I  INTRODUCTION

II  ROOTS

A  Introduction to Roots section
B  Economic theories
   1  History of value theory
   2  Current economic theories
   3  Land economics
   4  Theory of capitalism
C  Economic principles as applied to real estate
   1  Anticipation
   2  Balance
   3  Change
   4  Competition
   5  Conformity
   6  Contribution
   7  Externalities
   8  Increasing and decreasing returns
   9  Opportunity cost
  10  Substitution
  11  Supply and demand
  12  Surplus productivity
D  Value/Cost/Price concept
E  Factors of value
   1  Utility
   2  Scarcity
   3  Desire
   4  Effective purchasing power
F  Highest and best use
G  Influences on value
   1  Social
   2  Economic
   3  Governmental
   4  Environmental
H  Function of money

III  TRUNK

A  Introduction to the Trunk section
B  Legal considerations
   1  Real estate v. real property
   2  Real property v. personal property
   3  Limitations on real estate ownership
   4  Real property legal rights and interests
   5  Forms of property ownership
   6  Legal descriptions
7 Transfer of title

C Real estate markets and analysis
1 Characteristics of real estate markets
2 Absorption analysis
3 Competing investments
4 Role of money and capital markets

D Real estate financing
1 Mortgage components and terms
2 Types of traditional mortgage financing
3 Types of creative mortgage financing

E Uniform Standards of Professional Appraisal Practice (USPAP)
1 Introduction
2 Standards
3 Statements
4 Advisory Opinions and Glossary

F Introduction to the Appraisal/Valuation Process
1 Definition of the problem
2 Collection and analysis of data
3 Analysis of highest and best use
4 Land/site value
5 Approaches to value
6 Reconciliation and final value estimate
7 Communicating the appraisal report

G Appraisal/valuation process
1 Definition of the problem
   a Purpose and use of appraisal
   b Interests to be appraised
   c Type of value to be estimated
   d Date of the value to be estimated
   e Assumptions and limiting conditions
2 Collection and analysis of data
   a Primary v. secondary data
   b General data relevant to value
   c Specific data relevant to value
3 Analysis of highest and best use
   a Test/constraints
   b Application of highest and best use
4 Land/site value techniques
   a Sales comparison analysis
   b Land residual
   c Allocation
   d Extraction
   e Ground rent capitalization
   f Land/subdivision development method
   g Additional land value considerations
5 Approaches to value
   a Sales comparison
Real Property Appraisal Body of Knowledge
Summary

b Cost
c Income capitalization

6 Reconciliation and final value estimate
   a Review and assigning weight of validity and reliability of each approach
   b Criteria for selecting the appropriate approach(es) for final value estimate
   c Statement of final value conclusion

7 Communicating the appraisal report
   a Appraiser’s obligations
   b Types of appraisal reports
   c Methods of communication
   d Contents of report

IV BRANCHES

A Introduction to Branches section
B Types of Property
   1 Residential
      a Forms of occupancy
      b Types of residential properties
      c Property rights appraised and legal issues
      d Financial and income characteristics
      e Neighborhood
      f Site
      g Off-site improvements
      h Types of off-street improvements
      i Site characteristics
      j Improvements
      k Depreciation
      l Adverse conditions
      m Approaches to value
      n Application of appropriate technique
      o Reconciliation and final value estimate
      p Conditions of the appraisal
      q Appraisal guidelines and underwriting requirements
   2 Commercial
      a Forms of Occupancy
      b Types of commercial properties
      c Building description/functional utility
      d Legal considerations
      e Typical building measurements (square foot)
      f Approaches to value
      g Reconciliation and report of final value estimate
   3 Industrial
      a Forms of occupancy
      b Sites
      c Types of industrial properties
      d Functional utility
Real Property Appraisal Body of Knowledge

Summary

e Legal considerations
f Approaches to value
g Reconciliation and report of final value estimate
h Financial considerations

4 Agricultural/rural
a Types of ownership
b Types of agricultural properties
c Property description/functional utility
d Legal considerations
e Approaches to value
f Reconciliation and report of final value estimate

5 Special Purpose
a Purpose and function of the appraisal
b Data gathering special considerations
c Highest and best use special considerations
d Approaches to value special considerations
e Reconciliation special considerations
f Communicating the appraisal special considerations
g Types of special purpose assignments

C Review
1 Purpose of review
2 Client report
3 Types of review
4 Review process
5 Report types
6 USPAP compliance

D Valuation of partial interests
1 Interests created by a lease
2 Lease provisions
3 Valuation considerations
4 Partial and fractional interests

E Appraisal management/operational practices
1 Form of ownership
2 Office and business organization
3 Financial
4 Risk management
5 Professional business skills

F Regulatory
1 Levels
2 Types

G Quantitative techniques
1 Basic mathematics
2 Statistics
3 Probability
4 Index numbers and series

H Technology
1 Office technology
Real Property Appraisal Body of Knowledge
Summary

2 Network technology
I Accounting basics
1 Double entry bookkeeping basics
2 Cost accounting concepts
3 Accounting documents
4 Asset management accounting and book depreciation
5 Balance sheet
6 Profit and loss statement
7 Property management accounting basics
8 Project development accounting basics
9 Farm records systems
J Communications
1 Language skills
2 Written
3 Oral
4 Multimedia skills
K Engineering basics
1 Engineering drawings and specifications
2 Surveying and legal descriptions basics
3 Civil engineering basics
L Architectural basics
1 Architectural drawings and specifications
2 Local architectural styles identification
3 Architectural design considerations

V CONCLUSION
I  INTRODUCTION
The Real Property Appraisal Body of Knowledge (BOK) is an outline of concepts, theories, paradigms, and applications of the real property appraisal profession. The profession’s knowledge base is a tree with three parts: roots, a trunk, and branches. Roots (from economics) form the foundation of the tree and provide support for the trunk and branches. The trunk, composed of the valuation process and the Uniform Standards of Professional Appraisal Practice (USPAP) provides support for the branches. Branches represent individual appraisal assignments and specialties. Within each branch are many twigs which represent subspecialties within the discipline.

The BOK provides a spectrum of knowledge for the real property appraisal profession. While not exhaustive, it contains the profession’s foundations, supporting concepts and specialties. It is a living, dynamic document designed to be modified, tested, and exposed to the test of time.

The BOK generally defines the knowledge base of the real property appraisal profession. A BOK has two dimensions: breadth and depth. The fringes in both dimensions are ambiguous. While most assignments will require a subset of the knowledge provided in this document, unusual or highly specialized appraisals may require knowledge that is greater in breadth or depth. Assignments may also require the knowledge and/or experience of other experts.

Individual appraisers will not possess the complete BOK. However, the appraiser will know at least a subset of the BOK. The contents of the subset will be dependent on the knowledge needed to competently complete the assignment.

II  ROOTS
A  Introduction to Roots section
This section provides insight and knowledge of the various value theories and principles that underlie value. The different value theories and principles that are germane to all generic investment types are the foundation for valuing all types of real property.

B  Economic theories
1  History of value theory
   a  Classical school
   b  Austrian (Marginal Utility) school
c Neoclassical school
d Contemporary value theory
2 Current economic theories
   a Keynesian
   b Monetary
3 Land economics
   a Factors of production (land, labor, capital, entrepreneurship)
   b Microeconomics and macroeconomics
4 Theory of capitalism
C Economic principles as applied to real estate
   1 Anticipation
   2 Balance
   3 Change
   4 Competition
   5 Conformity
   6 Contribution
   7 Externalities
   8 Increasing and decreasing returns
   9 Opportunity cost
  10 Substitution
  11 Supply and demand
  12 Surplus productivity
D Value/Cost/Price concept
E Factors of value
   1 Utility
   2 Scarcity
   3 Desire
   4 Effective purchasing power
F Highest and best use
G Influences on value
   1 Social
   2 Economic
III TRUNK

A Introduction to the Trunk section

Expanding upon the value theories presented in the roots, the trunk applies these theories to real property valuation. The trunk forms a solid basis for the application of the various concepts and procedures presented in the branches. The knowledge in the trunk includes legal aspects of real property, market and financial analysis, standards of professional practice, and the appraisal/valuation process.

B Legal considerations

1 Real estate v. real property
2 Real property v. personal property
   a Fixtures
      i Attached to property
      ii Appropriate to function of property
      iii Intention
      iv Other
   b Trade fixtures
   c Business assets
      i Machinery and equipment
      ii Furniture and portable equipment
      iii Franchises, patents, business name
      iv Stock in trade and inventory
      v Owner specific license (liquor, child care, etc.)
      vi Other business assets
   d Going concern assets, liabilities and equity
      i Human capital
      ii Receivables/payables
      iii Files and records
      iv Established suppliers and clients
3 Limitations on real estate ownership

a Private
   i Covenants, conditions, restrictions (CC & Rs)
   ii Deed restrictions
   iii Leases
   iv Mortgages
   v Easements
   vi Liens
   vii Encroachments

b Public
   i Police power
      (a) Zoning
      (b) Building and fire codes
      (c) Environmental regulations
      (d) Historical restrictions
      (e) Health and safety laws
   ii Taxation
      (a) Property tax
      (b) Special assessments
   iii Eminent domain
      (a) Theory
         (i) Property right required for public use
         (ii) Just compensation
         (iii) Due process of law
         (iv) State v. federal rule
      (b) Procedure
         (i) Determination of need for taking
         (ii) Notification
         (iii) Determination of compensation
Real Property Appraisal Body of Knowledge

(iv) Negotiation
(v) Court proceedings
(c) Whole v. partial taking

iv Escheat

4 Real property legal rights and interests

a Bundle of rights concept
b Fee simple estate
c Lesser estates
   i Reservations
   ii Specific rights held by others
   iii Convenants, conditions and restrictions (CC & Rs)
   iv Liens and other encumbrances
d Life estate
   i Measuring life
   ii Life tenant
   iii Reversionary interest
   iv Remainder interest
   v Conventional life estate
   vi Life estate pur autre vie
   vii Legal life estate
e Lease interests
   i Leasehold interest
   ii Leased fee interest
   iii Ground rent systems
   iv Other interest
f Other legal interests
   i Easement
      (a) Categories
         (i) Subsurface
         (ii) Surface
         (iii) Suprasurface
      (b) Types
Real Property Appraisal Body of Knowledge

(i) In gross
(ii) In appurtenance
   ii Encroachment
   iii Adverse possession

5 Forms of property ownership
a Individual (severalty)
b Multiple
   i Partnership
   ii Corporation
   iii Other
c Tenancies and undivided interests
   i Tenancy in common
   ii Joint tenancy
   iii Tenancy by entirety
d Special ownership forms
   i Condominiums
   ii Cooperative
   iii Timesharing
   iv Condop

6 Legal descriptions
a Metes and bounds
   i Point of beginning and closure
   ii Water line and tide line references
   iii River edge and meander lines
b Monuments
c Government survey
   i Base line and meridian
   ii Township and range
   iii Section
   iv Government lots
d Lot and block
e Other surveys
Real Property Appraisal Body of Knowledge

i  Geodetic
ii  Global positioning systems

7  Transfer of title
   a  Basic types of deeds
      i  General warranty
      ii  Special warranty
      iii Grant deed
      iv  Quit claim
      v  Other deeds
   b  Recordation

C  Real estate markets and analysis
1  Characteristics of real estate markets
   a  Availability of information
   b  Changes in supply v. demand
   c  Immobility of real estate
   d  Segmented markets
   e  Regulations
   f  Liquidity
   g  Divisibility
   h  Management
   i  Taxation
   j  Cycles
      i  Business
      ii Real estate
   k  Other characteristics

2  Absorption analysis
   a  Demographic data
   b  Competition
   c  Absorption rate
   d  Forecasts
      i  Existing space inventory
Current and projected space surplus

New space

Competing investments

Types of investments

Speculative markets

(a) Types of properties

(b) National/international competition

Money markets

Capital markets

Real asset markets

Role of money and capital markets

Capital and banking structure

Money supply

Banking system

Money and capital markets

Relationships between money and capital markets

Rates and yield levels

(a) Level

(b) Term structure

(c) Real v. nominal

Sources of capital

Equity

(a) Trusts

(b) Partnerships

(c) Syndicates

(d) Joint ventures

(e) Pension funds

(f) Life insurance companies

(g) International equity capital

(h) Individuals

(i) Corporation

(j) Other sources
D  Real estate financing

1  Mortgage components and terms
   a  Promissory note
   b  Principal and interest
   c  Security interest
       i  Mortgage
           (a) Mortgagor
           (b) Mortgagee
       ii  Deed of trust
           (a) Trustor
           (b) Trustee
           (c) Beneficiary
   d  Points and origination fees
       i  Subordination
       ii  Acceleration
       iii  Due on sale
       iv  Other mortgage documents
   e  Title v. lien
   f  Amortization term
       i  Negative amortization
       ii  Full amortization
       iii  Partial amortization
       iv  Interest only
Fixed rate, level payment

Adjustable rate

Foreclosure

Other

Balloon payments

Long term note/Short term call

Sale/Lease back

2 Types of traditional mortgage financing

Residential

Conventional

Insured

(a) Government

(b) Private

Guaranteed

Special types

(a) Land contracts

(b) Other

Commercial

3 Types of creative mortgage financing

Purchase money mortgage (seller loan)

Installment (land) sales contract

Buydown plans

Wraparound loans

Other forms

E Uniform Standards of Professional Appraisal Practice (USPAP)

1 Introduction

Preamble

Ethics

Competency

Departure

Jurisdictional Exception

Supplemental Standards
Introduction to the Appraisal/Valuation Process

The appraisal/valuation process is a systematic procedure which provides the answer to a client's question about real property value. This process both models and mirrors appraisal activity which reflects the market-driven attitudes, beliefs, techniques and methods that relate to value. These concepts are fundamental to appraising and serve as the basis for the actions appraisers perform in addressing their client's needs. This process is accomplished through specific steps, which depend on the nature of the assignment and the available data. This model indicates a pattern that can be used in assignments to perform market research and data analysis, to apply appraisal techniques and to integrate the results of these activities into an estimate of defined value. The steps in the process are listed below.

1. Definition of the problem
2. Collection and analysis of data
3. Analysis of highest and best use
4. Land/site value
5. Approaches to value
6. Reconciliation and final value estimate
7. Communicating the appraisal report
Real Property Appraisal Body of Knowledge

i Market value

ii Other values
(a) Investment value
(b) Value in use
(c) Going concern value
(d) Ad valorem assessed value
(e) Liquidation value
(f) Insurance value

d Date of the value to be estimated
i Effective date of appraisal
(a) Retrospective
(b) Prospective
(c) Current

ii Date of report

e Assumptions and limiting conditions
i Reasonable assumptions

ii Extraordinary assumptions

iii Not misleading

2 Collection and analysis of data
a Primary v. secondary data

b General data relevant to value
i National/international
(a) Employment
(b) Income
(c) Population
(d) Economic indicators (e.g., Consumer Price Index, Producer Price Index, Gross National Product/Gross Domestic Product, etc.)

ii Regional

iii Local market conditions
(a) History and trends of community growth and development
(i) Theories of urban and community growth patterns
   (A) Concentric zone


Real Property Appraisal Body of Knowledge

B  Sector
C  Multiple nuclei
D  Radial corridor/axial
(ii) Land use planning

(b) Economic base and trends
(i) Employment
(ii) Income
(iii) Population
(iv) Position in business cycle

(c) Property supply and demand

(d) Linkages

iv  Neighborhood description and analysis
(a) Neighborhood boundaries
(b) Neighborhood life cycles
(i) Growth
(ii) Stability
(iii) Decline
(iv) Revitalization

(c) Forces and trends influencing value
(i) Social
A  Demographics
B  Employment statistics
C  Educational levels
D  Community and neighborhood associations
E  Safety
(ii) Economic
A  Economic base data
B  Property price levels
C  Income levels
D  Mortgage availability
E  Capital investment
(iii) Governmental
A  Financial activities
B  Land use regulations
C  Municipal and school services
D  Taxation levels

(iv) Environmental
A  Physical features
B  Presence of hazardous substances
   1  Surface
   2  Subsurface
   3  Pollution cause/effect in area
   4  Recognition
C  Transportation
D  Area land use patterns
   1  New construction
   2  Conversions
   3  Vacant land availability
   4  Extent of owner occupancy
   5  Vacancy rates
   6  Competition analysis for subject

c  Specific data relevant to value
   i  Subject property
      (a) Identification
         (i) Assessor parcel number
         (ii) Street address
         (iii) Census tract/block numbering area
         (iv) Postal zip code
         (v) Other identifiers
      (b) Property rights appraised
         (i) Fee simple
         (ii) Less than fee simple estates
            A  Easements
            B  Covenants, conditions, and restrictions (CC & Rs)
Real Property Appraisal Body of Knowledge

C  Encumbrances  
D  Leases  
E  Reservations  
F  Contracts and private agreements  
G  Declarations  
H  Special assessments  
I  Riparian and littoral rights  
J  Party wall agreements  
K  Encroachments  
L  Title conditions (clouds on title)  
M  Other

(c)  Form of ownership  
(d)  History of subject  
   (i)  Recent and current listings  
   (ii)  Sales history  
   (iii)  Use of property  
   (iv)  Construction and remodeling  
   (v)  Environmental history  
(e)  Site description  
   (i)  Off-site considerations  

A  Utilities  
   1  Location and distance to utility hookups  
   2  Utility hookup fees  
   3  Supply capacity problems and moratoriums  
   4  Construction requirements  
   5  Periodic testing requirements  
   6  Regulatory agencies and laws  
   7  Quantity and quality  
   8  Cost  

B  Site access  
   1  Traffic flow  
   2  Traffic volume
C  Public services
   1  Fire
   2  Police
   3  Schools parks and recreation areas
   4  Public transportation
D  Adjacent land use
(ii) Shape and area
   A  Area of regular and irregular shapes
   B  Perimeter measurements
   C  Volume measurements
(iii) Topography
   A  Type/ slope
   B  Slope erosion control
   C  Drainage and runoff
   D  Effect on construction and utilities
(iv) Soil characteristics
   A  Soil types
   B  Suitability for construction
   C  Suitability for agriculture
   D  Environmental considerations
(v) View and water orientation
   A  Types of views (lake, ocean, mountain, golf course, etc.)
   B  Water frontage
   C  Lake/ocean/etc. front
   D  Split lake/ocean/etc. front
   E  Lake/ocean/etc. access
   F  Lake/ocean/etc. view
   G  Other amenity orientation
(vi) Utilities
   A  Water
      1  Public service
Real Property Appraisal Body of Knowledge

2  Private community service
3  Private service
4  Wells, aquifers, and catch basins
5  Irrigation and agricultural use

B  Electricity
1  Energy sources
   a  Hydro
   b  Solar
   c  Wind
   d  Geo-thermal
   e  Nuclear
2  Public service
3  Private community service
4  Private service
5  Maintenance
6  Chargeback policy

C  Sewer
1  Public service
2  Private community service
3  Private service
4  Lateral connection
5  Clean-out access
6  Pumping station and elevation
7  Septic system
8  Dry well/cesspool
9  Privy
10 Maintenance

D  Solid waste disposal
1  Public service
2  Private community service
3  Private service
4  Recycling policy
5  Hazardous materials policies
6  On site dumps and land fills

E  Natural gas
   1  Public service
   2  Private community service
   3  Private service
   4  Maintenance

F  Telephone and other communication access
   1  Public service
   2  Private community service
   3  Private service
   4  Maintenance

G  Cable television
   1  Public service
   2  Private community service
   3  Private service
   4  Maintenance

(vii) Site improvements
   A  Driveway
   B  Patios and walks
   C  Pools and ponds
   D  Athletic courts
   E  Landscaping
   F  Out-buildings
   G  Fences
   H  Retaining walls
   I  Sea walls
   J  Piers
   K  Lighting
   L  Parking areas

(viii) Special considerations
   A  Flood hazard areas
B Noise zones
C Volcanic and seismic zones
D Mud slides areas
E Sink holes
F Flight paths and ditch areas
G Military and other restrictions
H Toxic waste
I Wetlands
J Endangered species
K Historic and archaeological sites

(f) Improvements

(i) General considerations
A History of the improvements
  1 Date of construction
  2 Date(s) of remodeling/renovations
  3 Use
  4 Historical/architectural preservation aspects
B Compliance with applicable regulations
C Demolition and removal
D Toxic and hazardous substances

(ii) Architectural styles
A Residential
B Non-residential
C Design considerations
D Aesthetics
E Blueprints and specifications

(iii) Area calculations
A Gross building area
B Rentable area
C Occupied area
D Usable area
E Retail area
Real Property Appraisal Body of Knowledge

F Common area
G Net building area
H Gross living area
I Building Owners and Managers Association (BOMA)

(iv) Functional utility
A Work flow patterns
B Building efficiency
C Deficiencies
D Super-adequacies

(v) Building construction
A Structural classifications (A,B,C,D,S)
B Residential v. non-residential construction
C Manufactured construction methods
   1 Modular construction
   2 Prefabricated construction
   3 Pre-constructed
   4 Mobile homes and mobile non-residential
D Foundations and basements
E Exterior walls and finishes
F Interior framing, walls and finishes
G Roof systems
H Ceiling and attic areas
I Insulation
J Electrical systems
K Plumbing systems
L Heating, ventilating, and air conditioning
M Elevator
N Specialty systems
   1 Telephone, intercom, LAN and other communication access
   2 Radio, stereo and other audio systems
   3 Cable TV
Real Property Appraisal Body of Knowledge

4 Security and alarm
5 Fire protection
6 Vacuum and compressed air
7 Clean rooms
8 Decontamination and detoxification facilities
9 Internet
10 Other specialty systems

O Special features
1 Art work
2 Unique window installations
3 Special masonry work
4 Other

P Quality of construction
Q Condition
1 Damage and physical deterioration
2 Deferred maintenance
3 Condition of short lived items
4 Condition of long lived items

Comparable properties

(a) Types of data
(i) Sales
(ii) Listings
(iii) Offers
(iv) Contracts of sale
(v) Income and expenses
(vi) Capitalization and yield rates
(vii) Leases/rentals
(viii) Construction cost
(ix) Vacancy and occupancy levels
(x) Absorption rates
(xi) Supply and demand
(xii) Other studies, surveys, etc.
(b) Comparable selection
   (i) Fair market transactions
   (ii) Cash or cash equivalent
   (iii) Recent activity
   (iv) Proximity to subject
   (v) Similarity of elements of comparison
       A Property rights
       B Conditions of sale
       C Market conditions (time)
       D Location
       E Physical characteristics
       F Income characteristics

(vi) Documentation
   A Approvals and permits
   B Land records
   C Print media
   D Field notes
   E Office files
   F Photographs
   G Private data sources
   H Verification
   I Other

iii Analytical techniques
   (a) Grid arrays
   (b) Regression applications
   (c) Paired data analysis
   (d) Graphs
   (e) Statistics
   (f) Logical interpretation
   (g) Simulation
   (h) Other qualitative and quantitative techniques

3 Analysis of highest and best use
a  Test/constraints  
   i  Physically possible  
   ii  Legally permissible  
      (a) Governmental regulations  
      (b) Private restrictions  
      (c) Reasonable probability of change  
      (d) Economic feasibility of change  
      (e) Cost to remove private restrictions  
      (f) Possible dedications and improvements  
      (g) Time and risk to obtain changes  
   iii  Economically/financially feasible  
   iv  Maximally productive/most profitable use  
   v  Time to effect change if required  
   vi  Risk to effect change if required  
   vii  Costs to effect change if required  

b  Application of highest and best use  
   i  Land/site as if vacant  
      (a) Consider possible uses  
          (i) Optimum size  
          (ii) Excess land  
          (iii) Need of additional land availability  
          (iv) New civil improvements costs  
          (v) Land redevelopment costs  
      (b) Conclusion  
   ii  Property as currently improved  
      (a) Consider for postulated uses  
          (i) Potential for remodeling  
          (ii) Remodeling costs  
          (iii) Income when completed  
          (iv) Time and income loss pending conversion  
      (b) Conclusion  

c  Special considerations
Real Property Appraisal Body of Knowledge

1. Use
2. Time
3. Participants
4. Legally non-conforming
5. Interim use
6. Variance
7. Salvage value
8. Demolition cost
9. Development and approval documents

4 Land/site value techniques
   a. Sales comparison analysis
   b. Land residual
   c. Allocation
   d. Extraction
   e. Ground rent capitalization
      i. Ground rental
      ii. Capitalization rate
   f. Land/subdivision development method
      i. Development cost: direct and indirect
      ii. Profit and overhead
      iii. Forecast absorption and gross sales
   iv. Entrepreneurial incentive/developer’s fee
   v. Discounted value conclusion
      (a) Construction
      (b) Absorption time
   g. Additional land value considerations
      i. Plottage value in assemblage with other land
      ii. Excess land over optimum size for highest and best use

5 Approaches to value
   a. Sales comparison
      i. Research and selection of comparables
         (a) Data sources
Real Property Appraisal Body of Knowledge

(b) Selection filter
   (i) Similar property rights
   (ii) Proximity to appraised property
   (iii) Similar use
   (iv) Recent transaction
   (v) Physically similar

(c) Comparable specific data

(d) Verification

(e) Units of comparison
   (i) Data sources
   (ii) Size
      A Square foot
      B Acres
      C Front foot
      D Other
   (iii) Utility (examples only)
      A Rooms
      B Beds
      C Other
   (iv) Income
      A Potential gross income multiplier
      B Effective gross income multiplier
      C Overall capitalization/yield rate

(f) Elements of comparison
   (i) Property rights conveyed
      A Leased fee/leasehold
      B Easements
      C Surface, subsurface, suprasurface rights
      D Others
   (ii) Financing terms and cash equivalency
      A Market reaction
      B Calculations
1 Loan payment
2 Loan balance
3 Discounting
4 Paired Sales

(iii) Conditions of sale
   A Arms-length sale
   B Personalty
   C Trade fixtures

(iv) Market conditions at time of contract and closing
(v) Location
(vi) Physical characteristics
(vii) Tenant improvements
(viii) Other

ii Adjustment process
   (a) Sequence of adjustments
   (b) Dollar adjustments
   (c) Percentage adjustments
   (d) Paired sales analysis
   (e) Reconciliation

iii Application of sales comparison approach

b Cost

i Cost approach concepts
   (a) Basic format
      (i) Cost new
      (ii) Less accrued depreciation
      (iii) Plus depreciated value site improvements
      (iv) Plus site value
      (v) Value by cost approach
   (b) Relationship to economic principles applied to real estate
      (i) Supply and demand
      (ii) Substitution
      (iii) Balance
(iv) Externalities

(v) Highest and best use

(c) Use

(i) Applicability

A Improvement value desired
B New or relatively new construction
C Low effective age
D Consider additions or renovations
E Special purpose/unique improvements
F Improvements at highest and best use
G Inactive market

(ii) Limitations

A Accuracy of land value as vacant
B Accuracy of cost estimate
C Difficulty of calculating depreciation estimate

1 Older building
2 Special use building
3 Building not at highest and best use
4 Non-conforming use
   a Inappropriate improvements
   b Improvements misplaced on site
   c Other
5 Changing economic conditions/overbuilt markets
6 Building with major remodeling
7 Building with major problems
   a Environmental
   b Uncompleted
   c Abandoned
   d Functional obsolescence
8 Difficult to estimate remaining life
   a Economic
Cost approach procedure

(a) Estimate site value as if vacant
   (i) To be developed at its highest and best use
   (ii) Include site improvements for reasonable uses of site
         A Survey
         B Soil report
         C Grading, drainage, slopes, and retaining walls
         D Civil Improvement necessary for use of land
         E Prepaid governmental fees necessary for use of land
   (iii) Site value
         A Sales comparison analysis
         B Land residual
         C Allocation
         D Extraction
         E Ground rent capitalization
         F Land/subdivision development method

(b) Estimate cost new of improvements
   (i) Cost concepts
       A Reproduction cost - replica of improvements
       B Replacement cost - replacement with current materials and design
       C Original cost indexed to current cost
   (ii) Cost new elements
       A Direct costs (hard) - labor and materials
       B Indirect costs (soft) - not part of construction contract
       C Entrepreneurial profit incentive
          1 Projected return to attract capital
          2 Fee compensation
          3 Market derived estimation technique

(c) Sources of cost data
(i) Professional estimations
(ii) Contractors of similar (or subject) buildings
(iii) Cost comparables
(iv) Cost service manuals
(v) Appraiser estimate from suppliers
(vi) Cost-index trending

(d) Methods of cost estimation
   (i) Quantity survey method
   (ii) Unit-in-place (segregated-cost) method
   (iii) Comparative-unit method
   (iv) Cost-service index

(e) Estimate accrued depreciation
   (i) Definitions
      A  Depreciation
      B  Physical life
      C  Total economic life
      D  Remaining economic life
      E  Actual (historical, chronological) age
      F  Effective age
   (ii) Types of depreciation
      A  Physical deterioration
         1  Curable physical
         2  Incurable physical
            a  Short-lived
            b  Long-lived
      B  Functional obsolescence
         1  Curable
            a  Deficiency
               1  Existing item
               2  Nonexisting item
            b  Superadequacy
         2  Incurable
Real Property Appraisal Body of Knowledge

a  Deficiency
   1  Existing item
   2  Nonexisting item
b  Superadequacy
C  External obsolescence
   1  Types
      a  Economic
      b  Locational
   2  Test for curability
   (iii) Methods of estimating accrued depreciation
      A  Economic age-life
      B  Modified economic age-life
      C  Breakdown - trade
      D  Market extraction (sales comparison)
      E  Published depreciation tables
      F  Income capitalization
   (f)  Subtract total accrued depreciation from estimated building improvements
   (g)  Add estimated depreciated cost new of site improvements
   (h)  Add estimated site value
   (i)  Adjust, if necessary, for property interest being appraised

c  Income capitalization
   i  Income capitalization concepts
      (a)  Current value of anticipated future income
         (i)  Periodic rental income
         (ii) Resale/reversion income (future value)
      (b)  Investment value v. market value
      (c)  Future net income is the return
         (i)  Of capital investment (recapture)
         (ii) On capital investment
      (d)  Conversion of future net income to current value
         (i)  Dividing future net income by rate of return
Real Property Appraisal Body of Knowledge

(ii) Discounting future net income by discount rate of return

(e) Relationship to each of the economic principles applied to real estate

(f) Income capitalization mathematical basis
   (i) Income, rate, and value relationships (IRV)
      A Value equals income divided by rate
      B Income equals value times rate
      C Rate equals income divided by value
   (ii) Compound interest concepts (see that section in branches)
   (iii) Symbols and abbreviations used in formulas

Advantages and limitations of income capitalization

(a) Advantage: examines properties from investors' perspectives

(b) Limitations
   (i) Future income and expense data may be difficult to forecast
   (ii) Income/expense may be difficult to estimate for owner occupied
   (iii) Complete and accurate property lease data may be difficult to get
      A Lease terms
      B Rentals and concessions
      C Overage rent
      D Expense data and obligations of the parties
   (iv) Sufficient market support may be difficult to find for
      A Rental and expense estimates
      B Selected capitalization and yield rates
      C Impact of inflation may be difficult to forecast
      D Comparable data may be difficult to analyze for rates because of a lack of full disclosure of
      1 Accurate income and expense data
      2 Degree of owner management
Real Property Appraisal Body of Knowledge

E May be difficult to evaluate parties expectations
   1 Resale/reversion value
   2 Impact of inflation
   3 True asset depreciation (not book)

F Unknown impact of income tax on sales price decisions
   1 Reserves for replacements
   2 Cash basis for capital improvements
   3 Depreciation play out impact
   4 Tax deferred exchange impacts

iii Rates
   (a) Characteristics of rates of return
      (i) Rate of return on and of capital is influenced by
         A Liquidity risk
         B Management risk
         C Competition from other investment alternatives
         D Risk associated with all factors that affect value
         E Capital growth expectations
         F Periodic income expectations
         G Inflationary pressures
         H Income tax treatment
   (b) Difference between capitalization rates and yield rates
   (c) Historical perspective on rates
   (d) Capitalization rates may include (depending on rate definition for specific capitalization technique)
      (i) Future market changes
      (ii) Inflation effects
      (iii) Resale/reversion value
      (iv) Debt financing terms
      (v) Future income changes
      (vi) Return on capital
      (vii) Return of capital
(viii) Tax shelter
(ix) NOI characteristics
(e) Types of capitalization rates
   (i) Overall capitalization rate
       A First year rate (going in rate)
       B Terminal rate (going out rate)
       C Stabilized rate
(ii) Land capitalization rate
(iii) Improvement capitalization rate
       A Estimated remaining economic life
       B Recapture rate
(f) Sources of capitalization and yield rates
   (i) Derivation from market data including mathematical application(s)
       A Sales of income property
       B Sales of leased fee
       C Sales of leaseholds and other interests
       D Properties for sale or lease
(ii) Interviews with market participants
(iii) Government/private ground lease policies
(iv) Published surveys and secondary data
(v) Built up rates
       A Mortgage equity
       B Summation
       C Other
(vi) Comparison with other financial rates

iv Income and expenses
(a) Estimation
   (i) Potential gross income
   (ii) Vacancy and collection loss
   (iii) Effective gross income
   (iv) Operating expenses
A Fixed expenses
B Variable expenses
C Reserves for replacement

(v) Net operating income
(vi) Debt service
(vii) Before tax cash flow
(viii) After tax cash flow

(b) Types of income and expenses
(i) Pro forma
(ii) Actual
(iii) Stabilized
(iv) Forecast

(c) Potential gross income analysis
(i) Income capitalization methods
   A Overall Capitalization: one year’s income
   B Discounted cash flow: multiple years’ income
   C Other methods

(ii) Lease analysis
   A Dates
      1 Contract date
      2 Occupancy date
      3 Termination date
      4 Other
   B Rental income
      1 Periodic payment
      2 Prepayments and deposits
      3 Excess tenant improvement amortization
      4 Concessions and rebates
      5 Reimbursed expenses
   C Escalations
      1 Step (up or down)
      2 Percentage (minimum rent and overage rent)
3 Consumer Price Index (CPI) or other index adjustment
4 Revaluation
D Tenant improvement allowances
E Expense obligations of the lessee and lessor
F Expense stops
G Lease term
H Lease extensions, options for renewal, and/or purchase
I Items supplied to lessee
   1 Furniture
   2 Utilities
   3 Services
   4 Other
J Trade fixtures
K Other terms of the lease

(iii) Ancillary income
(iv) Rental history
   A Rent roll
   B Income and expense statements
   C Other financial statements
   D Documents covering concessions and rebates
(v) Forecast of future rentals
   A Competitive rental survey
   B Occupancy rates
   C Prospective competitive construction/demolition
   D Demographic/economic/psychographic trends
(vi) Comparable rent survey and comparison to subject lease rents
(vii) Contract v. actual v. market rent
   A Excess rent
   B Percentage (overage) rent
C Other rent
(viii) Decision to use effective rent or contract rent
   A Effect of rent concessions/rebates
   B Effect on capitalized value
(ix) Conclusion of potential gross income analysis
(c) Vacancy and collection loss analysis
(i) Income capitalization formats
   A Overall capitalization: one year’s vacancy
   B Discounted cash flow: multiple year vacancy
(ii) Review vacancy and collection loss history
(iii) Review management practices
(iv) Review vacancy effect on ancillary income
(v) Test vacancy factor for reasonableness
   A Market comparison
   B Published standards
   C Local vacancy studies
(vi) Estimate absorption rate
(vii) Decision on how to handle abnormal subject vacancy
(viii) Conclusion of vacancy and collection loss analysis
(d) Operating expense analysis
(i) Income capitalization formats
   A Overall capitalization: one year’s expense
   B Discounted cash flow: multiple year expense
(ii) Review and reconstruct expense history
   A Income and expense statement
   B Other financial statements
   C Operating expenses
      1 Fixed expense
      2 Variable expense
      3 Reserve/allowance for replacement
   D Special expense considerations
      1 Proper charge for owner maintenance
Management including estimate of proper charge for owner management

Exclude non-property expenses
- Income tax depreciation
- Salaries and expenses not related to property management
- Capital improvement lump sum outlays

Comparison of actual expenses with market derived expenses
- Comparable property expense data
- Published data standards

Conclusion of operating expense analysis

Net Operating Income (NOI) estimation

Income analysis ratios
- Debt coverage ratio
- Break even ratio
- Operating expense ratio
- Net income ratio

Mortgage aspects of income capitalization
- Mortgage related components
  - Mortgage constant
  - Annual percentage rates
  - Points and origination fees and their impact
  - Loan ratio
  - Amortization and equity build-up
  - Balloon payments and mortgage balance
- Leverage

Methods of converting income into value
- Income multipliers
  - Concepts
    - Using monthly income v. annual income
B Using potential gross income v. effective gross income
C Other

(ii) Application
A Extracting multipliers from sales
B Mathematical application of multipliers
C Converting multipliers to capitalization rates using ratios
D Applications of multipliers to residential and commercial properties and when to use these techniques
E Advantages and limitations of multipliers

(b) Direct capitalization techniques
(i) Overall capitalization rate
A Concepts
B Application
  1 Extracting overall capitalization rates from sales
  2 Mathematical application of this technique
  3 When to use this technique
  4 Advantages and limitations

(ii) Built up technique of deriving overall capitalization rate
A Concepts
B Application
  1 Deriving rate components
  2 When to use this technique
  3 Advantages and limitations

(iii) Band of investment with financial (debt/equity) split
(simple band of investment technique)
A Concepts
  1 Weighted average (including mathematics)
  2 Variant on Income/Rate = Value (IRV)
  3 Other
B Application
1 Methods of extracting equity capitalization rate \( (Re) \) from sales
2 Other inputs
3 Mathematical application of the technique
4 When to use this technique
5 Advantages and limitations

(iv) Other band of investment techniques
A Physical components such as land and building split
B Legal components split

(v) Loan to value ratio technique (underwriter’s technique)
A Concepts
B Application
1 Derivation and calculation of inputs
2 Mathematical application of the technique
3 When to use this technique
4 Advantages and limitations

(vi) Mortgage-equity technique
A Concepts
1 Technique can be used to calculate overall yield \( (Yo) \) or overall capitalization rate \( (Ro) \)
2 Band of investment (weighted average) concept
3 Incorporation of mortgage terms and amortization
4 Forecast and incorporation of property value change over the holding period
5 Holding period concept and how to pick a holding period
6 Equity yield rate concept and how to pick an equity yield rate
7 Incorporation of income change patterns over the holding period
8 Other concepts

B Application
1 Derivation and calculation of inputs
2 Mathematical application of the technique
3 Mathematical incorporation of forecast income changes
4 When to use this technique and its various options
5 Advantages and limitations

(c) Residual techniques
(i) Equity residual

A Concepts
1 How property value change is forecast and incorporated
2 Use of algebra to solve for property value
3 Mortgage is valued using debt service coverage ratio
4 Other

B Application
1 Derivation and calculation of inputs
2 Mathematical application of the technique
3 When to use this technique
4 Advantages and limitations

(ii) Building Residual

A Concepts
1 Land value is known or can be found
2 Use of IRV (I/R=V)
3 All rates of return must account for capital value change over the holding period
4 How assumptions about equity yield rate over a projected holding period, debt financing, and land or building value change can be incorporated by building up Ro

5 Other

B Application

1 Derivation and calculation of inputs
2 Mathematical application of the technique
3 When to use this technique
4 Special applicability when the building is near the end of its economic life
5 Advantages and limitations

(iii) Land residual

A Concepts

1 Building value is known or can be found
2 Use of IRV (I/R=V)
3 All rates of return must account for capital value change over the holding period
4 How assumptions about equity yield rate over a projected holding period, debt financing, and land or building value change can be incorporated by building up Ro
5 Other

B Application

1 Derivation and calculation of inputs
2 Mathematical application of the technique
3 When to use this technique
4 Advantages and limitations

(iv) Property residual

A Concepts

1 Similarity to discounted cash flow
2 Other
B Application
1 Derivation and calculation of inputs
2 Mathematical application of the technique
3 When to use this technique
4 Advantages and limitations

(iv) Mortgage residual
A Concepts
1 Equity is known or can be found
2 Use of IRV (I/R=V)
3 Other
B Application
1 Derivation and calculation of inputs
2 Mathematical application of the technique
3 When to use this technique
4 Advantages and limitations

(d) Discounted cash flow techniques
(l) Concepts
A Calculates present worth of all projected net income cash flows to an investor over a projected holding period using present worth factors
B Types
1 Property discounted cash flow discounts yearly NOI and property reversion at Yo rate
2 Equity discounted cash flow discounts yearly income to the equity position (NOI less annual debt service) and equity reversion at Ye rate
C Discounted cash flow can be modified and incorporated into residual techniques
D Discounted cash flow can be applied to value partial interests
E Income projection concepts
1 Forecast income, vacancy, and expense changes and construct spreadsheet showing income and expense flows for each year of the holding period
2 Lease renewals can be individually taken into account
3 Decision on how to handle vacancy and lease omissions in calculating income
4 Decision on how to handle tenant improvements and concessions

F Reversion concepts
1 Decision on whether to calculate reversion as a function of income at the end of the holding period or by some other technique
2 Relationship between going in capitalization rates and terminal capitalization rates
3 Treatment of selling costs in calculating reversion

G Decision on whether to discount all flows with an internal rate of return or use a modified rate (reinvestment rate, etc.)

H Hoskold variation

I Other

(ii) Application
A Derivation and calculation of inputs
B Mathematical application of the technique
C When to use this technique
D Advantages and limitations

(e) The general model
(i) Concepts
A Relationship between the general model and discounted cash flow
B Other

(ii) Application
A Derivation and calculation of inputs
B Mathematical application of the technique
C When to use this technique
D Advantages and limitations

viii Reconciliation of methods used for converting income to value when more than one technique is used.
(a) Reliability of income and expense information
(b) Degree of market data support
(c) Accuracy of rate selections
(d) All other relevant factors

ix Consider how to handle immediate capital expense items

6 Reconciliation and final value estimate
a Review and assigning weight of validity and reliability of each approach
i Quantity, quality, appropriateness and accuracy of data for each approach utilized:
   (a) Limitations
   (b) Advantages
ii Magnitude of adjustments and judgment
iii Sources and verification of data
iv Logical application and analysis
v Sensitivity analysis

b Criteria for selecting the appropriate approach(es) for final value estimate
i Relationship of value definition to final value estimate
ii Reasonableness of final value
iii Dates of value affecting analysis
iv Type of value
   (a) Fee simple
   (b) Leased fee
   (c) Leasehold
   (d) Partial interest
Real Property Appraisal Body of Knowledge

(e) Other

v Restrictions
(a) Financing
(b) Covenants
(c) Other agreements
(d) Timing
(e) Subject to future expenditures
   (i) Special assessments
   (ii) Toxic removals or other environmental restrictions
   (iii) Deferred maintenance
   (iv) Loss of NOI during absorption period
   (v) Future tenant improvement allowances
   (vi) Other buyer assumed obligations
(f) Licensing/business interest
(g) Uniform Commercial Code (UCC)
(h) Furniture, fixtures & equipment
(i) Other restrictions and assumptions

c Statement of final value conclusion
   i Exercise of judgment, logic and experience
   ii Distribution of final conclusion of value

(a) Legal
   (i) Leased fee/leasehold interests
   (ii) Life estate/remainderman
   (iii) Fractional ownership interests

(b) Physical allocation

7 Communicating the appraisal report

a Appraiser’s obligations
   i Comply with USPAP
   ii Comply with Supplemental Standards to which the appraiser has agreed

(a) State licensing requirements

(b) Professional organization requirements
Real Property Appraisal Body of Knowledge

(c) Client requirements
(d) Other

iii Utilize appropriate methods/techniques
iii Report must not be misleading
iv Competency
v Disclose extraordinary assumptions and limiting conditions

b Types of written appraisal reports
i Self Contained
ii Summary
iii Restricted

c Methods of communication
i Oral reports
   (a) Compliance with USPAP
       (i) Written records in file
       (ii) Other
   (b) Presentation skills
       (i) Speaking skills
       (ii) Interpersonal skills
       (iii) Multimedia skills

ii Written reports
   (a) Forms
       (i) Single family residential [Uniform Residential Appraisal Report (URAR), Condo/PUD, Cooperative, Employee Relocation Council form (ERC), other]
       (ii) Multi-family residential (2 to 4 Family, other)
       (iii) Land [Uniform Appraisal Review Report (UARR)]
       (iv) Uniform Agricultural Appraisal Report (UAAR)
       (v) Commercial/Industrial [Uniform Commercial and Industrial Appraisal Report (UCIAR)]
       (vi) Other
   (b) Narrative
       (i) Report writing
(ii) Professional business communication

Electronic reports
(a) Transmission
(b) Security (signature)
(c) Authentication
(d) Retention

Contents of report
(i) USPAP minimum requirements for report type
(ii) Supplemental Standards requirements for report type
(iii) Additional support and explanation
(a) Within the body of the report
(b) Addenda - Information

IV BRANCHES

A Introduction to Branches section

The branches represent specific or specialized areas of knowledge that may be used by appraisers. The branches are for knowledge that may be used for appraising specific types of real property or for specialized areas of appraisal. Within each branch are twigs which represent subspecialties.

B Types of Property

1 Residential
   a Forms of occupancy
      i Owner occupied
      ii Single tenant
      iii Multi-tenant
   b Types of residential properties
      i Single family
      ii Small residential income properties (1-4 units)
      iii Condominiums
      iv Cooperatives
      v Timeshare
      vi Planned Unit Development (PUD)
Real Property Appraisal Body of Knowledge

vii Mobile homes
viii Modular/prefabricated homes
ix Farmettes/ranchettes
x Earth shelters
xi Historic
xii Other
c Property rights appraised and legal issues
i Fee simple
ii Leasehold
iii Control issues of a PUD
   (a) Common elements
   (b) Recreation facilities
   (c) Number of units for sale
   (d) Developer control
iv Cooperative
v Rent control
d Financial and income characteristics
i Ground rents and land leases
ii Home owner association fees
iii Condominium fees
iv Gross monthly rent
v Loan charges
vi Concessions
vii Cash equivalency
viii Special assessments
ix Real estate taxes
x Operating expenses
e Neighborhood
i Urban, suburban, rural
ii Percent built-up
iii Growth rate
iv Property value trends
v Demand/supply trends
vi Marketing and exposure time
vii Predominant occupancy
viii Price and range of single family homes/condominium units
   (a) Range
   (b) Predominant
ix Land use
   (a) Current land use
   (b) Anticipated changes in land use
   (c) Potential for new units
x Marketability of properties in the neighborhood
xi Number phases
xii Number of units
xiii Number sold
xiv Number of units for sale
   (a) Subject’s phase
   (b) Subject’s project
xv Units in subject/project phase
   (a) Total
   (b) Completed
   (c) Sold
   (d) Rented
xvi Proximity of amenities
   (a) Employment
   (b) Shopping
   (c) Public transportation
   (d) Schools
   (e) Freeway access
   (f) Parks
   (g) Other
xvii Employment opportunities and stability
xviii Recreational facilities
Site

Utilities

(a) Private
(b) Public

Types of utility systems

(a) Electricity
(b) Gas
(c) Water
(d) Sanitary sewer
(e) Storm Sewer

Zoning classification and requirements

(a) Conforming and non-conforming uses
(b) Ingress/egress

Off-site improvements

Private
Public

Types of off-street improvements

Street
Curb/gutter
Sidewalk
Street lights
Alley
Marketing and exposure time
Predominant occupancy
Price and range of single family homes/condominium units

Site characteristics
Topography
Real Property Appraisal Body of Knowledge

ii Site size
iii Shape
iv Drainage
v View
vi Landscaping
vii Driveway surface
viii Easements
ix Federal Emergency Management Agency (FEMA) special flood hazard area
j Improvements
i General
ii Number of units
iii Number of stories
iv Type
   (a) Single-family (attached/detached)
   (b) Small residential income property
      (i) Single family unit
      (ii) Two-four family unit
   (c) Condominium/cooperative
      (i) Elevator building
      (ii) Row/town house
      (iii) Walk-up
      (iv) High-rise
      (v) Mid-rise
      (vi) Converted
v Design (style/architecture)
vi Actual age
vii Effective age
viii Remaining and total economic life
ix Exterior
   (a) Foundation
   (b) Exterior walls
(c) Roof surface
(d) Gutters and downspouts
(e) Types of windows and doors
(f) Types of storm equipment

x Foundation
(a) Slab
(b) Crawl spaces

xi Basements
(a) Type (full/partial)
(b) Size
(c) Percent finished
(d) Ceilings
(e) Walls
(f) Floor finishes
(g) Outside entry

xii Insulation
(a) Type
(b) Resistance factor (R) rating
(c) Location (roof, ceiling, etc.)

xiii Room count

xiv Building area
(a) Gross living area
(b) Unit livable area
(c) Gross building area

xv Materials and finishes of key components
(a) Floors
(b) Walls
(c) Trim/finish
(d) Bath floor
(e) Bath wainscot
(f) Doors
(g) Cabinets and countertops
Real Property Appraisal Body of Knowledge

(h) Other

xvi Types of heat and cooling

xvii Heating fuels

xviii Kitchen equipment

xix Attics
  (a) Finished
  (b) Unfinished

xx Amenities
  (a) Fireplace
  (b) Woodstoves
  (c) Patio
  (d) Deck
  (e) Porch
  (f) Fence
  (g) Pool
  (h) Other

xxi Car storage
  (a) Garage types
  (b) Carport
  (c) Driveway
  (d) Type of parking
  (e) Total parking
  (f) Parking ratio
  (g) Guest parking

xxii Energy efficient items
  (a) Double/triple/low energy (E) glazed windows
  (b) Caulking/weather-stripping
  (c) Solar heat
  (d) Solar hot water
  (e) Solar design
  (f) Solar space
  (g) Geo-thermal heating and cooling
(h) Flue dampers
(i) Electric ignition
(j) Automatic setback thermostats
(k) Thermal jackets and wraps
(l) Other energy efficient items

k Depreciation
i Physical
ii Functional
iii External

l Adverse conditions
i Hazardous substances
ii Toxic substances
iii Other

m Approaches to value
i Sales comparison
   (a) Application of appropriate analytical technique
   (b) Common units of comparison
ii Cost approach
iii Income approach
   (a) Lease considerations
   (b) Income/expense estimates
   (c) Capitalization

n Application of appropriate technique

o Reconciliation and final value estimate

p Conditions of the appraisal
i As is
ii Subject to repairs, alterations, inspections or conditions
iii Subject to completion per plans and specifications

q Appraisal guidelines and underwriting requirements
i Federal National Mortgage Agency (Fannie Mae)
ii Federal Home Loan Mortgage Corporation (Freddie Mac)
iii Employee Relocation Council (ERC)
iv Department of Housing and Urban Development (HUD)/ Department of Veterans’ Affairs (VA)

v Other

2 Commercial

a Forms of Occupancy

i Owner occupied

ii Single tenant

iii Multi-tenant

b Types of commercial properties

i Office buildings

(a) General purpose

(b) Corporate headquarters

(c) Medical office buildings

ii Retail

(a) Shopping centers

(i) Super regional centers

(ii) Regional centers

(iii) Community centers

(iv) Neighborhood centers

(v) Strip centers

(vi) Power centers

(vii) Specialty centers

(b) Free standing stores

(c) Department stores

(d) Restaurants

(e) Banks

(f) Service stores

(g) Theaters

(h) Supermarkets

iii Mixed use

c Building description/functional utility

i Column spacing
Real Property Appraisal Body of Knowledge

ii  Bay depth
iii  Floor load
iv  Ceiling heights
v  Module width
vi  Elevator facilities
vii  Heating, ventilation and air conditioning (HVAC) adequacy
viii  Lighting and electrical adequacy
ix  Energy efficiency
x  Onsite/offsite utilities
xi  Public amenities
xii  Parking ratio
xiii  Security
xiv  Safety
   (a)  Fire protection
   (b)  Air quality
   (c)  Structural
   (d)  Miscellaneous equipment
xv  Systems compatibility
xvi  Floor area ratio (floor space per employee)
xvii  Signage
xviii  Handicap compliance [Americans with Disabilities Act (ADA)]
xix  Traffic flow (interior and exterior)
xx  Floor plan
xxi  Loading facilities
d  Legal considerations
   i  Zoning
   ii  Building codes
   iii  Environmental laws/regulations
e  Typical building measurements (square foot)
   i  Gross building area
   ii  Net rentable area
   iii  Usable area
iv  Gross leasable area

f  Approaches to value

i  Sales comparison

(a)  Application of appropriate analytical technique

(b)  Common units of comparison

   (i)  Area

   (ii) Number of seats

   (iii) Efficiency ratio

   (iv) Front feet

   (v)  Depth

ii  Cost approach

iii  Income

(a)  Lease considerations

   (i)  Length

   (ii) Terms

   (iii) Restrictions on use

   (iv) Lease types

   A  Flat rental

   B  Graduated rental

   C  Revaluation

   D  Indexes

   E  Percentage

(vi)  Special provisions in leases

   A  Concessions

   B  Division of expenses/common area maintenance (CAM)

   C  Renewal options

   D  Escalation clauses

   E  Purchase options

   F  Escape clauses

   G  Continued occupancy clauses

   H  Tenant improvement allowances
Real Property Appraisal Body of Knowledge

I Restrictions on lease
   (vii) Signage and other
   (b) Income/expense estimate
   (c) NOI estimate
   (d) Selection of capitalization (direct/yield) rate
   (e) Application of appropriate technique

   iv Reconciliation of approaches to value
   g Reconciliation and report of final value estimate

3 Industrial
   a Forms of occupancy
      i Owner occupied
      ii Single tenant
      iii Multi-tenants
   b Sites
      i Location
         (a) Centrally located
         (b) Suburban sites and acreage
         (c) Organized districts or industrial parks
         (d) Redeveloped land
      ii Utility
         (a) Area, shape, topography, soils
         (b) Transportation (rail, highway, air, water, public)
         (c) Zoning
         (d) Utilities (electricity, telephone, water, gas, sewer)
         (e) Protection (fire, police)
         (f) Distance from central business district
         (g) Distance from airport
         (h) Proximity to raw materials, supplies, and services
         (i) Proximity to labor
      iii Environmental aspects
   c Types of industrial properties
      i General-purpose buildings
Real Property Appraisal Body of Knowledge

ii Special-purpose buildings
iii Single-purpose buildings
iv Heavy industrial (plant) buildings
v Loft buildings
d Functional utility
i Type of construction (Class A, B, C, D, S)
ii Number of stories
iii Clear span/column spacing
iv Ceiling height
v Floor loads
vi Elevators, lifts, and conveyors
vii Heating ventilation and air conditioning (HVAC) adequacy
viii Lighting and electrical adequacy
ix Energy efficiency
x Onsite/offsite utilities
xi Parking ratio
xii Security
xiii Safety
(a) Fire protection
(b) Air quality
(c) Structural
(d) Miscellaneous equipment
xiv Floor area ratio (Floor space per employee)
 xv Loading docks/wells
xvi Off-street truck maneuvering/parking
xvii Open storage (yard area)
xviii Office and mezzanine area
xix Fencing
xx Environmental aspects
xxi Systems compatibility
xxii Signage
xxiv Handicap compliance (ADA)
Traffic flow (interior and exterior)

Floor plan

Special features

Legal considerations

Zoning

Building codes

Environmental laws/regulations

Approaches to value

Sales comparison

Application of appropriate analytical technique

Common units of comparison

Price per square foot or cubic foot of building volume

Price per square foot of rentable area

Price per door or loading dock

Gross income multiplier

Cost approach

Income

Lease considerations

Length

Terms

Restrictions on use

Income/expense estimate

NOI estimate

Selection of capitalization (direct/yield) rate

Application of appropriate technique

Reconciliation of approaches to value

Reconciliation and report of final value estimate

Financial considerations

Lease types

Flat rental

Graduated rental

Revaluation
(d) Indexes

   ii Special provisions in leases

(a) Concessions

(b) Division of expenses/CAM

(c) Renewal options

(d) Escalation clauses

(e) Purchase options

(f) Escape clauses

(g) Continued occupancy clauses

(h) Tenant improvement allowances

(i) Restrictions on lease

iii Signage and other

4 Agricultural/rural

a Types of ownership

   i Corporation

   ii Individual

   iii Partnerships

   iv Other

b Types of agricultural properties

   i Farms

      (a) Dry land

      (b) Irrigated

      (c) Dairy

      (d) Fish/aquaculture

      (e) Permanent planting - orchard, vineyard, or bog

      (f) Game

      (g) Horse (breeding/training)

      (h) Specialty farms

   ii Ranches

   iii Ranchettes/farmettes/hobby farms/rural residential

   iv Recreational

   v Timber land
vi Minerals (oil, gas, hard minerals)
   (a) Non-producing
   (b) Producing
   (c) Royalty interest (producing, non-producing)

vii Special agricultural properties
   (a) Confinement feeding facilities
   (b) Grain elevator and storage facilities
   (c) Processing facilities
   (d) Other

c Property description/functional utility

i Land use
   (a) Soil types
   (b) Utilization rates
      (i) Grazing
      (ii) Soil productivity
      (iii) Carrying capacity
      (iv) Other
   (c) Crop/ production base information
      (i) Actual crop yield
      (ii) Farm Services Agency (FSA) crop yield
      (iii) Productivity indexes
         A Corn suitability index
         B Crop equivalency rating
         C Other
   (d) Land quality
      (i) Good, fair, marginal, pasture
      (ii) Farm Services Agency (FSA) soil land use capability rating classes I-VIII
      (iii) Assessing and taxing agency categories
         A Grades A, B, C cropland
         B Pasture
         C Woodland
D Other - building sites, orchards, etc.

ii Physical features
   (a) Terrain/topography
   (b) Drainage

iii Location, access and markets

iv Natural vegetation

v Water (quality and quantity)
   (a) Source
      (i) Windmill, electric system
      (ii) Well water
      (iii) Surface water
         A Surface tank
         B Creeks
         C River
         D Other
      (iv) Rural water systems
   (b) Irrigation water
   (c) Water rights

vi Utilities
   (a) Type
   (b) Availability

vii Climatic conditions
   (a) Annual rainfall
   (b) Temperature
   (c) Growing season
   (d) Climatic hazards

viii Improvements
   (a) Houses
   (b) Barns/outbuildings
   (c) Fences, corrals, etc.
   (d) Water systems, etc.
   (e) Roads, drainage, etc.
d Legal considerations

i Zoning

ii Building codes

iii Environmental laws/regulations

(a) Water

(b) Air

(c) Oil and gas production

(d) Minerals

(e) Governmental regulatory agencies

(f) Endangered species

(g) Wetlands

iv Grazing permits

v Taxes and assessment, agricultural value, market value

vi Extraterritorial jurisdiction

vii Right to farm

e Approaches to value

i Sales comparison

(a) Application of appropriate analytical technique

(b) Common units of comparison

(i) Price per acre

(ii) Animal units

(iii) Yield per acre

(iv) Other

(c) Comparable(s) sales price allocation

ii Cost approach

iii Income

(a) Applicability of income capitalization

(i) Degree to which the market perceives income capitalization to reflect market value

(ii) Likelihood of the typical purchaser being an investor seeking rental income

(b) Lease considerations
Real Property Appraisal Body of Knowledge

(i) Length
(ii) Term
(iii) Participations

(c) Income/expense estimate
(i) Productivity based income
(ii) Lease based income

(d) Selection of capitalization (direct/yield) rate

(e) Application of appropriate technique

(iv) Reconciliation of approaches of value

(f) Reconciliation and report of final value estimate

5 Special Purpose

(a) Purpose and function of the appraisal
   i Discussion of appraisal assignment with the client
   ii Compliance with USPAP Competency Provision

(b) Data gathering special considerations
   i Gather industry data
   ii Contribution of real estate to the enterprise

   (a) Location
   (b) Site
   (c) Improvements
      (i) Special features
      (ii) Deficiencies

   iii Need for outside experts

(iv) Comparable sales special considerations
   (i) Define range of comparability and bracket subject
   (ii) Special sources of data

   A Owners/users of the property type (including owner
       of subject property)
   B Trade/professional associations
   C Government agencies
   D Suppliers
   E Real estate specialists
Real Property Appraisal Body of Knowledge

F Others

c Highest and best use special considerations
  i analysis of whether there are enough buyers to constitute a “market”
  ii analysis of the real estate without the business
  iii analysis of the regulatory environment
  iv analysis of subject industry trends
  v alternative uses

d Approaches to value special considerations
  i Sales comparison
    (a) Application of appropriate analytical techniques
    (b) Common units of comparison
    (c) Comparable(s) sales price allocation
  ii Cost approach
    (a) Choice of using replacement cost or reproduction cost new
    (b) Analysis of limitations of appraiser to accurately determine cost
      (i) Cost manual limitations
      (ii) Appraiser’s construction and cost estimating limitations
    (c) Decision of whether to bring in cost expert
    (d) Decision of how to handle developer’s profit
    (e) Depreciation
      (i) Analysis of how to best use age/life or other method for estimating physical depreciation
      (ii) Analysis of sources and presence of functional obsolescence
      (iii) Analysis of sources and presence of external obsolescence
    (f) Degree to which the market perceives cost to reflect market value
  iii Income
    (a) Applicability of income capitalization
      (i) Degree to which the market perceives income capitalization to reflect market value
(ii) Likelihood of the typical purchaser being an investor seeking rental income

(b) Interest appraised

(c) Difficulty of obtaining market rentals

(d) Difficulty of extracting overall capitalization rates and other rates from sales

(e) Desirability of a business income analysis

(f) Lease considerations
   (i) Length
   (ii) Terms
   (iii) Restrictions on use
   (iv) Lease types
      A Flat rental
      B Graduated rental
      C Revaluation
      D Indexes
      E Percentage

(vi) Special provisions in leases
   A Concessions
   B Division of expenses/CAM
   C Renewal options
   D Escalation clauses
   E Purchase options
   F Escape clauses
   G Continued occupancy clauses
   H Tenant improvement allowances
   I Restrictions on lease
   J Signage
   K Other

(g) Lease types

(h) Special provisions

Reconciliation special considerations
Real Property Appraisal Body of Knowledge

i Analysis of typical market participant thinking

ii Analysis of which approach(es) best infer typical market participants behavior

iii Tests of reasonability

iv Allocation of value to real estate, fixtures, personal property and business components

f Communicating the appraisal special considerations

i Overall level of detail

ii USPAP compliance

g Types of special purpose assignments

i Agricultural, rural or mining oriented

ii Easements

iii Entertainment and recreational oriented

iv Funeral industry

v Harbor or port facility

vi Historic property

vii Hospitality oriented

viii Industrial or warehouse special purpose

ix Institutional

x Landfill

xi Laundromat

xii Lumber yard

xiii Medical or care giving

xiv Petroleum production

xv Polluted property

xvi Post office

xvii Residential oriented

xviii Transportation oriented

xix Utility

xx Other

C Review

1 Purpose of review
2 Client report

3 Types of review
   a Field v. desk
   b Technical v. administrative
   c Peer review for compliance/enforcement

4 Review process
   a USPAP minimal requirements for report type
   b Supplemental Standards requirements for report type
   c Additional support and explanation

5 Report types
   a Separate report or letter
   b Form or checklist
   c Stamped impression on the appraisal report to distinguish review function from appraisal function

6 USPAP compliance
   a As reviewers
   b When the reviewer becomes the appraiser

D Valuation of partial interests

1 Interests created by a lease
   a Leased fee
   b Leasehold
   c Subleasehold
   d Renewal options
   e Tenant improvements
   f Concessions

2 Lease provisions
   a Overage rent
   b Expense stops
   c Net leases
   d Minimum rent
   e Percentage rent
   f CPI adjustments
g  Excess rent

3  Valuation considerations
   a  Identifying the cash flows to the different interests, including turnover ratios
   b  Discount rate selection for different interests
   c  Relationship between the values of the interests

4  Partial and fractional interests
   a  Life estates
   b  Undivided interest in commonly held property
   c  Easements
   d  Timeshares
   e  Cooperatives
   f  Subsurface/air rights
   g  Licenses
   h  Other

E  Appraisal management/operational practices

1  Form of ownership
   a  Sole proprietorship
   b  Partnership
   c  Corporation
   d  Special forms
      i  Limited liability corporation
      ii Limited liability partnership
      iii Other special forms

2  Office and business organization
   a  Work flow analysis
   b  Information systems
   c  Policies and procedures
   d  Equipment needs
   e  Office facility needs

3  Financial
   a  Accounting and payroll
Real Property Appraisal Body of Knowledge

i Documentation and accounts

ii Financial statements

iii Balance sheet

b Budgeting

c Cash flow management

d Capital and operating income requirements

4 Risk management

a Professional liability

b Business lines

c Other

5 Professional business skills

a Marketing

i Strategy

ii Target market(s)

(a) Geographic area

(b) Property type

(c) Client type

iii Levels of competitiveness/services

iv Pricing

v Promotion

b Human resources

i Independent contractor/employee

ii Compensation

iii Work scheduling

iv Special contracts (non-compete agreements)

v Technology issues

vi Professional advancement

vii Training and teambuilding

viii Benefits

ix Special Issues - Americans with Disabilities Act (ADA), Equal Employment Opportunity Commission (EEOC), Occupational Health and Safety Administration (OHSA), Internal Revenue Service (IRS)
Real Property Appraisal Body of Knowledge

x Minimum job skills
xi Supervision
xii Job safety

c Planning and organization
i Strategic planning
ii Mission and vision
iii Focus
iv Strengths, weaknesses, opportunities, threats
v Structure
d Products
i Types
(a) Appraisal reports
(b) Review reports
(c) Consulting reports
(d) Other types of reports
(e) USPAP implications

ii Client orientation
(a) Client objectives
(b) Client procedures

iii Project control and scheduling
(a) Task analysis
(b) Personnel requirements
(c) Material and data requirements
(d) Time requirements
(e) Supervision requirements
(f) Project cost estimate and pricing
(g) Project performance and delivery
(h) Quality control
e Engagement contracts and terms

F Regulatory
1 Levels
a Federal
Real Property Appraisal Body of Knowledge

b State

c Local

d Private

2 Types

a Financial institutions
   i Safety and soundness laws and regulations
   ii Compliance laws and regulations

b Eminent domain
   i Uniform Relocation Act
   ii State law

c State appraiser licensing and certification

d Appraisal Subcommittee of Federal Financial Institutions Examinations Council (FFIEC)

e The Appraisal Foundation
   i Objectives
   ii Organization
      (a) Appraiser Qualifications Board
      (b) Appraisal Standards Board

f Other

G Quantitative techniques

1 Basic mathematics

a Area calculations

b Algebra

c Mathematics of finance
   i Compound interest concepts
      (a) Future value of $1
      (b) Present value of $1
      (c) Future value of an annuity of $1 per period
      (d) Present value of an annuity of $1 per period
      (e) Sinking fund factor
      (f) Installment to amortize $1 (loan constant)
   ii Compounding v. discounting
2 Statistics
   a Sampling techniques
      i Random
      ii Stratified
      iii Sample size
   b Graphical presentation
   c Central tendency
      i Mean
      ii Median
      iii Mode
   d Dispersion
      i Range
      ii Standard deviation
      iii Variance
      iv Coefficient of variation
   e Confidence levels
      i T-tests
      ii Z-tests
      iii Normal distribution
   f Regression
      i Types
      ii Assumptions
      iii USPAP implications
      iv Terms
         (a) Correlation
         (b) Covariance
         (c) Coefficient of determination
      v Applications
         (a) Automated Valuation Models (AVMs)
         (b) Mass appraisal

3 Probability

4 Index numbers and series
H Technology

1 Office technology
   a Office systems
   b Application programs
      i Lease analysis packages
      ii Form processors
   c Internet technology
      i Appraisal applications
      ii Office applications
      iii Data applications
      iv Modeling applications
         (a) AVMs
         (b) Other

2 Network technology
   a File servers
   b Software
   c Connectivity

I Accounting basics

1 Double entry bookkeeping basics
2 Cost accounting concepts
3 Accounting documents
4 Asset management accounting and book depreciation
5 Balance sheet
6 Profit and loss statement
7 Property management accounting basics
   a Rent rolls
   b Repair and maintenance records
   c Expense accounts
8 Project development accounting basics
   a Project control records
   b Construction funding draw records
9 Farm records systems
Communications

1 Language skills
   a Composition
   b Grammar
   c Spelling
   d Punctuation

2 Written
   a Report writing
   b Business communication

3 Oral
   a Presentation skills
      i Speaking skills
      ii Expert witness
         (a) Objectives
         (b) Organization
            (i) Materials
            (ii) Presentation
         (c) Style of presentation
         (d) Graphics and exhibits
         (e) Answering questions
   b Interpersonal skills
      i Interview
      ii Other

4 Multimedia skills

Engineering basics

1 Engineering drawings and specifications
   a Layout sheets
   b Profiles
   c Cross sections
   d Plan scales (engineer scale use)
   e Drawing symbols
   f Centerline stationing
Real Property Appraisal Body of Knowledge

g  Curve data

h  Bench marks, elevations and contours

2  Surveying and legal descriptions basics
   a  Surveying equipment and application
   b  Topographic maps and symbols
   c  Cadastral surveying basics
      i  Reference points and coordinate systems
      ii  Triangulation methods
      iii  Surveying calls and distances
      iv  Area calculation techniques

3  Civil engineering basics
   a  Streets and highways
      i  Traffic engineering
         (a)  Traffic counts
         (b)  Street and highway capacity design
      ii  Right of way delineation
         (a)  Street right of way
         (b)  Slope requirements
         (c)  Detour and temporary construction requirements
      iii  Construction
         (a)  Street grade
         (b)  Earth work balance, cut and fill
         (c)  Paved section
         (d)  Bridge and structure requirements
         (e)  Curbs, sidewalks and medians
         (f)  Drainage layout and structures
         (g)  Driveway approaches
         (h)  Street lighting
         (i)  Traffic lights
         (j)  Signing

L  Architectural basics
   1  Architectural drawings and specifications
Real Property Appraisal Body of Knowledge

a Building plans and schedule sheets
b Drawing symbols
c Plan scales

2 Local architectural styles identification
a Style descriptions
   i Non residential
   ii Residential
b Trends and patterns of style use

3 Architectural design considerations
a Aesthetics
   i Exterior balance with surroundings
      (a) Compatible architecture style
      (b) Size and scale
      (c) Landscaping and yard improvements
      (d) Public art requirements
   ii Harmony of colors, finishes, textures
b Other

V CONCLUSION


Appraiser Qualifications Board

Stephen G. Williams, Chair
Scott R. Williams, Vice-Chair
James W. Klopfenstein
Arlen Mills
Anthony Reynolds