This checklist illustrates the scope and detail of the DIM feasibility analysis and provides the necessary data to run the DIM program.

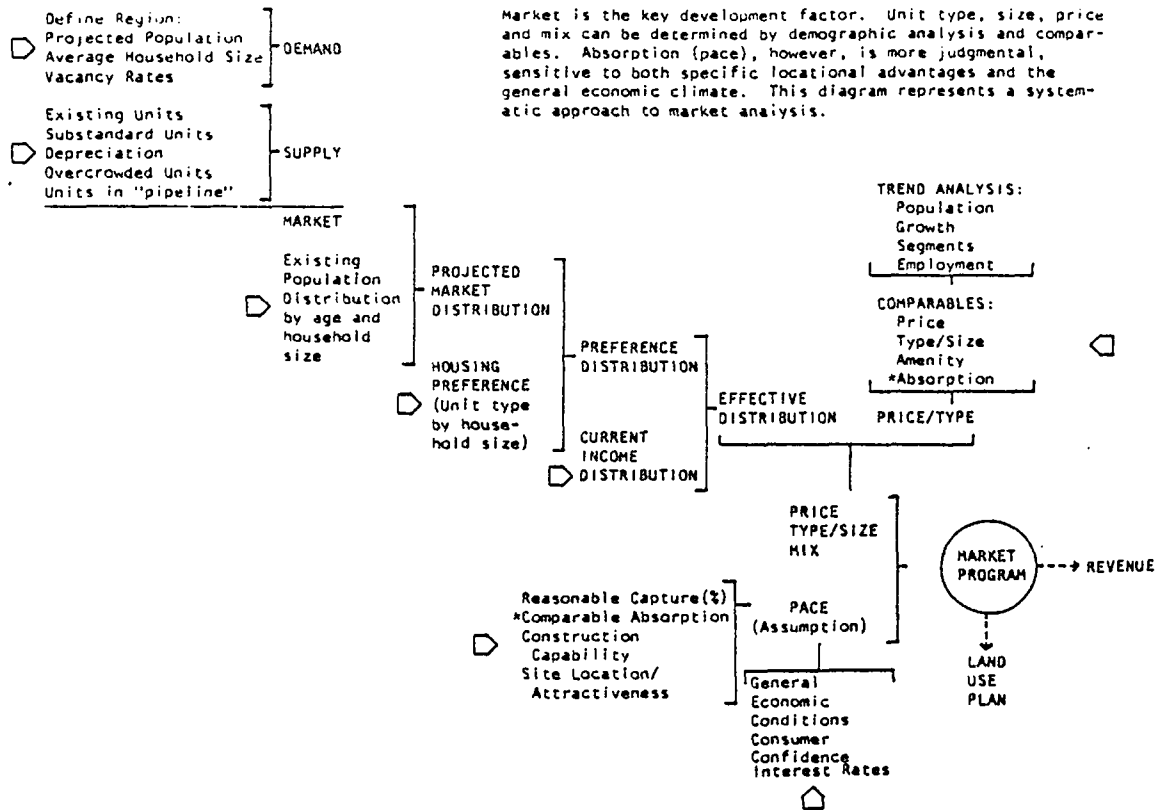
The Feasibility Checklist is supplemented by several pages of explanatory notes and exhibits. Each input space on the checklist has been assigned a code number which corresponds to a note describing the information required, and in five cases, these notes refer to one of the exhibits. After the exhibits is a sample of the checklist which was prepared for a typical project and a feasibility analysis printout which can be a guide.

It should be noted that all of the data indicated on the checklist is not required for analysis purposes. Where data is missing either a specific analysis will not be performed, e.g., School, Municipal, Demand, or the computer will assume a zero value. However, before each analysis all the data is reviewed by a staff computer specialist to insure its completeness.

1

market
planning

MARKET SEGMENTATION



MARKET SEGMENTATION ILLUSTRATION

MONTGOMERY CO.

PRICE LEVEL COMPARABLES

(RENT/MONTH)	180.	225.	275.	350.
GA-1BR	9697.	0.	0.	0.
GA-2BR	1727.	7856.	0.	0.
TH	2715.	2761.	2590.	0.
SF	422.	5368.	4808.	13836.
TOTAL NET MARKET	14562.	15986.	14397.	13836.
% TOTAL DEMAND	25.	27.	24.	24.

TOTAL NET MARKET (15 YEAR ESTIMATE)

58780.

MARKET TREND ANALYSIS

RESEARCH:

- * Major commercial centers within 15 minutes
- * Major commercial centers within 45 minutes
- * Major employment centers within 15 minutes
- * Major employment centers within 45 minutes
- * Commercial and employment growth rate
- * Population growth rate by age segments
- * Family income growth rate by segments
- * Housing vacancy rates
- * Permits issued by type

INTERPRETATIONS:

- * Strength and income/housing type implications of future employment opportunities
- * Locational convenience
- * Growing age and income segments related to price and housing type
- * Strength of competition; how much of the market is being absorbed and/or lost?

CONCLUSIONS:

- * What is presently being built (price/type) is correct; follow the leaders and do comparables
- * Identify market demands not being met
- * There is some elasticity in the market to support price increases over competition
- * Hold or reduce prices due to competition

MARKET COMPARABLES

Project Name: <u>Indian Hills</u>		Date: <u>2/14/75</u>	
Owner: <u>C. Quinn</u>		Address: <u>Winona Way</u>	
Builder: _____		Lender: _____	
Age or Status: <u>8 yrs.</u>		Architect: _____	
No. of Units: <u>120</u>	No. of Bldgs: <u>10</u>		
No. of Stories: <u>2 & 3</u>	No. Vacant: <u>none</u>	Type of Constr: <u>frame</u>	
Map Key: <u>9</u>			

Bedrooms - Baths:	<u>1/1</u>	<u>2/1</u>
Number of Units:	_____	_____
Monthly Rents:	<u>185</u>	<u>275</u>
Square Feet:	<u>900</u>	<u>1000</u>
Rent/Sq. Ft. (Unfurn):	<u>.206</u>	<u>.275</u>
No. of Furn. Apts:	<u>none</u>	_____
No. of Vacant Apts:	<u>none</u>	_____
Utilities Furnished:	Electric: _____	Gas: _____ Water: <u>x</u>
Extra Charges:	Refrigerator: _____	Other: _____
	Furniture: <u>0 BR</u>	<u>1 BR</u> <u>2 BR</u> <u>3 BR</u>

Cooking Energy: <u>elec.</u>	Type of Heating: <u>central gas</u>	Walk-In Closets: _____
Air Conditioning: <u>central</u>	Ranges/Ovens: <u>x</u>	Fireplaces: _____
Dishwashers: <u>x</u>	Patios/Balconies: <u>x</u>	Carpets/Drapes: <u>x</u>
Washer/Dryer: <u>in bldg.</u>	Other Good Features/Remarks: _____	

Pool(s): <u>x</u>	Laundry Facilities: <u>in bldg.</u>
Clubhouse(s): <u>x</u>	Security System: _____
Tennis: _____	Parking: <u>incl. garages</u>
Playground Area: _____	Storage Lockers: _____
Other Good Recreation or Project Features/Remarks: _____	

MARKET PLAN/SUMMARY OF ASSUMPTIONS

Upon completion of the market segmentation analysis, the following information is arranged in a convenient form for direct input to the DIM data sheets and as a working program for physical land use planning.

Unit Types:	Single Family	Townhouse	Garden Apartment
Mix (%):	11.3	54.7	34.0
Price (K\$):	60.0	45.0	30.0
Average Size (S.F.):	2,000	1,500	900
Average Stories:	1.5	2.5	3.0

Annual Sales*:					Pace
Year	1	0	0	0	0
	2	0	0	0	100
	3	0	0	0	130
	4	0	0	0	130
	5	0	0	0	130
	6	0	0	0	130
	7	0	0	0	140

*Based on market analysis only: Subject to physical confirmation after land use planning.

•Actual minimal distribution will be approximately equal to projected market mix but is subject to physical planning

2

land use
planning

POLITICAL CLIMATE ANALYSIS

APPROVABILITY

Project Proposal Impacts:	on existing zoning on fair share on existing demography on existing population size on growth rate
Index of Exclusionary Tendency:	elected official turnover rate professional staff capability and attitudes change approval rate allowable density and land use types fair share allocation "vigilante" groups community income distribution
Codes and Procedures:	complexity clarity time lines flexibility requirements standards
Local Issues:	fiscal environmental land use utilities open space

Estimate of legal position and potential tradeoffs.

Summary estimate of probability (%) of approval for proposed project.

CODE ANALYSIS

Applicable zoning codes are reviewed and analyzed to determine development potential under existing zoning or the availability of appropriate zoning districts which might satisfy the client's building program.

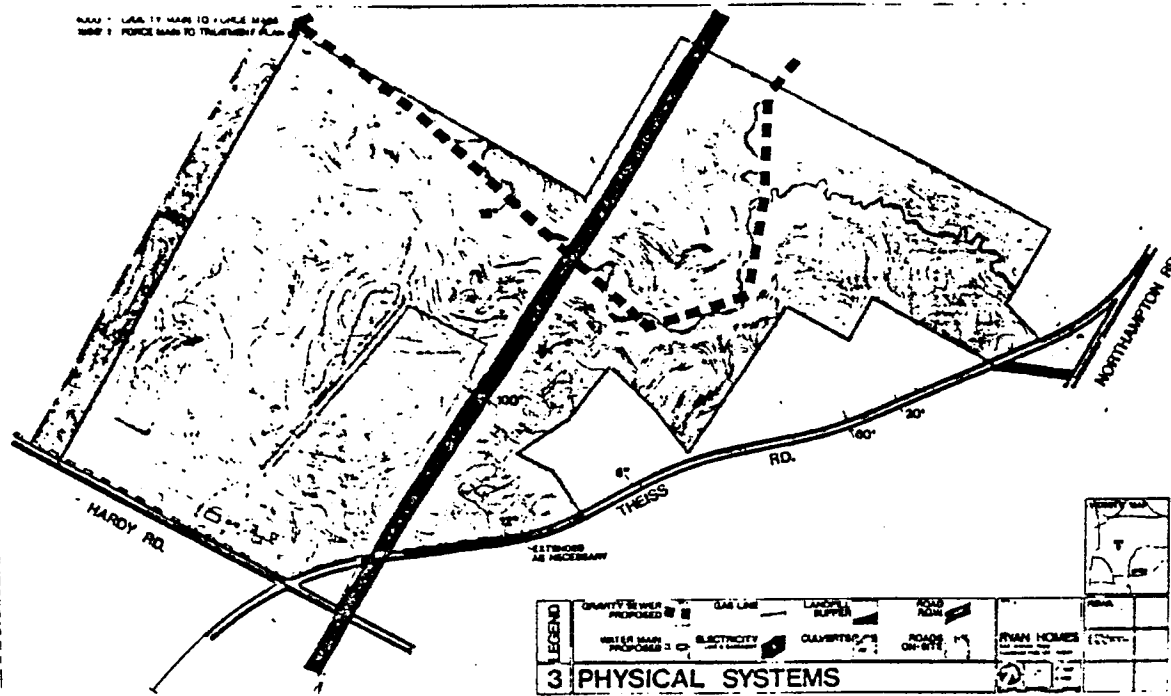
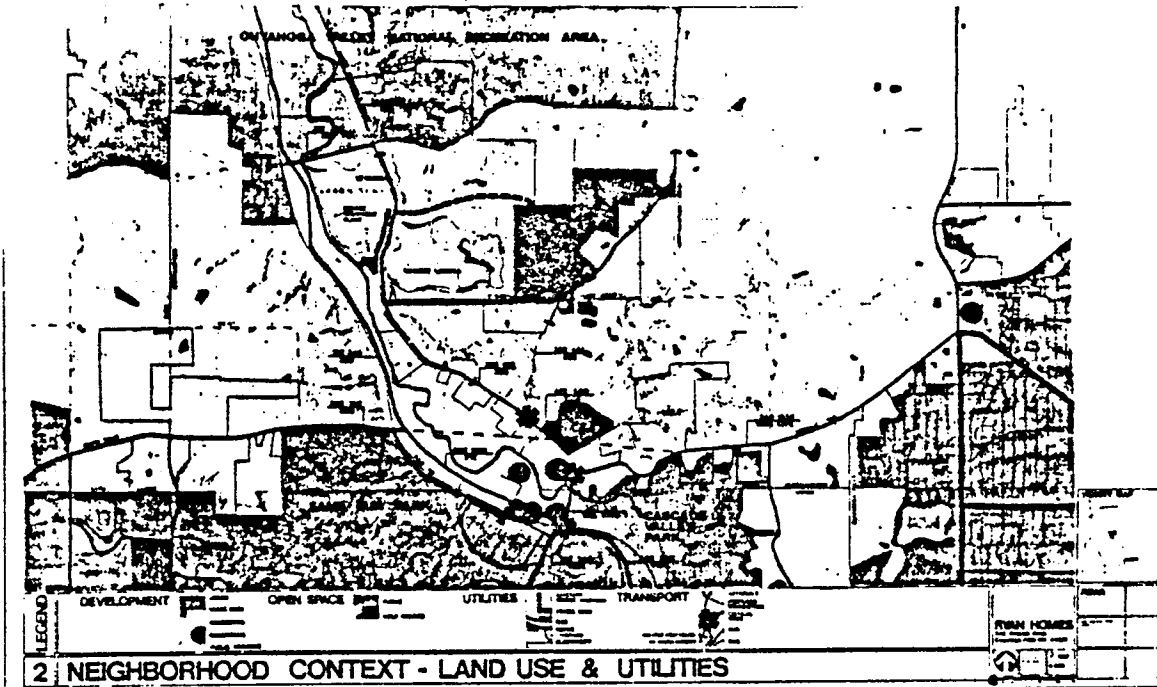
At the last year's election experienced a drastic realignment in its political structure. The Township, turned-out the "democratic machine" who had dominated Barlin for the past thirty to forty years. A group of young independents, whose platform was a change of government was elected with nearly 75% of the vote. As a result, all the major administrative boards were changed and people of the same persuasion as the Mayor-Council were appointed. A portion of the platform of the new government was to promote good substantial growth.

As a result of these changes, the Mayor-Council has appointed a Land Use Study Committee to review the Township's existing zoning ordinance to determine what changes should be made to encourage growth while minimizing its adverse effects.

The site is presently zoned into three categories: 276 ac. in R-1 Residential with minimum lots of one acre; 21.5 ac. I-1 Light Industrial; and 2.5+ ac. C-2 Neighborhood Commercial. With this splitting of the parcel into various zones, the chance of unified development is lessened which would not permit maximizing the site's development potential. The Township is relatively unsophisticated in its planning activities, but the new officials are aggressive and appear to be open to construction suggestion which will enable them to promote the desired quality growth.

INFRASTRUCTURE ANALYSIS

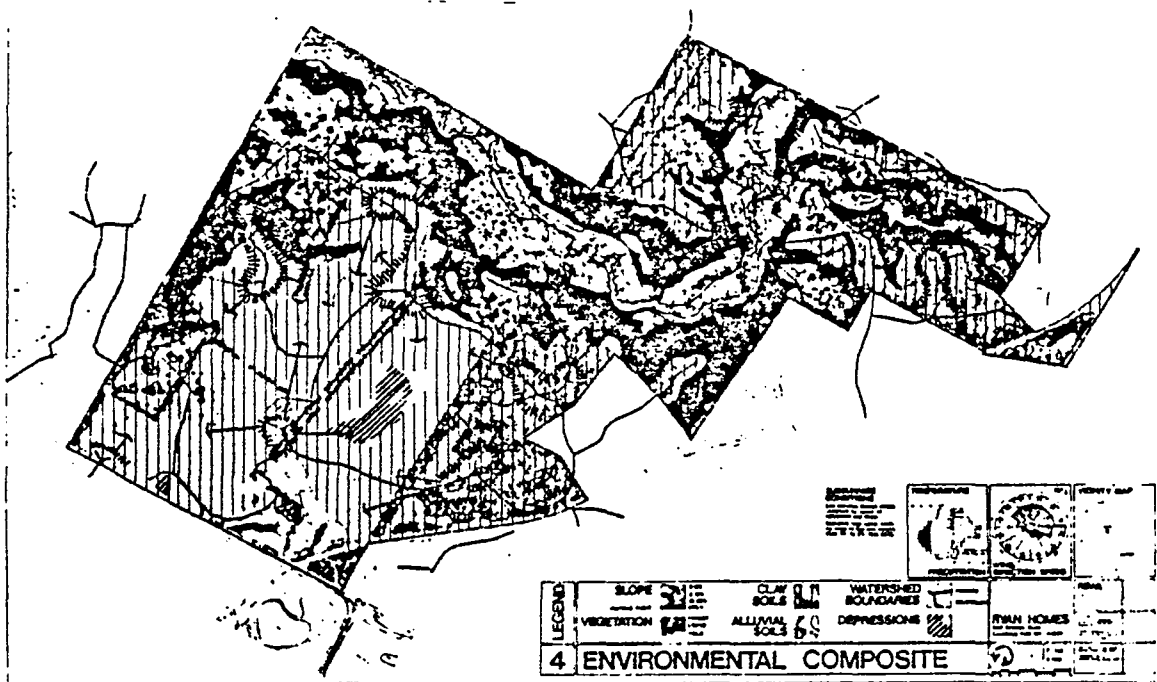
Every development generates demands on man-made systems. The capacity to absorb these demands must exist or be built. An analysis is required to make this determination which is often the difference between a profitable project and one that is marginal or premature.



ENVIRONMENTAL ANALYSIS

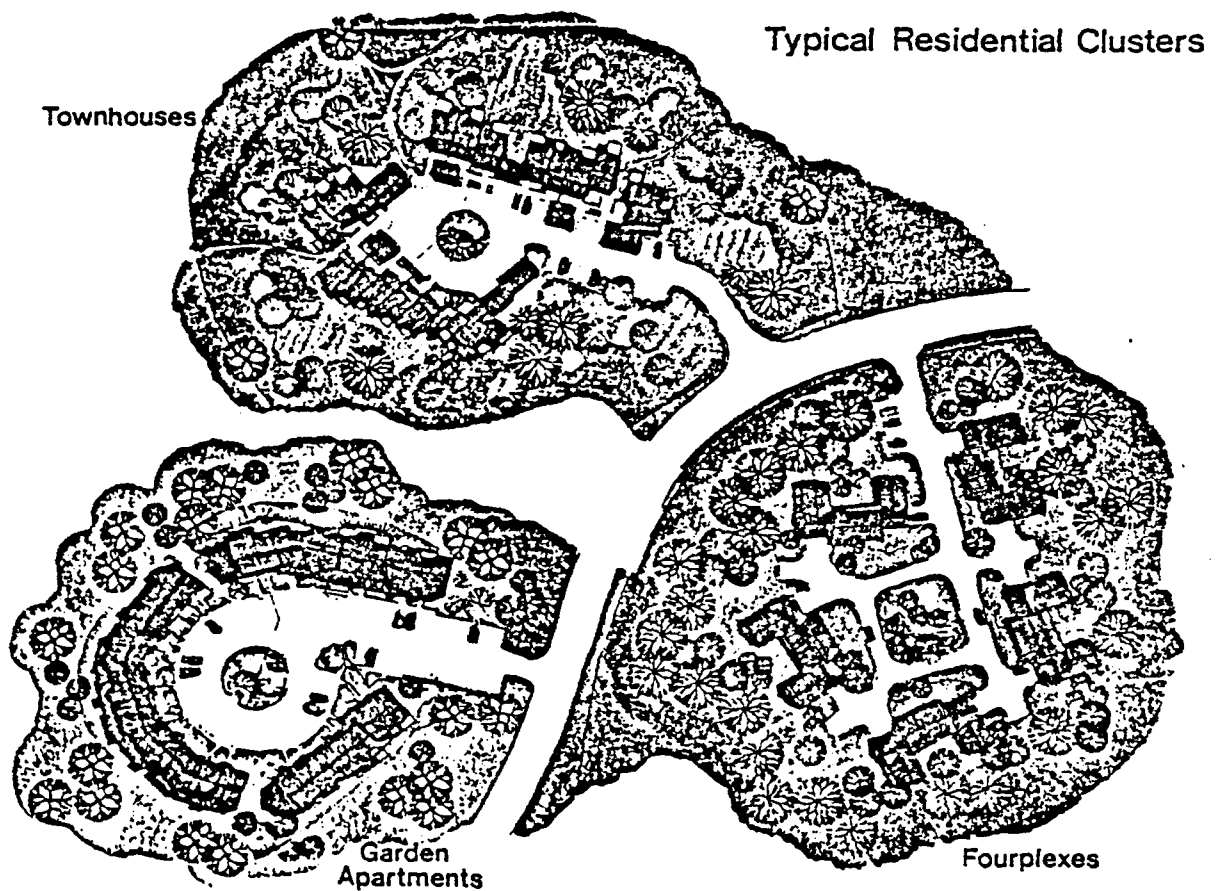
Environmental variables can be identified which materially affect the disposition of land uses if the plan is to be cost effective. Severe slopes, high water tables, and shallow bedrock have obvious cost consequences if not identified. Conserving trees and natural ground covers reduces landscaping costs and helps to prevent excessive erosion. Public health and safety must also be protected by identifying easily polluted soils and underground water supplies. If properly conducted and used, environmental analysis proves it is less costly to work with, rather than against, nature.

As part of the environmental analysis, the visual opportunities and burdens of the site, whether part of a larger neighborhood (if it's a small site) or as a self-contained neighborhood (if a large one) must be identified. Visual attributes include long or intimate views, dense or filtered spatial enclosures, natural features, and water. Burdens that must be mitigated if possible include noise, odors, visual obstructions like high tension lines, and unsightly views. The visual analysis locates these opportunities and burdens so they can be used in developing the land use plan most effectively.



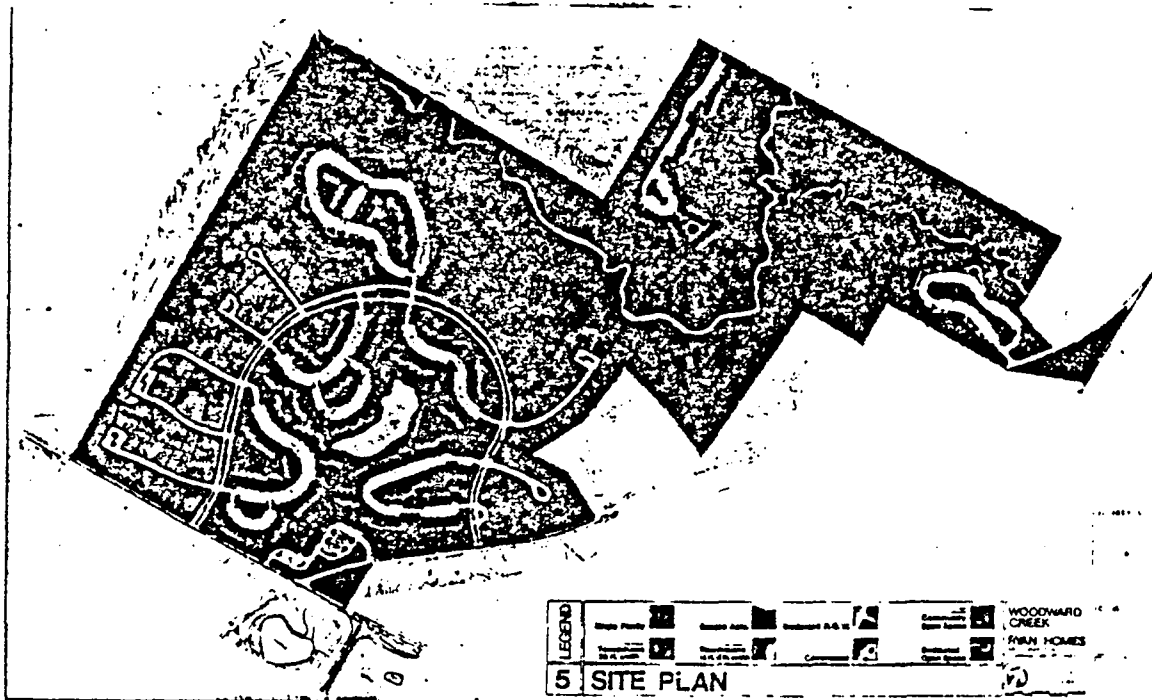
HOUSING PRODUCTS ANALYSIS

For land use plans to be used as reasonable representations of what can be built and for rough development cost estimates, it is necessary to be realistic about what can be placed on the ground (usually expressed as net densities for each unit type). Typical cluster designs are developed to insure that unit counts can be achieved and that lot improvement costs are accurate.



LAND USE PLANS

The land use plan must accommodate the market program and respect both visual and other environmental considerations. It must be cost-effectively phased for on and off-site infrastructure and generally enhance the marketability of the site through sensitive design.



3

financial
analysis

DIM DATA INPUT SHEETS

The Development Impact Model (DIM) calculates quickly and accurately the combined consequences of the market, physical and other financial data provided to it. It is used to speed up computation and to organize the output so the project can be conveniently compared to acceptable standards of performance. The general value of the computer program is the ability to make many changes without the labor of endless calculation or the danger of error.

The DIM data sheets facilitate the systematic recording of the specific data requirements of the program. Each section has an appropriate heading covering the following four areas of data:

- Market Data from the market program (modified if necessary after physical planning)
- Physical Data from the land use plan
- Public Impact Data from the political climate and code analysis
- Financial Data from the client concerning sales and overhead costs

In general, the market determines revenues; land use, the costs; and public impacts, the probability of public approval.

Attached to the data sheets are specific definitions of what is included in the number called for in each box. In some cases, checklists are provided for even finer breakdowns. These definitions and checklists provide confidence that nothing has been overlooked and that revisions can be made without disturbing other variables. The data input to DIM is thus highly explicit.

client data

CLIENT NAME		
	DNAME-1	
PROJECT NAME, LOCATION		
	DNAME-2	
DATE		
	DATE-3	

site data

SITE AREA COVERAGE ALLOWABLE			
	A-4	GSCAP-5	
INDUSTRIAL COMMERCIAL SCHOOL SITE			
	AI-6	AC-6	AS-6
MAJOR ROAD (R.O.W.) OPEN SPACE			
	AR-6	AO-6	
RECREATIONAL FACILITY OTHER (SPECIFY)			
	ARC-6	AOT-6	

unit data

UNIT TYPES						
DUMNMS-7						
NET DENSITIES						
DD-8						
SALE PRICES - RESIDENTIAL						
- INDUSTRIAL	ISP-9					
- COMMERCIAL	SPNRI-10 SPNRC-11					
MIX						
MIX-12						
NUMBER OF UNITS						
INU-13						
UNIT SIZE						
AUS-14						
NUMBER OF STORIES						
STORYS-15						

demand data

ANNUAL REGIONAL RESIDENTIAL DEMAND		RD-16
ANNUAL REGIONAL INDUSTRIAL DEMAND		RID-17
ANNUAL REGIONAL COMMERCIAL DEMAND		RCD-18

school data

SCHOOL CAPACITY		
NSC-19		
CONSTRUCTION COST SQUARE FOOT REQUIREMENT	CSC-20	CSC-20
SCHOOL BOND RATE SCHOOL BOND TERM	DS-21	DS-21
OPER. INC.	XOY-22	
SCHOOL ENROLLMENT	MSC-23	

municipal data

REAL ESTATE VALUE		
MMV-24		
POPULATION MUNICIPAL COSTS	NR-25	CCOMOI-26

fiscal data

ASSESSMENT FACTOR		
AF-27		
SCHOOL TAX MILLAGE MUNICIPAL TAX MILLAGE	STM-28	MM-29

land and development data

LAND COST				
INTEREST				
PROFESSIONAL FEES	LC-30	INT-31	FOP-31	
DEVELOPMENT COST				
OFF-SITE CONTRIBUTION	CA-33	DEVC-34		
ANNUAL LAND EXPENDITURES	1	2	3	4
LAC-35	6	7	8	9
ANNUAL SITE-DEVELOPMENT EXPENDITURES	1	2	3	4
XPCPY-36	6	7	8	9
ANNUAL OFF-SITE CONTRIBUTION	1	2	3	4
OSC-37	6	7	8	9

construction and management data

PERCENT LAND PRICE TO SALE PRICE						
PCT-38						
CONSTRUCTION COST/SQ. FT. BY UNIT TYPE						
ESCF-39						
LOT IMPROVEMENT COST/UNIT TYPE						
CLI-40						
PERCENT SALES COST						
ESC-41						
TECHNICAL FEES						
INTEREST ON CONSTRUCTION	TECH-42	IOCC-43				
OVERHEAD EXPENSE						
	POHE-44					
ANNUAL RESIDENTIAL CONSTRUCTION	1	2	3	4	5	
ID-45	6	7	8	9	10	
ANNUAL INDUSTRIAL CONSTRUCTION	1	2	3	4	5	
IID-46	6	7	8	9	10	
ANNUAL COMMERCIAL CONSTRUCTION	1	2	3	4	5	
CID-47	6	7	8	9	10	

annual sales/revenue data

ANNUAL RESIDENTIAL SALES (UNITS) SDU-48	1	2	3	4	5
	6	7	8	9	10
ANNUAL INDUSTRIAL SALES (ACRES) SNRAI-49	1	2	3	4	5
	6	7	8	9	10
ANNUAL COMMERCIAL SALES (ACRES) SNRAC-50	1	2	3	4	5
	6	7	8	9	10
OTHER REVENUES OR-51	1	2	3	4	5
	6	7	8	9	10
OTHER EXPENSES OE-52	1	2	3	4	5
	6	7	8	9	10

NOTES ON INPUT CHECKLIST

KEY CODE	KEY NUMBER	DESCRIPTION
<u>CLIENT DATA</u>		
DNAME	(1)	CLIENT NAME
DNAME	(2)	PROJECT NAME, LOCATION: LOCATION BY MUNICIPALITY, STATE.
DATE	(3)	DATE: DATE OF CHECKLIST COM- PLETION.
<u>SITE DATA</u>		
A	(4)	SITE AREA: TOTAL SITE ACREAGE.
GSCAP	(5)	COVERAGE ALLOWABLE: TOTAL ALLOWABLE IMPERVIOUS COVER AS DEFINED BY CODE; 30% COVERAGE MAXIMUM.
NON-RESIDENTIAL ACREAGES		
AI	(6)	INDUSTRIAL
AC	(6)	COMMERCIAL
AS	(6)	SCHOOL SITE
AR	(6)	MAJOR ROAD (RIGHT-OF-WAY)
AO	(6)	OPEN SPACE
ARC	(6)	RECREATIONAL FACILITY
AOT	(6)	OTHER (SPECIFY)
<u>UNIT DATA</u>		
DUMNMS	(7)	UNIT TYPES: DEFINED AS SINGLE FAMILY (SF), TOWNHOUSE (TH), GARDEN APARTMENT (GA), MID-RISE (MR), HIGH RISE (HR).
DD	(8)	NET DENSITIES: NET DENSITY PER UNIT TYPES, IN DWELLING UNITS PER ACRE.

SALE PRICES:

ISP	(9)	ESTIMATED AVERAGE SALES PRICE BY RESIDENTIAL UNIT TYPE.
SDNRI	(10)	ESTIMATED AVERAGE SALES PRICE BY INDUSTRIAL UNIT TYPE.
SPNRC	(11)	ESTIMATED AVERAGE SALES PRICE BY COMMERCIAL UNIT TYPE.
MIX	(12)	Mix; SUGGESTED RESIDENTIAL UNIT MIX AS A PERCENT OF TOTAL RESIDENTIAL UNITS (100%). SUGGESTED NON-RESIDENTIAL UNIT MIX AS A PERCENT OF TOTAL NON-RESIDENTIAL UNITS (100%).
INU	(13)	NUMBER OF UNITS: SUGGESTED NUMBER OF UNITS BY RESIDENTIAL AND NON- RESIDENTIAL TYPES.
AUS	(14)	UNIT SIZE: ESTIMATED SQUARE FOOTAGE OF LIVING AREA BY RESIDENTIAL UNIT TYPE. ESTIMATED SQUARE FOOTAGE OF GROSS LEASABLE AREA (GLA) BY NON-RESIDENTIAL UNIT TYPE.
STORYS	(15)	NUMBER OF STORIES: ESTIMATED HEIGHT OF BUILDINGS IN NUMBER OF STORIES BY RESI- DENTIAL AND NON-RESIDENTIAL UNIT TYPES.

DEMAND DATA

RD	(16)	ANNUAL REGIONAL RESIDENTIAL DEMAND: TOTAL NUMBER OF RESIDENTIAL UNITS DEMANDED ANNUALLY WITHIN THE DEFINED MARKET AREA.
RID	(17)	ANNUAL REGIONAL INDUSTRIAL DEMAND: TOTAL NUMBER OF INDUSTRIAL UNITS DEMANDED ANNUALLY WITHIN THE DEFINED MARKET AREA. (1,000 SQ. FT. PER UNIT)

RCD	(18)	ANNUAL REGIONAL COMMERCIAL DEMAND: TOTAL NUMBER OF COMMERCIAL UNITS DEMANDED ANNUALLY WITHIN THE DEFINED MARKET AREA, (1,000 SQ. FT. PER UNIT)
-----	------	--

SCHOOL DATA

NSC	(19)	SCHOOL CAPACITY: TOTAL NUMBER OF SPACES AVAIL- ABLE IN THE MUNICIPAL SCHOOL SYSTEM. (TOTAL CAPACITY OF ALL SCHOOLS MINUS CURRENT ENROLLMENT.)
-----	------	--

CSC	(20)	CONSTRUCTION COST (SCHOOLS): ESTIMATED COST PER SQUARE FOOT FOR SCHOOL CONSTRUCTION.
-----	------	--

CSC	(20)	SQUARE FOOT REQUIREMENT: THE NUMBER OF SQUARE FEET REQUIRED PER STUDENT BY STATE LAW OR MUNICIPAL RECOMMENDATION.
-----	------	---

DS	(21)	SCHOOL BOND RATE: THE CURRENT OR PROJECTED INTEREST RATE ON SCHOOL BOND OFFERINGS.
----	------	---

DS	(21)	SCHOOL BOND TERM: THE CURRENT OR PROJECTED NUMBER OF YEARS FOR A SCHOOL BOND TO REACH MATURITY FROM ITS INITIAL OFFERING.
----	------	---

XOY	(22)	OPER. INC. THE AMOUNT OF REVENUE RAISED THROUGH LOCAL REAL ESTATE TAXES USED IN THE SCHOOL OPERATING BUDGET FOR THE CURRENT ACADEMIC YEAR. (RESIDENTIAL ONLY IF AVAILABLE)
-----	------	--

MSC	(23)	SCHOOL ENROLLMENT: THE TOTAL NUMBER OF SCHOOL CHILDREN REGISTERED IN THE SCHOOL SYSTEM FOR THE CURRENT ACADEMIC YEAR (DATE).
-----	------	--

INT	(31)	INTEREST: INTEREST RATE AT WHICH LAND FINANCING WAS/ WOULD BE OBTAINED.
FOP	(32)	PROFESSIONAL FEES: TOTAL FEES TO INCLUDE ALL PLAN- NING AND LEGAL EXPENSES BEFORE ANY TECHNICAL FEES RELATING TO CONSTRUCTION (DEFINED BELOW).
CA	(33)	DEVELOPMENT COST: TOTAL COST OF SITE DEVELOPMENT (SEE EXHIBIT 1 FOR ITEMIZED BREAKDOWN).
DEVC	(34)	OFF-SITE CONTRIBUTION: TOTAL OFF-SITE COSTS (SEE EX- HIBIT 2 FOR ITEMIZED BREAKDOWN).
LAC	(35)	ANNUAL LAND EXPENDITURES (\$): ANNUAL DISTRIBUTION OF LAND AND CARRY COSTS THROUGH THE PROJECT PERIOD. (MAY BE SUPPLIED IN LIEU OF ITEMS (30) AND (31).)
XPCPY	(36)	ANNUAL SITE-DEVELOPMENT EXPENDITURES (%): ANNUAL PERCENT DISTRIBUTION OF SITE DEVELOPMENT COSTS. THIS WILL BE RELATED TO ESTIMATED CONSTRUCTION OR PHASING PACE.
OSC	(37)	ANNUAL OFF-SITE CONTRIBUTION (\$): ANNUAL DISTRIBUTION OF OFF-SITE COSTS THROUGH THE PROJECT PERIOD. (THE TOTAL SHOULD AGREE WITH EXHIBIT 2.)

CONSTRUCTION AND MANAGEMENT DATA

PCT	(38)	PERCENT LAND PRICE TO SALE PRICE: THE PERCENT OF TOTAL RESIDEN- TIAL UNIT SALE PRICE ATTRIB- UTABLE TO LAND SALE.
ESCF	(39)	CONSTRUCTION COST/SQ. FT. BY UNIT TYPE: ESTIMATED COST PER SQUARE FOOT FOR RESIDENTIAL CONSTRUCTION (BRICKS AND MORTAR) OF LIVING AREA, BASEMENTS, AND GARAGES (SEE EXHIBIT 3 FOR ITEMIZED BREAKDOWN).

MUNICIPAL DATA

- MMV (24) REAL ESTATE VALUE:
TOTAL VALUE OF ALL REAL ESTATE BEFORE THE ASSESSMENT RATIO IS APPLIED, TYPICALLY BROKEN DOWN INTO RESIDENTIAL AND NON-RESIDENTIAL USES (SUPPLY BREAKDOWN IF POSSIBLE).
- NR (25) POPULATION:
CURRENT TOTAL POPULATION DEFINED BY THE MUNICIPALITY OR CENSUS.
- CCOMOI (26) MUNICIPAL COSTS:
ANY EXPENDITURES REQUIRED BY THE MUNICIPALITY DUE TO THE DEMANDS OF PROJECT DEVELOPMENT.

FISCAL DATA

- AF (27) ASSESSMENT FACTOR:
THE RATIO OF ASSESSED VALUE TO MARKET VALUE USED BY THE ASSESSOR'S OFFICE FOR DETERMINING THE VALUE OF REAL ESTATE FOR TAX PURPOSES.
- STM (28) SCHOOL TAX MILLAGE:
THE MILLAGE RATE SET BY THE MUNICIPALITY FOR SCHOOL REVENUES RAISED FROM REAL ESTATE TAXES. (SUPPLY ITEMIZED TAX BILL.)
- MM (29) MUNICIPAL TAX MILLAGE:
THE MILLAGE RATE SET BY THE MUNICIPALITY FOR MUNICIPAL REVENUES RAISED FROM REAL ESTATE TAXES. (SUPPLY ITEMIZED TAX BILL.)

LAND AND DEVELOPMENT DATA

- LC (30) LAND COST:
GROSS PURCHASE PRICE OF THE LAND NET OF ANY INTEREST CHARGES. (THE ANNUAL DISTRIBUTION OF LAND AND CARRY MAY BE SUPPLIED IN # (35) IN LIEU OF (30) AND (31).)

CLI	(40)	LOT IMPROVEMENT COST/UNIT TYPE: ESTIMATED COST FOR LOT IMPROVEMENT (WITHIN THE LOT LINE) BY RESIDENTIAL UNIT TYPE (SEE EXHIBIT 4 FOR ITEMIZED BREAKDOWN).
ESC	(41)	PERCENT SALES COST: PERCENT OF TOTAL SALE PRICE ATTRIBUTED TO SALES AND CLOSING EXPENSES.
TECH	(42)	TECHNICAL FEES: TOTAL FEES PER UNIT TO INCLUDE ARCHITECTURAL, ENGINEERING, HOOK-UP, ETC. (SEE EXHIBIT 5 FOR ITEMIZED BREAKDOWN).
IOCC	(43)	INTEREST ON CONSTRUCTION: INTEREST RATE AT WHICH CONSTRUCTION FINANCING WAS/WOULD BE OBTAINED.
POHE	(44)	OVERHEAD EXPENSE: PERCENT OF SALE PRICE ATTRIBUTED TO GENERAL OVERHEAD EXPENSES.
ID	(45)	ANNUAL RESIDENTIAL CONSTRUCTION: ESTIMATED ANNUAL TOTAL RESIDENTIAL CONSTRUCTION BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.
IID	(46)	ANNUAL INDUSTRIAL CONSTRUCTION: ESTIMATED ANNUAL TOTAL INDUSTRIAL CONSTRUCTION BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.
CID	(47)	ANNUAL COMMERCIAL CONSTRUCTION: ESTIMATED ANNUAL COMMERCIAL CONSTRUCTION BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.

SALES/REVENUE DATA

SDU	(48)	ANNUAL RESIDENTIAL SALES (UNITS): ESTIMATED ANNUAL UNIT SALES BEGINNING WITH YEAR ONE, RUN- NING THROUGH THE TOTAL LENGTH OF THE PROJECT.
SNRAI	(49)	ANNUAL INDUSTRIAL SALES (ACRES): ESTIMATED ANNUAL SALE OF IN- DUSTRIAL ACREAGE BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.
SNRAC	(50)	ANNUAL COMMERCIAL SALES (ACRES): ESTIMATED ANNUAL SALE OF COMMERCIAL ACREAGE BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.
OR	(51)	OTHER REVENUES: ADDITIONAL ANNUAL REVENUES AN- TICIPATED FROM THE PROJECT BY YEAR NOT INCLUDED PREVIOUSLY.
OEX	(52)	OTHER EXPENSES: ADDITIONAL ANNUAL EXPENSES ANTICIPATED FROM THE PROJECT NOT INCLUDED PREVIOUSLY.

EXHIBIT 1

DEVELOPMENT COST

(INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN
THE PROJECT'S BOUNDARIES EXCLUDING LOT IMPROVE-
MENTS AND BUILDING CONSTRUCTION COSTS.)

ITEM	QUANTITY	UNIT COST	ALLOW- ANCES*	TOTAL COST
<hr/>				
A. ROADS/STREETS (1)				
1. CLEARING				
2. ROAD GRADING				
3. ROAD SURFACING				
4. CURB AND GUTTER				
5. SIDEWALK				
6. STREET LIGHTING				
7. SEEDING/SODDING (COMMON AREAS, NOT LOTS)				
8. STREET TREES/ PLANTING (COMMON AREAS)				
9. OTHER				
SUBTOTAL				

NOTES:

* ALLOWANCES: ANY CONTINGENCIES ON ALLOWANCES FOR OVER-
HEAD AND PROFIT NOT INCLUDED IN UNIT OR TOTAL COST.

(1) ROADS/STREETS - INCLUDE ALL NECESSARY IMPROVEMENTS, WITHIN
DEDICATED ROAD R.O.W., REQUIRED BY ORDINANCE AND/OR CODE.

ITEM	QUANTITY	UNIT COST	ALLOW- ANCES	TOTAL COST
<hr/>				
B.	STORM WATER/ SEWER SYSTEM (2)			
	1.	PIPE		
	2.	CATCH BASINS		
	3.	CULVERTS		
	4.	RETENTION PONDS		
	5.	OTHER		
	SUBTOTAL			
C.	SANITARY SEWER/ SEWAGE DISPOSAL (3)			
	1.	SEPTIC SYSTEMS		
	2.	TREATMENT PLANT		
	3.	PUMP/LIFT STATIONS		
	4.	FORCE/GRAVITY MAINS		
	5.	MANHOLES		
	6.	CONNECTION CHARGES/ ASSESSMENTS		
	7.	OTHER		
	SUBTOTAL			

NOTES:

- (2) STORM WATER/SEWER SYSTEM - INCLUDE ALL REQUIRED STORM SEWER/ DRAINAGE NECESSARY TO CONTROL STORM WATER RUNOFF AS REQUIRED BY ORDINANCE AND/OR CODE.
- (3) SANITARY SEWER/SEWAGE DISPOSAL - INCLUDE ALL CONSTRUCTION NECESSARY TO PROVIDE COMPLETE SEWAGE FACILITIES. DO NOT INCLUDE ON-SITE LATERAL CONNECTIONS. THESE ARE CONSIDERED ON A LOT BASIS IN EXHIBIT 4.

ITEM	QUANTITY	UNIT COST	ALLOW- ANCES	TOTAL COST
<hr/>				
D.	WATER SYSTEM (4)			
	1.	WELL		
	2.	MAIN		
	3.	HYDRANTS		
	4.	CONNECTION CHARGES/ ASSESSMENTS		
	5.	OTHER		
	SUBTOTAL			
E.	OPEN SPACE/ COMMUNITY FACILITIES (5)			
	1.	CLEARING		
	2.	PATHS		
	3.	LIGHTING		
	4.	PLAY AREAS		
	5.	TENNIS COURTS OR OTHERS		
	6.	SWIMMING POOL		
	7.	COMMUNITY BUILDING		
	8.	LANDSCAPING		
	9.	OTHER		
	SUBTOTAL			
F.	TOTAL			

NOTES:

- (4) WATER SYSTEM - INCLUDE ALL CONSTRUCTION NECESSARY TO PROVIDE COMPLETE WATER DISTRIBUTION SYSTEM. DO NOT INCLUDE ON-SITE LATERAL CONNECTIONS. THESE ARE CONSIDERED ON A LOT BASIS IN EXHIBIT 4.
- (5) OPEN SPACE/COMMUNITY FACILITIES - INCLUDE ALL IMPROVEMENTS NECESSARY TO MEET RECREATIONAL DEMANDS OF PROJECT.

EXHIBIT 2

OFF-SITE CONTRIBUTION

(INCLUDE ALL DEVELOPMENT/IMPROVEMENTS BEYOND THE PROJECT'S BOUNDARIES THAT ARE CONSIDERED TO BE ESSENTIAL OR ATTRIBUTABLE TO THE PROJECT'S DEVELOPMENT.)

ITEM	QUANTITY	UNIT COST	ALLOW- ANCES*	TOTAL COST
<hr/>				
A. ROAD/STREET				
1. SURFACING				
2. CURB AND GUTTER				
3. TRAFFIC CONTROLS				
4. LIGHTING				
5. ASSESSMENTS				
6. OTHER				
SUBTOTAL				
B. STORM WATER/ SEWER SYSTEM				
1. PIPE				
2. CATCH BASINS				
3. CULVERTS				
4. CONNECTION CHARGES/ ASSESSMENTS				
5. OTHER				
SUBTOTAL				

* ALLOWANCES: ANY CONTINGENCIES ON ALLOWANCES FOR OVER-HEAD AND PROFIT NOT INCLUDED IN UNIT OR TOTAL COST,

ITEM	QUANTITY	UNIT COST	ALLOW- ANCES	TOTAL COST
C. SANITARY SEWER/ SEWAGE DISPOSAL				
1. TREATMENT PLANT IMPROVEMENTS				
2. PUMP/LIFT STATIONS				
3. FORCE/GRAVITY MAINS				
4. MANHOLES				
5. CONNECTION CHARGES/ ASSESSMENTS				
6. OTHER				
SUBTOTAL				
D. WATER SYSTEM				
1. MAIN				
2. HYDRANTS				
3. CONNECTION CHARGES/ ASSESSMENTS				
4. OTHER				
SUBTOTAL				
E. OTHER COSTS/ COMMUNITY FAC. CONTRIBUTIONS				
1. SCHOOLS				
2. PARKS				
3. OTHER				
SUBTOTAL				
F. TOTAL				

EXHIBIT 3

CONSTRUCTION COST/SQ. FT. (FOR EACH UNIT TYPE)

(INCLUDE ALL CONSTRUCTION COSTS RELATED TO ACTUAL PRODUCTION OF HOUSING/DWELLING UNIT EXCLUDING SITE AND LOT DEVELOPMENT AND ARCHITECTURAL FEES, MARKETING COSTS, ETC.)

UNIT TYPE	ITEM	SIZE	SQ. FT. COST	TOTAL
-----------	------	------	--------------	-------

LIVING AREA

BASEMENT

GARAGE

OTHER

TOTAL

LIVING AREA

BASEMENT

GARAGE

OTHER

TOTAL

LIVING AREA

BASEMENT

GARAGE

OTHER

TOTAL

LIVING AREA

BASEMENT

GARAGE

OTHER

TOTAL

EXHIBIT 4

LOT IMPROVEMENT COST (FOR EACH UNIT TYPE)

- A. SINGLE FAMILY DETACHED: INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN THE LOT AREA EXCLUDING ACTUAL BUILDING CONSTRUCTION.
- B. SINGLE FAMILY ATTACHED: INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN THE SITE AREA OF THE HOUSING CLUSTER/BUILDING TYPE ATTRIBUTED TO EACH INDIVIDUAL DWELLING UNIT.
- C. MULTI-FAMILY: INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN THE SITE AREA OF THE BUILDING "UNIT" ATTRIBUTED TO EACH INDIVIDUAL DWELLING UNIT (TOTAL COST DIVIDED BY NUMBER OF D.U. = COST PER D.U.).

UNIT TYPE:

ITEM	QUANTITY	UNIT COST	ALLOW- ANCES	TOTAL COST
A. CLEARING (1)				
B. GRADING AND DRAINAGE (2)				
C. SURFACING (3)				
D. SAFETY CONTROLS (4)				
E. WATER SERVICE (5)				
F. SANITARY SEWER (6)				
G. LANDSCAPING (7)				
H. FEES AND PERMITS (8)				
I. OTHER (9)				
TOTAL				

NOTES:

- (1) CLEARING - INCLUDE TOTAL AND SELECTIVE CLEARING NECESSARY TO ACCOMMODATE CONSTRUCTION WITHIN "LOT" AREA,
- (2) GRADING AND DRAINAGE - INCLUDE ALL IMPROVEMENTS NECESSARY TO PROVIDE FOR ADEQUATE DRAINAGE AND STORM WATER RUNOFF FROM "LOT,"
- (3) SURFACING - INCLUDE ALL DRIVES AND PARKING AREAS, WALKS AND TERRACES AND OTHER SURFACING.
- (4) SAFETY CONTROLS - INCLUDE BOLLARDS, LIGHTING AND OTHER CONTROLS.
- (5) WATER SERVICE - INCLUDE ALL WATER LATERALS FROM MAIN IN ROAD R.O.W. TO BUILDING.
- (6) SANITARY SEWER - INCLUDE ALL SEWER LATERALS FROM SEWER MAIN TO BUILDING.
- (7) LANDSCAPING - INCLUDE GRADING, TOPSOIL, SEEDING, AND LANDSCAPE CONSTRUCTION AND PLANTING ALLOWANCE.
- (8) FEES AND PERMITS - INCLUDE SEWER AND WATER HOOK-UP AND BUILDING PERMITS.
- (9) OTHER.

EXHIBIT 5

TECHNICAL FEES

(INCLUDE ALL ARCHITECTURAL, ENGINEERING, LAND-
SCAPE ARCHITECTURAL, LAND SURVEYING, GRAPHIC
AND INTERIOR-DESIGN FEES FOR EACH CATEGORY ON
A UNIT BASES AS INDICATED BY THE NOTES.)

ITEM	TOTAL COST
A. ARCHITECTURAL (1)	
B. ENGINEERING (2)	
C. LANDSCAPE ARCHITECTURAL (3)	
D. LAND SURVEYING (4)	
E. GRAPHICS (5)	
F. INTERIOR DESIGN (6)	

TOTAL

NOTES:

(1) ARCHITECTURAL

- A. BUILDING DESIGN (COMPLETE)
- B. CONSTRUCTION SPECIFICATION (BUILDING SYSTEMS)
- C. CONSTRUCTION COST ESTIMATES AND PROGRAM (\$ AND SCHEDULE)
- D. CONSTRUCTION INSPECTION (PERIODIC)

(2) ENGINEERING

- A. ROAD/STREET SYSTEMS DESIGN (HORIZONTAL AND VERTICAL CURVE DATA, PROFILES)
- B. UTILITY SYSTEMS DESIGN (SEWAGE, WATER, STORM, ETC.)
- C. LOT DESIGN (LOT CLOSURE AND PLAT/SURVEY DATA)
- D. CONSTRUCTION SPECIFICATIONS (ROAD AND UTILITY SYSTEMS)
- E. CONSTRUCTION COST ESTIMATES AND PROGRAM (\$ AND SCHEDULE)
- F. CONSTRUCTION INSPECTION (PERIODIC)

(3) LANDSCAPE ARCHITECTURAL

- A. LANDSCAPE CONSTRUCTION AND PLANTING DESIGN (ALL SITE IMPROVEMENTS NOT COVERED BY ARCHITECTURAL AND ENGINEERING, I.E. GRADING, SURFACING, RETAINMENT, LIGHTING, PLANTING, SPECIAL FEATURES, ETC.)
- B. CONSTRUCTION AND PLANTING SPECIFICATIONS (AS NOTED IN 3A.)
- C. CONSTRUCTION AND PLANTING COST ESTIMATES AND PROGRAM (\$ AND SCHEDULE)
- D. CONSTRUCTION AND PLANTING INSPECTION (PERIODIC)

(4) LAND SURVEYING

- A. ROAD/STREET SYSTEMS LAYOUT (SEE 2A.)
- B. UTILITY SYSTEMS LAYOUT (SEE 2B.)
- C. LOT LAYOUT (BOUNDARY SURVEY AND MONUMENTS)
- D. BUILDING LAYOUT (STAKEOUT AND SET ELEVATIONS)
- E. LANDSCAPE CONSTRUCTION LAYOUT (STAKEOUT DRIVES, PARKING, ETC. AND SET ELEVATIONS)

(5) GRAPHICS

- A. SIGNAGE (PROJECT SIGNS, ETC.)
- B. P.R. LITERATURE (BROCHURES, ETC.)

(6) INTERIOR DESIGN

- A. INTERIORS (SAMPLES/MODELS)
- B. MATERIALS/COLORS (TYPICAL UNITS)

EXAMPLE: INPUT CHECKLIST
(Private Developer Data Only)

client data

CLIENT NAME	XYZ Corporation		DNAME-1
PROJECT NAME, LOCATION	A-PUD, Akron, Ohio		DNAME-2
DATE	9/13/79	DATE-3	

site data

SITE AREA COVERAGE ALLOWABLE	207.00	A-4	GSCAP-5	
INDUSTRIAL COMMERCIAL SCHOOL SITE		AI-6	4.79	AC-6 AS-6
MAJOR ROAD (R.O.W.) OPEN SPACE	7.40	AR-6	112.35	AO-6
RECREATIONAL FACILITY OTHER (SPECIFY)	3.30	ARC-6	7.58	AOT-6

unit data

UNIT TYPES	SFD	TH	GA			
DUMNMS-7						
NET DENSITIES	4.42	8.75	15.20			
DD-8						
SALE PRICES - RESIDENTIAL - INDUSTRIAL - COMMERCIAL	68250.	52800.	43700.			
ISP-9 SPNRI-10 SPNRC-11						
MIX	22.1	22.5	55.5			
MIX-12						
NUMBER OF UNITS	141	143	354			
INU-13						
UNIT SIZE	1625	1200	950			
AUS-14						
NUMBER OF STORIES	2	2	2			
STORYS-15						

land and development data

LAND COST INTEREST PROFESSIONAL FEES	1,424,665	0.00	150,000
	LC-30	INT-31	FOP-31
DEVELOPMENT COST OFF-SITE CONTRIBUTION	1,535,714	113,000	
	CA-33	DEVC-34	
ANNUAL LAND EXPENDITURES	1 250000.	2 413333.	3 386666.
	6	7	8
LAC-35			
ANNUAL SITE-DEVELOPMENT EXPENDITURES	1 .417	2 .230	3 .275
	6	7	8
XPCPY-36			
ANNUAL OFF-SITE CONTRIBUTION	1 113000.	2	3
	6	7	8
OSC-37			

construction and management data

PERCENT LAND PRICE TO SALE PRICE	14.	9.	6.			
PCT-38						
CONSTRUCTION COST/SQ. FT. BY UNIT TYPE	25.	24.	22.			
ESCF-39						
LOT IMPROVEMENT COST/ UNIT TYPE	3000.	3100.	2100.			
CLI-40						
PERCENT SALES COST	14	9	6			
ESC-41						
TECHNICAL FEES INTEREST ON CONSTRUCTION	350	3.0				
	TECH-42	IOCC-43				
OVERHEAD EXPENSE	5.0					
	POHE-44					
ANNUAL RESIDENTIAL CONSTRUCTION	1 186	2 190	3 116	4 146	5	
	6	7	8	9	10	
ID-45						
ANNUAL INDUSTRIAL CONSTRUCTION	1	2	3	4	5	
	6	7	8	9	10	
IID-46						
ANNUAL COMMERCIAL CONSTRUCTION	1	2	3	4 4.79	5	
	6	7	8	9	10	
CID-47						

annual sales/revenue data

ANNUAL RESIDENTIAL SALES (UNITS) SDU-48	1 186	2 190	3 116	4 146	5
	6	7	8	9	10
ANNUAL INDUSTRIAL SALES (ACRES) SNRAI-49	1	2	3	4	5
	6	7	8	9	10
ANNUAL COMMERCIAL SALES (ACRES) SNRAC-50	1	2	3	4 4.79	5
	6	7	8	9	10
OTHER REVENUES OR-51	1	2	3	4	5
	6	7	8	9	10
OTHER EXPENSES OE-52	1 200000.	2 200000.	3	4	5
	6	7	8	9	10

APPENDIX: DEVELOPMENT IMPACT MODEL — OPERATING PROCEDURE

The Development Impact Model is a system for analyzing development proposals to determine their economic feasibility within the constraints imposed by natural determinants, physical delivery systems, public service systems, market factors and legal requirements. The following is an outline of the procedure for using the Development Impact Model.

DATA COLLECTION

A. Site Analysis

1. Base map with location of property outbounds and important features from property survey or county tax maps.
2. Municipal zoning map and code and development codes for analysis of legal constraints.
3. Municipal and county master plans for analysis of public intentions and policy.
4. Price of land from the developer or other source for use in the feasibility analysis.
5. Legal fees, interest on land, and other miscellaneous front-end costs from the developer for use in the feasibility analysis.

B. Natural Determinants and Coverage Analysis

1. County soil survey from Soil Conservation Service for soil series types, shallow to bedrock, seasonal high water table, alluvial soils.
2. Topographic maps of site and surrounding areas from U.S. Geological Survey or site survey for slope analysis.
3. Aerial photographs of site from U.S. Department of Agriculture, Aero Service, etc., for analysis of vegetation and other physical features.
4. Hydrology and floodplain location from the U.S. Army Corps of Engineers or the Soil Conservation Service for floodplain analysis.

C. Physical Systems Analysis

1. Streets and roads from municipal or county planning department/commission or state highway department, or a traffic study by a consultant.
 - a. Right-of-way and cartway dimensions, including intersection approaches.
 - b. Existing traffic volumes.
 - c. Design capacities. (Intersection capacities are usually critical points.)
2. Water supply information from municipality, county, or private water company(ies).
 - a. Location and excess capacity of water lines near the site.
 - b. Supply costs and hook-up charges.
 - c. If there is no feasible public water supply, determine the ground water supply and delivery costs from the Soil Conservation Service, state department of natural resources or its equivalent, or well drilling companies.
3. Sewer service information from the municipality or county authority.
 - a. Location and excess capacity of sewer lines in the area.
 - b. Sewer rental rates and hook-up charges.
 - c. If there is no public sewer available, contact state department of health for package plant or septic tank requirements and costs.
4. Check location of electrical supply and cost of installing lines underground with the local power company.
5. Check location of telephone lines and cost of installing lines underground with the local telephone company. Determine whether this can be coordinated with electric lines for any savings.
6. Check location and hook-up costs for gas service with the local gas company.

D. Public Services and Revenues Analysis

1. Obtain a copy of the current municipal budget.
2. Check the level of service provided for by the budget for:
 - a. Police
 - b. Fire
 - c. Recreation, parks
 - d. Road maintenance
 - e. Other
3. Check sources of municipal revenue, tax base, and rate.
 - a. Property tax
 - (1) Total revenue
 - (2) Total assessed value
 - (3) Assessment rate
 - (4) Tax rate
 - b. Income tax
 - (1) Total revenue
 - (2) Total personal income (average household income times number of households)
 - (3) Tax rate
 - c. Per capita and other taxes
 - (1) Total taxable population
 - (2) Tax rate
 - d. State and federal subsidy
 - (1) Amount of subsidy
 - (2) Basis for subsidy
 - e. Municipal debt
 - (1) Current municipal debt
 - (2) Legislative debt limit
4. School data
 - a. School taxes - Obtain school budget and supporting data to determine:
 - (1) Property tax
 - (a) Total revenue
 - (b) Total assessed value
 - (c) Assessment rate
 - (d) Tax rate
 - (2) Income tax
 - (a) Total revenue
 - (b) Total personal income
 - (c) Tax rate

- (3) Per capita and other taxes
 - (a) Total taxable population
 - (b) Tax rate
- (4) State and federal subsidy
 - (a) Amount of subsidy
 - (b) Basis for subsidy
- (5) School debt
 - (a) Current debt
 - (b) Legislative debt limit
- b. School capacity/enrollment
 - (1) Current enrollment
 - (2) Current capacity
- c. Plans for school expansion

E. Market Analysis

- 1. Market comparables
 - a. Unit types (market mix: percent of each type available).
 - b. Sale prices and rents.
 - c. Unit sizes.
 - d. Special features.
- 2. Market absorption rates
- 3. Cyclical construction trends. (Is the market over-built or under-built now?)
- 4. Neighborhood characteristics
- 5. Regional location factors:
 - a. Access to work, shopping, recreation, etc.
 - b. Special amenities.
 - c. Major pollution sources, etc.

NATURAL SYSTEMS ANALYSIS

Dollar costs that may be incurred to overcome restrictions or meet performance standards should be particularly noted.

A. Analysis of Natural Restrictions

- 1. Vegetation
 - a. Acres in each vegetation classification (wooded, non-wooded).
 - b. Percentage of the site in each vegetation type.
- 2. Slopes
 - a. Acres in each slope classification (0-3%, 3-8%, 8-15%, 15-25%, 25+%).
 - b. Percentage of the site in each slope classification.
- 3. Seasonal high water table (SHWT)
 - a. Acres in each class of SHWT.
 - b. Percentage of the site in each SHWT class.

4. Shallow to bedrock
 - a. Acres in each class of shallow to bedrock.
 - b. Percentage of the site in each shallow to bedrock class.
5. Floodplain
 - a. Acres of the site in the floodplain.
 - b. Percentage of the site in the floodplain.
6. Composite development restrictions.
 - a. Acres with development restrictions.
 - b. Percentage of site with development restrictions.

B. Coverage Limits Analysis

This involves an analysis of the projected runoff of stormwater and the determination of impervious coverage limits or performance standard requirements.

LAND USE DESCRIPTION

Determine the types of units, market values, sizes and mix. These will be based on the developer's preferences and the market study.

SCHEMATIC SITE DESIGN

This is a blob diagram showing land use classifications (single-family, townhouses, garden apartments, commercial, open space, etc.) and the major circulation and utility lines. The amount of land shown in the various blobs should agree with the required unit mix determined in the Land Use Description phase. The schematic design should also respect the natural restrictions from the Natural Systems Analysis phase.

PHYSICAL DELIVERY SYSTEMS ANALYSIS

A. Roads

1. Length of major access and site circulation.
2. Cost of major access and circulation.
3. Cost of intersection improvements.

B. Water System

1. Length of major water lines on- and off-site.
2. Cost of major water lines.
3. Cost of other water system features if required (wells, pumps, storage tanks, treatment equipment, etc.)

C. Sewer System

1. Length of major sewer lines on- and off-site.
2. Cost of major sewer lines including manholes.
3. Cost of other sewer system features if required (pumping station, package plant, etc.).

D. Other Utilities

1. Length of other utility lines (telephone, electric, gas).
2. Cost of utility lines not paid by the utility companies (placing system underground, etc.).

DENSITY FEASIBILITY ANALYSIS

A. Upper limit of development density can be determined in a number of ways:

1. Maximum density allowable from zoning or PUD code. This is the legal maximum.
2. Maximum density possible within the constraints imposed by the market mix and lot sizes from the Land Use Description phase. This can be calculated using Equation 1.

$$D_m = \frac{100}{\sum l_n m_n} \quad (\text{Equation 1})$$

where D_m is the net density based on the market study mix,
 l is the lot size for the unit type (acres),
 m is the mix for the unit type (%), and
 n is the total number of unit types.

For instance, if the market study shows that the proposed development should include 80% (m_1) single family homes on half acre lots ($l_1 = .5$), 10% (m_2) townhouses at 10 per acre ($l_2 = .1$), and 10% (m_3) garden apartments at 14 per acre ($l_3 = .07$), then the net density would be calculated as follows:

$$\begin{aligned} D_m &= 100 / \{ (.5 \times 80) + (.1 \times 10) + (.07 \times 10) \} \\ &= 100 / (40 + 1 + .7) \\ &= 100 / 41.7 \\ &= 2.4 \text{ du/acre} \end{aligned}$$

3. Maximum density determined from the coverage analysis in the Natural Systems Analysis phase and the market mix of the Land Use Description phase. Three impervious coverage (C) values are required: (a) the weighted average coverage per unit (C_X), (b) the amount of impervious coverage allowed for the site (C_a), and (c) the amount of impervious coverage per acre for all major site improvements such as community buildings, major roads, etc. (C_d).

A weighted average is calculated using the following equation:

$$X = \frac{\sum v_n k_n}{\sum v_n} \quad (\text{Equation A})$$

where v is the number of each variable or element,
 k is the constant value of each variable or element, and
 n is the number of different variables.

This equation can then be used to calculate the weighted average coverage per unit. For instance, suppose that the following is the recommended mix from the market study:

Unit Type	Unit Area	Stories	Net Cover	Parking, Patio, etc.	Total/Unit	Mix
SF	1700 sf	1	1700 sf	1000 sf	2700 sf	10%
TH	1400 sf	2	700 sf	600 sf	1300 sf	30%
GA2	1000 sf	3	333 sf	600 sf	933 sf	30%
GA1	800 sf	3	267 sf	600 sf	867 sf	30%

Therefore, if the percent mix is the variable value (v) and the total coverage per unit is the constant value (k), then for the four (n) unit types the weighted average coverage per unit (C_X) can be calculated as follows:

$$\begin{aligned} C_X &= \frac{v_1 k_1 + v_2 k_2 + v_3 k_3 + v_4 k_4}{v_1 + v_2 + v_3 + v_4} \\ &= \frac{(10 \times 2700) + (30 \times 1300) + (30 \times 933) + (30 \times 867)}{10 + 30 + 30 + 30} \\ &= \frac{27000 + 39000 + 27990 + 26010}{100} \\ &= 12000/100 = 1200 \text{ sf/du} \end{aligned}$$

The maximum density based on the cover model (D_i) can then be calculated using Equation 2 as follows:

$$D_i = \frac{(435.6 \times C\alpha) - C\delta}{C\chi} \quad (\text{Equation 2})$$

As an example, assume that the allowable impervious coverage for the site based on the cover model ($C\alpha$) is 22%, the coverage per acre of all major site improvements ($C\delta$) is 1500 square feet per acre, and the weighted average coverage per unit is 1200 square feet per unit as above, then the maximum density would be calculated using Equation 2 as follows:

$$\begin{aligned} D_i &= \frac{(435.6 \times 22) - 1500}{1200} \\ &= \frac{9583.2 - 1500}{1200} \\ &= 8083.2 / 1200 \\ &= 6.736 \text{ du/acre} \end{aligned}$$

8. Break-even Density. This is the minimum project density at which the developer will be able to meet all costs and still make an acceptable profit. This is used to determine the relationships among the total site development cost (both on- and off-site), the average market value per unit, and the density.

1. The basic break-even density equation is as follows:

$$D_e = \frac{L}{.0826 \times V \times A} \quad (\text{Equation 3})$$

where L is the major site development costs (\$),
V is the average market value per unit (\$/du), and
A is the site area in acres.

2. Variations of break-even equation.

- a. To find the average market value if the density and development cost is known:

$$V = L / (.0826 \times A \times D_e) \quad (\text{Equation 3a})$$

- b. To find the allowable development cost if the density and average market value is known:

$$L = V \times A \times D_e \times .0826 \quad (\text{Equation 3b})$$

3. Determination of site development cost (L). This is the total of all front-end and major improvement costs. It includes:

- a. Cost of land.
- b. Interest on land.
- c. Planning fees.
- d. Legal fees, permits, etc.
- e. Sewer system.
- f. Water system.
- g. Roads and intersection improvements.
- h. Community buildings and recreation facilities.
- i. Other major site improvement costs.

4. Determination of average unit market value (V). This is the weighted average of the market value of all units.

- a. V can be a one-number estimate for the whole project.
- b. A more accurate method of determining V is to use a weighted average of the project value of each type of unit based on the Land Use Description analysis and the market study.

- c. To find the market value for rental apartments, multiply the expected annual rent by 7.28.
 - d. To find the total construction cost (bricks and boards plus unit share of major site development costs) from the market value, divide the market value by 1.661.
 - e. To find the unit share of the major site development costs from the market value, multiply the market value by .0826.
 - f. To find the total construction cost (bricks and boards plus unit share of major site development improvement costs) from the annual rent, multiply the annual rent by 4.3833.
- C. Equilibrium break-even density. This analysis is used when the developer and the municipality (or school district) share the cost of major site improvements. The analysis is subject to the constraints that the project must generate a positive tax surplus if the developer pays all major site development costs.

With the equilibrium analysis the municipality invests all tax surplus generated by the project in the major site development costs. When the municipality pays part of the site development cost, the break-even density for the developer is lowered because his costs are lowered. The equilibrium analysis determines the minimum breakdown density where the developer just breaks even and the municipality reinvests all tax surplus. The analysis also determines the respective shares of costs for the developer and the municipality.

The equilibrium break-even density (D_b) is calculated using the following equation:

$$D_b = \frac{L}{A \{ (.0826 V + 15 \{ (V \times M \times R) + T - S \}) \}} \quad (\text{Equation 4})$$

where L is the major site development costs (\$),
 V is the average market value per unit (\$/du),
 A is the site area in acres,
 M is the tax millage rate,
 R is the assessment factor,
 T is all other taxes paid by the occupants per unit, and
 S is the unit service cost.

All of the other taxes paid by the occupants of the units would include income taxes, per capita taxes, etc. This value (T) is calculated on a per unit basis for the entire project. The unit service cost (S) is based on the average cost per unit for municipal services to the project. This is based on an analysis of the municipal budget. The same procedure would be used for school budget information if the equilibrium analysis was between the developer and the school district.

For instance, suppose that each of the variables has the following values:

L = \$1,500,000
 V = \$25,000
 A = 120 acres
 M = .025
 R = .6 (60%)
 T = \$250/unit
 S = \$600

The equilibrium break-even density would be calculated using Equation 4 as follows:

$$\begin{aligned}
 D_b &= \frac{1,500,000}{120 \{ (.0826 \times 25,000) + 15 \{ (25,000 \times .025 \times .6) + 250 - 600 \} \}} \\
 &= \frac{1,500,000}{120 \{ 2065 + 15(375 + 250 - 600) \}} \\
 &= \frac{1,500,000}{120 \{ 2065 + (15 \times 25) \}} \\
 &= \frac{1,500,000}{120 \{ 2065 + 375 \}} \\
 &= \frac{1,500,000}{120 \times 2440} \\
 &= \frac{1,500,000}{292,800} \\
 &= 5.12 \text{ du/acre}
 \end{aligned}$$

To calculate the developer's share of the site development costs (L_d), use Equation 3b by substituting the equilibrium break-even density (D_b) for the break-even density (D_e) in the equation as follows:

$$L_d = V \times A \times D_b \times .0826 \quad (\text{Equation 4a})$$

The municipality's share of the site development costs (L_m) is simply calculated by subtracting the developer's share from the total site development costs:

$$L_m = L - L_d \quad (\text{Equation 4b})$$

Following through with the above example, the developer's share of the site development costs would be

$$\begin{aligned} L_d &= \$25,000 \times 120 \text{ acres} \times 5.12 \text{ du/acre} \times .0826 \\ &= \$1,268,736 \end{aligned}$$

and the municipality's share would be

$$\begin{aligned} L_m &= \$1,500,000 - \$1,268,736 \\ &= \$231,264 \end{aligned}$$

There are two major practical limitations on the use of the equilibrium analysis:

1. Any investment of public funds in major site development must be politically expedient. The municipality might be able to invest in intersection improvements, off-site sewer lines, and other improvements which ostensibly benefit more of the public than just the residents of the site. If the municipal share of costs at the equilibrium density is \$200,000 but only \$100,000 in off-site public improvements can judiciously be made, then the other \$100,000 will remain as a tax surplus.
2. Separate taxing bodies normally will not and cannot exchange surplus revenues to balance out deficits. If a project is developing a \$100,000 municipal tax surplus, a \$100,000 school tax deficit will not be cancelled out.

DEVELOPMENT EXTERNALITIES

This section deals with costs (monetary and non-monetary) and revenues generated by a development. A detailed analysis of these externalities is often useful for planning purposes.

A. Traffic Generation

1. Daily or peak hour trip generation rates by unit type are applied to the total number of units contemplated for the project. This gives the total traffic generation.
2. Percentage allocation of the various access routes to the site is derived from origin-destination studies.
3. By combining 1 and 2 above the site-generated traffic load on any access point can be determined.
4. Comparison of existing traffic, design capacity, and site-generated traffic loads indicates the amount of anticipated congestion.
5. If a road or intersection improvement is needed to overcome the anticipated level of congestion, the cost will become part of the major site development cost. Either the municipality or the developer can pay for the improvements.

B. School Children

1. School children generation rates by unit type are applied to the total number of units contemplated to obtain an estimate of the total number of school children generated by the project.
2. The school budget will indicate the cost per student for operation. Multiply that cost by the total number of students generated for the projected school costs.
3. Project market value, property tax rates, and other tax information are used to determine the total school tax generated by the project.
4. Formulas for state and federal school subsidies are used to determine the additional subsidy created by the school children from the project.
5. The sum of items 3 and 4 above is compared to item 2 to determine the net surplus or deficit caused by the project.

C. Municipal Services

The revenue and operations structure must be investigated to find which services are supported by general taxes and which are supported by special user charges.

1. Typically sewer and water operations are separate from the general fund so that a property tax surplus cannot usually be used for sewer construction. The structure of municipal services must be investigated to sort this out.
2. Costs, revenues, and indicators of use on a per capita, per square foot, per linear foot, per dwelling, per acre, etc., basis for all municipal services should be investigated to find out which areas show a favorable balance for the proposed project (or an unfavorable balance as the case may be).

Second Day

REAL ESTATE FEASIBILITY SEMINAR

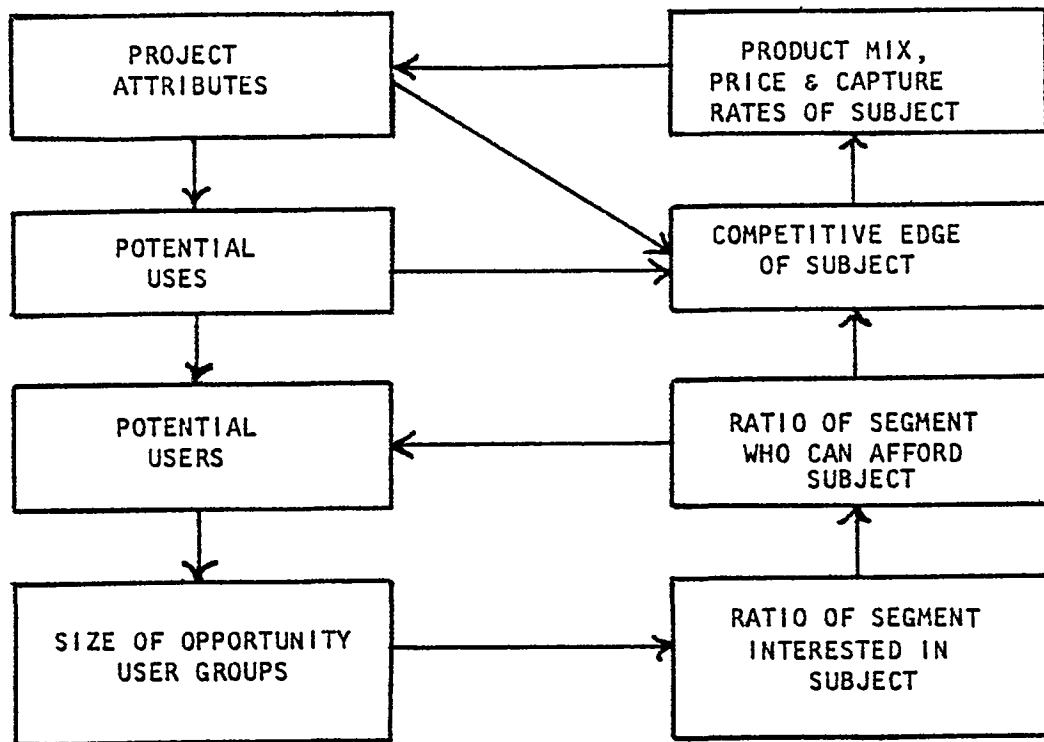
Houston Chapter 33
February 18-19, 1983
Houston Grand Hotel

Presented by Professor James A. Graaskamp, SREA, CRE
University of Wisconsin School of Business

- I. Free enterprise is the art of creating ones own monopoly, if only for a moment in the mind of the buyer. Monopoly characteristics in real estate depend on careful analysis of uncontrollable variables among the collective consumers and precise segmentation of the controllable variables relative to individual consumer.
- A. To review the broad strategic concern of real estate investment in order of priority:
 1. Degree of exposure to political risks (collective consumer action)
 - a. Broad array of land use controls
 - b. Vulnerability to subsidize competition
 - c. Dependency on government subsidized demand
 2. Ability to generate channel demand
 - a. Control of space consumer
 - b. Indirect control through reciprocity
 - c. Indirect control of alternative supplies
 - d. Indirect control through effective research and timing
 3. Degree of acceptable management intensity
 - a. Marketing tied to a specific personality
 - b. Marketing tied to a specific set of high skill talents
 - c. Marketing tied to quality, service, and convenience
 - d. Marketing tied to technology/cost advantage (high tech/high touch product)
 4. Degree of financial exposure per project
 - a. Front end cost
 - b. Hard dollar equity required
 - c. Time line risks
 - d. Holding power
 - e. Efficiency of credit utilization
 5. Tax strategy and exposures
 - a. Federal income tax
 - b. State taxes
 - c. Real estate taxes
 - d. Special assessments
 6. Going concern versus liquidation options
 - a. Estate tax and estate planning considerations
 - b. Corporate liquidation
 - c. Asset liquidity
 - d. Management rewards, penalties, and survival

- B. The real estate project marketing program must keep in mind the features required to neutralize the collective consumer who might oppose entitlements, the features and codes which will motivate the space consumer at a price which provides financial viability, and the overall six strategic attributes to be marketed to the investor. At the very least market and merchandising research should be able to eventually produce a marketing program which suggests:
 1. Where the developer/investor should position his effort relative to demographic and economic trends given a desired scale of operation.
 2. The unmet needs in the marketplace in terms of most probable user groups, their total number, and their effective demand constraints.
 3. The time span of their effective demand in the marketplace
 4. The competitive standard product minimum required for entry into the market.
 5. The competitive product/service/margin necessary for monopoly advantage
 6. The project's image most likely to neutralize collective opposition
 7. Essential media and themes required for promotion programs
 8. Financial parameters required to attract investors, mortgage or equity
- II. The first step is to reduce aggregate data about user groups which is plausible but overly general information to a scale which will focus on a sub-segment with a proper rationale or hierarchy. To do that requires an analytical model and in most cases, each situation requires the analyst to create his own model with which to structure the data available and to discover the missing links in the logic diagram which must be researched.
 - A. Models organize the analyst, the report, and the client
 1. Models explain what you are going to do.
 2. Models make relationships and key assumptions explicit.
 3. Models permit clients to understand logic of conclusion and to test his own set of assumptions.
 - B. A market research model should be careful to recognize?
 1. What are the questions
 2. What data is available which is relevant?
 3. What theory is available to focus data on the questions?
 4. How will the results be communicated?
 5. What are the abilities of the analyst?
 6. What is the cost benefit ratio between the model method and the question?

EXHIBIT I
SEGMENTATION LOGIC TREE



- C. Market data refers to aggregate data, secondary information, the easy to acquire data from census tracts, traffic counts, building permits, and so on. It is useful to scale the size of the market potential, of the opportunity area but by itself aggregate market data is relatively unimportant to the success of most projects.

- D. Merchandising data is generally primary information generated by the analyst about specific competitive projects and specific user groups which will permit an estimate of what percentage of the opportunity group can be captured for a specific project.
 - 1. Absorption rates apply to aggregate market data to determine the total size or amount of market activity in terms of how many lots were sold, how many apartments in a rental range were newly rented, or how many square feet of leased office space were occupied.
 - 2. Capture rates are the product of merchandise research and are the ratio of the total opportunity potential which might be secured for a project or must be secured to achieve financial goals. The capture rate will reflect a careful judgment of product mix, amenities, pricing, and timing.
- E. A flow chart of the market research process is provided in Exhibit 1.
- F. Most multi-tenant or multi-user land uses are susceptible to a retail trade area model. A retail model is a device analogous to establishing a retail trade area perimeter for a super market to segregate households which have a reasonable probability of using the outlet from those who don't because of convenience, distance, age, or income. Thus the analyst should establish a preliminary hypothesis for:
 - 1. Primary market area to be served.
 - 2. Secondary market area to be served.
 - 3. Principal competitors.
- G. Consider Exhibit 2 as a simple market model to define the size of an opportunity area in a selected county for elderly persons requiring residential care units.
 - 1. For lines with asterisks the key ratios for reduction were derived from a survey of the elderly generating primary data for this county.
 - 2. For example, while 37% of the elderly were financially qualified, only about 60% of those were interested in considering a residential, minimal care facility or 22% of those in the conventional housing market - hence the reduction from 19,700 to only 4,200. This chart should have showed the ratios from the survey.
 - 3. Failure to convert serious interest into action was a round number based on experience of those which had marketed similar developments in the past, as was an allowance for potential customers coming from outside the county to be closer to relatives, etc.
- III. Market data provides a measure of potential scale of a market opportunity; the most important aspect of market analysis is forecasting the degree of market penetration or capture rate of remedial development.
 - A. To reduce aggregate market data to a merchandising hypothesis, the first clue to segmentation may be found in correctly understanding the essence of buyer motivation or of the activity to be housed.

EXHIBIT 2a

RETIREMENT CENTER MARKET SITUATION ANALYSIS

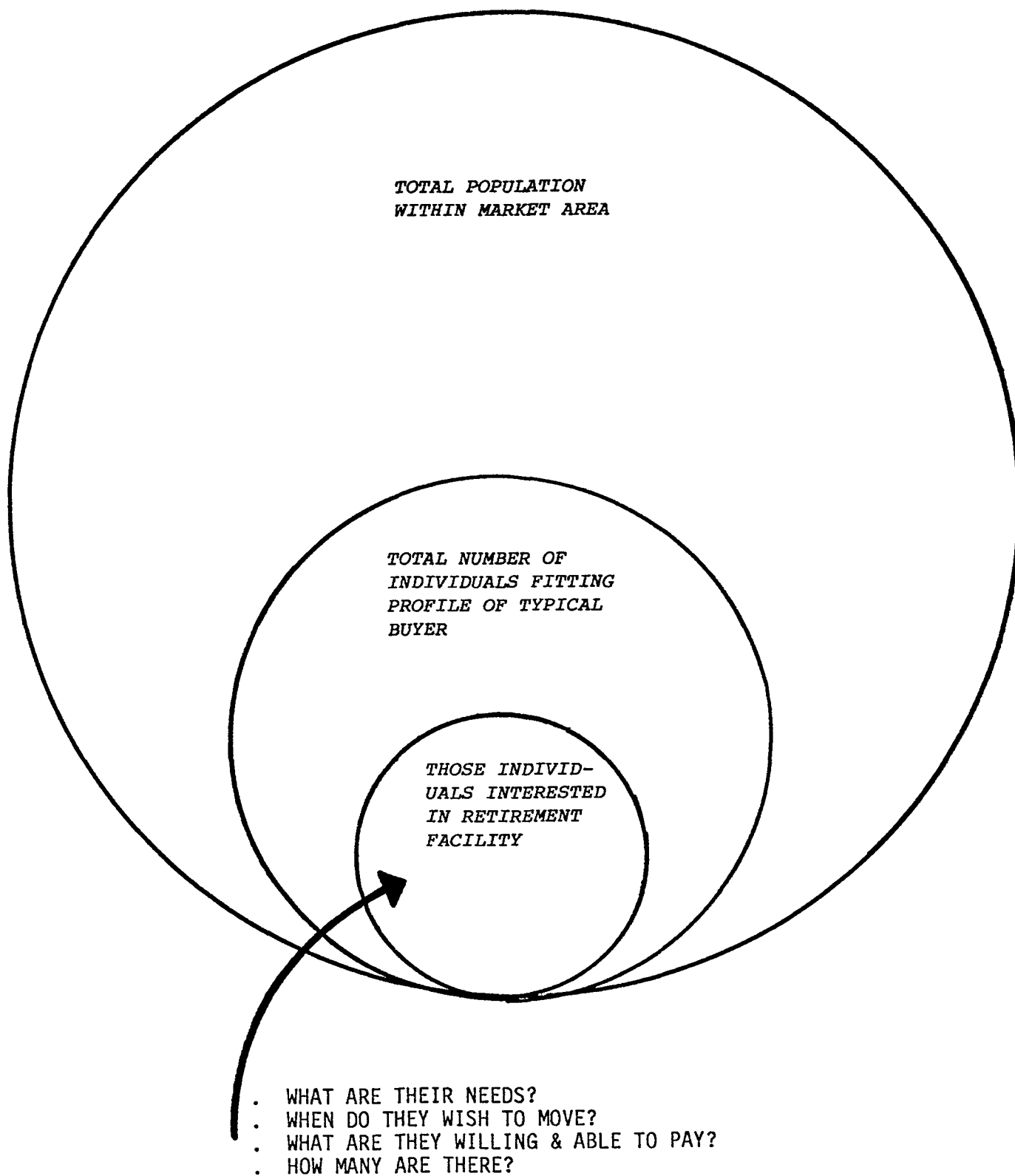
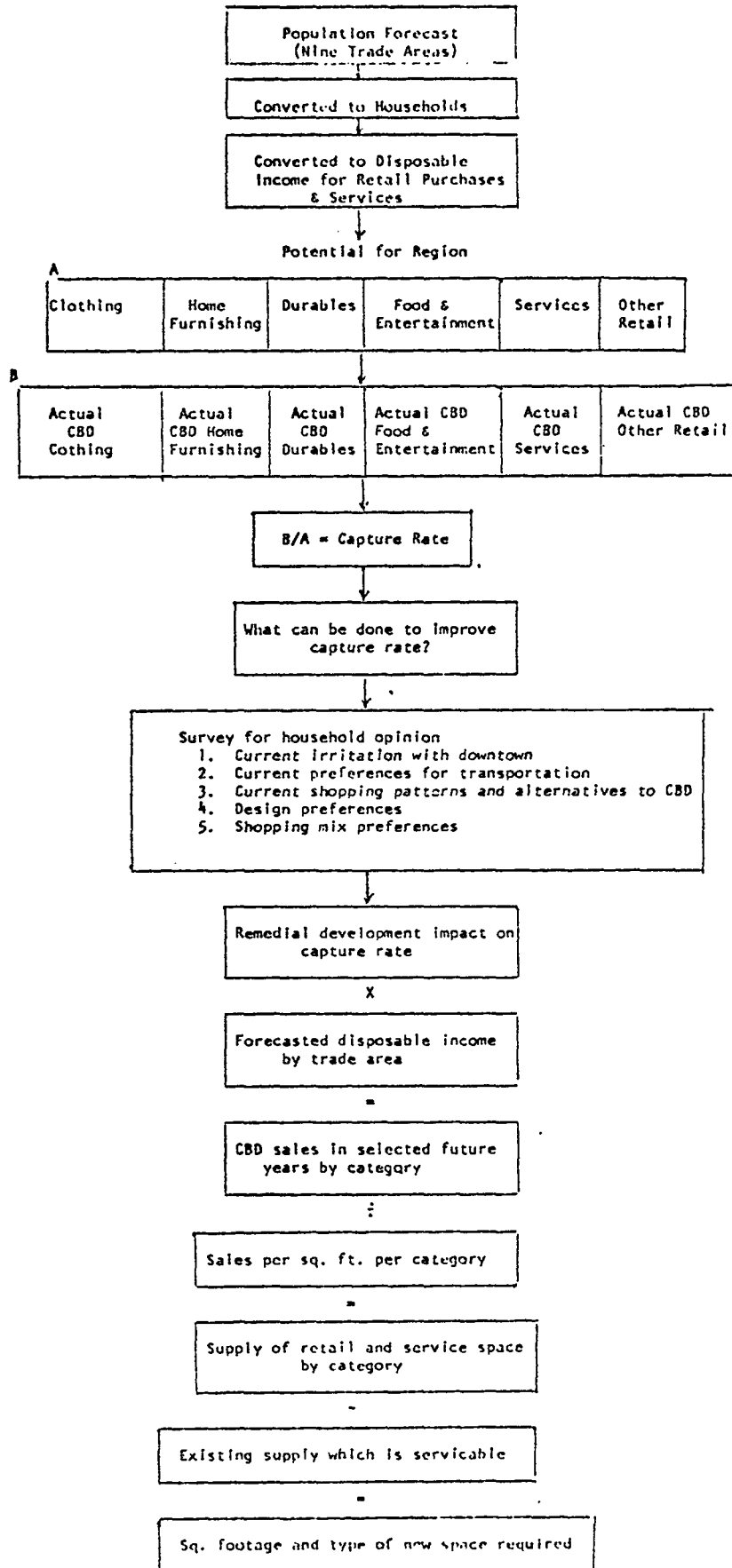


EXHIBIT 2b
DEMAND FOR ELDERLY RESIDENTIAL CARE UNITS

Persons in County age 65 and over in 1970		21,914
Adjustment 1970-1974 to reflect the number of persons moving into the 65+ bracket and the application of mortality rates by age and sex		<u>245</u>
Estimated persons in County age 65 and over in 1974		22,159
Less persons 65+ presently in nursing and residential care facilities in County	1,792	
Less persons 65+ presently in government subsidized housing for the elderly	<u>638</u>	<u>2,430</u>
Persons age 65+ in the conventional housing market in County in 1974		19,729
Survey percentage of persons financially qualified for \$350 a month + \$5,000 entry deposit (34%)		6,707
Survey percentage of these qualified who are seriously interested in proposed independent elderly unit (63.6%)		4,270
Household equivalent (+ 1.519 persons per household)		2,811
Less estimated number who will not convert serious interest into any form of action (50%)		1,406
Less the percentage who, while seriously interested, said (before they heard the hypothesis) that their next home would probably be outside County (13.3%) from survey questionnaire)	187	
Less those disqualified because their current health status necessitates care beyond the scope of services to be provided in the residential care units (5.4%) (from survey)	<u>76</u>	<u>263</u>
Elderly households in County qualified for and seriously interested in moving into the proposed development		1,142
Plus an allowance for those elderly households coming from outside County to enter the proposed development(10%)		<u>127</u>
Elderly households qualified for and seriously interested in moving into the proposed development		1,269
Share of market opportunity area who state in survey that for their next dwelling unit their first preference would be an apartment, in a highrise, midrise, or garden building:		
Highrise or midrise	28.0%	
Garden	<u>49.1</u>	
	77.1%	978
Less estimated numbers of households who might move into competitive developments available supply of units		<u>270</u>
Households that can be considered candidates for the proposed development		780

1. Retailing is a break point for goods (a warehouse grocery), or a service industry, or a theater using lighting, staging, and mood to reinforce a role played by the buyer.
 2. A restaurant may be to provide a quick food break (high turnover, pedestrian flow, conditioned ordering), or to provide recreational entertainment and consumption of an evening, or to provide a staging for business, social, or publicity roles.
 3. A motel for transients, for resorts, or for terminal traffic uses all of its facilities and location to sell a "room-night" of occupancy because that is an 80% gross margin. Anything done after that is justified by its contribution to "room-night" sales or its reduction of average cost to capture a customer per "room-night."
 4. The revenue unit may be related to the method of measuring profit of the project in question such as per acre, per camper pad, per event, per front foot of shoreline, per stool or table, etc., not to mention sq. ft., per frame at a bowling alley or per tennis court hours, or per hour of ice time.
 5. Sometimes the prospect is identified by who really signs the check for a particular type of real estate.
 - a. The salesman or the management paying his travel costs
 - b. The doctor or the clinic
 - c. The district manager or the corporate real estate manager
 - d. The ticket buyer or the promoter
 - e. The bowling league, team business manager, travel agency tour guide
 6. The market segment may be defined initially by the source for a prospective user list - people who share a common address, hobby, professional specialty or some other identifier.
 - a. A reverse directory or criss-cross telephone book
 - b. Building directories of comparables
 - c. Mailing lists of specialty publications
 - d. License number spotting
 - e. Guest registers
 - f. Charge account mailing addresses
- B. The objective of these approaches, revenue unit, the decision maker, the prospect list source, is to segment the user market to a specific and relatively small group of potential customers who can be surveyed to generate original and relevant information about their space needs and motivations. Unlike most consumer markets, the number of prospects is always low; think small!
1. Real estate is a series of micro-markets. A 24-unit building with one, two, three bedroom units has at least three sub-markets.
 2. A 24-unit building is a \$500,000 enterprise with a \$75,000 gross sales potential from only 24 customers!

Exhibit 3



- C. A survey of existing properties and alternatives available to a selected market segment defines only the competitive standard - namely the minimum product and price necessary to be in the market.
 1. Comparison shopping further identifies where there may be gaps in the supply of alternatives, a market opportunity gap, or where the oversupply is so significant as to portend the last competitive alternative before bankruptcy - namely price cutting.
 2. Comparison shopping should not only identify the physical characteristics of the product and price but the nature of the promotion effort as well.
 3. Promotion comparison should consider pedestrian and vehicle approaches, model location, furnishings, and sales people.
 4. Review of the promotion campaign should reveal whom the competitors believe to be their prospect.
 - D. A survey of users, is designed to reveal or to identify the competitive differential attributes which would provide that monopoly element required of every successful project.
 1. A second product of consumer survey is the ability to develop locally relevant ratios which permit disaggregation of market data into market segments and the conversion of potential numbers of people into potential dollar sales over time.
 2. Survey questions to create ratios require previous construction of a market model hypothesis.
 3. Survey questions can discover latent political issues or provide a calm base for citizen input from those who rightfully dislike public hearings.
 4. Survey questions and execution should not be done by planners or appraisers.
- IV. A good example of modeling market data through segmentation and survey for renovation in a small community is a project by Gruen Gruen + Associates for Santa Maria, California. The study was begun in 1972. Project is operating as the Santa Maria Town Center with retail sales ahead of forecasts.
- A. The Gruen's were able to convince the redevelopment agency to avoid any physical planning until a detailed analysis of the demand for alternative services that could attract people back to the downtown area was done. This EMAS study (economic market analysis study) outline is in Exhibit 3 had the following outputs:
 1. First, a full analysis of economic data and retail data was utilized to generate information about the type of tenancies that could realistically be expected to penetrate downtown markets. (Table of Contents Exhibit 4)

Exhibit 4

ECONOMIC AND MARKET ANALYSIS STUDY
FOR DOWNTOWN SANTA MARIA

Prepared for: The City of Santa Maria
Redevelopment Agency

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Prepared by:

GRUEN GRUEN + ASSOCIATES
Economic and Sociological Consultants

February, 1972



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2. With a lead on tenancies, the Gruen's worked with an architect to provide sketches of alternative architectural styles and concepts to show residence in survey to see what type of treatments might strike the most positive response. (See Exhibit 5)
 3. The EMAS should then be able to indicate the kind of tenancies that could survive downtown, suggest their dollar sales potential, and indicate at a preliminary level a design scheme. (See Exhibit 6)
 4. At the same time, back door financial studies are done from rents from capital budgets to discover what would be feasible for the private developer and what components may need to be subsidized by the public.
 5. Appraisers use the EMAS and suggested tenant mix as the basis for their value estimate in the after condition.
 6. Final stage was to write up a series of specifications or profiles on tenants, product design and components, and a cash flow analysis of the entire project from the viewpoint of the developer so he could see how much money there was to make and he would know that the city knew the financial aspects of the project. Developers were then asked to bid.
- B. In the case of Santa Maria, three developers bid and the city picked Ernest Hahn to build the project. There was no demolition or site acquisition before the start of the EMAS. The entire project was done within a four year period. For the first six months of complete operation, June 1976 through December 1976, sales were approximately 15.6 million and is 70% leased. The Mall did 4.9 million, Sears - 6.9 million, and a local department store - 3.7 million.
- C. Before looking at report organization and product, it is useful to observe:
1. Planners are poor market economists and merchandising survey analysts. Use specialist at the start.
 2. Most appraisers are equally bad, but are reluctant to use team approach or to accept EMAS by somebody else as a legitimate set of assumptions for appraisal. Moreover, appraisal financial analysis must be on after tax cash flow in the redevelopment game, or he will miss the market completely. The financial analysis must contain extensive sensitivity analysis so that changing times due to a slow pace of such projects does not invalidate a point conclusion.
 3. The leader of the team should be oriented to empirical observation, be he planner, lawyer or architect, rather than dedicated to purist appraisal or planning dogma and esthetics. The numbers crunch or nothing will be built that should have been built.

Exhibit 5

Excerpt With Permission From Economic & Market Analysis Study for Downtown Santa Maria

Prepared for City of Santa Maria Redevelopment Agency
by Gruen Gruen + Associates

Thus, the relationship between survey derived indications of satisfaction and current expenditure patterns were sufficiently significant to warrant the use of survey responses to suggest the change in relative preferences that would be caused by an appropriately developed new shopping agglomeration in downtown Santa Maria. However, the rapid deterioration of this relationship with distance suggested that it be used very cautiously in Trade Areas 5 through 9. Therefore, in addition to considering the percentage of respondents who made no complaints, we also analyzed into the following three categories all the comments that were made in response to the interview question concerning the reasons for not shopping in downtown Santa Maria:

1. Complaints about physical deficiencies of the existing downtown that we have assumed the redevelopment will alleviate. (Remediable complaints)
2. Complaints concerning limited selection such as requests for a department store or more stores. (Remediable complaints)
3. Complaints about prices, the lack of a supermarket or other contemporary situations that we do not think the redevelopment programs will alter. (Irremediable complaints)

Table 10 presents the percentage of respondents making remediable complaints. These complaints were used in conjunction with the information about the relationship between the indications of satisfaction discussed above to adjust the present indicators of the proportion of expenditures on various items in downtown Santa Maria (the S variables originally presented in Table 4) to reflect the increase in consumer preferences for downtown Santa Maria that would result from the completion of a sales optimizing redevelopment program. We did not think the evidence warranted using these percentages of remediable complaints (%RC) directly by adding them to the previously revealed preference percentages (S₁₉₇₀) to get a new percentage (S₁₉₇₅, 1980, 1985). Instead, we adopted the following rules to get the new estimates of this preference variable:

	<u>Trade Areas 1 through 4</u>	<u>Trade Areas 5 through 9</u>
For Clothing	$\% RC \times .964 + S_{1970}$	Use % RC instead of S ₁₉₇₀
For Home Furnishings	$\% RC \times .861 + S_{1970}$	Use % RC instead of S ₁₉₇₀
For Other Retail	$\% RC \times .017 + S_{1970}$	1% + S ₁₉₇₀

Exhibit 5

Table 10

Percentage of Respondents Making Complaints
About Remediable Features of the Present Downtown
(Complaints About Physical Problems
or Inadequate Selection of Stores and Goods)

<u>Trade Area</u>	<u>% Remediable Complaints</u>
1	62.7
2	53.8
3	65.8
4	53.3
5	19.3
6	22.2
7	14.3
8	20.0
9	10.2

Source: Gruen Gruen + Associates telephone survey

Computations following these rules permitted us to develop the estimates of maximum percentage effective preference or penetration presented below in Table 11. The insertion of these percentages in the sales estimate generating equations we have been using throughout permits us to make the forecasts of potential sales summarized in Table 12. The forecast sales potential of almost \$42 million in 1975 would have downtown Santa Maria capturing 26.4% of the region's sales. By 1985 potential sales climb to almost \$58 million in spite of the fact that our model has downtown Santa Maria's share of the region's sales dropping slightly to 25.4%.

Table 11

Estimated Maximum Effective Preference (S)
or Percentage Penetration Possible
After Appropriate Redevelopment

<u>Trade Area</u>	<u>Clothing</u>	<u>Home Furnishings</u>	<u>Other Retail</u>
1	76.2	74.5	19.9
2	74.3	69.1	10.4
3	76.3	72.2	12.9
4	56.9	53.0	8.6
5	19.3	19.3	2.1
6	22.2	22.2	1.5
7	14.3	14.3	1.6
8	20.0	20.0	2.8
9	10.2	10.2	1.5

Source: Gruen Gruen + Associates

Table 12

Estimated Downtown Santa Maria Future Sales Potential
(In Thousands of Dollars)

Trade Area	\$ Available In Region 1975	Potential \$ Sales in NDP 1975	\$ Available In Region 1980	Potential \$ Sales in NDP 1980	\$ Available In Region 1985	Potential \$ Sales in NDP 1985	% of Regional Sales to NDP
1	21,347	12,520	23,950	14,047	26,764	15,693	58.6
2	9,159	4,940	10,665	5,753	12,369	6,673	53.9
3	15,852	8,916	18,705	10,521	22,956	12,912	56.2
4	6,759	2,806	7,949	3,300	9,473	3,933	41.5
5	19,676	2,756	22,963	3,217	26,613	3,728	14.0
6	18,030	2,854	20,878	3,305	24,042	3,806	15.8
7	9,065	942	10,920	1,135	13,106	1,362	10.4
8.	25,355	3,729	31,043	4,566	38,198	5,618	14.7
9	33,589	2,527	42,857	3,224	53,925	4,057	7.5
Total	158,831	41,990	189,931	49,068	227,447	57,782	

Exhibit 5

Source: Gruen Gruen + Associates

Table 30

Proportion of Expenditures in Downtown

<u>Trade Area</u>	<u>% Clothing</u>	<u>% Home Furnishings</u>	<u>% Other Retail</u>	<u>% Service</u>
1	15.9	20.5	18.8	33.3
2	22.6	22.8	9.5	35.9
3	13.1	15.5	11.8	28.0
4	5.7	7.0	7.7	5.3
5	5.4	4.5	1.1	4.0
6	2.9	0.9	0.5	1.8
7	2.5	1.5	0.6	0.6
8	6.6	5.0	1.8	3.5
9	2.0	0.6	0.5	0.6

Source: Gruen Gruen + Associates telephone survey

Table 31

Banking, Repair, Beauty Parlor/Barber Shop
and Similar Services Obtained Downtown
By Consumers of Differing Incomes

<u>Household Income</u>	<u>% Generally</u>	<u>% Occasionally</u>	<u>% Seldom</u>
Under \$7,000	43.7	22.9	16.0
\$7,000-10,000	43.3	20.0	36.7
\$10,000-15,000	60.7	12.5	26.8
Over \$15,000	61.5	21.2	17.3

Source: Gruen Gruen + Associates downtown survey

FOR YES RESPONDENTS ONLY

37. If a new and attractive apartment complex were to be built in Downtown Santa Maria, would you be very likely 1, likely 2, or unlikely 3 to consider this location?
38. If a one-bedroom unit were priced from \$150-175 and a two bedroom unit from \$175-250, would you be very likely 1, likely 2, or unlikely 3 to consider this location?
39. If a new residential hotel were to be built in Downtown Santa Maria, would you be very likely 1, likely 2, or unlikely 3 to consider this location?

We are going to show you four sets of pictures of differing of shopping centers. We would like to get your opinion of each.

Picture No. 1

40. Which of the two pictures do you like the best?

A 1 B 2

a. Why?

INTERVIEWER: If respondent has not mentioned the width of the walkway ask:

41. Did the different widths of the walkway affect your choice in any way? Yes 1 No 2

a. If yes, how?

Picture No. 2

42. Which of the three pictures do you like the best?

A 1 B 2 C 3

a. Why?

43. Which of the three pictures do you like the least?

A 1 B 2 C 3

a. Why?

INTERVIEWER: If respondent has not mentioned the openness or closeness of the shopping center ask:

44. Picture A presents an open mall center. B a partly enclosed center and Picture C a completely closed mall. Did this factor influence your choice in any way? Yes 1 No 2

a. How?

Picture No. 3

45. Which of the two pictures do you like the best?

A 1 B 2

a. Why?

46. If Picture A were to contain both apartments and stores while Picture B were to contain only stores, which would you prefer? A 1 B 2

c. Why?

Picture No. 4

47. Which of the three pictures do you like the best?

A 1 B 2 C 3

a. Why?

48. Which of the three pictures do you like the least?

A 1 B 2 C 3

a. Why?

To assist us in better planning for all residents, we would appreciate your answering a few biographical questions.

INTERVIEWER: Fill in sex and race

49. Sex: Male 1 Female 2

50. Race/Ethnic: White 1, Black 2, Spanish Surname 3,
Other 4

- D. Consider the elderly housing market chart in Exhibit 2a,b. Notice that the ratios required for market segmentation follow a logical reduction pattern. The analyst has made several working assumptions - namely that his market is over 65 and overwhelmingly from Dane County because these assumptions are both reasonable and conform to break-out points in the raw data.
- E. The ratio sought by the survey follow a precise reduction pattern:
1. How many will consider moving?
 2. Of those, how many would consider staying in town?
 3. Of those, how many would consider an apartment?
 4. Of those remaining who would consider an apartment in town, how many would consider a specific location?
 5. Notice the reduction process defines a subset of the elderly market - a micro-market.
- F. Each of these ratios suggests a specific calculation or perhaps a short table of statistics. The specific title on the table of data and its sub-columns should be written before the questions are drafted and the collection of data begun. Notice the research begins with careful definition of the questions to be answered. All answers become relevant and all unnecessary questions are avoided. These types of questions depend on knowing the precise character of secondary data available to which the ratios must be applied in the systematic model devised for the problem.
1. Confine vocabulary to basic 1000 words; avoid lingo.
 2. Structure questions to permit check-off, or branching to set up subsets. (See Exhibit 6)
 3. Always test the questionnaire on half a dozen prospects or friends to reveal misunderstandings before using on the market.
 4. Questions may take different formats. (See Exhibit 6)
- G. The second type of question is generally attempting to measure either anxieties or preferences. Both are dangerous survey areas for amateurs as well as professionals and it is often cheaper to subcontract these particular functions to consumer research specialists. Nevertheless, a little common sense can generate considerable useful information on the competitive edge.
1. Probe for dissatisfaction with existing space or life style.
 2. Probe for anxieties about uncontrollable trends and events.
 3. Probe for desired social structure ties, real or imagined.
- H. The real estate analyst can choose between systematic telephone interviews, direct mail questionnaires, and personal interviews in depth.
1. The telephone interview may be less expensive per question and fastest but is limited in the type and amount of questions which can be asked. Rifled to a project known to the analyst,

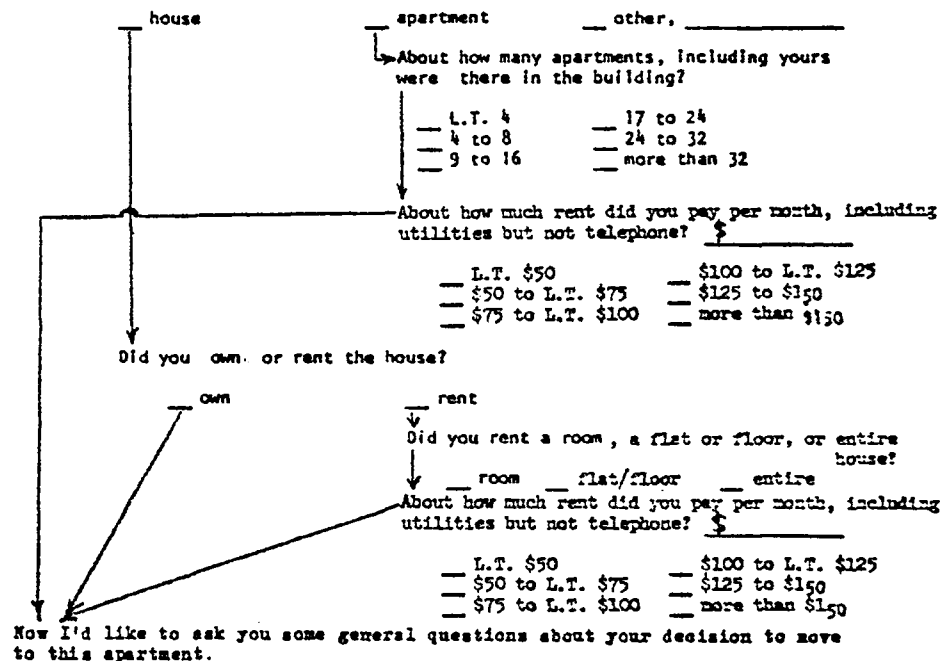
Simple Survey Formats for Classification of Subsets & Measurement of Preference

I'd like to ask you a few questions about the place you lived just before you moved into this apartment.

5. About how many years did you live in your former home?

- ☐ less than 1 year ☐ 10 to 15 years
☐ 1 year - L.T. 2 years ☐ more than 15 years, _____
☐ 2 to L.T. 5 years
☐ 5 to L.T. 10 years

6. Did you live in a house or in an apartment building just before your move here?



7. How did you first find out about them?

- ☐ family ☐ newspaper
☐ friends ☐ radio
☐ church ☐ television
☐ Housing Authority ☐ other, _____

26. How important are the following items to you?

	Very Important	Somewhat Important	Indifferent	Somewhat Unimportant	Not Important
Private Balconies or patios	()	()	()	()	()
Laundry facilities in each building	()	()	()	()	()
Washer/dryer connection in your apartment	()	()	()	()	()
Extra storage space	()	()	()	()	()
More than 1 bath	()	()	()	()	()
Carpeted stairways & hallways in common areas of apt. bldg. (Areas shared by all residents)	()	()	()	()	()
Master T.V. Antenna System	()	()	()	()	()
Children's day care center and/or nursery school nearby	()	()	()	()	()

14. What type of building features would you prefer in the layout of the condominium unit? (choose only one of each of the following sets of alternatives)

- () Two bedrooms with larger living area or/
- () Three bedrooms
- _____
- () Three bedrooms, or/
- () Four bedrooms, or/
- () Large master bedroom and two 4-bed bunk rooms
- _____
- () Two-story living room with inside balcony, or/
- () Living room with beamed cathedral ceiling
- _____
- () Full dining room, or
- () Dining "L" plus family-sized kitchen
- _____
- () Sundeck balcony for living room or/
- () Outdoor patio at ground level
- _____
- () Walk-in closets in each room or/
- () Large work room plus laundry room in each unit & standard closets
- _____
- () One car garage attached to unit or/
- () Two car garage in group parking complex, or/
- () Carport and lower price
- _____
- () Central air conditioning or/
- () Woodburning masonry fireplace or/
- () Gas-log fireplace and window air conditioning unit
- _____
- () Contemporary natural decor with wood and rock materials, or/
- () Maintenance-free modern masonry and aluminum exteriors, or/
- () Well styled colonial detailing
- _____
- () Extensive outside landscaping, or/
- () More floor space in each room

it tells much about the user profile for a good comparable without having to ask about the product which the analyst can inspect for himself. (See Exhibit 7)

2. A telephone survey is also useful to disaggregate census data or to estimate market penetration of a competitor (such as a retail store) into an area.
3. Direct mail questionnaires may cost from 5¢ to \$3 or more for each successful question; they take at least a week to prepare and test and perhaps three weeks before cutoff of additional responses. The type of question is broader and can be graphic such as alternative site maps and simple floor plans; response depends on careful construction of the mailing list, a very time consuming process. Consider the following types of questions:
 - . Would you be at all uneasy if people of a different religion or race were to move in next to your home?
 - . As you see it, what are some of the good points and the bad points of the present Governor of this state?
5. Sensitive questions on family income should be asked at the end of the interview while the opening questions should be of more general interest. When a question about income is asked, the response should permit some degree of obliqueness by the respondent.
 - . The respondent can select a range of income or perhaps enter the answer with a letter A, B, etc. in place of a dollar amount.
 - . If socio-economic questions are generally short and direct, they are a welcome contrast to the time consuming and thought provoking questions which preceded them.
6. Contingency questions are those which are asked or skipped depending on the respondent's answer to a preceding question. The survey should be as simple to follow as a well designed road map for an interviewer or a respondent. For example:

WE WOULD APPRECIATE YOUR COMMENTS ABOUT APARTMENT LIVING OR ABOUT THIS SURVEY.

YOUR COMMENTS:

buying
I have considered a house so that I could have my own washer and dryer. I really dislike running down to the basement to do my laundry and sometimes finding the washer & dryer being used. Also I dislike having to put coins in the machines. I understand that in South Bend, Indiana, apartments have their own washers and dryers in each unit. I realize that moving to a house would bring maintenance & lawn care and snow removal concerns which I do not want.

THANK YOU FOR YOUR HELP!

Please return the survey in the postage-paid envelope as soon as possible.

So, I'm still living in an apartment. I would move in an instant if an apartment complex would provide me with a washer & dryer.

FEASIBILITY RESEARCH GROUP
210 Michigan Theater Building
Ann Arbor, Michigan 48108

EXHIBIT 7

COPY

FEASIBILITY RESEARCH GROUP

Specialists in Consumer Market Research for Decision Makers

JOHN A. RASMUSSEN
Research Coordinator

OCTOBER, 1976

SUBJECT: LANSING APARTMENT RESIDENT SURVEY

DEAR APARTMENT RESIDENT:

YOU CAN HELP PLAN NEW APARTMENTS. YOUR OPINIONS ABOUT YOUR OWN APARTMENT AS WELL AS OTHER APARTMENTS YOU MAY HAVE LOOKED AT OR LIVED IN, CAN HELP DECISION-MAKERS IDENTIFY WHAT APARTMENT RESIDENTS PREFER. THIS WILL HELP THEM IN PLANNING FUTURE APARTMENTS ACCORDING TO THE RESIDENTS' NEEDS AND PREFERENCES.

BY FILLING OUT THE ENCLOSED QUESTIONNAIRE AND RETURNING IT IN THE POSTAGE PAID ENVELOPE PROVIDED, YOU CAN HELP IN MAKING THESE DECISIONS. THIS SURVEY IS BEING CONDUCTED BY FEASIBILITY RESEARCH GROUP, AN INDEPENDENT RESEARCH FIRM.

YOUR REPLY TO THE SURVEY IS CONFIDENTIAL. THE CODE NUMBER IS USED ONLY TO HELP US REMIND PEOPLE WHO MAY BE SLOW TO RESPOND. PLEASE RETURN YOUR SURVEY IN THE POSTAGE PAID RETURN ENVELOPE AS SOON AS POSSIBLE.

VERY TRULY YOURS,

John A. Rasmussen
JOHN A. RASMUSSEN
RESEARCH COORDINATOR

YOUR OPINION COUNTS

210 MICHIGAN THEATER BUILDING • ANN ARBOR, MICHIGAN 48108 • 313/994-4054

16A. WHO LIVES WITH YOU IN YOUR PRESENT APARTMENT? (Check one)

- (1) ☐ My spouse
(2) ☐ My spouse and children
(3) ☒ I do not share my apartment with anyone.
(4) ☐ I share my apartment with roommates
Other (Please explain _____)

16B. IF YOU SHARE YOUR APARTMENT WITH ROOMMATES, HOW MANY SHARE YOUR APARTMENT? (INCLUDING YOURSELF)

- (1) ☐ Two
(2) ☐ Three
(3) ☐ Four

16C. IF YOU HAVE CHILDREN, PLEASE INDICATE HOW MANY LIVE IN YOUR HOUSEHOLD AND HOW OLD THEY ARE.

How many children? N/A Their ages? _____

17. WHICH OF THE FOLLOWING AGE GROUPS DO YOU AND YOUR SPOUSE OR ROOMMATE(S) FALL INTO?

- (1) ☐ 18 - 24 (3) ☐ 36 - 44 (5) ☐ 55 - 64
(2) ☒ 25 - 34 (4) ☐ 45 - 54 (6) ☐ 65 or over

18. ARE YOU: (1) ☐ Male (2) ☒ Female

IN ORDER TO ASSIST FUTURE DEVELOPERS TO MEET THE NEEDS OF INDIVIDUALS LIKE YOU, IT IS IMPORTANT TO UNDERSTAND WHICH EMPLOYERS IN THE AREA ARE ATTRACTING NEW EMPLOYEES. WITH THIS INFORMATION, FUTURE HOUSING NEEDS CAN BE ANTICIPATED AND MET.

19A. HOW MANY INDIVIDUALS IN YOUR HOUSEHOLD ARE NOW EMPLOYED? 1

19B. WHERE DO PERSONS IN YOUR HOUSEHOLD WORK?

Name of Company _____ Location (City, Street) _____ Year Employment Began _____

(Law Firm) _____ Lansing, MI 48933 _____ 1966

20. WHICH OF THE FOLLOWING CORRESPONDS WITH YOUR TOTAL HOUSEHOLD INCOME? (IF YOU SHARE WITH ROOMMATES, DO NOT INCLUDE THEIR INCOME.) [Check one]

- (1) ☐ Under \$6,000 per year (4) ☒ \$12,000 to \$14,999 per year
(2) ☐ \$6,000 to \$8,999 per year (5) ☐ \$15,000 to \$19,999 per year
(3) ☐ \$9,000 to \$11,999 per year (6) ☐ \$20,000 or more per year

THANK YOU FOR YOUR HELP!

PLEASE RETURN YOUR SURVEY RIGHT AWAY IN THE POSTAGE PAID ENVELOPE.

1. WHICH OF THE FOLLOWING BEST DESCRIBES YOUR PREVIOUS RESIDENCE? (Check one)

- (1) ☒ Apartment
(2) ☐ Single family house which I/we rented
(3) ☐ Single family house which I/we owned
(4) ☐ Lived with parents
Other (Please explain _____)

0157

2A. WHERE WAS YOUR PREVIOUS RESIDENCE LOCATED? (Check one)

- (1) ☐ Lansing
(2) ☒ East Lansing
(3) ☐ Grand Ledge
(4) ☐ DeWitt
(5) ☐ Outside the state of Michigan
Other (Where? _____)

2B. WHAT WAS THE NAME OF THE STREET WHERE YOUR PREVIOUS RESIDENCE WAS LOCATED? (IF YOUR PREVIOUS RESIDENCE WAS LOCATED IN AN APARTMENT DEVELOPMENT, WHAT IS THE NAME OF THE DEVELOPMENT?)

Street Name West Saginaw Apartment Development Name Horizon House

3. FOR HOW MANY YEARS DID YOU LIVE AT YOUR PREVIOUS RESIDENCE? 4 Years

4. WHAT WERE YOUR MAJOR REASONS FOR DECIDING TO MOVE FROM YOUR PREVIOUS RESIDENCE?

From one-bedroom to two-bedroom
From no dishwasher to a dishwasher
For a change after 4 years

5. BEFORE YOU DECIDED TO MOVE TO THE APARTMENT DEVELOPMENT IN WHICH YOU NOW LIVE, WHICH OTHER DEVELOPMENTS DID YOU CONSIDER? WHAT WERE THEIR NAMES?

Names of Other Apartment Developments Considered
Others considered from outside appearance
and reputation only - also location - did
not seriously look at any other

6. WHY DID YOU DECIDE TO LIVE HERE RATHER THAN IN ONE OF THE OTHER DEVELOPMENTS YOU CONSIDERED? (Looked at complex 3 times before decided)

Decided to live here because knew to move
owners; liked apartment; and ready
for a change - especially to a 2-bedroom

7A. IF THERE HAD BEEN NO VACANCY AT THE APARTMENT DEVELOPMENT IN WHICH YOU NOW LIVE, WHICH OF THE OTHERS WOULD YOU HAVE SELECTED AS YOUR SECOND CHOICE?

N/A

7B. WHY WOULD YOU HAVE CONSIDERED THIS AS YOUR SECOND CHOICE OVER THE OTHERS?

N/A

LANSING AREA APARTMENT RESIDENTS

WHETHER YOU ARE

- * VERY SATISFIED
- * NEUTRAL OR
- * VERY DISSATISFIED

WITH YOUR APARTMENT,

HERE IS YOUR CHANCE TO BE HEARD!

NOTE: TO BE COUNTED, YOUR SURVEY MUST BE RECEIVED
BEFORE THE TABULATION DATE.

WHO RECEIVES A SURVEY?

- * SURVEY SAMPLES ARE SELECTED BY A SCIENTIFIC
RANDOM NUMBER PROCESS. NOT EVERY HOUSEHOLD
WILL BE SURVEYED. THEREFORE, IT IS IMPORTANT
THAT SELECTED HOUSEHOLDS DO RESPOND.

IF I DON'T REPLY, WILL YOU SURVEY SOMEONE ELSE?

- * NO. ONCE YOUR HOUSEHOLD IS SELECTED FOR THE
SAMPLE, WE CANNOT SUBSTITUTE ANOTHER APARTMENT.

WHAT IF I DON'T WANT TO ANSWER SOME OF THE QUESTIONS?

- * IF YOU COME TO ANY QUESTIONS YOU DO NOT WISH
TO ANSWER, JUST SKIP THAT QUESTION AND GO ON
TO THE NEXT ONE.

WILL MY APARTMENT MANAGER SEE MY SURVEY?

- * NO. THIS IS AN INDEPENDENT SURVEY OF MANY
APARTMENT COMMUNITIES. ONLY THE COMBINED
RESPONSES OF ALL APARTMENT RESIDENTS WILL BE
TABULATED.

8. WHAT MONTH AND YEAR DID YOU MOVE INTO THE APARTMENT DEVELOPMENT IN WHICH YOU NOW LIVE? Apr Month 75 Year
9. WHY DID YOU SELECT THE PARTICULAR APARTMENT UNIT YOU LIVE IN?
2-bedroom unit.
Close to community building.
Gold carpeting and gold appliances
10. HOW MANY BEDROOMS DO YOU HAVE IN YOUR PRESENT APARTMENT? 2
11. HOW MANY BATHROOMS DO YOU HAVE IN YOUR PRESENT APARTMENT? 1
- 12A. HOW MUCH DO YOU PAY MONTHLY FOR RENT FOR YOUR APARTMENT? \$ 225
- 12B. PLEASE CHECK THOSE UTILITIES THAT ARE INCLUDED IN YOUR MONTHLY RENTAL PAYMENT.
- (1) ☒ Water
(2) ☒ Heat
(3) ☐ Electricity
- 12C. PLEASE CHECK THOSE ITEMS FOR WHICH YOU PAY EXTRA IN YOUR MONTHLY RENT?
- | ITEM | HOW MUCH EXTRA PER MONTH? |
|---|---------------------------------|
| (1) <input type="checkbox"/> Carport | \$ <u>N/A (no carports)</u> |
| (2) <input type="checkbox"/> Pet | \$ <u>N/A (no pets allowed)</u> |
| <input checked="" type="checkbox"/> Other (What? <u>top floor</u>) | \$ <u>unknown</u> |

13. PLEASE RATE YOUR PRESENT RESIDENCE IN THE FOLLOWING AREAS BY PLACING A CHECK (✓) IN THE SPACE BELOW THE PHRASE THAT BEST DESCRIBES YOUR FEELINGS ABOUT YOUR RESIDENCE.

(1) VERY SATISFIED	(2) SOMEWHAT SATISFIED	(3) NEUTRAL	(4) SOMEWHAT DISSATISFIED	(5) VERY DISSATISFIED
--------------------------	------------------------------	----------------	---------------------------------	-----------------------------

A. RENTAL MANAGEMENT SERVICE

(✓) () () () ()

COMMENTS _____

B. MAINTENANCE SERVICE

(✓) () () () ()

COMMENTS Not 100% pleased at all times but cannot say only somewhat satisfied.

C. GENERAL ATTITUDE OF MANAGEMENT

(✓) () () () ()

COMMENTS _____

D. RENT LEVEL

(✓) () () () ()

COMMENTS Naturally, I would be more satisfied if it were lower

13. CONTINUED PLEASE RATE YOUR PRESENT RESIDENCE IN THE FOLLOWING AREAS BY PLACING A CHECK (✓) IN THE SPACE BELOW THE PHRASE THAT BEST DESCRIBES YOUR FEELINGS ABOUT YOUR RESIDENCE.

(1) VERY SATISFIED	(2) SOMEWHAT SATISFIED	(3) NEUTRAL	(4) SOMEWHAT DISSATISFIED	(5) VERY DISSATISFIED
--------------------------	------------------------------	----------------	---------------------------------	-----------------------------

E. GENERAL APPEARANCE OF DEVELOPMENT

(✓) () () () ()

COMMENTS

Good landscaping and good general upkeep

F. SOUNDPROOFING BETWEEN UNITS

() (✓) () () ()

Soundproofing could be improved upon.

COMMENTS

I would only be satisfied when I could not hear voices & garbage disposal & showering, etc.

G. APPLIANCES AND FIXTURES

() () () () ()

Strong desire

COMMENTS

I would like an apt. size washer & dryer in the unit & would be willing to pay extra for that convenience.

H. ADEQUACY OF RECREATIONAL FACILITIES

(✓) () () () ()

COMMENTS _____

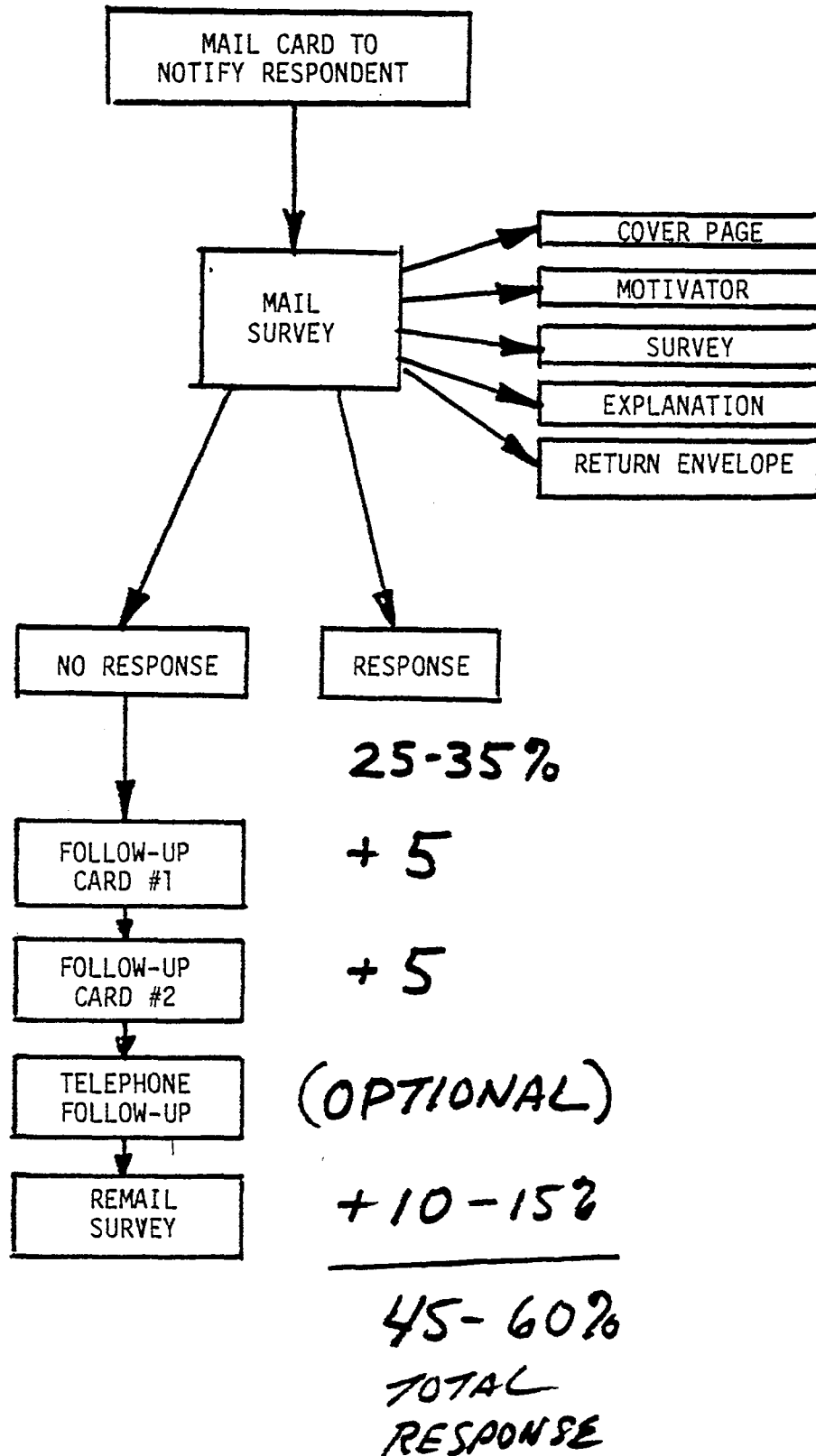
ABOUT YOUR HOUSEHOLD

14. HOW MANY PASSENGER VEHICLES (CARS, TRUCKS, VANS, ETC.) ARE OWNED BY MEMBERS OF YOUR HOUSEHOLD? (Check one)

- (1) ☐ None
(2) ☒ One
(3) ☐ Two
(4) ☐ Three

15. WHAT IS YOUR MARITAL STATUS? (Check one)

- (1) ☒ Single
(2) ☐ Married
(3) ☐ Widowed
(4) ☐ Divorced or separated
Other _____

SURVEY RESEARCH PROCESS--MAIL SURVEY

V. Introduction to Prospect Survey

While a survey analysis appears to be a group of questions, in fact the real product is a table of data unavailable from any other source. The analyst should begin with a written mock-up of the final report logic and the specific tables which lead to a conclusion.

- A. A survey of existing properties and alternatives available to a selected market segment defines only the competitive standard - namely the minimum product and price necessary to be in the market.
 1. Comparison shopping further identifies where there may be gaps in the supply of alternatives, a market opportunity gap, or where the oversupply is so significant as to portend the last competitive alternative before bankruptcy - namely price cutting.
 2. Comparison shopping should not only identify the physical characteristics of the product and price but the nature of the promotion effort as well.
 3. Promotion comparison should consider pedestrian and vehicle approaches, model location, furnishings, and sales people.
 4. Review of the promotion campaign should reveal whom the competitors believe to be their prospect.
- B. A survey of users, is designed to reveal or to identify the competitive differential attributes which would provide that monopoly element required of every successful project.
 1. A second product of consumer survey is the ability to develop locally relevant ratios which permit disaggregation of market data into market segments and the conversion of potential numbers of people into potential dollar sales over time.
 2. Survey questions to create ratios require previous construction of a market model hypothesis.
- C. With a preliminary hypothesis as to the prospect, survey questions may be intended to provide:
 1. Key ratios necessary for segmentation of market data already broken down by trade area, demographics, employment, etc.
 2. Key indicators of anxieties or preferences or tradeoffs of the prospect.
 3. Key indicators of the anxieties or preferences of non-prospects who feel a vested interest in the impact or have a significant part in the purchase process. (For example - the members of the Public Housing Authority have a different set of needs than the ultimate user, but the product is "bought" by the Board).

FEASIBILITY RESEARCH GROUP
CONSUMER MARKET RESEARCH FOR DECISION MAKERS

JOHN A. RASMUSSEN
Research Coordinator

June 10, 1977

SUBJECT: CONSUMER HOUSING RESEARCH

Dear Traver Villa Townhouse Owner:

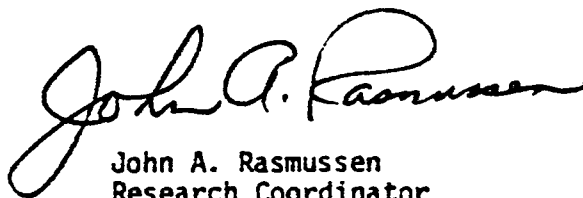
By completing the attached questionnaire you can help Ann Arbor builders determine the type of housing to build. As an owner of a condominium home your opinions and preferences will help in selecting the design and features for proposed new housing units.

This research is being conducted by an independent firm, Feasibility Research Group, Ltd. If you come to any questions you don't wish to answer please skip that question and go on to the next one.

If you are not at home an interviewer will leave the survey for you to fill out. A postage-paid envelope is enclosed or, if you prefer, the interviewer will call back to pick up the questionnaire.

Please fill out your survey as soon as possible. Thank you for your cooperation.

Your opinion does count.



John A. Rasmussen
Research Coordinator
208 Michigan Theater Building
Ann Arbor, Michigan 48104
Telephone: 994-4454

CONSUMER SURVEY

(ANN ARBOR CONDOMINIUM MARKET)

1. DID YOU PURCHASE THIS RESIDENCE FROM A PREVIOUS OWNER?

- (1) ___ Yes
(2) ___ No, I/we purchased it new
(3) ___ I/we rent this residence

2. WHEN DID YOU PURCHASE THIS RESIDENCE? MONTH _____ YEAR 19__

3A. WHERE WAS YOUR PREVIOUS RESIDENCE LOCATED?

- (1) ___ Outside the state of Michigan
(2) ___ Outside Ann Arbor but within Michigan
(3) ___ Within the Ann Arbor area

3B. IF YOUR PREVIOUS RESIDENCE WAS LOCATED WITHIN THE ANN ARBOR AREA PLEASE INDICATE THE ADDRESS AND/OR NEIGHBORHOOD OR DEVELOPMENT WHERE IT WAS LOCATED.

4. DID YOU OWN OR RENT YOUR PREVIOUS RESIDENCE? (1) ___ Own (2) ___ Rent

5. WHAT WAS THE NATURE OF YOUR PREVIOUS RESIDENCE?

- (1) ___ Single family house (4) ___ Townhouse
(2) ___ Condominium ___ Other (Please explain)
(3) ___ Apartment

6. WHAT PROMPTED YOU TO MOVE FROM YOUR PREVIOUS RESIDENCE?

7A. WHAT ALTERNATIVE TYPES OF HOUSING DID YOU CONSIDER BEFORE DECIDING TO PURCHASE A CONDOMINIUM?

- (1) ___ Single family house (3) ___ Townhouse
(2) ___ Apartment ___ Other (Please explain)

- 7B. WHY DID YOU DECIDE TO PURCHASE A CONDOMINIUM RATHER THAN ONE OF THE OTHER HOUSING ALTERNATIVES YOU CONSIDERED?

- 8A. WHAT OTHER CONDOMINIUM DEVELOPMENTS DID YOU LOOK AT BEFORE DECIDING TO PURCHASE A CONDOMINIUM AT THIS DEVELOPMENT ?

- 8B. OF THOSE CONDOMINIUM DEVELOPMENTS THAT YOU LOOKED AT, WHICH ONES DID YOU SERIOUSLY CONSIDER?

- 8C. OF THOSE CONDOMINIUM DEVELOPMENTS THAT YOU SERIOUSLY CONSIDERED, WHY DID YOU CHOOSE TO BUY IN THIS DEVELOPMENT?

9. WHY DID YOU PURCHASE THIS PARTICULAR UNIT WITHIN THIS DEVELOPMENT OVER OTHER UNITS THAT WERE AVAILABLE?

ABOUT YOUR PRESENT RESIDENCE

10. WHAT TYPE OF UNIT DID YOU PURCHASE?

(1) ☐ One-story ranch style

(3) ☐ Split-level (bi-level, tri-level)

(2) ☐ Two-story

☐ Other (Please explain)

- 11A. HOW MANY BEDROOMS DOES YOUR RESIDENCE HAVE?

(1) ☐ One

(3) ☐ Three

(2) ☐ Two

(4) ☐ Four

- 11B. WHERE ARE THESE BEDROOMS LOCATED?

(1) ☐ All bedrooms on first floor

(2) ☐ All bedrooms on second floor

(3) ☐ Master bedroom on first floor and other bedroom(s) on upper floor

(4) ☐ Master bedroom on upper floor and other bedroom(s) on lower floor

12. HOW MANY BATHS DOES YOUR RESIDENCE HAVE?

- (1) ☐ One (4) ☐ Two-and-a-half
 (2) ☐ One-and-a-half ☐ Other (Please explain)
 (2) ☐ Two

13. WHAT TYPE OF BASEMENT DOES YOUR RESIDENCE HAVE?

- (1) ☐ Full basement (2) ☐ Partial basement (3) ☐ No basement

14. WHAT TYPE OF AUTOMOBILE STORAGE DOES YOUR PRESENT RESIDENCE PROVIDE?

- (1) ☐ One car attached garage (5) ☐ One car carport
 (2) ☐ Two car attached garage (6) ☐ Two car carport
 (3) ☐ One car detached garage (7) ☐ Open parking
 (4) ☐ Two car detached garage

15. DOES YOUR RESIDENCE HAVE A FIREPLACE? (1) ☐ Yes (2) ☐ No

16. WHAT TYPE OF KITCHEN CABINETS DOES YOUR RESIDENCE HAVE?

- (1) ☐ Wood cabinets with formica tops
 (2) ☐ Formica finished cabinets with formica tops
☐ Other (Please explain)

WHAT WOULD YOU HAVE PREFERRED?

17. WHAT TYPE OF UNIT WOULD YOU HAVE PREFERRED?

- (1) ☐ I/we like our present design
 (2) ☐ Would have preferred a one-story unit
 (3) ☐ Would have preferred a two-story unit
 (4) ☐ Would have preferred a split-level unit
☐ Would have preferred some other design (Please explain)

18A. HOW MANY BEDROOMS WOULD YOU HAVE PREFERRED?

- (1) ☐ I/we like the number we presently have
 (2) ☐ Would have preferred one bedroom
 (3) ☐ Would have preferred two bedrooms
 (4) ☐ Would have preferred three bedrooms
 (5) ☐ Would have preferred four bedrooms

18B. WHERE WOULD YOU HAVE PREFERRED THAT THE BEDROOMS BE LOCATED?

- (1) ☐ I/we like our present arrangement
- (2) ☐ Would have preferred all bedrooms on first floor
- (3) ☐ Would have preferred all bedrooms on the second floor
- (4) ☐ Would have preferred Master bedroom on first floor and other bedroom(s) on the upper floor
- (5) ☐ Would have preferred Master bedroom on upper floor and other bedroom(s) on the lower floor

19. WHAT NUMBER OF BATHROOMS WOULD YOU HAVE PREFERRED?

- (1) ☐ I/we like the present number we have
- (2) ☐ Would have preferred one bath
- (3) ☐ Would have preferred one-and-a-half baths
- (4) ☐ Would have preferred two baths
- (5) ☐ Would have preferred two-and-a-half baths
- ☐ Other (Please explain) _____

20. WHAT TYPE OF BASEMENT WOULD YOU HAVE PREFERRED?

- (1) ☐ I/we like our present arrangement
- (2) ☐ Would have preferred a full basement
- (3) ☐ Would have preferred a partial basement
- (4) ☐ Would have preferred no basement(provided dwelling has adequate storage)
- (5) ☐ Makes no difference

21. WHAT TYPE OF AUTOMOBILE STORAGE WOULD YOU HAVE PREFERRED?

- (1) ☐ I/we like our present arrangement
- (2) ☐ Would have preferred a one car attached garage
- (3) ☐ Would have preferred a two car attached garage
- (4) ☐ Would have preferred a one car detached garage
- (5) ☐ Would have preferred a two car detached garage
- (6) ☐ Would have preferred a one car carport
- (7) ☐ Would have preferred a two car carport
- (8) ☐ Would have preferred open parking at a lower cost

22. WOULD YOU HAVE PREFERRED A FIREPLACE?

- (1) ☐ I/we have a fireplace
- (2) ☐ Would have preferred a wood burning brick fireplace at \$2,500 extra cost
- (3) ☐ Would have preferred a wood burning metal fireplace at \$1,500 extra cost
- (4) ☐ Would have preferred gas log fireplace at \$1,000 extra cost
- (5) ☐ Would have preferred no fireplace at a lower cost

23. WHAT TYPE OF KITCHEN CABINETS WOULD YOU HAVE PREFERRED?

- (1) ☐ I/we like our present cabinets
 (2) ☐ Would have preferred wood cabinets with formica tops
 (3) ☐ Would have preferred formica finish cabinets with formica tops
 (4) ☐ Makes no difference

ABOUT YOUR HOUSEHOLD

24. HOW MANY VEHICLES (CARS, TRUCKS, VANS, ETC.) ARE OWNED BY MEMBERS OF YOUR HOUSEHOLD?

25. ARE YOU:

- (1) ☐ Married (3) ☐ Widowed (5) ☐ Other
 (2) ☐ Single (4) ☐ Divorced or separated

26. ARE YOU: (1) ☐ Female (2) ☐ Male

27. WHAT AGE GROUP DO YOU AND SPOUSE OR ROOMATE(S) FALL INTO?

- (1) ☐ 18 - 24 (3) ☐ 35 - 44 (5) ☐ 55 - 64
 (2) ☐ 25 - 34 (4) ☐ 45 - 54 (6) ☐ 65 or over

28. HOW MANY CHILDREN ARE THERE IN YOUR HOUSEHOLD? WHAT ARE THEIR AGES?

29. WHICH OF THE FOLLOWING CORRESPONDS WITH YOUR TOTAL ANNUAL HOUSEHOLD INCOME?

- (1) ☐ Under \$10,000 (4) ☐ \$20,000 to \$24,999
 (2) ☐ \$10,000 to \$14,999 (5) ☐ \$25,000 to \$29,999
 (3) ☐ \$15,000 to \$19,999 (6) ☐ \$30,000 or more

30. HOW MANY INDIVIDUALS WITHIN YOUR HOUSEHOLD ARE EMPLOYED OUTSIDE THE HOME?

31. WHAT WAS THE PURCHASE PRICE OF YOUR PRESENT RESIDENCE? \$ _____ , _____

THANK YOU FOR YOUR HELP!

FEASIBILITY RESEARCH GROUP LTD.
 208 MICHIGAN THEATRE BUILDING
 ANN ARBOR, MICHIGAN 48104

(313) 994-4454

F *E* *A* *S* *I* *B* *I* *L* *I* *T* *Y* *R* *E* *S* *E* *A* *R* *C* *H* *G* *R* *O* *U* *P*

MARKET ANALYSIS FOR
PROPOSED TOWNHOUSES

PREPARED BY

JOHN RASMUSSEN, *RESEARCH COORDINATOR*

FEASIBILITY RESEARCH GROUP
210 Michigan Theater Building
Ann Arbor, Michigan 48108

F E A S I B I L I T Y R E S E A R C H G R O U P

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BUYER PROFILES

CONDOMINIUM BUYER PROFILES ARE DEVELOPED THROUGH DIRECT SURVEYS OF THE CONSUMER USING PERSONAL INTERVIEWS, TELEPHONE INTERVIEWS OR MAIL QUESTIONNAIRES. THE FOLLOWING QUESTIONS ARE FROM A RECENT BUYER SURVEY.

ABOUT YOUR HOUSEHOLD

24. HOW MANY VEHICLES (CARS, TRUCKS, VANS, ETC.) ARE OWNED BY MEMBERS OF YOUR HOUSEHOLD?

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THANK YOU FOR YOUR HELP!

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F E A S I B I L I T Y R E S E A R C H G R O U P

HOUSING MARKET SEGMENTS

Housing markets can be segmented by resident life cycles. Each segment typically has different housing needs in terms of type of housing, number of bedrooms and floor plan.

<u>PROFILE</u>	<u>CHILDREN</u>	<u>TYPICAL AGE</u>
1. <u>SINGLES, DIVORCED</u>	without children	
2. <u>YOUNG MARRIEDS</u>	without children	25 - 34
3. <u>FULL NESTER I</u>	oldest child under 11 years	35 - 44
4. <u>FULL NESTER II</u>	oldest child 11 to 17 years	45 - 54
5. <u>EMPTY NESTER</u>	no children under 18	55 - 64
6. <u>RETIREEES</u>		65 - 74
7. <u>WIDOWS, WIDOWERS AND SINGLES (never married)</u>		75 and up

The existing Lake Villa Buyer Profile mix is as follows:

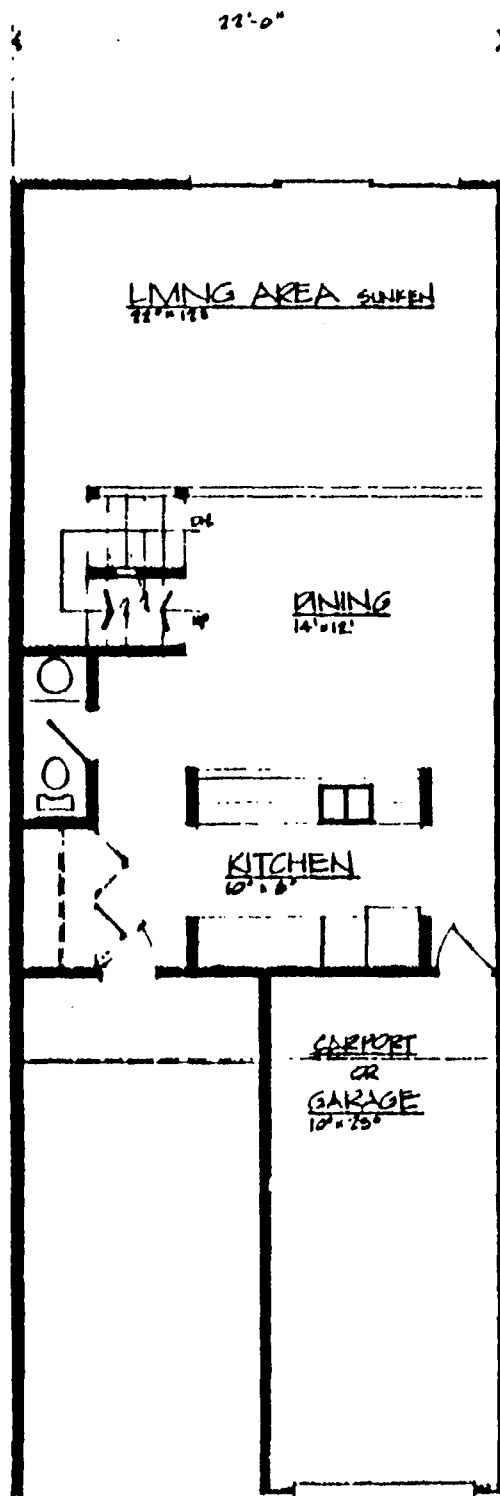
LAKE VILLA PROFILE*

<u>PROFILE</u>	<u>PERCENT</u>
SINGLES, DIVORCED	15%
YOUNG MARRIEDS	20%
FULL NESTER I	25%
FULL NESTER II	25%
EMPTY NESTER	15%
RETIREEES	0%
TOTAL	100%

* The above profiles were developed through personal interviews with a sample of 20 of 43 Lake Villa buyers.

Buyer Profiles provide one indication of the market (and product mix). To identify the nature of demand, Buyer Profiles developed through systematic sampling and personal interviews or mail surveys provide insight into why people buy condominium units in specific developments. By understanding the buyer decision process and why buyers prefer one development over another we can more accurately project market strategies for capturing potential sales.

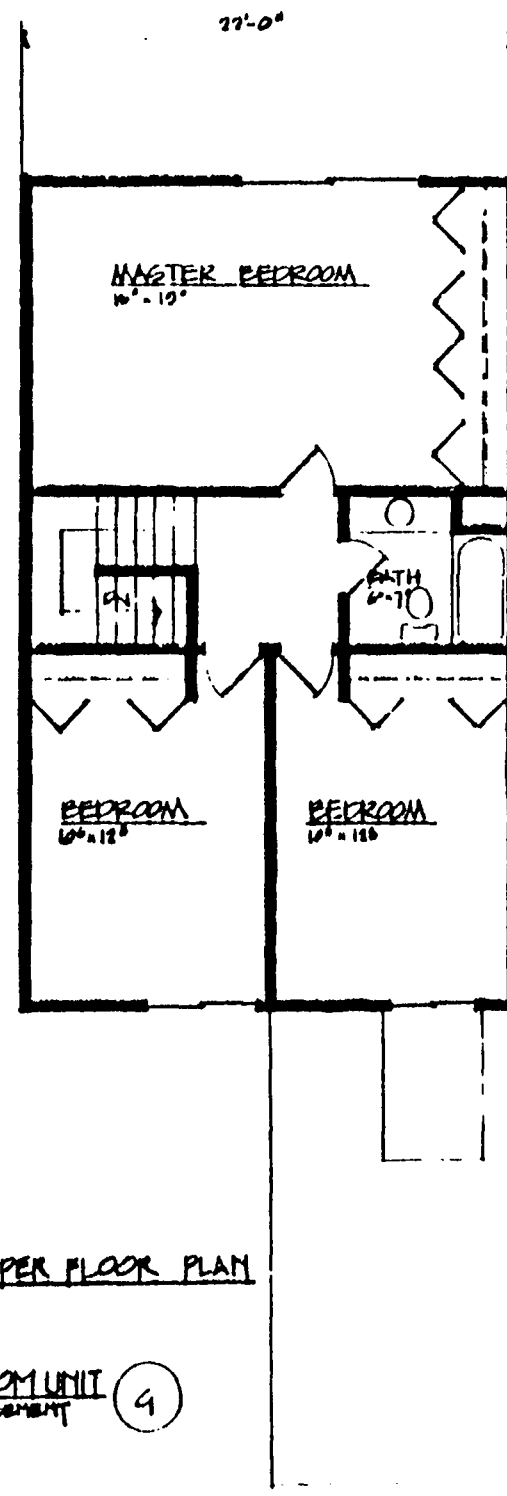
A COMPARISON OF SUBJECT AND COMPETITION BUYER
PROFILES IS SHOWN ON THE FOLLOWING PAGES



ORIG. AC G PLAN

- ONLY ONE FIRST FLOOR CLOSET
- NO WINDOWS IN FRONT FIRST FLOOR
- SMALL BATH WITH NO LINEN CLOSET

MAIN FLOOR PLAN



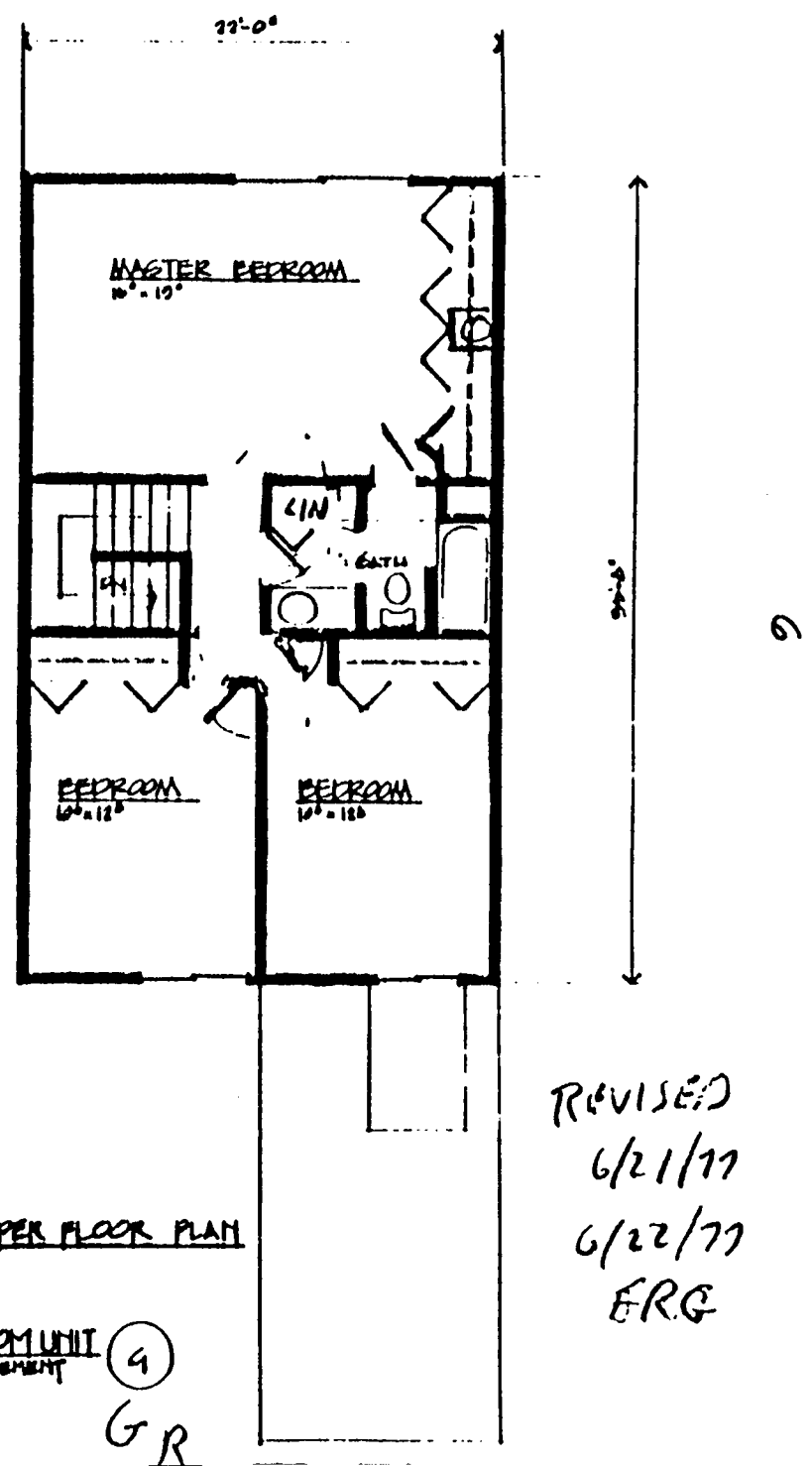
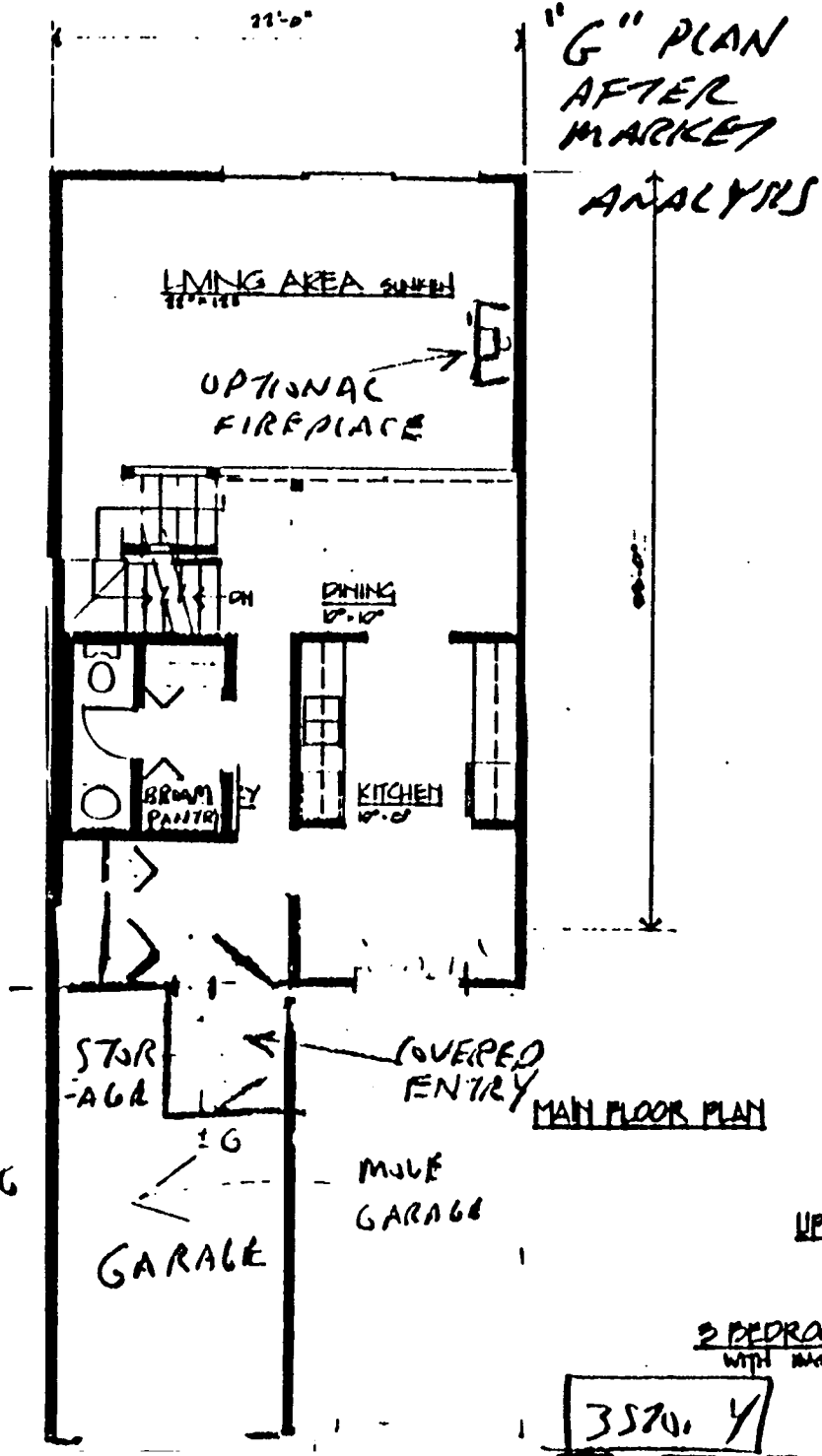
UPPER FLOOR PLAN

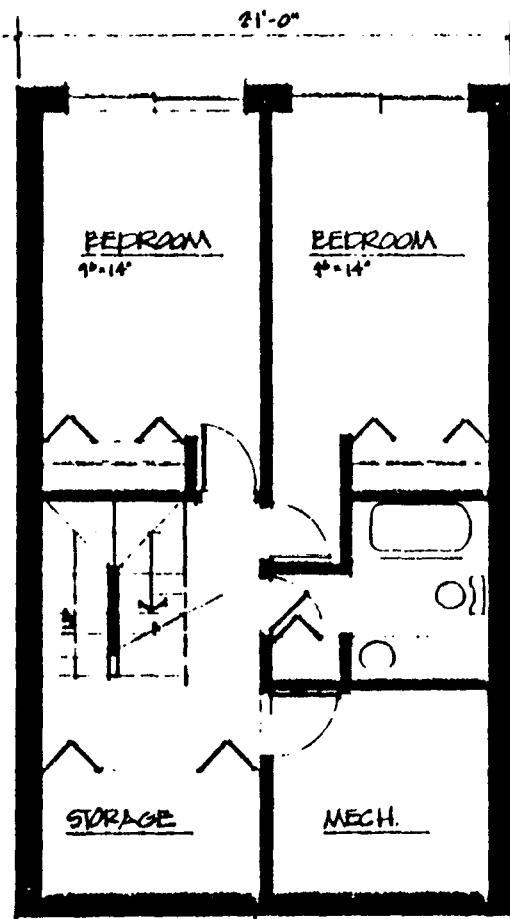
2 BEDROOM UNIT
WITH BASEMENT

4

S

226

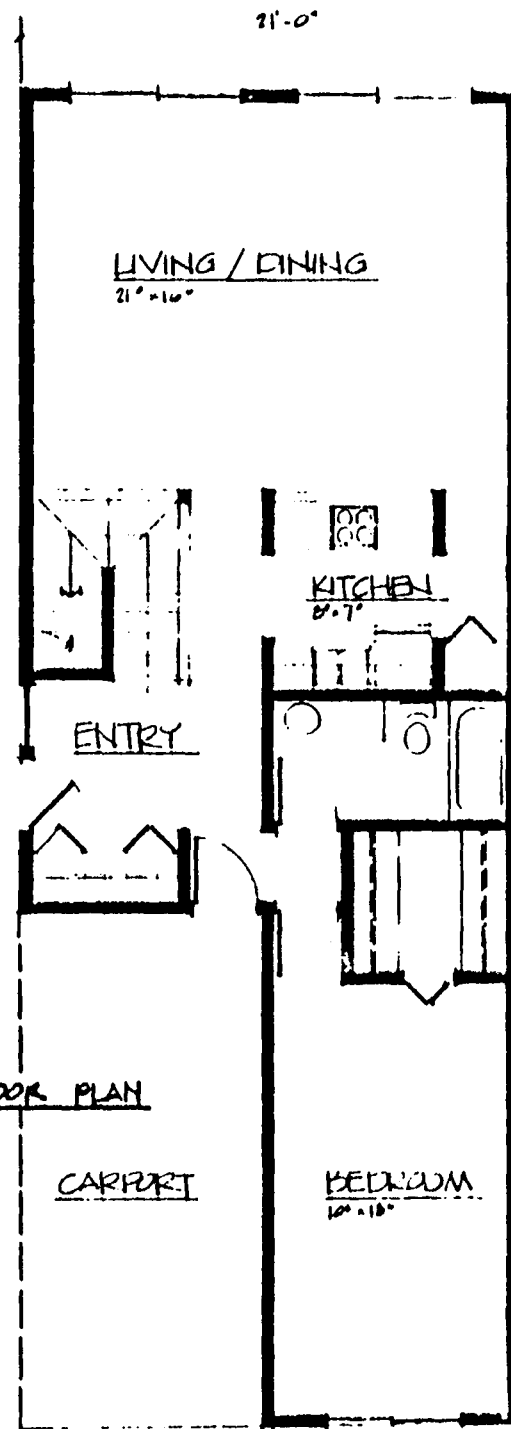




LOWER FLOOR PLAN

ORIGINAL "F" PLAN

- 1-CAR GARPORT
- ONE BEDROOM ON MAIN LEVEL.
- TWO BEDROOMS ON LOWER LEVEL

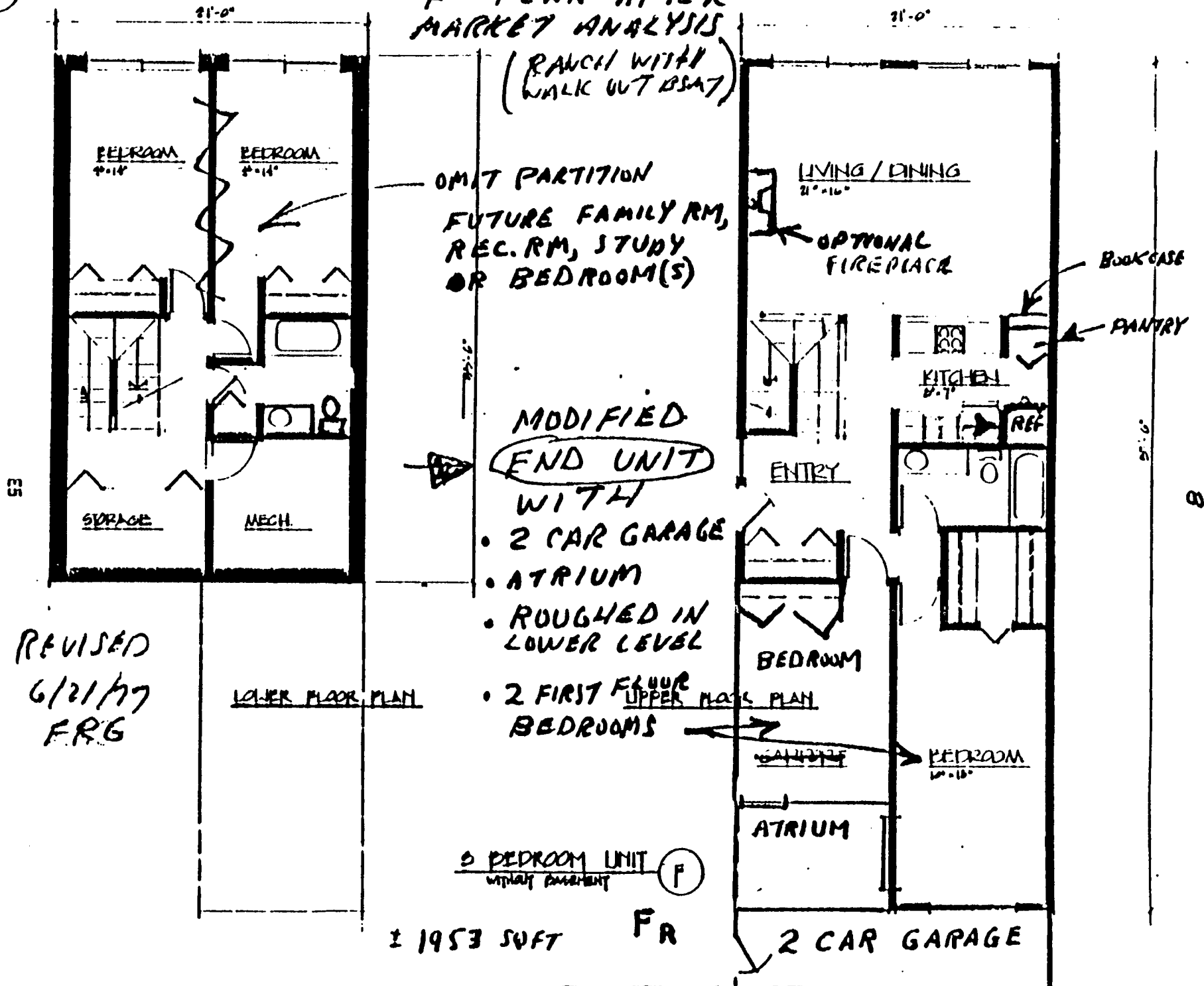


UPPER FLOOR PLAN

3 BEDROOM UNIT
WITHOUT FINISHMENT (F)

(12)

"F" PLAN AFTER
MARKET ANALYSIS
(RANCH WITH
WALK OUT GAR)



POTENTIAL MARKET SEGMENTS

- I. Singles -- Unmarried, active, mobile, many interests, entertain informally, few financial burdens, recreation oriented. Buy basic furniture, basic kitchen equipment, cars, stereos, and vacations.
- II. Young Marrieds, #1 -- Young couple, working wife, entertain informally, amateur gardeners, planning on family. Better off financially than they will be in the "family formation" future. Buy durables -- cars, kitchen equipment, furniture, and vacations. Rate housing as a need for more living space.
- III. Young Marrieds, #2 -- Discretionary income available, deferring family, active, entertain informally and often, some formal entertaining, independent, dual-person working household, do-it-yourself buffs, sports car. Rate housing as an investment.
- IV. Compact Family/Move Down -- Discretionary income available, interested in no maintenance, informal living, some formal entertainment. Away from home often, occasional visits from family or guests, focus on both active and passive recreation.
- V. Divorcees/With Children -- Family oriented activity, limited entertainment, informal lifestyle, limited maintenance.
- VI. Full Nest, #1 -- Home purchasing at its peak, even though liquid assets are low. Dissatisfied with financial position, and amount of money saved. Conscious of monthly payments, family activities. Unemployed female with numerous interests, mostly child oriented. Lifestyle is casual and informal. Interested in new products, buy washers, dryers, T.V.'s, baby food, dolls, wagons, etc.
- VII. Full Nest, #2 -- Family move-up market, as financial position gets better, some wives work. Interested in larger sized packages. The most price/size sensitive group.
- VIII. Established Family -- Making monthly payment comfortably, some discretionary income as more wives work, approaching peak of economic and social lifestyle curve, some formal entertaining, older children and teenagers, many interests.
- IX. Luxury Families -- Have arrived, tremendous discretionary income, very formal house, don't entertain often, but when they do, it's formal, dine out often, no maintenance, privacy mandatory.

- X. Empty Nester -- Home ownership at its peak, more satisfied with financial position. Small or no debt. Family is often away from home, occasional visits from family. Mobile in attitude, but permanent in residence, near grandchildren, many hobbies, one child in college, one or two children married, self-sufficient couple.
- XI. Active Retired -- Still working two or three days per week, active either socially or politically in community or church affairs, self-sufficient, many hours away from home, do not entertain often, but when they do, it's semi-formal. Winter/summer residences. Likely to sell home before retirement.
- XII. Retired -- Drastic cut in income, dependent, limited activities outside community. Winter/summer residences.

Exhibit 9

F *E* *A* *S* *I* *B* *I* *L* *I* *T* *Y* *R* *E* *S* *E* *A* *R* *C* *H* *G* *R* *O* *U* *P*

SAMPLE QUALITY CONTROL

SAMPLING ERROR

DEFINITION: Sampling error occurs when sample data is not representative of the total population of households from which the sample is drawn.

HOW FRG's sample of the population reflects updated 1977 household
CONTROLLED: data. Using our source of Washtenaw County Household addresses,
which is updated for new apartments and homes built in 1977 and
applying a computer-generated random sample, we can hold sample
error to a minimum.

SAMPLE BIAS

DEFINITION: Sample bias occurs when respondents drawn in the sample refuse to be interviewed for the survey or do not reply to certain questions in the survey.

HOW At FRG the following steps are taken to reduce possible sample
CONTROLLED: bias:

- (1) Pretesting of the survey questions and survey format to:
 - (a) enable the respondent to understand the question
 - (b) reduce respondent fatigue by creating a natural flow in the question sequence
- (2) Monitoring interviewer performance by Head Interviewer to:
 - (a) review completed surveys for completion and editing
 - (b) review respondent's perception of interviewer through calling of 5% of respondents to learn consumers' opinion of interviewer

MAIL SURVEY RESPONSE RATES

	¹ DATE	² DAILY RESPONSE	³ TOTAL RESPONSE	⁴ POSTAGE DUE	⁵ UNDE-LIVERED	⁶ POSTAGE DUE FRG	⁸ DATE	⁸ DAILY RESPONSE	⁹ TOTAL RESPONSE	¹⁰ POSTAGE DUE	¹¹ UNDE-LIVERED	¹² POSTAGE DUE FRG	¹³
SURVEY MAILED →	7/7/75						8/11/75	33+6	1,906	\$ 3.96			
	7/10/75	1	1	\$0.22	1	\$.10	8/12/75	3+1	1,910	\$.36	(+ \$1.20 remail postage)		
	7/11/75	7	8	\$0.84			8/13/75	18	1,928	\$ 2.16			
1st FOLLOW-UP MAILED →	7/12/75						8/14/75	10	1,938	\$ 1.20	1(27)		
	7/12/75	11	19	\$0.82			8/15/75	5	1,943	\$.60			
	7/14/75	1+41+30	91	\$8.62	(1 FRG stamp used)		8/18/75	10	1,953	\$ 1.20			
	7/15/75	63	154	\$7.76	1	\$.10	8/19/75	4	1,957	\$.40			
	7/16/75	1+2, 1+90	247	\$10.90	1(3 FRG stamps)		8/20/75	2	1,959	\$.34	1		
	7/17/75	1+115	363	\$11.60	1 (1 FRG stamp)		8/21/75	1	1,960	\$.12			
2nd FOLLOW-UP MAILED →	7/18/75						8/22/75	1	1,961	\$.12	(+1 mailed to MEHA = 1,962)		
	7/18/75	247	610	\$34.14	5		8/25/75	1	1,963	\$.12	(+\$.40 remail)		
	7/21/75	165	775	\$21.10	3		8/26/75	3	1,966	\$.36			
	7/22/75	233	1,008	\$28.36	4		8/27/75	2	1,968	\$.24			
				(+\$.20 remail)			8/28/75	3	1,971	\$.36			
	7/23/75	1+2, 138	1,149	\$15.66	2		8/29/75	1	1,972	\$.12			
				(+\$.20 remail)			9/2/75	2	1,974	\$.24	(+1 mailed to MEHA = 1,975)		
	7/24/75	153	1,302	\$14.02	(+\$.20 remail)		9/8/75	2	1,977	\$.24			
	7/25/75	114	1,416	\$13.68	1		9/9/75	1	1,978	\$.12			
	7/28/75	49	1,465	\$ 5.88			9/18/75	4	1,982	\$.55	(28)		
	7/29/75	143	1,608	\$17.16	(+\$.40 remail)		(3,331-28 = 1,982/3,303 = 60% response rate to date)						
	7/30/75	53	1,661	\$ 6.56	2		9/22/75	1	1,983	\$.15			
	7/31/75	37	1,698	\$ 4.54	1		9/30/75	1	1,984	\$.15			
				(+\$.40 for 2-1st class)			10/6/75	1	1,985	\$.15			
MAILED →	8/1/75						10/22/75	1	1,986	\$.15			
FOLLOW-UP	8/1/75	11	1,709	\$ 1.52	2		11/12/75	1	1,987	\$.15			
(52.7%)	8/4/75	48	1,757	\$ 5.86	1(25)		11/24/75	1	1,988	\$.15			
response	8/5/75	31	1,788	\$ 3.72	(+\$.40 postage)								
rate to date	8/6/75	1+22	1,811	\$ 2.64	(+\$.40 postage)								
	8/7/75	25	1,836	\$ 3.00?									
	8/8/75	34	1,870	\$ 4.20	1								

7. Personal interviews in depth permit questions using photographs with colors and styles. Expensive and time consuming, it assumes precious qualification of the interviewee as a typical prospect.

I. Processing of surveys can involve simple tallies or counts, simple subdividing of responses into subcategories, or preferably organization of the questionnaire to permit key punching or cross tabbing or statistical analysis by computer processing. The problem of identification requires:

1. Coding by colored paper, colored return envelope, stamp on self-addressed stamped envelope to reflect geographic area, building address, type of respondent, original mailing list solves most processing problems.
2. Beware of code numbers if you promised anonymity; give them the option of identifying the respondent, etc.
3. Always identify yourself as an analyst (but not the project or the client), providing a phone number or an address where the interviewee can find you. It will generate both presale prospect lists and some primary unexpected political participation by others.

J. Comparative cost and comparative merits and disadvantages of alternative survey research methods for appraisers is suggested in EXHIBIT 11.

1. These were prepared in 1978 by John Rasmussen for a conference at the University of Wisconsin.
2. Many appraisers worry about the size of the sample and degree of reliability of the results. In many cases, market segmentation and correct identification of the customer group will allow survey of virtually the entire universe of 20-40 users.
3. A sample is used to infer facts about a larger universe. EXHIBIT 12 provides an indication of sample size and range of error. Note that if you are going to subdivide responses between homeowners and renters, for example, it is important to have the desired sample size in the subcategory. Hence, it is important to refine your list of names as sharply as possible.

VI. Telephone Survey to Improve Bidding Position on Turn-key Elderly Housing Project (Exhibits 13&14)

As a simple illustration of the relationship of consumer need to pre-architectural programs, consider the survey approach for a turnkey, 160-unit elderly housing project, solicited by the City

FEASIBILITY RESEARCH GROUP LTD.

THE RELATIONSHIP OF SAMPLE SIZE TO SURVEY ACCURACY

Sample or subsample size	With this size sample, we are <u>X</u> % certain the obtained percentage is within <u>Y</u> % of the true percentage ¹ .		
	<u>95% certain</u>	<u>90% certain</u>	<u>50% certain</u>
50	± 13.8% ²	± 11.6%	± 4.8%
100	9.8	8.2	3.4
150	8.0	6.7	2.8
200	6.9	5.8	2.4
250	6.2	5.2	2.1
300	5.7	4.7	1.9
350	5.2	4.4	1.8
400	4.9	4.1	1.7
450	4.6	3.9	1.6
500	4.4	3.7	1.5
600	4.0	3.4	1.4
700	3.7	3.1	1.3
800	3.5	2.9	1.2
900	3.3	2.7	1.1
1000	± 3.1%	± 2.6%	± 1.1%

¹The percentage that would be obtained if everyone in the sampling list had been sent a survey. The figures given are accurate if the true percentage is from 30% to 70%. The obtained percentage and true percentage are likely to be closer if the true percentage is less than 30% or greater than 70%.

²For example, if the obtained percentage is 50%, the true percentage will be between 36.2% and 63.8% (13.8% nineteen times out of twenty / 95% certain).

SURVEY RESEARCH FOR APPRAISERS

Survey Format	Advantages	Disadvantages	Response Rates	Typcial Cost Per Response	Typical Time
Personal Interviews	<ol style="list-style-type: none"> 1. Permits longer surveys 2. Opportunity to probe 3. Can use flash cards, floor plans, etc. 	<ol style="list-style-type: none"> 1. Higher cost than phone phone or mail survey 2. More time required than telephone 3. Training and field supervision required 	60 - 75% Call Backs-3	\$3 to \$6 per response	30 - 60 days
Telephone Survey	<ol style="list-style-type: none"> 1. Faster than personal interviews or mail surveys 2. Opportunity to probe 3. Less pretesting required 	<ol style="list-style-type: none"> 1. Shorter questionnaire required 2. High turnover results in lower completion rate 3. Unlisted and disconnected phones may bias sample 	30 - 50% Call Backs-3	\$2 to \$2.50	15 - 30 days
Mail Questionnaires	<ol style="list-style-type: none"> 1. Lowest cost 2. Larger survey sample 	<ol style="list-style-type: none"> 1. Longest time for turn around 2. Questions as well as layout require design 	40 - 60 % Follow ups 3 or 4	\$\$.55 to \$1.00	60 - 90 days

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CHECKLIST FOR INTERVIEWERS

Exhibit 13

1. BE NEUTRAL -- DON'T ATTEMPT TO INFLUENCE RESPONDENT IN ANY WAY.
BE INFORMAL.
BE COURTEOUS.
BE CONSCIENTIOUS.
2. FIRST ANSWERS ARE USUALLY THE MOST MEANINGFUL. DO NOT CHANGE ANY ANSWERS TO A PAST QUESTION.
3. DO NOT RECORD A "DON'T KNOW" ANSWER TOO QUICKLY -- GIVE RESPONDENT TIME TO THINK.
4. RECORD ANSWERS JUST AS THEY ARE GIVEN. IF LENGTHY, TRY TO SUMMARIZE IN RESPONDENT'S OWN WORDS, NOT YOURS.
5. TRY TO OBTAIN AS SPECIFIC INFORMATION AS POSSIBLE. IF RESPONDENT ANSWERS, "IT'S O.K.", ASK WHY. IF NECESSARY, DO A LITTLE PROBING.
6. KEEP TALKING AS YOU WRITE. ASK NEXT QUESTION WHILE WRITING FIRST ANSWER. DON'T LET RESPONDENT GET DISTRACTED OR BORED.
7. STICK TO THE SUBJECT. DON'T LET YOURSELF OR THE RESPONDENT DIGRESS.
8. BE SURE YOU'VE ASKED EVERY QUESTION AS IT IS WRITTEN IN THE ORDER THEY APPEAR ON THE QUESTIONNAIRE FORM.
9. CHECK OVER QUESTIONNAIRE BEFORE TERMINATING THE INTERVIEW TO MAKE SURE IT IS COMPLETE.
10. THANK RESPONDENT FOR PARTICIPATING!

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210 MICHIGAN THEATER BUILDING
ANN ARBOR, MICHIGAN 48108
(313) 994-4454

PROJECT NO: _____
PROJECT NAME: _____

Exhibit 14

CONTRACTOR NAME: _____
INTERVIEWER NO: _____

INTERVIEW VALIDATION

INTERVIEWER TO FILL IN (1) ADDRESS AND PHONE NUMBER OR (2) NAME AND ADDRESS (IF NO PHONE OR REFUSAL)										FIELD SUPERVISOR TO COMPLETE. (VALIDATE WITHIN 2-7 DAYS.)				
	ADDRESS	ZIP	NAME	MR, MRS, MS, MISS	PHONE #	INTERVIEW DATE	START TIME	FINISH TIME	TOTAL TIME	VALIDATED BY	PHONE OR IN PERSON	QUESTIONS VALIDATED	COMMENTS	
1														1
2														2
3														3
4														4
5														5
6														6
7														7
8														8
9														9
10														10
11														11
12														12
13														13
14														14
15														15
16														16
17														17
18														18
19														19
20														20

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ANN ARBOR, MICHIGAN 48104

Pink - INTERVIEWER'S COPY
Yellow - FIELD SUPERVISOR
White - OFFICE

KEY: YES = X
NO = —
DK = DON'T KNOW
NA = NOT APPROPRIATE
REF = REFUSED

I CERTIFY THE ABOVE LISTED ITEMS ARE TRUE AND CORRECT.

CONTRACTOR SIGNATURE _____ DATE _____ FIELD SUPERVISOR SIGNATURE _____ DATE _____

COMMENTS: _____

of Madison Housing and Redevelopment Authority for a specific urban renewal site. Developers were to compete on both cost and sensitivity of design with an oral presentation to the Board in addition to submission of bid materials.

A. The packet of bid instructions included:

1. Identification of the 116,549 sq. ft. site (with views of lake, park, and hospital)
2. Restriction of access to one side of site, and inclusion of 53 parking stalls, and a drive through portachere.
3. A statement that the proposed structure be in harmony with existing buildings.
4. Limit of 160 units in three distinct structures interconnected by an enclosed weatherized corridor system for elderly housing.
5. Specification of three structures consist of a one-story building housing 10-15% of total units; a three-story with 25-35% of total units; and a high rise with the remaining 60-70% of the total units.
6. Provision of extensive community, recreation, management and maintenance spaces with explicit instructions as to the location and relationship of the latter two space groups.
7. Design in accord with HUD Minimum Property Standards.
8. Time between solicitation and presentation was four weeks.

B. Joint venture proposal was to include experience design/construction firm from out-of-town, the local broker/developer for financing and community relations, and a team of two graduate students in real estate. After organization of their joint venture three and one half weeks remained; designer required two weeks to prepare materials; estimator two days, etc. and specification and development of a pre-architectural program had to be completed in eight days.

1. Four days allocated to data collection and survey design; four days allocated to analysis and development of design program.
2. Market researches read relevant secondary literature (such as Housing the Elderly, Central Mortgage and Housing Corporation of Canada, Second Edition, July 1972, Printed in Canada; or Design of Housing for the Elderly: A checklist, by Marie C. McGuire, NAHRO 1972; items found in The Built Environment For the Elderly and the Handicapped, a bibliography, U. D. Department of Housing & Urban Development, Library and Information Division, June 1971).

3. Researchers visited several Madison projects, obtained floor plans, and visited with managers to make a subjective analysis of the relative success or misfit design elements in existing housing.
- C. During same two day period architect/engineers reviewed information packet and site constraints; then met with market researchers to generate the following basic research questions.
1. What are the physical limitations of the prospective residents requiring special features?
 2. What is the prior living experience of the resident, to minimize disruption of life style through design sensitivity?
 3. What unit mix would be appropriate?
 4. How is unit mix allocated between three required structures?
 5. What should be basic unit size?
 6. How should space within each unit be allocated?
 7. What functions and design features should be included in community spaces?
 8. Are there other wants, needs and anxieties of users unmet by existing Madison elderly housing projects?
- D. To answer these questions the survey design required specification of survey measurement devices and identification of a respondent group.
1. Given the experience of the researchers, their preliminary research to brief themselves, and a two-day time limit, they chose to do a non-probability judgment sample.
 2. Time schedule required a telephone survey technique with a random sample of residents in elderly housing units in Madison.
- E. Sampling criteria required:
1. Sample be representative of the population of interest
 2. Persons selected must be able to respond with relevance and validity to the survey
 3. Population from which sample would be drawn had to be experienced in type of unit to be researched
- F. In response to these criteria:
1. It was reasoned that most likely there would be homogeneity of demand characteristics between present occupants of public elderly housing in Madison and prospective occupants on Housing Authority waiting lists.

2. Literature search indicated that continuity theory (habit, pattern, life style) control elderly so that occupant of present comparable units would best be able to relate to design questions and project their future needs and desires relative to their own units and experience.
3. A need survey could have been made of Housing Authority management, building managers, or HUD underwriters but developer felt that the best responding group would be the elderly themselves.

G. The interview sampling plan consisted of:

1. Identification of Madison public housing units for the elderly by street address
2. Identification of present occupants by name in existing units from current reverse telephone directory.
3. Random sample of residents named and available by phone (potential bias)

H. Survey results were to be keypunched and analyzed on a cross tabulation program at the UW School of Business Computer Center to reveal how different persons in different types of units might have differed in their responses.

1. For speed, keypunching was to be done directly from completed questionnaire form
2. Usable forms were required to have answers to all relevant questions
3. Ultimately there were 99 usable responses from a total population of 268 apartment units in the Madison elderly housing program.
4. Two persons complete these responses in two twelve hour working days; computer analysis took one day.

I. Sample questionnaire provided in Exhibit 15

1. Telephone survey very poor technique for measuring attitudes of elderly
2. More valid than group meetings conducted by Housing Authority where residents are intimidated by landlord, size of group, or dominant extroverts
3. Personal interview more time consuming and more valuable
4. Interviews should be conducted in respondent own unit to position questions against current experience and to permit demonstration with more ease than verbal articulation.
5. Exhibit 15 should be viewed as demonstrating how standardization is imposed on telephone survey techniques
6. Interviewers were women

VII. The questionnaire was intended to generate a brief consumer profile, identify possible significant and subtle dissatisfactions with unit design, and permit some open-end questions to explore areas not anticipated by researchers.

A. The consumer profile of the typical occupant:

1. Was female (83%)
2. Had previously rented a housing unit (82%) with 91% having paid less than \$175 per month and 60% had paid less than \$100, indicating most found the public housing unit better in quality and lower in price (\$50-\$60 per month)
3. Long waiting periods before admittance to public housing generally made them most grateful and non-critical
4. Almost all had known low density low rise residential environments over their lifetimes.

B. For space allocation and features the survey revealed:

1. Satisfaction of present site with living room larger than bedroom, etc.
2. 99% preferred bathroom to open into bedroom
3. Open-end question revealed majority wanted outside window from kitchen
4. Desire for indoor walking-exercise area without steps
5. Desire for lounges tied to indoor passages and with views of action centers
6. Desire for community craft and recreation facilities which were not isolated by stairs, windowless walls, or outside walkways (as was the case in Madison projects).
7. Anxiety about high rise among many due to fire hazard dependence on elevators or lifetime unfamiliarity with high rises.
8. Preferred more units per floor in low rise to exclusiveness of high rise floor but would take anything they could get.

C. The theory on aging elderly behavior patterns also contributed to design constraints, for example, the disengagement theory indicates the elderly gradually lose the energy to maintain a great variety of social contacts, etc., a tendency which leads to isolation and increased depression due to loneliness.

1. Physical design must provide a variety of choices as to their withdrawal from the street, the total project, a small group of neighbors, or their own room.
2. At the same time, heterogeneity of unit mix avoids clustering all handicapped, all married, etc. in one particular zone to give everyone a variety of social contacts.
3. Circulation patterns can be designed to encourage random meetings without forcing social involvement.
4. Visual elements which are depressants such as views of cemeteries, hospitals, nursing homes, etc. should be avoided.

D. With the initial design constraint inputs, the designers worked up a tentative plan which proved to exceed the desired cost estimate at which point estimators, market analysts, and designers met in an all-day session to hammer out final trade-offs. A 165-unit project was the result as described in Exhibits 17, 18, 19 and 20.

1. Project had second lowest total cost (\$3,397,380 or \$26,000 per unit) of the ten proposals submitted.
2. Project was turned down by renewal board because they did not like contractors reputation for economy and thought the exterior was less attractive than conventional tower.

3. Experience is typical of real estate that is designed to please the investor rather than the ultimate user, particularly when the investor has not properly defined the context in sufficient detail to judge the fit of any proposal submitted.

EXHIBIT #15

Telephone Survey Script - Elderly Housing

Prepared and executed by
James R. DeLisle, June, 1974

PRE-SURVEY INFO.

Survey
Turnkey Elderly Housing
Triangle Project
Madison, Wis.

Code of Interviewer ☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

PROJECT CODE Code of Project

☒ Braxton
☐ Romnes
☐ Tenney Park

Sex of Respondent ☐ Male ☒ Female

INTRO.

Hello, my name is _____. We are conducting a survey of residents of elderly housing apartments so that we may identify those features of apartment design and planning that are satisfying to residents, as well as those that are irritations.

The purpose of seeking your responses to these questions, is to provide a base of information from you --the real experts on housing for the elderly-- upon which we can make specific recommendations to developers of the proposed elderly housing project on the Triangle Urban Renewal Area, here in Madison. This information will result in an improved living environment in the proposed housing project. Your responses are confidential and you will not be identified as an individual.

Would you mind answering a few questions ? Thank you.

PRIOR LIVING EXPERIENCE

Note:
(read options
only when arrow
is shown as in
question # 2)

1. When did you move into your present home ?

<input checked="" type="checkbox"/> 1960 to 1965	<input type="checkbox"/> 1971 to 1972
<input type="checkbox"/> 1966 to 1968	<input type="checkbox"/> 1973 to 1974
<input checked="" type="checkbox"/> 1969 to 1970	

2. What type of home did you live in before moving to your present home ?

↓ <input checked="" type="checkbox"/> one family house	↓ <input type="checkbox"/> 1 to 4 unit apartment bldg.
<input type="checkbox"/> two family house	<input type="checkbox"/> 5 or more unit apt. bldg.
<input type="checkbox"/> other _____	<input type="checkbox"/> other _____

3. How long did you live in your former home ?

<input type="checkbox"/> less than 6 month	<input checked="" type="checkbox"/> 2 - 5 years
<input type="checkbox"/> 6 mo. to 1 year	<input type="checkbox"/> 5 -10 years
<input type="checkbox"/> 1 - 2 years	<input type="checkbox"/> Over 10 years

4. Was your previous home:

- ☐ owned by you (or you and your spouse)
☐ owned by your family (or your spouses' family)
☐ occupied without cash rent
☒ rented by you (or you and your spouse)

How much was your rent each month ?

- ☐ less than \$50 ☐ \$100 to 125
☐ \$50 to 75 ☒ \$125 to 175
☐ \$75 to 100 ☐ \$175 or more

Did your rent include:

- Electricity ☐ yes ☒ no
 Heat ☐ yes ☒ no
 Water ☒ yes ☐ no
 Gas ☐ yes ☐ no

☒ DNA

Present Living
Experience

YOUR RESPONSES TO THE FOLLOWING QUESTIONS WILL TELL US WHAT YOU FEEL IS IMPORTANT IN AN APARTMENT SPECIFICALLY DESIGNED FOR THE ELDERLY

5. Which of the rooms in the apartment should be the largest, second largest, and third largest ?

- | | Largest | Second Largest | Third Largest |
|---|----------------------------------|----------------------------------|----------------------------------|
| <input type="radio"/> Kitchen-Dining area | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| <input type="radio"/> Living Room | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Bedroom | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |

6. Is your present home:

- ☐ too large for your needs
☐ too small for your needs
☒ just right for your needs

7. How many people live with you in your apartment ?

- ☒ none ☐ three
☐ one ☐ four
☐ two ☐ five or more

If you could change your present apartment by making one room larger and one room smaller;

8. Would you make your:

- ↓ ☒ LR larger; BR smaller or/
☐ BR larger; LR smaller or/
☐ leave them like they are

9. Would you make your:

- ↓ ☒ LR larger; K-D area smaller or/
☐ K-D area larger; LR smaller or/
☐ leave them like they are

OPTIONAL UNIT FEATURES

If you had to select one of the following:

10. Would you prefer:

- ↓ ☒ A dining area in the kitchen or/
☐ A dining area next to the kitchen

11. Would you prefer:

- ↓ ☒ A bathroom door opening to bedroom only or/
☐ A bathroom door opening to living room area only

12. Would you prefer:

- ↓ ☒ A large closet area in the bedroom or/
☐ A large closet area in the living-dining-kitchen area

13. Would you prefer:

- ↓ ☒ A balcony or
☐ Slightly larger apartment size

14. Would you prefer:

- ↓ ☒ Larger closet space or
☐ More open space in your apartment

OPTIONAL PROJECT FEATURES

15. If you had the choice, would you want:

- ↓ ☒ A larger apartment and less community space or/
☐ A smaller apartment and more community space or/
☐ make no change

If you had to select one of the following:

16. Would you prefer:

- ↓ ☒ One large room with a music area, T.V. area, conversation area, and a small library or/
☐ Several smaller separate rooms for each of these activities, in addition to a central lounge

17. Would you prefer:

- ↓ ☐ A special lounge area for children of guests or/
☒ A larger main lounge

18. Should there be a separate lounge for women only ☒ ~~yes~~ and a separate lounge for men only ☒ ~~yes~~ No

19. Is there a craft or hobby room in the building you live in now ?

- ☒ yes
☐ no

20. Would you like ☒ ~~do you like~~ a crafts room ?

- ☐ no
☒ yes

21. For what crafts would you ☒ ~~do you~~ use the craft room ?

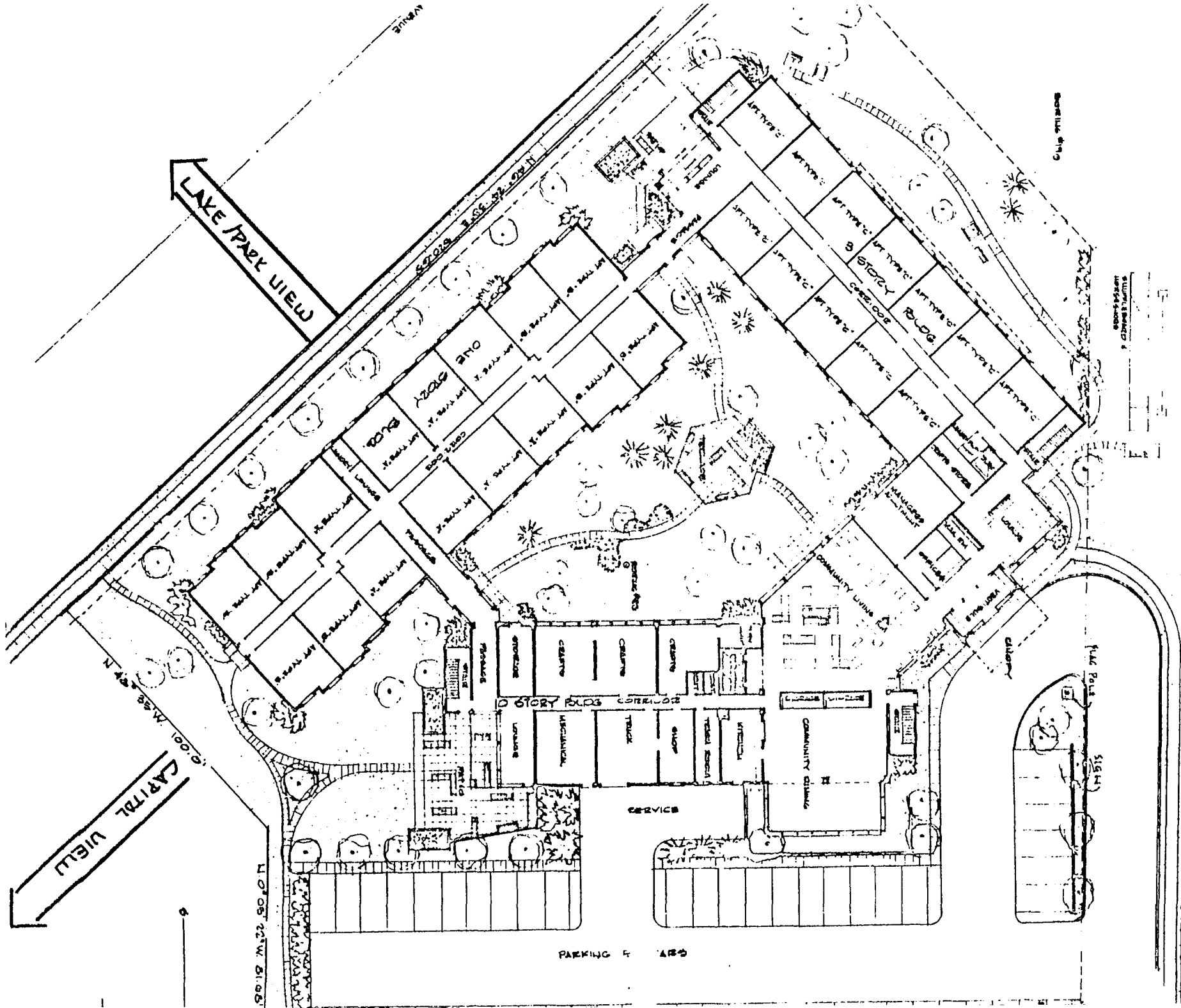
- | | |
|--|---|
| <input type="checkbox"/> Pottery | <input type="checkbox"/> woodworking |
| <input type="checkbox"/> knitting and crocheting | <input type="checkbox"/> sewing |
| <input type="checkbox"/> painting | <input type="checkbox"/> copper enameling |
| <input checked="" type="checkbox"/> weaving | <input type="checkbox"/> other _____ |
| <input type="checkbox"/> photography | <input type="checkbox"/> other _____ |

22. How many times a week would you ☒ ~~do you~~ use the room ?

- | | |
|--|--|
| <input type="checkbox"/> less than once a week | <input type="checkbox"/> More than 3 times |
| <input type="checkbox"/> once | <input type="checkbox"/> Never |
| <input type="checkbox"/> twice | |
| <input checked="" type="checkbox"/> three | |

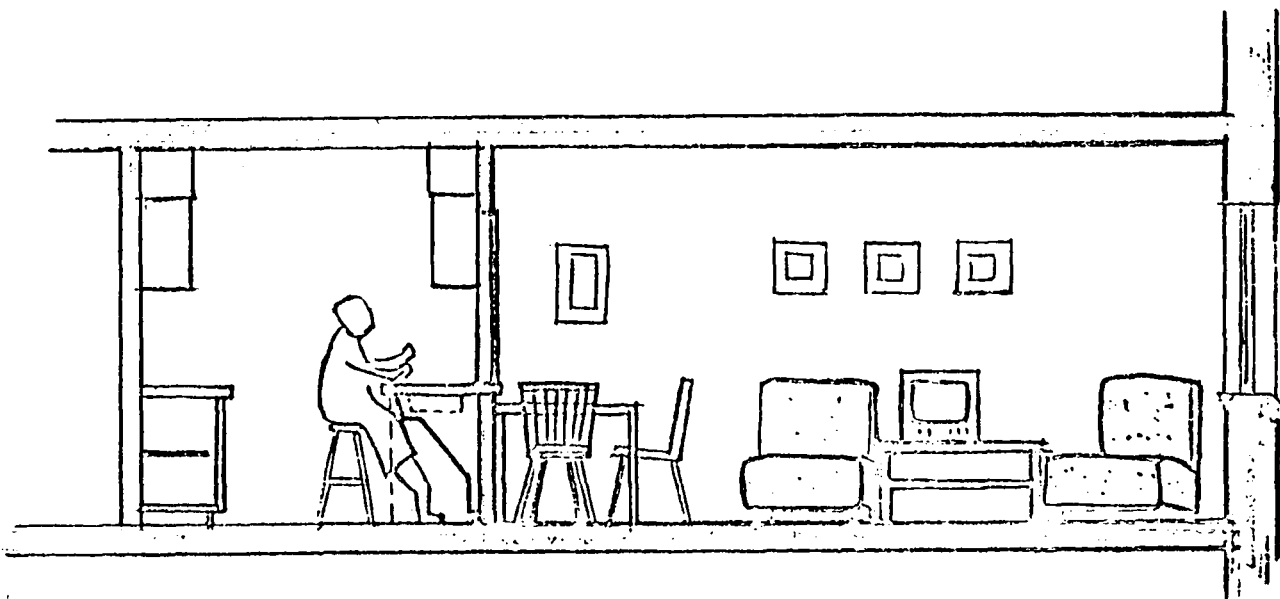
23. Should the crafts room be:

- ↓ ☒ one large room for all crafts or/
☐ several smaller rooms for each craft



UNIT CHARACTERISTICS AND DISTRIBUTION

BUILDING	UNIT TYPE	DESCRIPTION	NUMBER	FLOOR	NET SQUARE FOOTAGE	TYPICAL VIEW
One-Story	A	Handicapped 1 Bed	8	1	505	(4) Courtyard (4) Brittingham Park
	B	Handicapped 2 Beds	8	1	524	(2) Courtyard (2) Neighborhood Terrace (4) Brittingham Park
Mid-Rise	C	Handicapped 1 Bed	12	1	504	(7) Brittingham Park West (5) Courtyard
	C	1 Bed	18	2,3	504	(6) Brittingham Park West (12) Brittingham Park East
	D	2 Beds	8	2,3	536	(8) Brittingham Park West
	E	1 Bed	2	2,3	504	(2) Brittingham Park East
High Rise	C	1 Bed	84	2-8	504	(42) Capitol (42) Lake Monona
	D	2 Beds	24	9,10	536	(12) Capitol (12) Lake Monona
Manager's Apartment	F	2 Bedroom	1	1	660	Courtyard

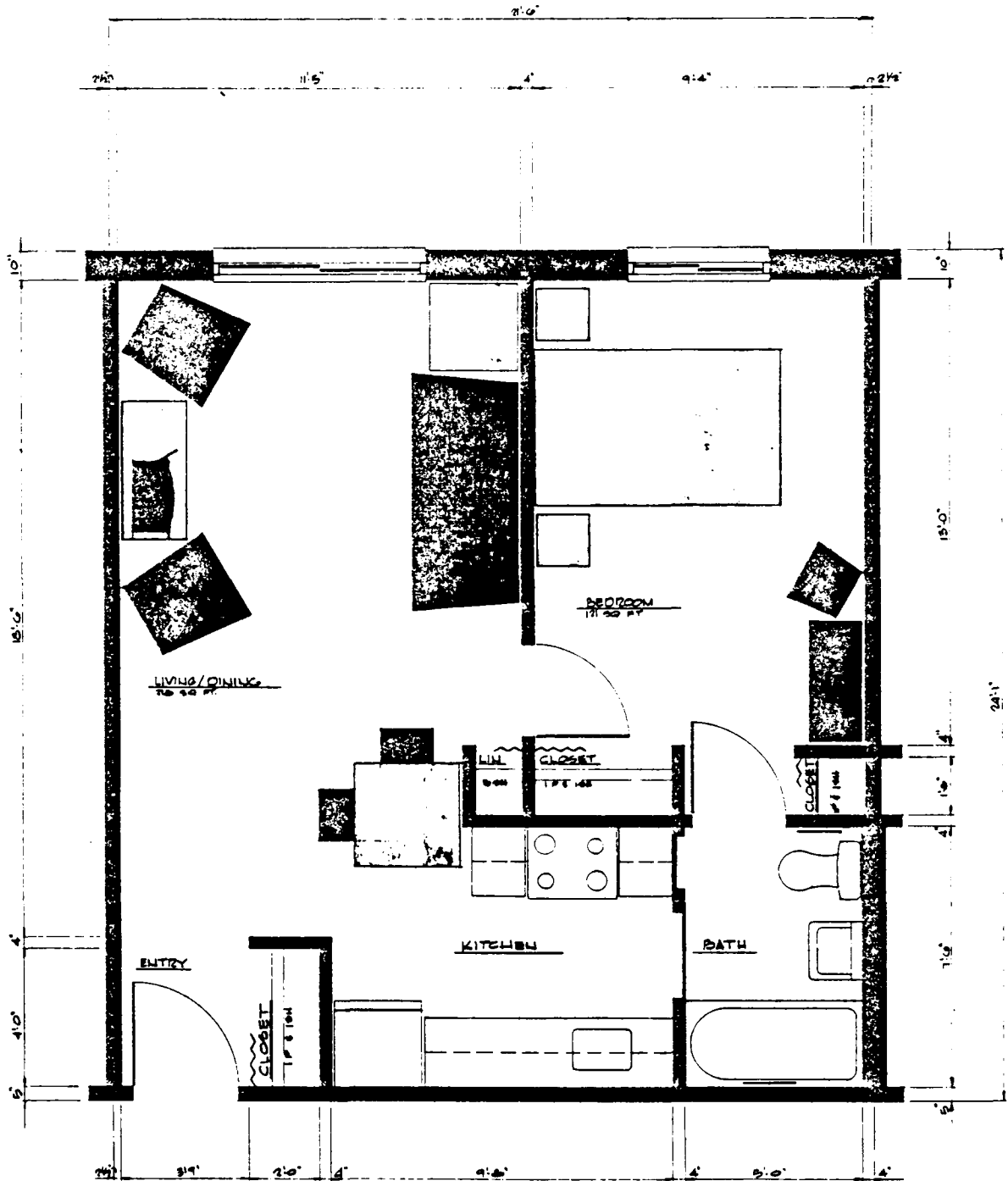


ELEVATION - KITCHEN & LIVING ROOM TYPES C & D

SCALE $\frac{1}{4}" = 1'-0"$

TOTAL 146 UNITS

98
EXHIBIT 20



622 sq. ft. GROSS - 505 sq. ft. NET

ONE STORY BLDG - ONE BEDROOM APT TYPE "A" - 8 UNITS

KITCHEN SHELF AREA 53 sq. ft.
KITCHEN DRAWERS 8 sq. ft.
GENERAL STORAGE 179 cu. ft.

E. Generalized Format of Merchandising Report Summary

Cash flows ultimately depend on sales or rental revenues and further refinements of the frontdoor-backdoor approaches depend on establishing an explicit set of assumptions about the geographical market area, the user segment within that market area, and so on. All you buy in a real estate investment is a set of assumptions about the market. Therefore, the analyst should provide and identify a marketing assumption checklist for the reader:

1. Definition of geographic and demographic market.
 - a. Primary trade area to be served
 - b. Profile of prospects by current location, status, income, etc. in primary carefully segmented area.
 - c. Secondary trade area to be served
 - d. Profile of prospects by current location, status, income, etc. in secondary carefully segmented area.
2. Definition of principal competitors
 - a. Existing supply
 - b. Prospective supply with timeline advantage.
 - c. Competitive standard package of project features.
 - d. Unique features of successful competitors.
 - e. Probable cause of unsuccessful competitors.
 - f. Merchandising appeals of competitors.
 - g. Definition of market penetration and competitive gap.
3. Establishment of merchandising strategy logic
 - a. Competition
 - . Standard product
 - . Price and quality
 - . Competitive edge opportunity
 - b. Positioning strategy
 - . Sales themes
 - . Name and byline
 - . Site and unit features
 - . Strong sales points
 - c. Construction and architecture
 - . Sales area
 - . Models
 - . Entrance and signs

- . Project amenities
- . Roads and paving
- . Site plan
- . Construction schedule

4. Definition of prospect target for subject property

- a. Recommendations on site location
- b. Recommendations on site linkages and dynamics
- c. Recommendations on building types and numbers
- d. Recommendations on basic unit features
- e. Recommendations on basic unit options
- f. Recommendations on level of quality
- g. Recommendations on basic price targets

F. Structuring the Feasibility Report

Ultimately the budget established for analysis and the need to communicate the findings represent a severe constraint on the feasibility process. Priorities and critical assumptions necessary to achieve the desired outcome must be separated from the great mass of detail and presented tersely.

1. Format of the report should rely on three elements:
 - a. An executive summary which tersely identifies alternative courses of action and recommendations as to how client can make the choice.
 - b. A basic reference document which includes all the detail analysis.
 - c. A collection of reports by contributing professionals incorporated by reference.
2. To be terse the executive summary should depend on:
 - a. Simple charts of choices of alternative outcomes (See Exhibit 21).
 - b. Simple flow charts (Such as Exhibits 3,7,13,22).
 - c. Specific criteria used to measure "likelihood of success"
3. Statement of limiting conditions should first begin with a definition of the word "feasible" (as per Institute of Appraisal Terminology Handbook), and then state that it was the purpose of the study to define the context of the situation and the parameters within which a solution might be

found to fit the major constraints with a reasonable likelihood of success. It should carefully point out that the generalist has made a series of explicit assumptions which may, nevertheless, need confirmation by more detailed study best done by specialists. The statement of limiting conditions should further emphasize the constraints and objectives placed on the study by identifying who:

- a. Defined the constraints
- b. Defined success
- c. Provided the data and assumptions
- d. Permitted key assumptions to remain untested for economy or speed
- e. Accepted assumptions of conditions of uncertainty
- f. Assembled proforma financial statements and projections
- g. Executed feasibility confirmation of key assumptions with aid of specialists.
- h. Placed limitations on use and confidentiality.

F *E* *A* *S* *I* *B* *I* *L* *I* *T* *Y* *R* *E* *S* *E* *A* *R* *C* *H* *G* *R* *O* *U* *P*

MINI-STORAGE MARKET FEASIBILITY ANALYSIS

A MARKET ANALYSIS GUIDE FOR REAL ESTATE APPRAISERS,
MORTGAGE LENDERS, DEVELOPERS AND INVESTORS.

PREPARED BY:

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PREFACE

The following illustrations of market feasibility analysis represent an introduction to market analysis. This effort should not be considered as a complete "how to do it" guide but rather as a framework for stimulating the discovery and reasoning processes of the reader i.e. not "What is the answer?" but "What questions should be asked?"

Market analysis requires original research. To assist the reader in visualizing a market opportunity analysis examples are included, both of secondary analysis (e.g. census data) and primary analysis (e.g. survey research).

An introduction to market analysis would not be complete if it did not include a basic outline or framework of the market analysis process. The real estate market analysis process used here considers real estate developments as a consumer market product. Real estate appraisers, architects and financial analysts hopefully will find that this introductory guide places market analysis in perspective.

The specific applications used to illustrate market analysis and market strategy should not be considered as models to be accepted and used in other situations. The very essence of market analysis is relating total potential demand to a specific site. Analysis of individual sites and competition in individual markets should be considered in each instance.

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THE CONCEPT

IS THE SELF-SERVE STORAGE CONCEPT A "FAD" OR AN ESTABLISHED MARKET TREND?

Prior to the introduction of self-serve storage facilities consumers rented storage space for storage of household furniture at MOVING AND STORAGE company warehouses.

Moving and storage company facilities are still available today from Mayflower, North American Van Lines and other companies with local household storage warehouses.

<u>DISADVANTAGES OF MOVING COMPANY</u>	<u>VS.</u>	<u>ADVANTAGES OF SELF-SERVICE STORAGE</u>
--In-and-out labor charges	vs.	--No labor charge for self-serve
--High minimum rents of \$30+	vs.	--\$9 to \$18 minimums for self-serve
--Container storage boxes stacked three tiers high by hydraulic forklift	vs.	--Walk-in quick access without waiting for forklift and operator
--Access limited to 8-5pm business hours	vs.	--Easy access in evenings and weekend hours
--High ceiling heights make boat, R.V. and sporting vehicle equipment storage expensive and impractical	vs.	--Drive-in size units with 10', 15', 20', 25' and 30' depths allow renting as much or as little space as needed. Eight to ten foot heights.

The above disadvantages of moving company storage facilities are very easily overcome by the self-serve mini-storage concept for household storage needs.

The likelihood of apartment dwellers or homeowners switching back from self-serve to moving company storage facilities appears highly unlikely. A fad would tend to show a spurt in consumer demand and then decline, but mini-storage demand in both southwestern and northwestern states has indicated increasing demand for mini-storage units in mature markets.

THE USER PROFILE

There are several methods of developing user profiles.

- (1) Trade Association or other published profile data
- (2) Review application forms where available
- (3) Survey existing users of mini-warehouses
- (4) Survey potential users of mini-warehouses

WHO IS THE PRIME USER?

By identifying the profile of the user we find that the prime user is the apartment resident. Survey by Feasibility Research Group of 299 households in a random sample survey in Washtenaw County, Michigan in 1976 revealed that 28% of the apartment residents and 16% of single-family residents said that, yes, they were interested in the concept of mini-warehouse service. An additional 32% of the apartment residents and 21% of the single-family residents indicated they possibly would be interested in mini-warehouse service.

Combining the responses of those who said yes and those who said possibly interested we found that 60% of the apartment residents and 37% of the single-family residents represent the potential market for mini-warehouse facilities. (Note: These percentages may or may not apply in other communities.) The actual percentages are not critical, but the total support for the concept from the apartment residents vs. the single-family residents is important.

HOW LONG DOES THE PRIME USER NEED STORAGE SPACE?

After identifying the prime user of the mini-warehouse, the apartment resident followed by the single-family resident, we can further profile the market of residential users into those people who use the mini-warehouse on an annual basis and those people who use it on a seasonal or short-term use. Based upon our sample survey of 299 households the indicated demand for seasonal storage is as follows:

	<u>APARTMENT RESIDENT'S DEMAND</u>	<u>SINGLE-FAMILY DEMAND</u>
SEASONAL STORAGE:	83%	17%
ANNUAL STORAGE:	67%	33%

The apartment residents are the largest segment of the user profile as they account for the highest percentage of both the seasonal and annual storage needs.

SHORT-TERM DEMAND GENERATED BY HOUSING MOVES

A significant segment of market demand for mini-storage use comes from households who move and those households which move frequently. As might be expected, apartment residents are more mobile. Apartment residents are also more likely to move themselves, using either U-Haul truck, Avis or National, or whatever company provides the truck rental service in the market area.

To estimate the size of this potential mover, do-it-yourself market, again we go to our survey of 299 households.

QUESTION #10A: WHEN YOU MOVED TO YOUR PRESENT HOME, HOW DID YOU MOVE ALL THE THINGS YOU BROUGHT WITH YOU? (DOUBLE COUNTING*)

<u>RESPONSE</u>	<u>APARTMENT</u>	<u>SINGLE-FAMILY HOUSING</u>
1. HIRED A MOVING AND STORAGE COMPANY	12.0%	30.2%
2. RENTED A U-HAUL TRUCK OR TRAILER AND MOVED IT MYSELF	46.2%	31.0%
3. USED MY OWN CAR OR TRUCK TO MOVE	18.3%	21.4%
4. BORROWED A VEHICLE FROM FRIEND OR RELATIVE	17.9%	10.3%
5. EMPLOYER HIRED A MOVING AND STORAGE COMPANY TO MOVE MY THINGS	1.2%	11.9%
TOTAL	100.0%	100.0%

*A household may have employed two or more methods in moving.

We can see from the survey results that only 12% of the apartment residents hired a moving and storage company, as opposed to 30% of the single-family households. Even including the households where the employer pays for moving and storage the total moving and storage company market segment accounts for only 13.2% to approximately 42.1% of the moving market. The do-it-yourself mover thus accounts for approximately 83% of all apartment movers in the market area survey.

To identify how to reach the potential user profile, the apartment residents who move and move frequently, we can also turn to the survey. Survey data indicated that the Yellow Pages was the largest one single source of information regarding moving companies and U-Haul rental locations. Later on, in evaluating the promotion plan for mini-warehouses, it is important to recognize the Yellow Pages ad as one major part of the mini-warehouse promotion.

WHAT KINDS OF ITEMS ARE STORED IN MINI-WAREHOUSES?

There are three ways of finding out what is stored in mini-warehouses.

- (1) Ask existing managers and inspect existing mini-warehouses.
- (2) Trade association data.
- (3) Survey people in a market area and find out what they have to store.

FRG used all of the above sources including a survey of prospective users.

Household furniture is the largest single category of items typically stored in mini-storage facilities. Our survey indicated that between 40-47% of the demand was for storage of household furniture. When you add household appliances this increases from about 48-62% of the demand.

7-12% of the indicated demand is for boats and trailers.

4-6% of the indicated demand is for sporting goods and recreational equipment.

I would like to add that most of this is for dead storage space, not where the space is used for work on a hobby or repair service or daily use, but strictly for dead storage use.

WHAT ARE THE GREATEST CONCERNS OF MINI-STORAGE WAREHOUSE USERS?

Survey responses reveal overwhelmingly that 60% of the potential users are concerned about security from theft. Safety from water damage is important to about 5-12% of the respondents. Single-family households are concerned about fire damage to a much lesser extent than security from theft. Temperature, humidity and dampness are concerns, but again much less than security from theft.

WHAT IS THE IMPORTANCE OF A STEEL STORAGE BUILDING VS. A MASONRY MINI-WAREHOUSE BUILDING?

This is perhaps one of the most interesting areas of the survey in respect to the perceived safety and security of a storage facility. We asked the question: "Which do you feel would be a safer place to store your property, a steel building or a concrete building?"

Mini-warehouses are built of steel skin over a wood frame, basically a pole barn for those of you who are familiar with pole barns, or they can be built with a steel frame, such as a Butler steel building with a steel skin and steel roof. They can also be built with poured concrete footings, 42" in Michigan, with either concrete block or tilt-up poured concrete walls with precast concrete roof structures or wood roof structures. The interior partitions can be of galvanized corrugated steel or wood frame partitions with drywall, wood frame partitions with galvanized steel or with partitions with particle board. I have seen combinations of both wood building with wood interior partitions, steel buildings with wood interior partitions, masonry buildings with wood interior partitions or masonry buildings with steel interior partitions. Which is best is best answered by the consumer.

WHAT DO CONSUMERS SAY?

TABLE R

QUESTION #25: WHICH DO YOU FEEL WOULD BE A SAFER PLACE TO STORE YOUR PROPERTY?

<u>RESPONSE</u>	<u>APARTMENT</u>	<u>SINGLE-FAMILY</u>
1. A STEEL BUILDING	8.3%	11.3%
2. A CONCRETE BUILDING	29.8%	30.9%
3. MAKES NO DIFFERENCE	62.0%	57.7%
TOTAL	100.0%	100.0%

About 8% preferred the steel building as a safer place to store their property. A concrete building was favored by about 30% of the apartment residents; however, 62% of the apartment residents say it doesn't make any difference whether it's built of steel or concrete.

The importance of this survey finding is that you can build a lower cost facility and still provide safe storage space.

HOW CAN THE SECURITY BE PROVIDED?

The security which the users of mini-warehouses expect and require can be provided in several ways:

- (1) A completely fenced facility,
- (2) Well lighted facility,
- (3) An onsite manager, manager's office and onsite manager's apartment for 24-hour security of the premises.

In several instances, in facilities with which we are familiar, two onsite manager's apartments had been offered.

HOW CAN THE INDIVIDUAL UNIT MIX BE MEASURED AGAINST THE MARKET DEMAND?

(1) Review Existing Experience

The successful developers of existing mini-warehouses who have monitored rent-up in several locations have been able to identify the best unit mix. After basing initial mix upon judgment and previous experience the monthly rent-up is monitored for each size of unit. Learn how rapidly the 5'x5' units fill compared with the 10'x10' units compared with the 10'x15' units. When all of the 5'x5' units are filled the demand would shift to filling in the next largest size unit. This would indicate a shortage of the 5'x5' units.

(2) Survey Potential Demand

If there are no mini-warehouses in the market area or perhaps only one or two smaller local facilities which can't be used as a guide to set a competitive standard, it is possible to estimate the demand for mini-warehouse unit mix using survey research.

In FRG's resident survey in Washtenaw County, Michigan we used the question: "HOW MUCH STORAGE SPACE WOULD YOU NEED TO STORE THE ITEMS YOU WISH TO STORE?" We then listed the various unit sizes. This was in a market where many people were not aware of mini-warehouses but had some idea of what amount of space they might need for the items they now needed to store.

FEASIBILITY RESEARCH GROUP

MINI-WAREHOUSE LOCATION CRITERIA

1. TOTAL POPULATION IN URBANIZED AREA

--Total demand may range from 1 to 1.5 feet of space per person in total urban population. (An urban area of 100,000 would indicate a total demand of 100,000 to 150,000 square feet of mini-storage space.)

2. TOTAL POPULATION WITHIN PRIMARY TRADE AREA

--Total demand based upon population within trade area of 3 to 5 miles.

Census tract maps and census tract data provide

(A 3-mile trade area population of 30,000 would indicate a potential demand of 30,000 to 45,000 square feet of space.)

(A 5-mile trade area population of 90,000 would indicate a potential demand of 90,000 to 135,000 square feet of space.)

3. HIGH CONCENTRATION OF RENTAL HOUSEHOLDS

--User profile consists of rental households.

(Census data used for trade area also provides information on renter or owner occupancy.)

4. TURNOVER RATE OF 20% OR MORE (IF DATA AVAILABLE)

--Housing moves generate mini-storage demand.

(Telephone or other utility connections indicate total annual turnover.)

5. HIGHLY VISIBLE SELF-ADVERTISING SITE

--Visibility appears more important than accessibility.

(Interstate highway and bypass exposure is helpful, but not essential.)

6. RELATIVELY HIGH TRAFFIC COUNT

--Local traffic counts in front of and adjacent to site may be more important than interstate highway traffic counts.

7. RESIDENTIAL, COMMERCIAL OR LIGHT INDUSTRIAL AREA

--A neighborhood attractive to residential users rather than a heavy industrial area.

MINI-WAREHOUSE SITE CRITERIA

1. SITE SIZE

Range 2-6 acres. Typical site is 2½-3½ acres.

2. MAXIMUM SITE COVERAGE

Maximum site coverage approximately 40% of gross site (depends upon zoning).

e.g. A 2-acre site would allow approximately a 35,000 square foot maximum size facility.

$$\begin{aligned} 43,560 \times 2 \text{ acres} &= 87,120 \text{ square feet} \\ 87,120 \times 40\% &= 34,848 \text{ square feet} \end{aligned}$$

3. ZONING

Light industrial or commercial zonings is typical. Heavily industrial districts are generally undesirable for residential storage use as apartment owners and homeowners do not like to go into industrial neighborhoods, particularly at night.

One community has allowed residential storage only to be located in a multiple-family zoning area.

4. SEWER AND WATER REQUIREMENTS

Mini-warehouses have been built with well and septic systems as well as public utilities. Many developers consider the public water essential for fire protection to help reduce insurance rates.

Storm drainage is perhaps one of the major problem areas for mini-warehouses. With the lot site covered with asphalt and roof area there is a considerable amount of water runoff. Retention ponds onsite or public storm sewer drainage are usually necessary.

5. ECONOMIC CONSIDERATIONS

MINIMUM
FACILITY
SIZE

In order to support a first-class mini-warehouse facility an onsite manager's office and apartment is a requirement. In order to maintain the operating expense ration with a manager's salary and apartment it is necessary to have a large enough facility to support the onsite manager. Based upon typical costs of construction and the operating expenses the minimum size for economic facility may be as low as 35,000 square feet in some locations but could be higher in other urban communities which have higher land costs, higher storm sewer costs, higher building costs and higher wage costs for managers.

MAXIMUM
FACILITY
SIZE

What is the maximum size operation for an economic mini-warehouse? While I understand there are some mini-warehouses over 100,000 square feet, most of the mini-warehouses are in the 40-60,000 square feet range with the typical being approximately 50,000 square feet.

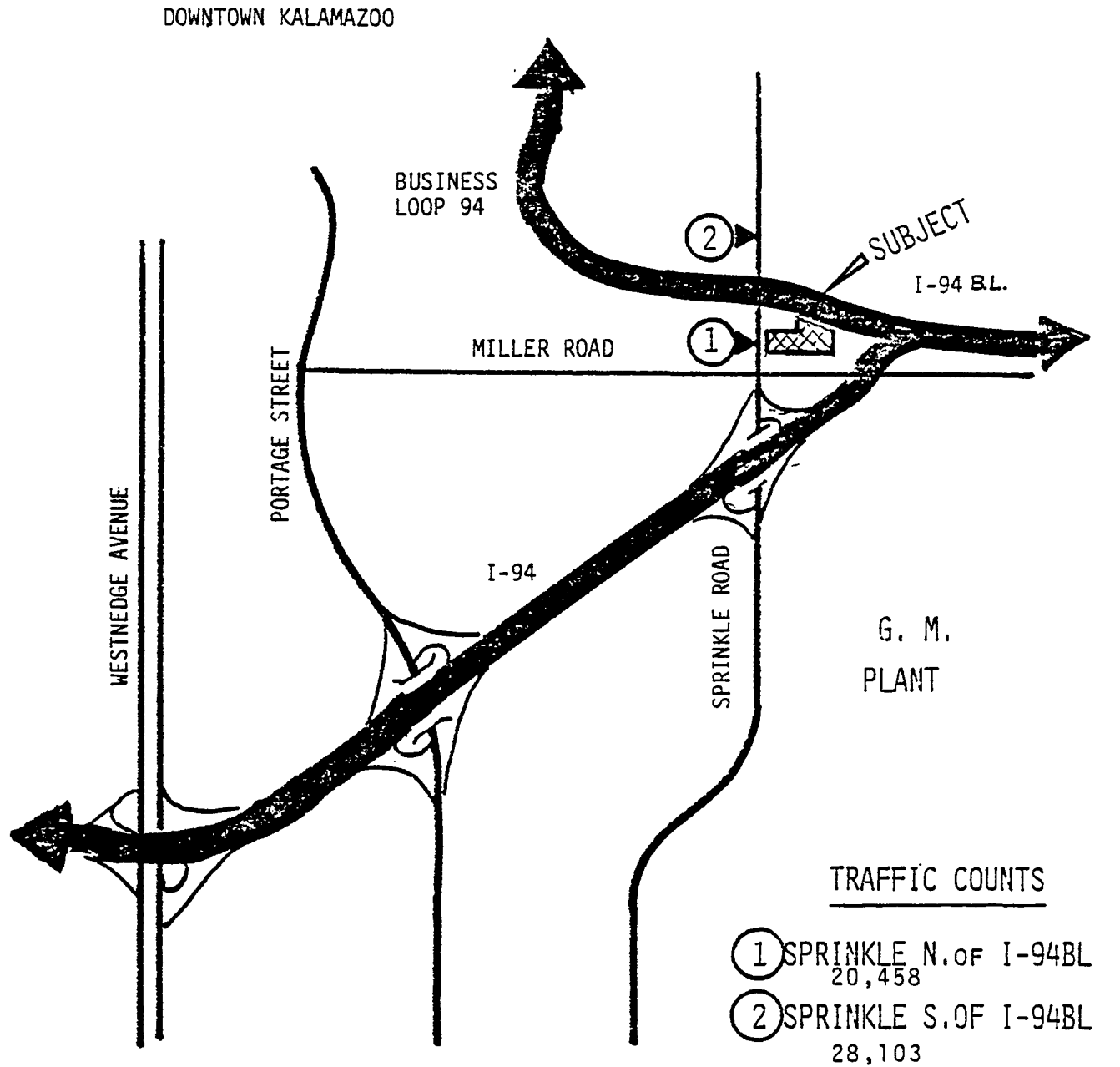
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CERTIFICATION

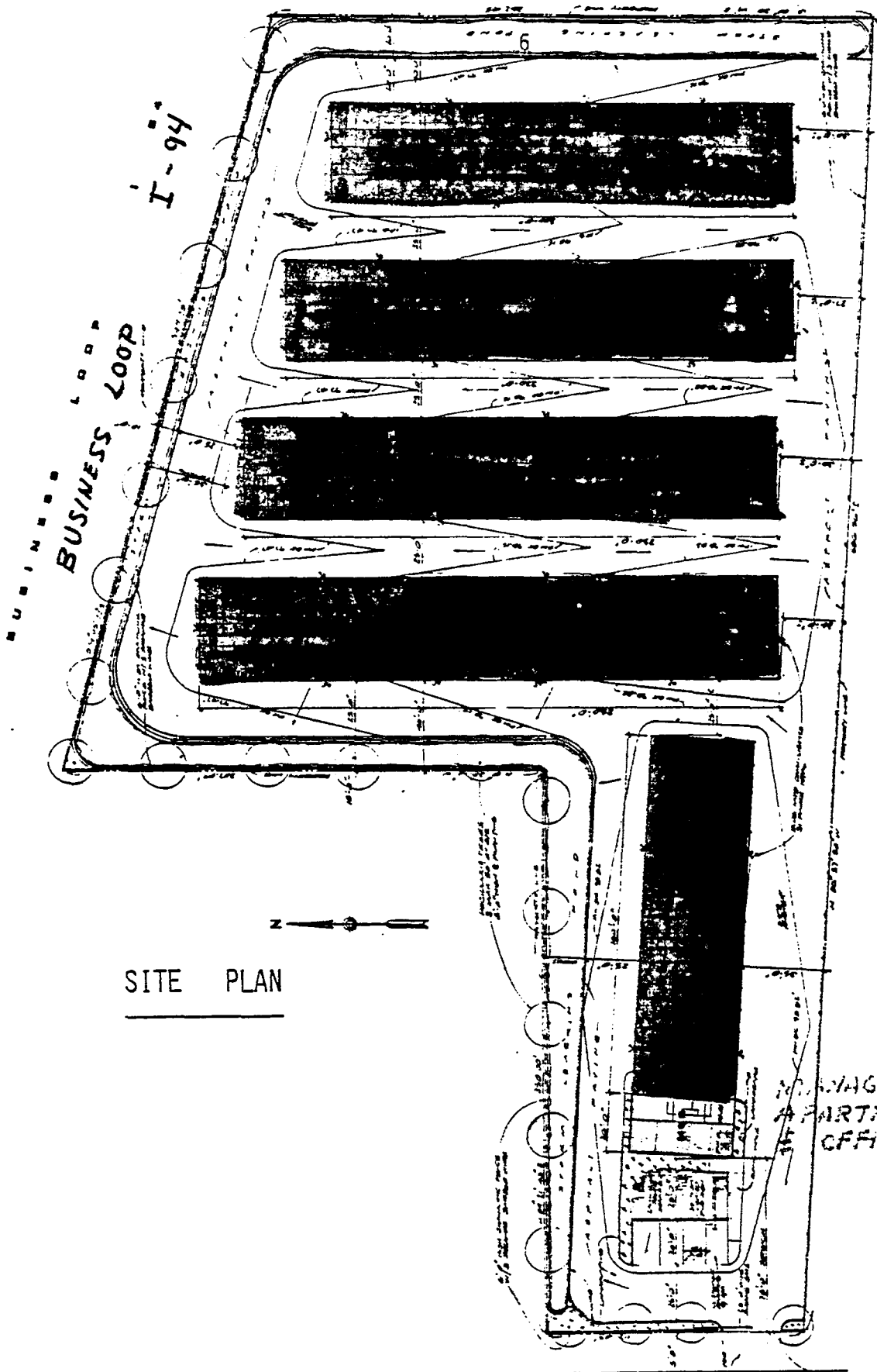
EXPERIENCE AND QUALIFICATIONS

SUBJECT LOCATION AND TRAFFIC MAP



Source: Kalamazoo Co.
Road Commission

FEASIBILITY RESEARCH GROUP LTD.



S.D. MINI STORAGE	
Unit #	
Size	
Rate	
Remarks	
Signature	
Date	

1. The site plan shows the proposed layout of the development. The site is located on the corner of Sprinkle Rd and Business Loop. The development consists of four long, narrow rectangular buildings arranged in a row. To the right of these buildings is a larger rectangular area labeled 'MANAGER'S APARTMENT OFFICE'. The plan includes various annotations such as 'SPRINKLE RD' at the bottom, 'S.D. MINI STORAGE' in the top right, and 'SITE PLAN' in the bottom right. The plan also shows parking spaces, landscaping, and other site details.

SITE PLAN

SITE PLAN

TOTAL 554 Units
 BLDG AREA 47,700
 OFFICE/APT 1,170
 TOTAL 48,870

SPRINKLE RD

F E A S I B I L I T Y R E S E A R C H G R O U P

MARKET FEASIBILITY ANALYSIS FOR MINI-WAREHOUSE DEVELOPMENT

OBJECTIVES

The objectives of the following market analysis are:

- (1) To provide the reader with a picture of the overall market potential for mini-warehouse development in Kalamazoo, Michigan.

(e.g. How many potential mini-warehouses and how many total square feet of mini-warehouse development will the Kalamazoo market support?)

- (2) To provide a projection of the potential mini-warehouse demand at a specific site.

(e.g. How many square feet of space will the market support in the subject trade area?)

- (3) To measure the probable impact of existing and potential competition on the proposed subject mini-warehouse.

(e.g. How much (if any) potential business within the subject trade area could be lost to competition?)

F E A S I B I L I T Y R E S E A R C H G R O U P

OVERALL MARKET POTENTIAL FOR KALAMAZOO MARKET

UNIT OF MEASURE

The unit of measure is square feet of mini-warehouse space per person.

Previous market analysis in the southwestern U.S. by Bill Aard Associates revealed an overall demand projection of 1 to 1.5 square feet of mini-warehouse space for each person in the overall population. Mature markets may support 2 square feet per person but Kalamazoo is only in the early stages of development.

MARKET POPULATION

The total population of the Kalamazoo market (SMSA) totals 201,550 as of 1970. For the purpose of this market analysis we have used the urbanized area population of 152,083 as a basis for analysis.

KALAMAZOO COUNTY (SMSA)	201,550*
KALAMAZOO URBANIZED AREAS	152,083*
KALAMAZOO CITY	85,555*
PORTAGE CITY	33,590*

The urbanized area as of 1970 understates the 1978 population but includes Comstock Township and other urbanized township areas outside the cities of Kalamazoo and Portage.

BASIC DEMAND

The basic overall mini-warehouse demand projection is 152,000 to 228,000 total square feet.

CONSERVATIVE

152,083
x 1 square foot
152,083 call
152,000 square feet

PROBABLE

152,083
x 1.5 square feet
228,125 call
228,000 square feet

Assuming a typical mini-warehouse development of about 50,000 square feet, a total of three to five mini-warehouses could be supported by the Kalamazoo urbanized market area.

$$\frac{152,000 \text{ square feet}}{50,000 \text{ square feet}} = 3.04 \text{ call } 3 \quad \frac{228,000 \text{ square feet}}{50,000 \text{ square feet}} = 4.56 \text{ call } 5$$

TOTAL MARKET POTENTIAL

Based upon the above analysis the Kalamazoo urban area can support:

- Three to five mini-warehouses of \pm 50,000 square feet
- 152,000 to 228,000 square feet of mini-storage space

*Source: 1970 U.S. Census

F E A S I B I L I T Y R E S E A R C H G R O U P

POTENTIAL DEMAND AT SUBJECT SITE

LOCATION: 2135 Sprinkle Road corner I-94 Business Loop, Kalamazoo (Comstock Township), Michigan.

TRADE AREA: Experience in the western U.S. as also verified in Washtenaw County (Ann Arbor market), Michigan indicates that the majority of mini-warehouse users live within three to five miles of a mini-warehouse site.

SUBJECT POTENTIAL MARKET: Compilation of the census tracts within three to five miles of the subject site reveals the following potential demand:

DISTANCE:	3-MILE TRADE AREA		5-MILE TRADE AREA	
POPULATION:	41,688	41,688 *	104,581	104,581 *
DEMAND:	<u>x1 SQ FT</u>	<u>x1.5 SQ FT</u>	<u>x1 SQ FT</u>	<u>x1.5 SQ FT</u>
TOTAL:	41,688	62,532	104,581	156,872
	SQ FT	SQ FT	SQ FT	SQ FT

TRADE AREA: The subject trade area can adequately support the proposed subject mini-warehouse.

POTENTIAL

CONSERVATIVE POTENTIAL

41,688 to 62,532 SQ FT
MINI-STORAGE

PROPOSED

47,700 SQ FT
MINI-STORAGE

PROBABLE POTENTIAL

104,581 to 156,872
MINI-STORAGE

* SOURCE: 1970 U. S. Census (see Table A for Trade Area analysis of 1,2,3,4, and 5 mile radius of subject site.)

TABLE APOTENTIAL MARKET WITHIN 1 MILE RADIUS OF SITE:

# PEOPLE	4,544	
# HOUSEHOLDS		
SINGLE FAMILY	1,297	89 %
RENTAL***	<u>168</u>	<u>11</u>
TOTAL HOUSEHOLDS	1,465	100 %

POTENTIAL MARKET WITHIN 2 MILE RADIUS OF SITE:

# PEOPLE	20,792	
# HOUSEHOLDS		
SINGLE FAMILY	5,271	73 %
RENTAL	<u>1,963</u>	<u>27</u>
TOTAL HOUSEHOLDS	7,234	100 %

POTENTIAL MARKET WITHIN 3 MILE RADIUS OF SITE:

PEOPLE

41,688

HOUSEHOLDS

SINGLE FAMILY	10,491	73 %
RENTAL	<u>3,830</u>	<u>27</u>
TOTAL HOUSEHOLDS	14,321	100 %

POTENTIAL MARKET WITHIN 4 MILE RADIUS OF SITE:

# PEOPLE	77,428	
# HOUSEHOLDS		
SINGLE FAMILY	18,272	69 %
RENTAL	<u>8,038</u>	<u>31</u>
TOTAL HOUSEHOLDS	26,310	100 %

POTENTIAL MARKET WITHIN 5 MILE RADIUS OF SITE:

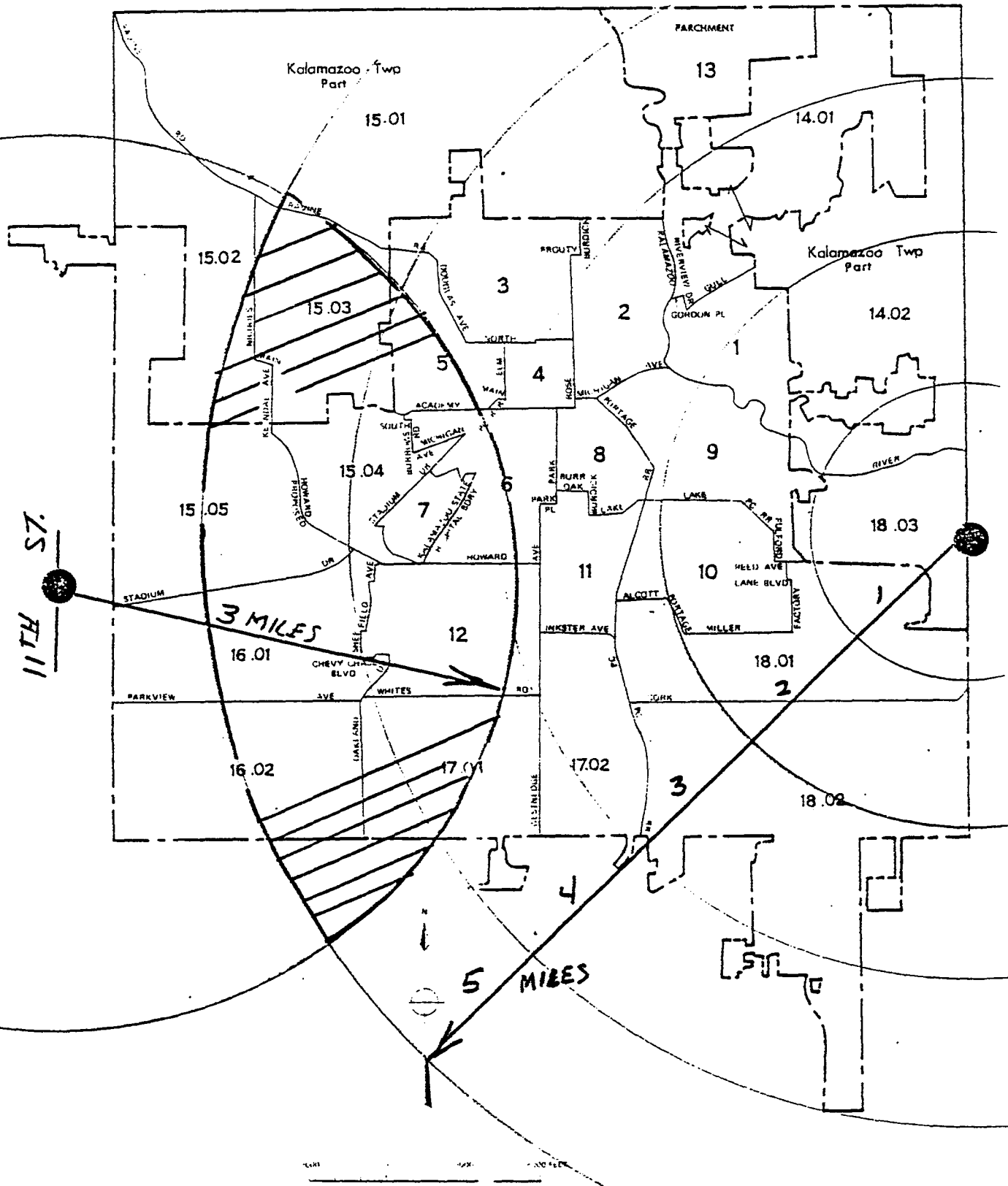
# PEOPLE	104,581	
# HOUSEHOLDS		
SINGLE FAMILY	24,584	70 %
RENTAL	<u>10,340</u>	<u>30</u>
TOTAL HOUSEHOLDS	34,924	100 %

* Source: 1970 U.S. CENSUS

**Includes mobile homes

*** Includes structures with 2 or more units

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CENSUS TRACTS IN THE KALAMAZOO, MICH. SMSA
INSET MAP - KALAMAZOO AND VICINITY



THE COMPETITION

EXISTING

One existing competitor is located west of Kalamazoo. The Wee Stor-N-Park mini-warehouse on 11th Street is outside the subject's three-mile trade area. The subject's five-mile trade area, however, overlaps the competitor's three-mile trade area. (See Competition Maps on pages 12, 13 and 15.) We have assumed the subject will lose those potential customers in the subject's five-mile trade area only where this overlap occurs. The U-Haul mini-storage at 1004 Portage is considered to be too small to be significant competition. The two small mini-storage buildings on South Sprinkle Road and the one building on Lovers' Lane, both located in Portage, are marginal competition.

POTENTIAL COMPETITION

Our investigation reveals that two potential developers are looking for sites on the west and south sides of Kalamazoo but no sites are known to be acquired with site plans approved for mini-warehouse use. Contact was made with both the city and county Planning Departments, but no rezoning requests or pending site plans for mini-storage facilities were discovered.

COMPETITION IMPACT

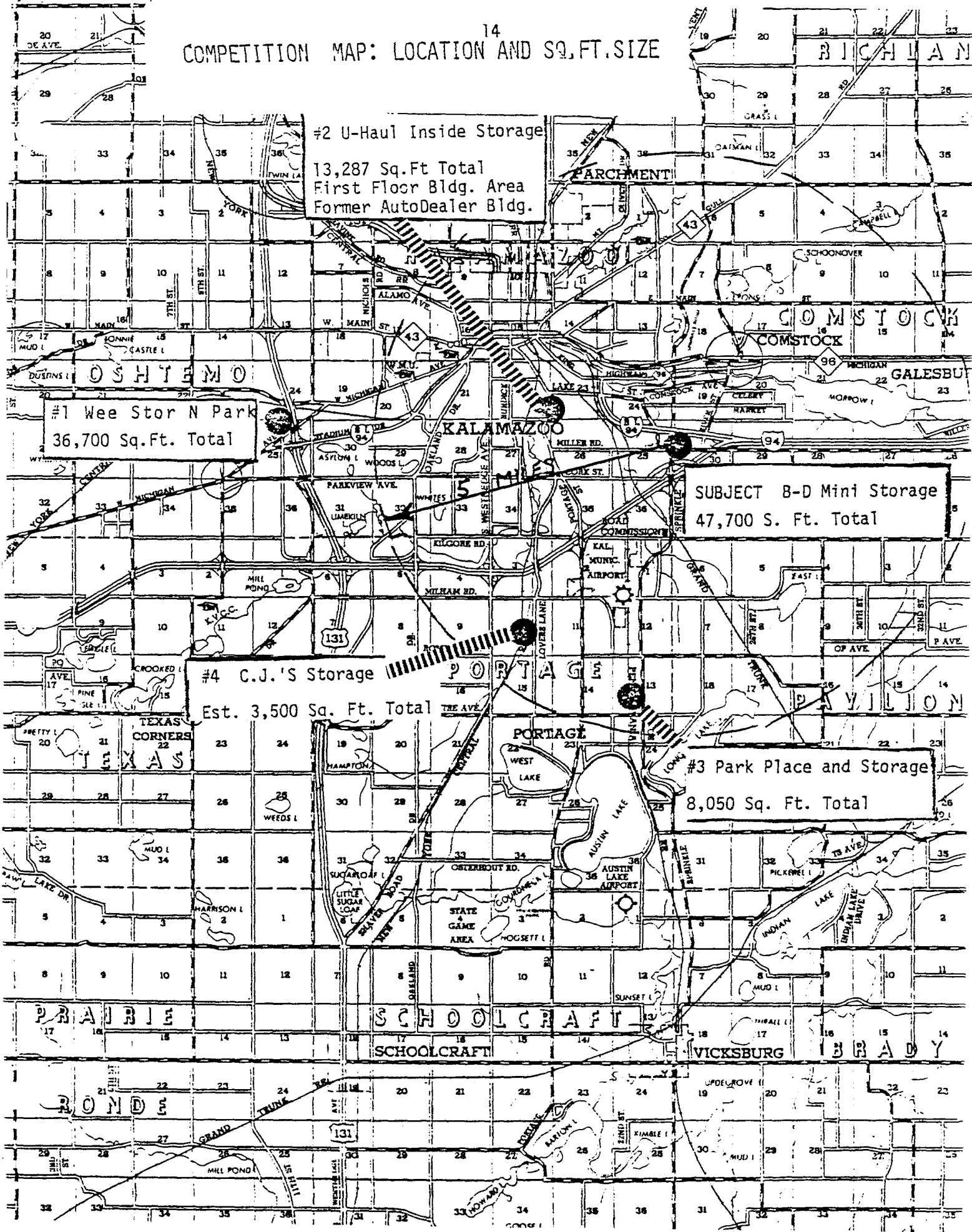
Competition with the subject's three-mile trade area could have a negative impact but there is no existing competition within three miles. If competition does develop within the three-mile trade area the subject's management and promotion could lessen the impact of future competition. The five-mile trade area is large enough to support two 50,000 square foot mini-warehouse developments, using conservative projections. Recognizing even this potential competition the impact on the subject is not likely to reduce the subject occupancy level below a normal vacancy level.

The best defense against potential competition is selecting a prime site with high visibility, a high traffic count and close proximity to the potential user population.

The proposed subject facility is located adjacent to the easterly edge of the city of Kalamazoo on a highly visible site with exposure to both Sprinkle Road and the I-94 Business Loop. The 24-hour traffic count on Sprinkle Road ranges from 20,458 (south of I-94) to 28,103 (north of I-94 Business Loop). Except for the potential loss of customers located near the Western Michigan University campus, which is closer to Wee Stor-N-Park location, the subject site, in our opinion, has a better location than all four existing Kalamazoo area mini-storage sites.

Analysis of the overlapping trade area with Wee Stor indicates 16,000 to 24,000 square feet of potential demand should be deducted. To arrive at the final estimated storage space demand at the subject site the total square footage of the three existing small storage companies should also be deducted.

COMPETITION MAP: LOCATION AND SQ.FT.SIZE



#2 U-Haul Inside Storage
13,287 Sq.Ft. Total
First Floor Bldg. Area
Former AutoDealer Bldg.

#1 Wee Stor N Park
36,700 Sq.Ft. Total

SUBJECT B-D Mini Storage
47,700 S. Ft. Total

#4 C.J.'S Storage
Est. 3,500 Sq. Ft. Total

#3 Park Place and Storage
8,050 Sq. Ft. Total

PRAIRIE

SCHOOLCRAFT

SCHOOLCRAFT

VICKSBURG

BRADY

RONDE

GRAND TRUNK

AVENUE

UPPER GROVE

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F E A S I B I L I T Y R E S E A R C H G R O U P

MINI-WAREHOUSE MARKET ANALYSIS POTENTIAL COMPETITION IMPACT SUMMARY

		1 SQ. FT. 1.5 SQ.FT.	
1. TOTAL DEMAND IN SUBJECT TRADE AREA:	104,581 to 156,872		SQUARE FEET
2. LESS EXISTING COMPETITION IN TRADE AREA:			
#1 Wee Stor N. Park (Partial Overlap)	16,000 to 24,000		SQUARE FEET
#2 U-Haul (Downtown)	13,287 13,287		
#3 Park Place and Storage (Portage)	8,050 8,050		
#4 C.J.'s Storage (Portage)	3,500 3,500		
3. INDICATED DEMAND FOR SUBJECT (1-2) =	63,744 to 108,035	◁	SQUARE FEET
4. PROPOSED SUBJECT SPACE:	47,700 to 47,700	◁	SQUARE FEET
5. EXCESS DEMAND (3-4) =	16,044 to 60,335		SQUARE FEET

CONCLUSION: The largest existing competitor #1 would only absorb excess demand. The three small facilities are within the subjects 5 mile trade area, but have less desirable sites and/or lower traffic counts. There is excess demand for 16,000 to 60,000 Sq.Ft. more than subject.

SUBJECT VS. COMPETITION RANKING

(EQUAL =) (SUBJECT IS SUPERIOR +) (SUBJECT IS INFERIOR -)

	SUBJECT B-D Mini	COMPETITION #1 Wee Stor	COMPETITION #2 U-Haul	COMPETITION #3 Park Place
LOCATION	+ Sprinkle	11th St (west)	Portage St (Dntn)	Sprinkle (Portage)
SITE VISIBILITY	+ Excellent	Good/Fair	Good	Good/Fair
TRAFFIC COUNT	+ 20-28000	3000	N.A.	10,500
BUSINESS USE Estimate	+ 25-30%	15%	5%	5%
RESIDENTIAL USE	75-70%	85%	95%	95%
UNIT SIZES	+ 12	8	4	4
PRICE	\$9.75-69.75	\$9-80	\$16-45	\$30-50
MANAGEMENT (ONSITE)	Full time	Part time	Full time	Part time
MANAGEMENT (OFFSITE)	Professional	Unknown	Franchise	Owner/Mgr.
PROMOTION	Experienced	Yellow Pgs&P	Thru U-Haul	Limited
OVERALL RANK	First	Second	Third	Fourth

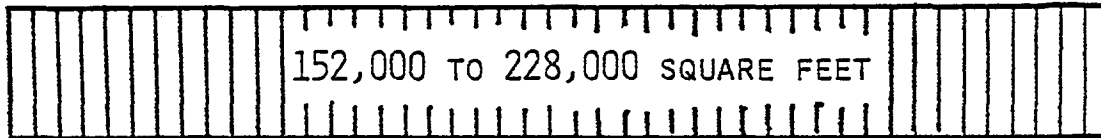
CONCLUSION: The proposed B-D Mini Storage facility is superior to the existing competition in location, site visibility, traffic count in front of site, and has a potentially higher business user demand. The unit sizes offered increase the competitive edge of the subject over existing and potential competition.

The monthly rentals are competitive and should compete very effectively with both mini-storage and moving company storage.

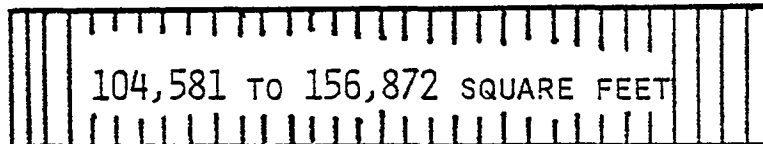
Full time on site management with off site back up for monitoring promotion and performance indicate a potential first class facility.

OVERVIEW
MINI-STORAGE MARKET DEMAND

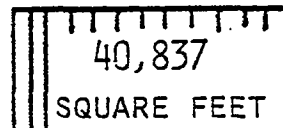
TOTAL KALAMAZOO MARKET DEMAND



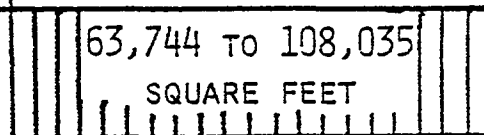
MARKET DEMAND IN
SUBJECT 5-MILE TRADE AREA



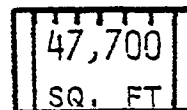
LESS
COMPETITION



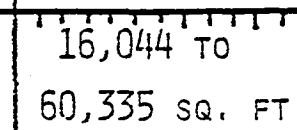
DEMAND FOR SUBJECT



PROPOSED
SUBJECT
SPACE



EXCESS
DEMAND



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Hospital Financial Management, Hospital Financial Management Association, 666 North Lake Shore Drive, Chicago, IL 60611.

Hospitality, Penton/IPC, 614 Superior Avenue West, Cleveland, OH 44113.

Hospitals, American Hospital Association, 840 North Lake Shore Drive, Chicago, IL 60611.

Hotel & Motel Management, Robert Freeman Publishing Co., 845 Chicago Avenue, Evanston, IL 60602.

Hotel Herald, Box 188, Gettysburg, PA 17325.

Hotel Restaurant, Matthes Verlag GmbH, Olgastrasse 87, Postfach 622, 7 Stuttgart 1, West Germany.

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Hotel Sales Management Association World, Hotel Sales Management Association, 362 Fifth Avenue, Suite 1160, New York, NY 10001.

Hoteldomani, Publihotel International s.r.l., Via Bianconi, 10 — 20139 Milano, Italy.

Hotelier and Caterer, Ramsay, Son & Parker (Pty) Ltd., 405 Tuilbagh Centre, Hans Strijdom Avenue, Cape Town, South Africa.

In Britain, British Tourist Authority, Head Office and Tourist Information Centre, 84 St. James Street, London SW1, England (distributed in U.S. by British Tourist Authority, 680 Fifth Avenue, New York, NY 10019).

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Institutional Distribution, Restaurant Business, 633 Third Avenue, New York, NY 10017.

Institutions/Volume Feeding, Cahners Publishing Co., 5 South Wabash Avenue, Chicago, IL 60603.

Insurance Conference Planner, Bayard Publications, 300 Broad Street, Stamford, CT 06901.

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Tourism International History, Tourism International Press Ltd., 154 Cromwell Road, London SW7 4EF, England.
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Travel Management Newsletter, Reuben H. Donnelley Corp., 2000 Clearwater Drive, Oak Brook, IL 60521.
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Washington Report, American Hotel and Motel Association, 777 14th Street N.W., Washington, DC 20005.
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Worldwide Lodging Industry, Horwath & Horwath International and Lavenhol & Horwath, 919 Third Avenue, New York, NY 10022.

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- Canadian Government Office of Tourism**, Ottawa K1A 0H6, Canada.
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- Catell Ltd.**, 1500 Atwater, Suite 1200, Montreal, Quebec H3Z 1X5, Canada.
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- Club Managers Association of America**, 5530 Wisconsin Avenue N.W., Washington, DC 20015.
- Collier Books**, Collier-MacMillan—see **MacMillan Publishing Co.**
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- Constable and Co. Ltd.**, 10 Orange Street, London WC2H 7EG, England.
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- Coopers and Lybrand**, 1251 Avenue of the Americas, New York, NY 10020.
- Cornell University College of Agriculture and Life Sciences**, Roberts Hall, Ithaca, NY 14853.
- Cornell University School of Hotel Administration**, 327 Statler Hall, Ithaca, NY 14853.
- Council of Planning Librarians**, P.O. Box 229, Monticello, IL 61856.
- Council on Hotel, Restaurant, and Institutional Education**, Human Development Building, Room 12, University Park, PA 16802.
- Counting House Publishing Co.**, Thiensville, WI 53092.
- Coward, McCann & Geoghegan**, 390 Murray Hill Parkway, East Rutherford, NJ 07073.
- Crossing Press**, 17 West Main Street, Trumansburg, NY 14886.
- Thomas Y. Crowell**, 666 Fifth Avenue, New York, NY 10019.
- Crown Publishers**, 419 Park Avenue South, New York, NY 10016.
- Culinary Arts Institute**, 1975 Hawthorne Place, Chicago, IL 60657.
- Culinary Arts Society**, 270 Madison Avenue, Suite 1302, New York, NY 10016.
- Culinary Institute of America**, North Road, Hyde Park, NY 12538.
- Dartnell Corp.**, 4660 Ravenswood Avenue, Chicago, IL 60640.
- John Day Co.**, 666 Fifth Avenue, New York, NY 10019.
- Dell Publishing Co.**, Delacourt Press, 1 Dag Hammarskjöld Plaza, 245 East 47th Street, New York, NY 10017.
- Dial Press**—see **Dell Publishing Co.**
- Discover America Travel Organizations**, 1100 Connecticut Avenue N.W., Washington, DC 20036.
- Doolco**, 2016 Canton Street, Dallas, TX 75201.
- Doubleday & Co.**, 501 Franklin Avenue, Garden City, NY 11530.
- Dover Publications**, 180 Varick Street, New York, NY 10014.
- Dow Jones-Irwin**—see **Richard D. Irwin**
- Dryden Press**, 901 North Elm Street, Hinsdale, IL 60521.
- Dun & Bradstreet**, Dun Donnelly Publishing Corporation, 666 Fifth Avenue, New York, NY 10019.
- E. P. Dutton and Co.**, 201 Park Avenue South, New York, NY 10003.
- Duxbury Press**—see **Wadsworth Publishing Co.**
- The Economist Intelligence Unit Ltd.**, Spencer House, 27 St. James Place, London SW1A 1NT, England.
- Edwards Brothers**, 2500 South State Street, Ann Arbor, MI 48104.
- Elbert Hubbard Foundation**, Roycraft Campus, East Aurora, NY 14052.
- Electrical Information Publications**, 2131 Fordem Avenue, Madison, WI 53701.
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- M. Evans and Company**, 216 East 49th Street, New York, NY 10017.
- Executive Enterprises Publications Co.**, P.O. Box 6532, La Jolla, CA 92037.
- Executive Publications**, P.O. Box 92, Harvard Square, Cambridge, MA 02138.
- Exposition Press**, 900 South Oyster Bay Road, Hicksville, NY 11801.
- Faber and Faber Ltd.**, 101 South Broadway, Salem, NH 03079.
- Fawcett Publications**, Fawcett Place, Greenwich, CT 06830.
- Frederick Fell**, 388 Park Avenue South, New York, NY 10016.
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- Financial Accounting Standards Board, High Ridge Park, Stamford, CT 06905.
- Financial Executives Research Foundation, 633 Third Avenue, New York, NY 10017.
- Financial Publishing Co., 82 Brookline Avenue, Boston, MA 02215.
- Follett Publishing Co., 1010 West Washington Boulevard, Chicago, IL 60607.
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- Free Press—see MacMillan Publishing Co.
- W. H. Freeman & Co., 860 Market Street, San Francisco, CA 94104.
- Georgia State University School of Business Administration, Publishing Services Division, University Plaza, Atlanta, GA 30303.
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- Greater Chicago Hotel and Motel Association, Illinois Athletic Club Building, 112 South Michigan Avenue, Chicago, IL 60603.
- Grid, 4666 Indianola Avenue, Columbus, OH 43214.
- Grolier, Sherman Turnpike, Danbury, CT 06816.
- Grosset & Dunlap, 51 Madison Avenue, New York, NY 10010.
- H. R. Books, PO Box 5367, Tucson, AZ 85703.
- Halstead Press—see John Wiley & Sons
- Hammond, 515 Valley Street, Maplewood, NJ 07040.
- Harcourt Brace Jovanovich, 757 Third Avenue, New York, NY 10017.
- Harper and Row Publishers, Keystone Industrial Park, Scranton, PA 18512.
- Harris, Kerr, Forster & Co., 420 Lexington Avenue, New York, NY 10017.
- Harvard University Press, 79 Garden Street, Cambridge, MA 02138.
- Hastings House Publishers, 10 East 40th Street, New York, NY 10018.
- Hawthorn Books, 260 Madison Avenue, New York, NY 10018.
- Hayden Book Co., 50 Essex Street, Rochelle Park, NJ 07662.
- Holiday Inn University, Olive Branch, MS 38654.
- Hospitality Institute, Ireland Educational Group, 1652 Groton Court, Wheaton, IL 60187.
- Holt, Rinehart & Winston, 383 Madison Avenue, New York, NY 10017.
- Hotel Association of New York City, 141 West 51st Street, New York, NY 10019.
- Hotel and Restaurant Employees and Bartenders International Union, 120 East Fourth Street, Cincinnati, OH 45202.
- Hotel Sales Management Association, 362 Fifth Avenue, New York, NY 10001.
- Houghton Mifflin Co., 2 Park Street, Boston, MA 02107.
- ITT Educational Services—see Howard W. Sams & Co.
- India Ministry of Information and Broadcasting, Publications Division, New Delhi, India.
- Industrial Press, Building 424, Raritan Center, Edison, NJ 08817.
- Info Press, 736 Center Street, Lewiston, NY 14092.
- Inform, 25 Broad Street, New York, NY 10004.
- Institute for Contemporary Studies, 260 California Street, Suite 811, San Francisco, CA 94111.
- Institute for Management, Old Saybrook, CT 06475.
- Institute for Social Research, University of Michigan, 426 Thompson Street, Ann Arbor, MI 48106.
- Institute of Certified Travel Agents, 148 Linden Street, PO Box 56, Wellesley, MA 02181.
- Institute of Real Estate Management, 155 East Superior Street, Chicago, IL 60611.
- Insurance Company of North America, 1600 Arch Street, Philadelphia, PA 19103.
- International Council of Shopping Centers, 445 Park Avenue, New York, NY 10022.
- International Foodservice Manufacturers Association, 1 East Wacker Drive, Chicago, IL 60601.
- International Franchise Association, 7315 Wisconsin Avenue, Suite 600W, Washington, DC 20014.
- International Labour Office, Washington Branch, 1750 New York Avenue N.W., Suite 311, Washington, DC 20006.
- International Personnel Management Association, 1313 East 60th Street, Chicago, IL 60637.
- International Publications Service, 114 East 32nd Street, New York, NY 10016.
- International Publishers, 381 Park Avenue South, Suite 1301, New York, NY 10016.
- International Scholarly Book Service, PO Box 555, Forest Grove, OR 97116.
- International Union of Official Travel Agents—see World Tourism Organization
- International Wine Society, 304 East 45th Street, New York, NY 10017.
- Iowa State University Press, South State Avenue, 112C Press Office, Ames, IA 50010.
- Richard D. Irwin, 1818 Ridge Road, Homewood, IL 60430.
- Johns Hopkins University Press, Baltimore, MD 21218.
- Johnson Publishing Co., PO Box 990, Boulder, CO 80306.
- Keats Publishing Co., 36 Grove Street, PO Box 876, New Canaan, CT 06840.
- J. J. Keller and Associates, 145 West Wisconsin Avenue, Neenah, WI 54958.
- Alfred A. Knopf—see Random House
- Lateiner Publishing, 1 Strawberry Hill Avenue 10-E, Stamford, CT 06902.
- Laventhol and Horwath, 1845 Walnut Street, Philadelphia, PA 19103.
- Law Journal Press, New York Law Journal Building, 258 Broadway, New York, NY 10007.
- Learning Systems Company—see Richard D. Irwin
- Lebhar-Friedman Books, 425 Park Avenue, New York, NY 10020.
- Lehigh Books, 54 West 21st Street, New York, NY 10010.
- Lenz and Reicker, 75 Varick Street, New York, NY 10013.
- Lester & Orpen, 42 Charles Street East 8 FLR, Toronto, M4Y 1T4, Canada.
- Lexington Books, D. C. Heath and Co., 125 Spring Street, Lexington, MA 02173.
- J. B. Lippincott Co., East Washington Square, Philadelphia, PA 19105.
- Little, Brown & Co., 200 West Street, Waltham, MA 02154.
- Longmark, Canada Ltd., 55 Barber Green Road, Don Mills, Ontario, Canada.
- Lord Publishing Co., 130 Clarke Road, Needham, MA 02192.
- Lyceum Books, PO Box 113, Wilton, CT 06897.
- MIT Press, 28 Carleton Street, Cambridge, MA 02142.
- McCutchan Publishing, 2526 Grove Street, Berkeley, CA 94704.
- McGill-Queens University Press, 1020 Pine Avenue West, Montreal, Quebec, Canada.
- McGraw-Hill Book Co., 1221 Avenue of the Americas, New York, NY 10020.
- David McKay Co., 750 Third Avenue, New York, NY 10017.
- MacMillan Publishing Co., Riverside, NJ 08075.
- Management Information Center, PO Box 357, Miami, FL 33148.
- Manhattan Menus, 919 Third Avenue, New York, NY 10022.
- Mason/Charter, 641 Lexington Avenue, New York, NY 10022.
- Mayfield Publishing Co., 285 Hamilton Avenue, Palo Alto, CA 94301.
- Meadowbrook Press, 16648 Meadowbrook Lane, Wayzata, MN 55391.
- R. S. Means Co., 100 Construction Plaza, Duxbury, MA 02332.
- Meredith Corporation, 1716 Locust Street, Des Moines, IA 50338.
- Michigan State University Press, East Lansing, MI 48823.
- Mobil Oil Corporation, 150 East 42nd Street, New York, NY 10017.
- Money Market Directories, 370 Lexington Avenue, New York, NY 10017.
- Morgan-Grampian, 205 East 42nd Street, New York, NY 10017.
- William Morrow & Co., 6 Henderson Drive, West Caldwell, NJ 07006.
- National Academy of Science, Printing and Publishing Offices, 2101 Constitution Avenue, Washington, DC 20418.
- National Association of Accountants, 919 Third Avenue, New York, NY 10022.
- National Association of Home Builders, 15th and M Streets N.W., Washington, DC 20005.
- National Association of Meat Purveyors, 252 West Ina Road, Tucson, AZ 85704.
- National Association of Pool Owners, 10 Kearney Road, Box 222, Needham, MA 02194.
- National Association of Realtors, 430 North Michigan Avenue, Chicago, IL 60611.
- National Club Association, Suite 602, 1129 20th Street N.W., Washington, DC 20036.

- National Education Standards, 650 South Grand Avenue, Suite 1002, Los Angeles, CA 90017.
- National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.
- National Inkeeping Association, 122 East High Street, Jefferson City, MO 65101.
- National Institute for the Foodservice Industry, 120 Riverside Plaza, Chicago, IL 60606.
- National Institute for Occupational Safety and Health, Office of Technical Publications, PO Building, Room 530, Cincinnati, OH 45202.
- National Live Stock and Meat Board, 444 North Michigan Avenue, Chicago, IL 60611.
- National Recreation and Park Association, 1601 North Kent Street, Arlington, VA 22209.
- National Restaurant Association, Suite 2600, One IBM Plaza, Chicago, IL 60611.
- National Sanitation Foundation, NSF Building, 3475 Plymouth Road, Ann Arbor, MI 48106.
- National Technical Information Service, U. S. Department of Commerce, Springfield, VA 22181.
- Nelson-Hall Co., 325 West Jackson Boulevard, Chicago, IL 60600.
- New American Library, 1301 Avenue of the Americas, New York, NY 10019.
- New University Education, Bingley Co., (Clive Ltd.), 16 Pembridge Street, London W11, England.
- New York State Department of Commerce, 99 Washington Avenue, Albany, NY 12245.
- New York State Recreation and Park Society, PO Box 68, Peekskill, NY 10568.
- New Zealand Tourist and Publicity Department, Wellington, New Zealand.
- Newnes-Butterworth, Borough Green, Sevenoaks, Kent TN 15 8 PH, England.
- Newspaper Enterprises Association, 230 Park Avenue, New York, NY 10017.
- North Holland — see Elsevier Scientific Publishing Co.
- W. W. Norton & Co., 500 Fifth Avenue, New York, NY 10036.
- Noyes Data Corporation, Mill Road at Grand Avenue, Park Ridge, NJ 07656.
- Ohio State University, College of Administrative Science, Columbus, OH 43210.
- Opinion Research Corporation, North Harrison, Princeton, NJ 08540.
- Organization of American States, 17th and Constitution Avenues N.W., Washington, DC 20006.
- Ottenheimer Publishers, 1632 Reisterstown Road, Baltimore, MD 21208.
- Owen-Sterling, Grand Rapids, MI 49503.
- Oxford University Press, 1600 Politt Drive, Fair Lawn, NJ 07410.
- Paddington Press Ltd. — see Grosset & Dunlap
- Pantheon Books, Random House, 400 Hahn Road, Westminster, MD 21157.
- Parker Publishing Co. — see Prentice-Hall
- Passive Energy Systems, PO Box 499, Blacksburg, VA 24060.
- Pendragon House, 2595 East Bayshore Drive, Palo Alto, CA 94303.
- Penguin Books, 625 Madison Avenue, New York, NY 10022.
- Peninsular Publishing Co., 2503 Jackson Bluff Road, Tallahassee, FL 32301.
- Pennsylvania State University Press, University Park, PA 16802.
- Pergamon Press, Maxwell House, Fairview Park, Elmsford, NY 10523.
- Petrocelli/Charter — see Mason/Charter
- Pica Editions, Pica Editorial Ltd., 26 Parkway, London NW1, England.
- Pilot Books, 347 Fifth Avenue, New York, NY 10016.
- Pinnacle Books, 1 Century Plaza, 2029 Century Park East, Los Angeles, CA 90067.
- Pitman Publishing Corp., 8 Davis Drive, Belmont, CA 94022.
- Potter, Clarkson N. — see Crown Publishers
- Practising Law Institute, 810 Seventh Avenue, New York, NY 10019.
- Praeger Publishing — see Holt, Rinehart & Winston
- Prentice-Hall, Box 903, Englewood Cliffs, NJ 07632.
- Price Analysis Systems, PO Box 8516, Minneapolis, MN 55408.
- Princeton University Press, 41 William Street, Princeton, NJ 08540.
- Profit Sharing Research Foundation, 1718 Sherman Avenue, Evanston, IL 60201.
- G. P. Putnam's Sons, 390 Murray Hill Parkway, East Rutherford, NJ 07073.
- Quadrangle/New York Times — see Harper and Row
- Rand McNally & Co., PO Box 7600, Chicago, IL 60680.
- Random House, 457 Hahn Road, Westminster, MD 21157.
- Rawson Associates — see Atheneum Publishers
- Henry Regnery Co., 180 North Michigan Avenue, Chicago, IL 60601.
- D. Reidel Publishing Co., 160 Old Derby Street, Hingham, MA 02043.
- Resources for the Future, 1755 Massachusetts Avenue N.W., Washington, DC 20036.
- Resume Researchers, 239 Fourth Avenue, Pittsburgh, PA 15222.
- Reston Publishing Co., Prentice-Hall, Englewood Cliffs, NJ 07632.
- Rodale Press, 33 East Minor Street, Emmaus, PA 18049.
- St. Augustinus Boekhandel, Curaçao, Antilles Islands.
- St. Martin's Press, 175 Fifth Avenue, New York, NY 10010.
- Howard W. Sams & Co., 4300 West 62nd Street, Indianapolis, IN 46206.
- San Francisco Book Co. — see Simon and Schuster
- W. B. Saunders Co., Columbia Broadcasting System, West Washington Square, Philadelphia, PA 19105.
- Schocken Books, 200 Madison Avenue, New York, NY 10016.
- Scholars Book Company, 4431 Mount Vernon, Houston, TX 77006.
- Charles Scribner's Sons, Shipping and Service Center, Vreeland Avenue, Totowa, NJ 07512.
- Security World Publishing Co., 2639 South La Cienega Boulevard, Los Angeles, CA 90034.
- Siebel Publishing Company, 4049 West Patterson Avenue, Chicago, IL 60646.
- Signet Books — see New American Library
- Simon and Schuster, 1230 Avenue of the Americas, New York, NY 10020.
- Simpson-Doyle Co., Phoenix Book Publishers, 1814 East McLellan Boulevard, Phoenix, AZ 85106.
- Society for the Advancement of Food Service Research, 2710 North Salisbury Street, West Lafayette, IN 47906.
- Society for Industrial Realtors, 935 15th Street N.W., Washington, DC 20005.
- Society of Real Estate Appraisers, 7 South Dearborn Street, Chicago, IL 60603.
- South-Western Publishing Co., 5101 Madison Road, Cincinnati, OH 45227.
- Southern University Press, 130 South 19th Street, Birmingham, AL 35233.
- E. & F. N. Spon Ltd., 11 New Fetter Lane, London EC4P 4EE, England.
- Stackpole Books, Cameron & Keller Streets, Harrisburg, PA 17105.
- Stamats Publishing Co., 427 6th Avenue, Cedar Rapids, IA 52406.
- Stein and Day, 122 East 42nd Street, New York, NY 10017.
- Structures Publishing Co., Box 423, Farmington, MI 48024.
- Struik, Cape Town, Union of South Africa.
- Successful Meetings Book Division, 633 Third Avenue, New York, NY 10017.
- Ten Speed Press, PO Box 7123, Berkeley, CA 94707.
- Charles C. Thomas, 301-27 East Lawrence Avenue, Springfield, IL 62717.
- Time-Life Books, Little, Brown & Co., 34 Beacon Street, Boston, MA 02106. For library and school orders: Silver Burdette Co., Morristown, NJ 13664.
- Touche Ross, 1633 Broadway, New York, NY 10019.
- Tourism Development Company, Fomento Building, 268 Ponce de Leon Avenue, Hato Rey, PR 00918.
- Tourism International Press, 154 Cromwell Road, London SW7, England.
- Tourist Planning and Research Ltd., Suite 433, 52-54 High Holborn House, London WC1 V6R, England.
- Travel Data Center, 1100 Connecticut Avenue N.W., Washington, DC 20036.
- Travel Information Bureau, PO Box 1051, Kings Park, NY 11754.
- Travel Marketing Consultant Service, 37 Haverford Road, Hicksville, NY 11802.
- Tudor Publishing Company, 31 West 46th Street, New York, NY 10036.
- Two Continents Publishing Group, 5 South Union Street, Lawrence, MA 01843.
- UCN Register Div., Anderson Group, PO Box 508, Madison, NJ 07940.

Unipub, PO Box 433, Murray Hill Station, New York, NY 10016.
United States Government Printing Office, Division of Public Documents, Washington, DC 20402.
United States Travel Data Center, Suite 340, 1100 Connecticut Avenue N.W., Washington, DC 20036.
University of California Press, 2223 Fulton Street, Berkeley, CA 94720.
University of Colorado, Business Research Division, Graduate School of Business Administration, Boulder, CO 80302.
University of Hawaii, College of Business Administration, Industrial Relations Center, 2444 Dole Street, Honolulu, HI 96822.
University of Massachusetts Press, PO Box 429, Amherst, MA 01002.
University of Michigan Press, 615 East University, Ann Arbor, MI 48106.
University of Nevada, Bureau of Business and Economic Research, Reno, NV 89557.
University of Texas, Bureau of Business Research, Graduate School of Business, PO Box 7459, University Station, Austin, TX 78712.
University of Wales, Cardiff, Wales.
University of Wisconsin Press, Box 1379, Madison, WI 53701.
Urban Institute, Publications Office, 2100 M Street N.W., Washington, DC 20037.
Urban Land Institute (ULI), 1200 18th Street N.W., Washington, DC 20036.
Van Nostrand-Reinhold, Litton Educational Publishing Co., 7625 Empire Drive, Lexington, KY 41042.

Arthur Vanous Co., One Richard Court, River Edge, NJ 07661.
Viking Press, 625 Madison Avenue, New York, NY 10022.
Virtue Books—see **Continental Publications**
Wadsworth Publishing Co., 10 Davis Drive, Belmont, CA 94002.
Warren, Gorham & Lamont, 210 South Street, Boston, MA 02111.
Watson-Guptill Publications, 2160 Patterson Street, Cincinnati, OH 45214.
West Publishing Co., PO Box 3526, St. Paul, MN 55165.
Whitney Library of Design—see **Watson-Guptill Publications**
John Wiley & Sons, 605 Third Avenue, New York, NY 10016.
Wilton Enterprises, 1602 South Michigan Avenue, Chicago, IL 60616.
Wine and Spirit Publications, Southbank House, Black Prince Road, London SE1, England.
Wines and Vines, Hiaring Co., 703 Market Street, San Francisco, CA 94103.
Winthrop Publishing Co., Prentice-Hall, Englewood Cliffs, NJ 07632.
Woodbridge Press Publishing Co., Box 6189, Santa Barbara, CA 93111.
World Publishing Co., 2231 West 110th Street, Cleveland, OH 44102.
World Tourism Organization, Avenida del Generalissimo, 59, Madrid 16, Spain.
Peter H. Wyden, 750 Third Avenue, New York, NY 10017.
Yale University Press, 92A Yale Station, New Haven, CT 06520.
Ziff-Davis Publishing Co., One Park Avenue, New York, NY 10016.

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MORTGAGE COMMITMENTS ON MULTIFAMILY AND NONRESIDENTIAL PROPERTIES REPORTED BY 20 LIFE INSURANCE COMPANIES FOURTH QUARTER 1980 AND ANNUAL DATA

Reporting companies account for 67% of nonfarm mortgages and 61% of total assets held by U. S. life insurance companies.

The attached tables provide the results for the fourth quarter of 1980 from the survey of mortgage commitments made on income properties by 20 life insurance companies. Annual data appear in Table 1, Table 4, Table A, Table B, and Table L.

Flexible lending terms continued to be emphasized in commitments made in the fourth quarter of 1980. Loans with provision for income or equity participation, renegotiable rates, maturities of 10 years or less, or a lender's call option accounted for nearly 90% of fourth-quarter commitments. (The ratio reflects adjustments to eliminate double-counting of loans with more than one feature.)

As shown in Table 3, loans with provision for income/equity returns or renegotiable rates accounted for 53% of the number and 75% of the amount committed in the final quarter of 1980, even larger shares than in the preceding quarter (see Investment Bulletin No. 818). Loans with final maturities of 10 years or less again represented some 30% of the number of loans, in contrast with a scant 5% share in the final quarter of 1979. With this emphasis on variable returns and shorter maturities, use of a lender's call option occurred less frequently than was found in 1979 commitments, but the option was exercisable much sooner in loan life than prevailed a year earlier (Table E and comparable earlier tables).

For the first time in these surveys, information is included on nonrefundable fees received in connection with some loan commitments (see footnotes to Table 3, Table D, and Table M). Such fees, which have long been utilized by some lenders, are at times associated with a lower contract rate than otherwise would have been required. The presence of nonrefundable fees and other yield-affecting features are important to any assessment of contract rates. The surveys, however, do not attempt to measure potential yields of the reported commitments, in part because the yield is highly uncertain. Moreover, some commitments may not be funded or may be funded at terms different from those set at commitment.

Table L

Commitments of \$100,000 and Over on Multifamily and Nonresidential Mortgages
Made by 20 Life Insurance Companies

Property Type	Property Type, Year 1980										Percentage Distribution by loan amount
	No. of Loans	Amount Committed (\$000)	Loan Amount (\$000)	Interest Rate (by %)	Interest Rate (by \$)	Loan/ Value	Capitaliza- tion Rate	Debt Coverage	Percent Constant	Term (Years/Months)	
Conventional Elevator Apartment	7	18,100	2,586	12.39%	12.53%	61.0%	10.1%	1.17	13.1%	14/3	0.4%
Conventional Nonelevator Apartment	21	91,145	4,340	12.52	12.55	74.4	11.8	1.25	13.0	13/7	2.2
Retail - less than 5 stores	9	20,102	2,234	12.76	12.80	72.7	11.6	1.25	13.2	18/2	0.5
Shopping Center - 5 or more stores ^{1/}	39	189,897	4,869	12.61	12.61	71.6	12.0	1.29	12.8	15/8	4.5
Supermarket	7	31,252	4,465	12.89	12.80	97.4	13.6	1.03	13.8	22/10	0.7
Department Store	5	38,800	7,760	12.00	12.00	100.0	13.9	1.09	12.8	25/0	0.9
Office Building ^{2/}	240	2,524,388	10,518	12.59	12.45	73.2	11.9	1.27	12.9	18/8	60.4
Medical Office Building ^{1/}	20	36,810	1,840	12.74	12.87	73.9	12.3	1.26	13.2	18/10	0.9
Parking Garage	2	4,075	2,038	*	*	*	*	*	*	*	0.1
Service Station	1	1,000	1,000	*	*	*	*	*	*	*	**
Restaurant	3	8,795	2,932	13.04	12.41	88.5	11.6	0.92	14.7	18/4	0.2
Commercial Warehouse ^{1/}	71	143,521	2,021	12.64	12.42	71.3	11.5	1.23	13.1	13/8	3.4
Truck Terminal	1	1,500	1,500	*	*	*	*	*	*	*	**
Other Commercial	4	10,675	2,669	13.16	13.53	69.7	12.7	1.28	14.4	13/6	0.3
Educational	1	350	350	*	*	*	*	*	*	*	**
Hospital and Institutional	2	2,968	1,484	*	*	*	*	*	*	*	0.1
Social and Recreational	3	4,130	1,377	13.42	13.65	58.9	13.5	1.24	14.8	11/8	0.1
Industrial Warehouse ^{3/}	149	285,381	1,915	12.85	12.43	73.8	12.4	1.26	13.2	21/6	6.8
Manufacturing Plant	10	10,010	1,001	12.88	12.82	72.2	11.8	1.23	13.3	17/2	0.2
Other Industrial	21	46,710	2,224	12.68	12.99	73.5	12.6	1.33	13.0	26/5	1.1
Hotel	32	635,050	19,845	12.75	12.66	72.0	13.1	1.39	13.2	16/11	15.2
Motel	4	36,200	9,050	12.88	11.86	66.3	13.0	1.57	13.2	10/6	0.9
Multiple Property Complex	4	39,430	9,858	12.56	12.47	74.8	11.9	1.24	12.8	22/6	0.9
TOTAL	656	4,180,289	6,372	12.69	12.42	73.3	12.1	1.27	13.1	18/6	100.0

*Data not shown where there are fewer than three loans.

**Less than 0.05%.

^{1/} Interest rate was not available for one loan.^{2/} Interest rate was not available for two loans.^{3/} Interest rate was not available for six loans.

Note: Averages for capitalization rate, debt coverage ratio, and percent constant may represent a fewer number of loans than the total for the specified category.

Table M

**Commitments of \$100,000 and Over on Multifamily and Nonresidential Mortgages
Made by 20 Life Insurance Companies**

Loan Size Class Within Major Property Type, Fourth Quarter, 1980

Major Property Type Loan Size	No. of Loans	Amount Committed (\$000)	Loan Amount (\$000)	Interest Rate (by %)	Interest Rate (by %)	Loan/ Value	Averages		Percent Constant	Term (Years/Months)
							Capitaliza- tion Rate	Debt Coverage		
APARTMENT - CONVENTIONAL	11	33,570	3,052	12.41%	12.45%	66.5%	11.3%	1.23	13.3%	13/2
Less than \$1 million	1	940	940	*	*	*	*	-	-	*
\$1 million - \$3,999(000)	6	11,980	1,997	12.67	12.64	59.4	11.0	1.19	14.0	13/4
\$4 million - \$7,999(000)	4	20,650	5,162	12.38	12.41	74.9	11.9	1.26	12.7	15/0
COMMERCIAL RETAIL	11	33,478	3,043	13.02	12.93	73.2	12.2	1.26	13.3	11/4
\$1 million - \$3,999(000)	8	18,343	2,293	13.00	12.83	72.6	12.2	1.27	13.4	11/10
\$4 million - \$7,999(000)	3	15,135	5,045	13.08	13.05	74.6	12.1	1.22	13.2	10/0
OFFICE BUILDING^{2/}	82	713,129	8,697	13.01	12.92	71.5	12.1	1.28	13.3	17/3
Less than \$1 million	8	5,420	678	13.98	13.95	69.8	13.3	1.39	14.7	15/0
\$1 million - \$3,999(000)	28	63,154	2,256	13.15	13.04	72.3	12.6	1.29	13.5	15/8
\$4 million - \$7,999(000)	23	134,550	5,850	12.82	12.81	71.0	11.8	1.28	13.1	19/7
\$8 million and over	23	510,005	22,174	12.72	12.92	71.5	11.4	1.23	12.9	17/7
COMMERCIAL SERVICE^{1/}	19	35,966	1,893 ¹	13.19	13.02	70.1	11.6	1.21	13.6	13/6
Less than \$1 million	3	1,381	460	14.00	14.27	70.8	12.6	1.26	14.2	5/8
\$1 million - \$3,999(000)	15	27,185	1,812	13.07	13.10	69.3	11.4	1.20	13.5	15/0
\$4 million - \$7,999(000)	1	7,400	7,400	*	*	*	*	*	*	*
INSTITUTIONAL AND RECREATIONAL	1	150	150	*	*	*	-	-	-	*
INDUSTRIAL^{3/}	32	55,566	1,736	13.31	13.30	74.0	12.9	1.29	13.7	20/3
Less than \$1 million	14	9,056	647	13.31	13.30	73.9	13.4	1.34	13.7	20/3
\$1 million - \$3,999(000)	16	33,360	2,085	13.36	13.45	74.1	12.4	1.23	13.7	19/10
\$4 million - \$7,999(000)	2	13,150	6,575	*	*	*	*	*	*	*
HOTEL AND MOTEL	8	114,400	14,300	12.92	12.75	70.9	13.0	1.39	13.3	17/6
\$1 million - \$3,999(000)	2	5,100	2,550	*	*	*	*	*	*	*
\$4 million - \$7,999(000)	1	4,000	4,000	*	*	*	*	*	*	*
\$8 million and over	5	105,300	21,060	12.65	12.70	72.0	13.2	1.43	13.1	19/0
MULTIPLE PROPERTY COMPLEX	1	6,675	6,675	*	*	*	*	*	*	*
TOTAL	165	992,934	6,018	13.04	12.90	71.6	12.2	1.28	13.4	16/8

*Data not shown where there are fewer than three loans.

^{1/} Interest rate was not available for one loan.

^{2/} Interest rate was not available for two loans.

^{3/} Interest rate was not available for five loans.

Note: Averages for capitalization rate, debt coverage ratio, and percent constant may represent a fewer number of loans than the total for the specified category. Nonrefundable fees were reported in connection with 26% of the number and 22% of the amount committed. The comparable shares by property type ran: 64% and 70% for apartments, 36% and 42% for retail stores, 27% and 21% for office buildings, 32% and 29% for commercial service properties, 6% and 4% for industrial properties, and 25% and 14% for hotels and motels. See note to Table D.