COST APPROACH TO VALUE

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SHENEHON
BUSINESS & REAL ESTATE VALUATIONS

Cost Approach to Value:

The cost approach is based on the understanding that market participants relate value to cost.

Principles and Concepts

- Substitution
- Contribution
- Balance

When to use the Cost Approach?

- Should always be considered
- New or newer construction (includes proposed or renovated)
- Special use properties

Cost Approach Basics:

RCNLDPLV=Value

1) Replacement/Reproduction Cost New
2) Less Depreciation
3) Plus Land Value
4) Equals Value (fee simple)

Step 1:

Estimate the costs of the improvements, including direct, indirect, and profit.

Basis

- Reproduction
- Replacement

Cost Data

- Construction contracts
- Contractors or professional cost estimators
- Historical data (market extraction)
- Cost estimating services

Cost Estimating Methods

- Unit-in-place (segregated)
- Quantity survey
- Cost indexing
- Comparative-unit (calculator)

Examples of Direct Costs and Indirect Costs

Direct Costs

- Building permits
- Materials, products, and equipment
- Labor used in construction
- Equipment used in construction and depreciation of equipment during construction
- Security during construction
- Contractor's shack and temporary fencing
- Material storage facilities and transportation costs
- Power line installation and utility costs
- Contractor's profit and overhead, including job supervision, coordination and management (when appropriate), worker's compensation, and fire, liability, and unemployment insurance
- Performance bonds

Indirect Costs

- Architectural and engineering fees for plans, plan checks, surveys to establish building lines and grades, and environmental studies
- Appraisal, consulting, accounting, and legal fees
- All-risk insurance expense and ad valorem taxes during construction
- The cost of carrying the investment in land and contract payments during construction*
- The cost of carrying the investment in the property after construction is complete but before stabilization is achieved
- Supplemental capital investment in tenant improvements and leasing commissions
- Marketing costs, sales commissions, and any applicable holding costs to achieve stabilized occupancy in a normal market
- Administrative expenses of the developer
- Local government development levies

* If construction financing is required, the points, fees or service charges, and interest on construction loans are indirect costs.

Cost Estimating Methods

Comparative-Unit Method (Calculator Method)

Base cost per sq. ft.	60,000 sq. ft. @		$44.89 per sq. ft.
Add for sprinkler system per sq. ft.		+	$2.10 per sq. ft.
Subtotal			$46.99 per sq. ft.
Adjustment for building height		x	1.086
Subtotal			$51.03 per sq. ft.
Adjustment for area/perimeter		x	0.839
Subtotal			$42.82 per sq. ft.
Current cost multiplier		x	1.03
Subtotal			$44.10 per sq. ft.
Local cost multiplier		x	1.10
Total building cost per sq. ft.			$48.51 per sq. ft.
Total direct costs for building	60,000 sq. ft. @ $48.51 per sq. ft.		$2,910,572
Landscaping/paving costs	55,385 sq. ft. @ $3.50 per sq. ft.		$193,848
Total direct costs for building and site improvements			$3,104,420
Indirect costs not included in cost manual*		x	1.08
Subtotal			$3,352,774
Indirect costs from completion to stabilized occupancy*		x	1.05
Subtotal			$3,520,412
Entrepreneurial incentive at 10% of total direct and indirect costs		x	1.10
Total cost for warehouse building and site improvements			$3,872,454
Land value	115,385 sq. ft. @ $3.25 per sq. ft.	+	$375,001
Total development cost new			$4,247,455

Unit-In-Place Method

			$ per Unit	
Excavation	Building	60,000 sq. ft.	0.42	$25,200
	Site	115,385 sq. ft.	0.34	$39,231
Foundation		940 linear ft.	36.25	$34,075
CMU wall	Base	13,160 sq. ft.	22.80	$300,048*
	2.00%/ft. over 14-ft. base	0.08	–	$24,004†
Floor (concrete)		60,000 sq. ft.	4.01	$240,600
Floor (asphalt tile)		4,400 sq. ft.	2.24	$9,856
Ceiling (acoustical tile)		4,400 sq. ft.	7.40	$32,560
Ceiling (suspended grid)		4,400 sq. ft.	1.47	$6,468
Roof joists and deck		60,000 sq. ft.	12.10	$726,000
Roof cover and insulation		60,000 sq. ft.	3.53	$211,800
Plumbing (three-piece restrooms)				
Fixtures		9 fixtures	3,450	$31,050
Drains		6 units	605	$3,630
Sprinkler system		60,000 sq. ft.	2.16	$129,600
HVAC				
Warehouse		55,600 sq. ft.	1.56	$86,736
Office		4,400 sq. ft.	6.70	$29,480
Electrical and lighting				
Warehouse		55,600 sq. ft.	4.82	$267,992
Office		4,400 sq. ft.	11.10	$48,840
Interior partitions				
Walls		4,400 sq. ft.	3.89	$17,116
Doors		10 doors	103.00	$1,030
Overhead doors	4 10×14-ft. doors	560 sq. ft.	35.71	$19,998
Landscaping and paving		55,385 sq. ft.	$3.50	$193,848
Miscellaneous specified items				$50,000
Subtotal				$2,529,162
Current cost multiplier				x 1.03
Subtotal				$2,605,037
Local cost multiplier				x 1.10
Subtotal				$2,865,541
Architectural and engineering fees at 5% of direct costs				x 1.05
Total direct costs				$3,008,818
Indirect costs not included in cost manual‡				x 1.12
Subtotal				$3,369,876
Indirect costs from completion to stabilized occupancy‡				x 1.05
Subtotal				$3,538,369
Entrepreneurial incentive at 10% of total direct and indirect costs				x 1.10
Total cost of building and site improvements				$3,892,206
Land value		115,385 sq. ft.	$3.25	+ $375,001
Total development cost new				$4,267,207

Warehouse Property–Contractor's Breakdown (Quantity Survey Method)

General conditions of contract			$10,000
Excavating and grading			$75,000
Concrete foundation/footings			$35,000
Concrete floor/slab on grade			$60,000
Carpentry (includes OHD and pedestrian doors)			$250,000
CMU walls			$165,000
Structural steel			$140,000
Joist, deck, and deck insulation			$725,000
Roofing			$200,000
Insulation			$12,250
Sash			$10,000
Glazing			$25,000
Painting			$40,000
Acoustical material			$7,500
Flooring			$10,000
Electric			$300,000
HVAC			$115,000
Piping			$40,000
Plumbing and sprinkler system			$125,000
Landscaping/paving			$195,000
Subtotal			$2,539,750
Contingencies	2.5%		$63,494
Contractor's overhead and profit	8%		$203,180
Total contract costs			$2,806,424
Architectural and engineering fees	5%		$140,321
Total direct costs			$2,946,745
Indirect costs before, during, and after construction*	20%		$589,349
Subtotal			$3,536,094
Entrepreneurial incentive	10%		$353,609
Total cost of building and site improvements			$3,889,703
Land value	115,385	@ $3.25	$375,001
Total development cost new			$4,264,704

Class

- Class A
- Class B
- Class C
- Class D
- Class S

Quality

- Excellent
- Good
- Average
- Low Cost

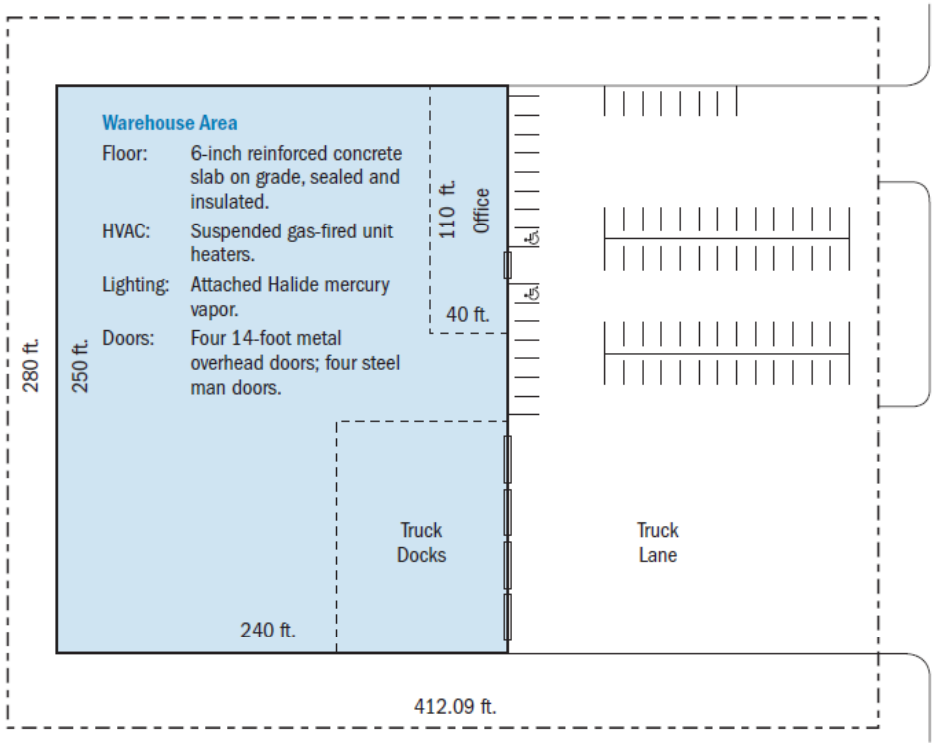
Condition

- Excellent
- Very Good
- Good
- Average
- Fair
- Poor

Plan of a Warehouse

Basic Construction

Building structure: Reinforced concrete spread footings and 12-inch stem wall; 6-inch steel framing w/ 6-inch pipe columns 50-foot o.c.; 8-inch masonry block exterior walls; painted exterior finish.
Roof structure: Steel bar joists w/ insulated metal roof deck with single-ply EPDM 20-year roof covering.
Electrical: OK.
Site improvements: 80% asphalt paving and balance landscaping.



Office Area

Office finish: 300 linear feet painted drywall partitions; suspended acoustical grid w/ recessed fluorescent lighting; two three-fixture ADA restrooms; commercial-grade glue-down carpet floor covering; aluminum storefront w/ insulated glazing; four natural gas heat and electric forced-air rooftop unit HVAC.

Basis	Replacement Cost
Cost Data	Cost estimating services (Marshall Valuation Service)
Cost Estimating Method	Calculator Method
Property Type	Class C, Average Quality Distribution Warehouse

Marshall Valuation Service

Class C, Good Quality Distribution Warehouse	$44.40 per sf
HVAC Adjustment	$0.00 per sf
Sprinkler System (wet)	$2.25 per sf
Building Height Adjustment (18 ft.)	1.086
Perimeter Adjustment	0.839
Current Cost Multiplier	1.030
Local Cost Multiplier	1.100
Site Improvements	$3.50 per sf
Developer's Overhead	5%
Developer's Profit	10%

Replacement Cost Calculator Method Class C, Average Quality Distribution Warehouse Building						
Base Cost	60,000	sf	x	$44.40	psf	$2,664,000
HVAC Adjustment	60,000	sf	x	$0.00	psf	$0
Sprinkler System	60,000	sf	x	$2.25	psf	$135,000
Subtotal						$2,799,000
Adjustments to Base Cost						
Building Height Adjustment	1.086					
Perimeter Adjustment	0.839					
Current Cost Multiplier	1.030					
Local Cost Multiplier	1.100					
Total Adjustments	1.032					
Subtotal Building Improvements Replacement Cost						$2,889,513
Subtotal Site Improvements Replacement Cost	55,385	sf	x	$3.50	psf	$193,848
						$3,083,360
Developer's Overhead	5%					$154,168
Subtotal						$3,237,528
Developer's Profit	10%					$323,753
Total Replacement Cost						$3,561,281
				Rounded		**$3,550,000**

Step 2:

Estimate the depreciation in the improvements and deduct the depreciation from the total cost of the improvements.

Depreciation

- Different from book depreciation
- A loss in property value from any cause
- Difference in cost of improvements and site value compared to market value

Economic Life

- A period over which improvements contribute to property value

Actual (Chronological) Age

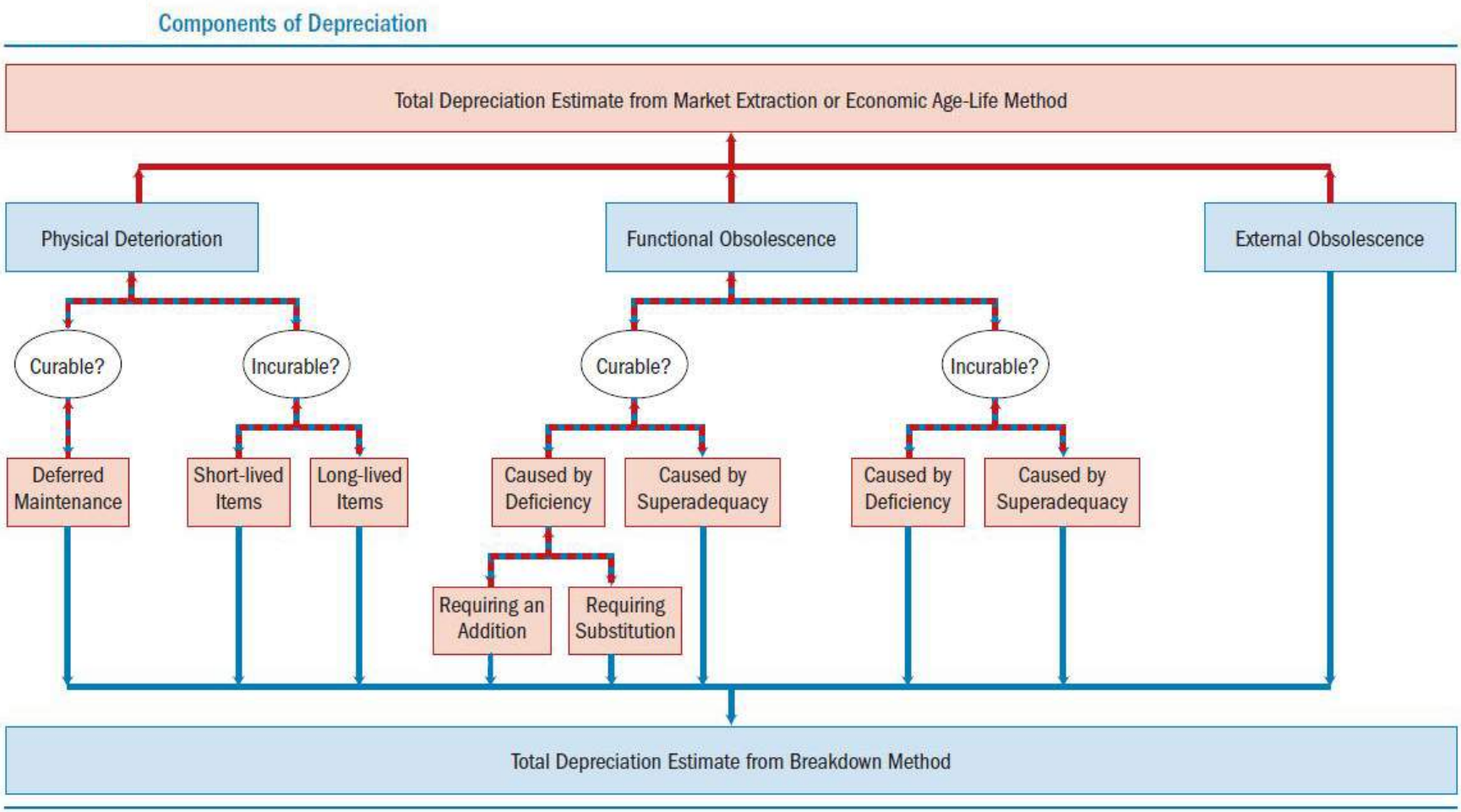
- The number of years that have elapsed since construction

Effective Age

- The age of property that is observed based on the amount of depreciation and obsolescence it has sustained

Curability

- The test of curability is economic rather than physical


Components of Depreciation
Total Depreciation Estimate from Market Extraction or Economic Age-Life Method
Physical Deterioration
Functional Obsolescence
External Obsolescence
Curable?
Incurable?
Curable?
Incurable?
Deferred Maintenance
Short-lived Items
Long-lived Items
Caused by Deficiency
Caused by Superadequacy
Caused by Deficiency
Caused by Superadequacy
Requiring an Addition
Requiring Substitution
Total Depreciation Estimate from Breakdown Method

Depreciation Estimate Methods

- Breakdown Method
- Market Extraction
- Economic Age-Life Method
- Modified Economic Age-Life Method

Causes of Depreciation

- Physical Deterioration
- Functional Obsolescence
- External Obsolescence

Depreciation Analysis of Warehouse Building	
Chronological Age of Improvements	0 years
Effective Age of Improvements	0 years
Economic Life of Improvements	45 years
Physical Condition of Improvements	Excellent
Chronological Age of Equipment	15 years
Effective Age of Equipment	15 years
Economic Life of Equipment	20 years
Deferred Maintenance	None observed nor reported
Functional Utility	Excellent
External Factor	Building is located in a rural area with a soft industrial market
External Factor	Broker's are quoted as seeing buildings selling at a 15%-25% discount to replacement cost
Market Observation	REO Warehouse in the subject's submaket sold at 20% discount to replacement cost

Replacement Cost Less Depreciation		
Total Replacement Cost		$3,550,000
Less: Physical Depreciation	0.00%	$0
Net Depreciated Value of Improvements		$3,550,000
Less: Functional Obsolescence	0.00%	$0
Net Depreciated Value of Improvements		$3,550,000
Less: External Obsolescence	20.00%	($710,000)
Total Depreciated Value of Improvements		$2,840,000
	Rounded	$2,850,000

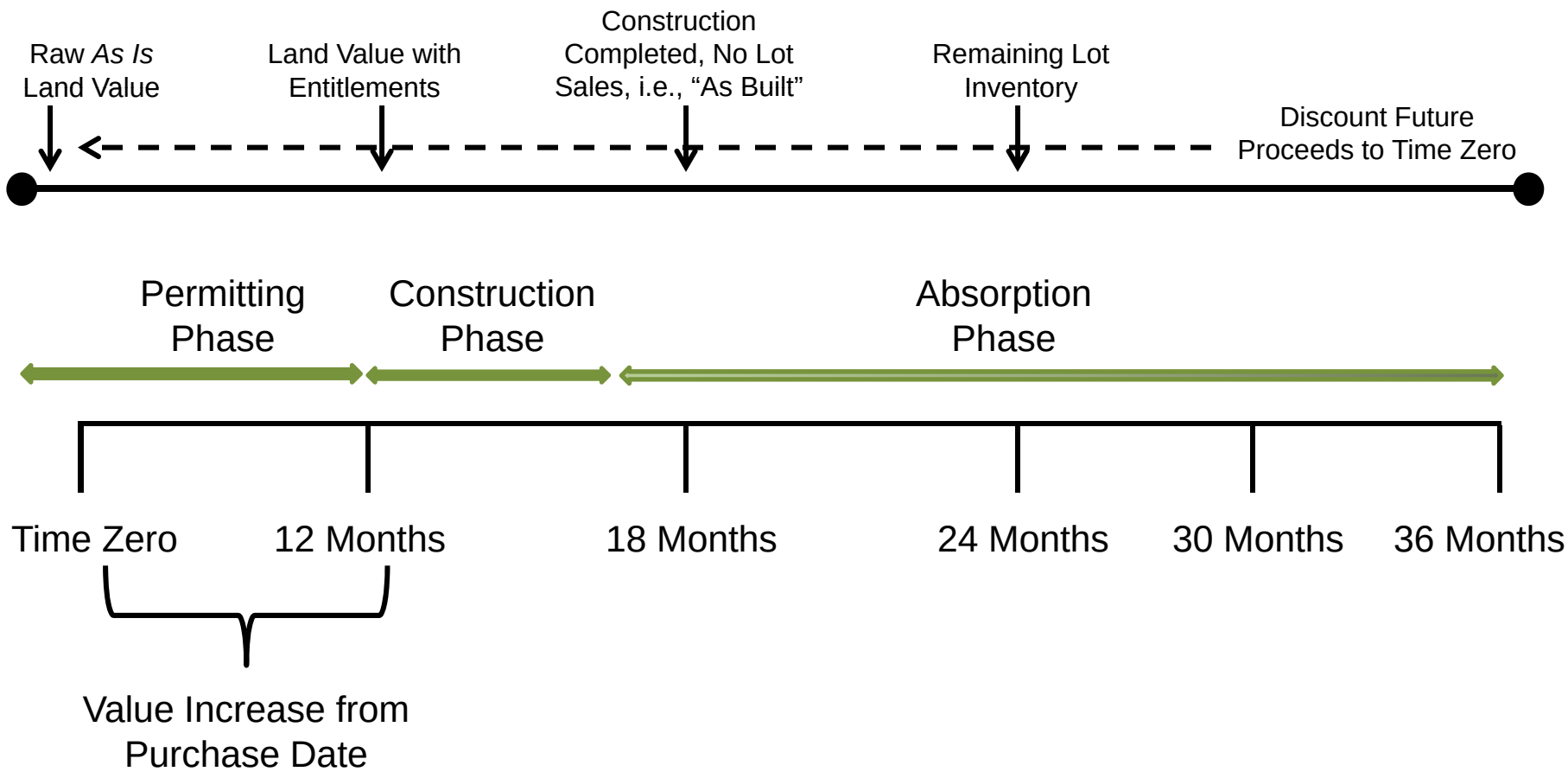
Step 3:

Estimate the value of the site as if it were vacant and available to be developed to its highest and best use.

Six Methods to Land Value

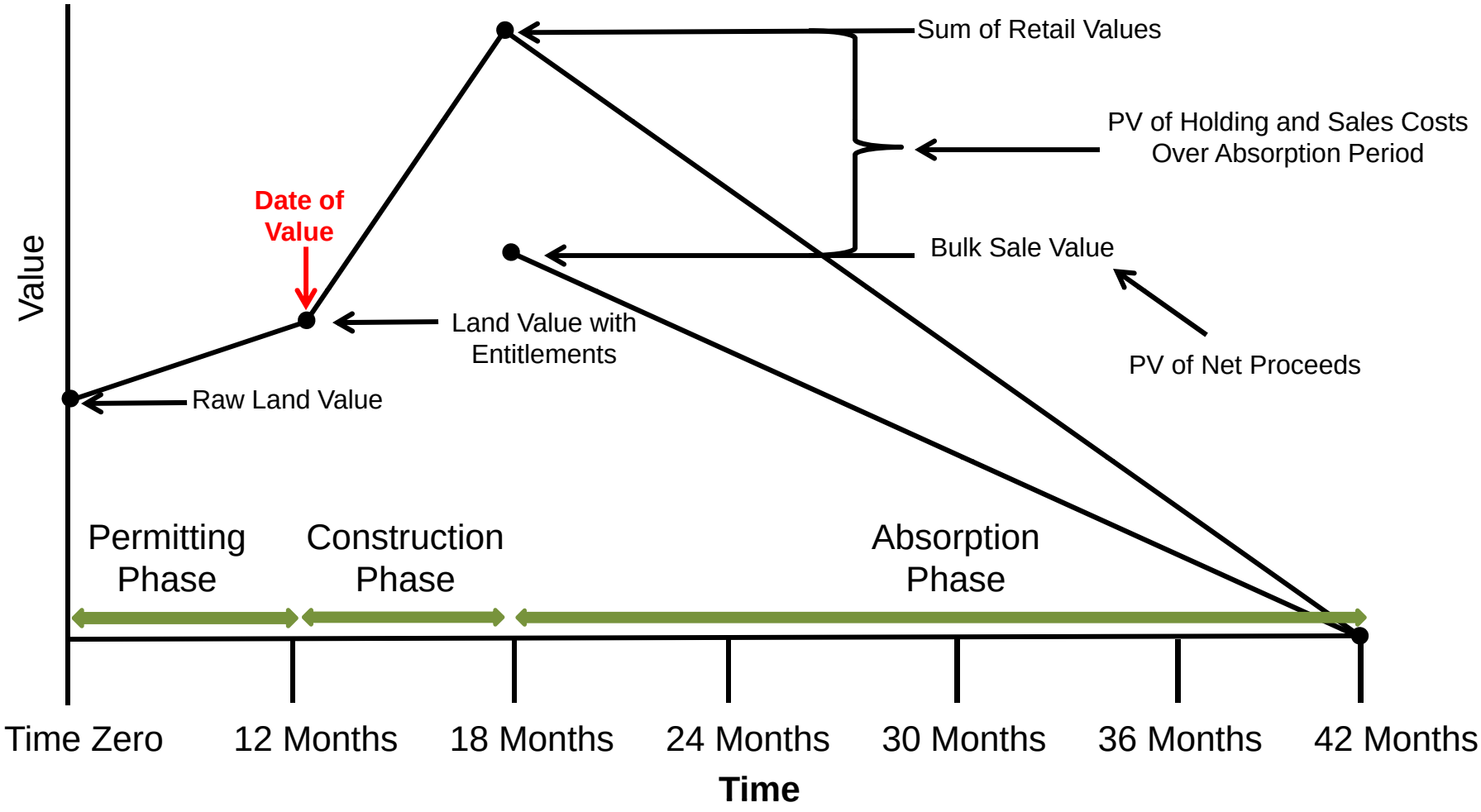
- Sales comparison
- Market extraction
- Allocation
- Land residual
- Ground rent capitalization
- Subdivision development

Land Value by Subdivision Development Analysis



Typical Value Pattern of a Proposed Development Project

Timeline and Value



SUMMARY OF COMPARABLE LAND SALES

Sale	Location	Intended Use	Zoning	Size (SF)	Sale Date	Sale Price PSF
1	xxxx Minnesota Avenue NW	Light-industrial	B-2, Highway Business	65,315	12/28/12	$1.91
2	xxxx Minnesota Avenue NW	Light-industrial	B-2, Highway Business	43,537	09/01/10	$2.18
3	SEC of 263rd Street & Pillsbury Avenue	Light-industrial	I-1	88,862	05/27/10	$0.84
4	866 Rolling View Lane	Light-industrial	C-2, Highway Commercial	79,610	Listing	$1.22
5	SWC of County Road 24 & Highway 52	Light-industrial/other	B-2, General Business District	91,476	Listing	$1.09
Subject Property	2877 520th Street Pine Island, Minnesota	Light-industrial	C-2, Highway Commercial	115,385	04/09/12 valuation date	N/A

Land Sale Summary	
Sale 1	Located along Minnesota Avenue and has an irregular shape parcel of land.
Sale 2	Located along Minnesota Avenue and had rolling topography. Assemblage parcel for buyer.
Sale 3	Located in subject's submarket with nearly identical location. Involved raw land.
Sale 4	Located in South submarket along Rolling View Lane.
Sale 5	Involved raw land.

Market Observations	
Conditions of Sale	Assemblage parcels command a 10% premium based on market evidence
Industrial Land Market	Increasing at a rate of approximately 3.0% annually since 2009. Current listings are selling at a discount of approximately 15% compared to listed asking prices.
Location	Properties along Minnesota Avenue are selling at a premium of approximately 30% compared to the subject's submarket, while properties in South submarket, which includes Rolling View Lane, are selling at a 15% discount compared to the subject's submarket.
Zoning	Properties zoned for I-1, Industrial are selling at a 10% discount compared to properties zoned Commercial or Business
Size	Properties under two acres in size sell at a discount of 5% compared to properties between two and five acres.
Shapes	Irregular shape parcel sell at a discount of between 5% and 20% compared to rectangular shape parcels
Topography/Soils	Parcels with rolling topography must be adjusted upward by 15%.
Development Stage	Parcels that involve raw land must be adjusted upward by 35%.

COMPARABLE LAND SALES ADJUSTMENT CHART					
Category	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5
Sale Price PSF	$1.91	$2.18	$0.84	$1.22	$1.09
Real Property Rights Conveyed	0%	0%	0%	0%	0%
Financing Terms	0%	0%	0%	0%	0%
Conditions of Sale	0%	-10%	0%	-15%	-15%
Expenditures Made Immediately After Purchase	0%	0%	0%	0%	0%
Market Conditions	-1.5%	4.5%	6%	0%	0%
Subtotal Price PSF	$1.88	$2.05	$0.89	$1.04	$0.93
Location	-30%	-30%	0%	15%	0%
Zoning	0%	0%	10%	0%	0%
Size	5%	5%	0%	5%	0%
Shape	-7.5%	0%	0%	0%	0%
Topography/Soils	0%	-15%	0%	0%	0%
Development Stage	0%	0%	35%	0%	35%
Other	0%	0%	0%	0%	0%
Net Adjustments	-32.5%	-40%	45%	20%	35%
ADJUSTED PRICE PSF	$1.27	$1.23	$1.29	$1.25	$1.26

115,385 square feet x $1.25 per square foot = $144,231

Rounded $150,000

Step 4:

Add the land value to the total depreciated cost of the improvements to conclude a market value.

Replacement Cost Less Depreciation		
Total Replacement Cost		$3,550,000
Less: Physical Depreciation	0.00%	$0
Net Depreciated Value of Improvements		$3,550,000
Less: Functional Obsolescence	0.00%	$0
Net Depreciated Value of Improvements		$3,550,000
Less: External Obsolescence	20.00%	($710,000)
Total Depreciated Value of Improvements		$2,840,000
Plus: Land Value		$150,000
Concluded Market Value		$2,990,000
	Rounded	$3,000,000

Adjustment for Property Interest

Step 5:

Adjust the value conclusion for the property interest being appraised, if not the fee simple interest.

When is the Cost Approach most often used?

- New or newer construction
- Special use properties
- Insurance Appraisals

Questions???