

Participant Name: _____

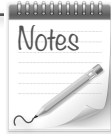
Anchoring Tree Appraisal

A Multi-Method Approach



Participant Workbook

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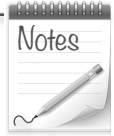
Types of Anchors

1)

2)

3)

Anchor	Benefit	Limitation
<i>Encyclopedia from 1985 says population is 120.2 million people</i>		
<i>My Japanese-American friend says population is at least 130 million people</i>		
<i>Wikipedia projects population to be 126 million people by January 2017.</i>		
<i>Google says population is 126.8 million people</i>		
<i>Census says population is 127,110,000 in February 2016</i>		



Approaches to Appraisal

1)

2)

3)

Steps in an Appraisal

1)

2)

3)

4)

5)

6)



Primary Components of TFT

- 1)
- 2)
- 3)
- 4)
- 5)

Changes from 9th to 10th Edition TFT

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)

Components of Condition Rating

- 1)
- 2)
- 3)

Rating Scale

Excellent _____

Good _____

Fair _____

Poor _____

Very Poor _____

Dead _____

Trunk Formula Technique



Redwood growing on college campus in the San Francisco Bay Area, near a library.

- ◆ Looking North
- ◆ Large open expanse of turf grass
- ◆ Retaining wall is 5 feet from trunk
- ◆ Trunk circumference is 69 inches at 4.5' above grade
- ◆ Foliage is healthy, structural form is defect free
- ◆ Redwoods grow well and are desirable in this climate zone



Trunk Formula Technique



	Trunk Formula Technique
DBH	22"
Trunk Area	
Unit Cost	\$54
Basic Cost	
Health	
Structure	
Form	
Condition Rating	
Functional Limitations	
External Limitations	
Depreciated Cost	
Replacement Tree Installation	
Aftercare	
Other Cost?	
Total Additional Cost	
Total Cost	
Assignment Result	

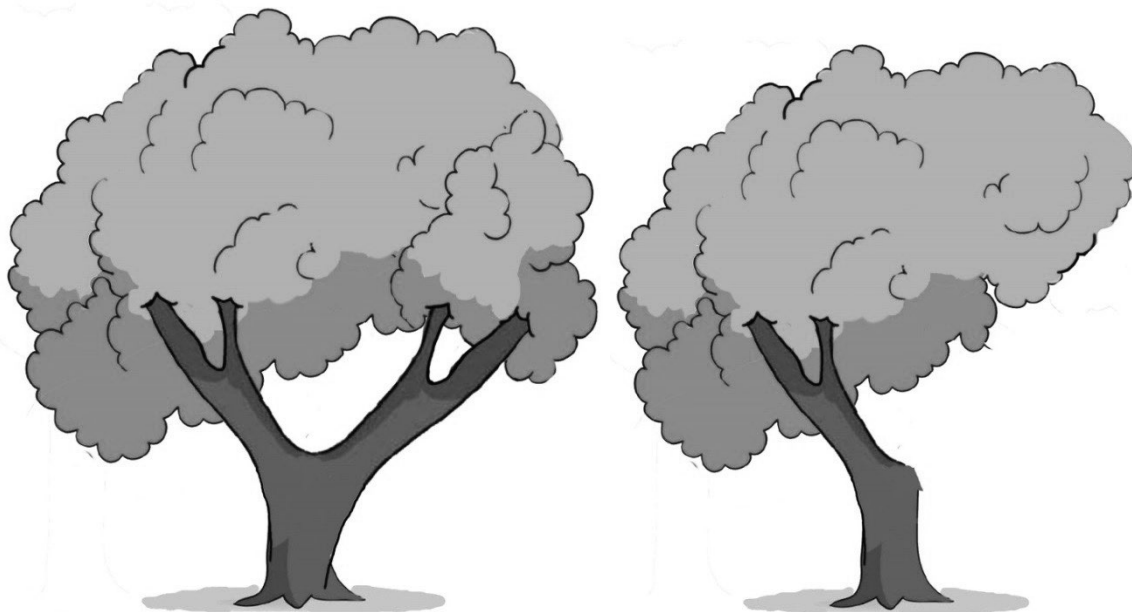
**Appraising Partial Losses – Right Trunk Loss**

TFT cost solution = \$12,000 pre-loss

Left Trunk: 12" DBH

Right Trunk: 12" DBH – LOSS

Percent trunk area lost	
Value of lost trunk area	
Percent canopy lost	
Value of lost canopy	





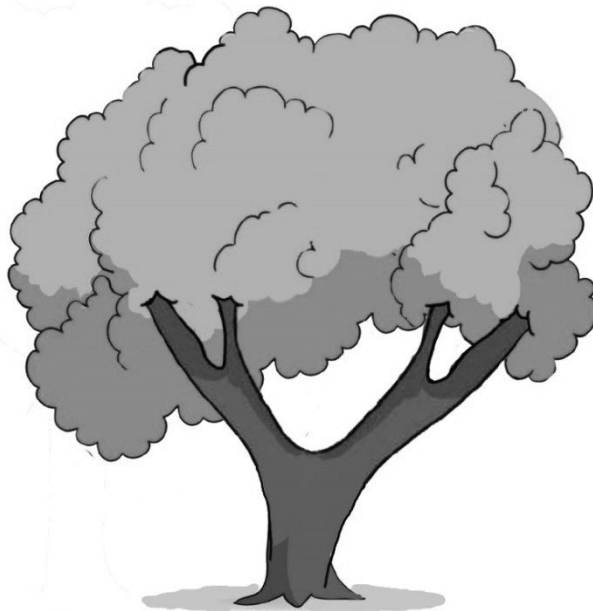
Appraising Partial Losses – Left Trunk Loss

TFT cost solution = \$12,000 pre-loss

Left Trunk: 12" DBH – LOSS

Right Trunk: 12" DBH

Percent trunk area lost	
Value of lost trunk area	
Percent canopy lost	
Value of lost canopy	





Appraising Trees with Incurable Defects



Co-dominant trunk failed in a wind storm
TFT cost solution = \$8,100 pre-loss

Percent trunk area remaining	
Value of trunk remaining	
Percent canopy remaining	
Value of canopy remaining	

Incurable Defects



	Pre-Loss TFT	Post-Loss TFT
DBH	20" & 18"	
Trunk Area	568	
Unit Cost	\$54	\$54
Basic Cost	\$30,672	
Health	80%	
Structure	60%	
Form	70%	
Condition Rating	60%	
Functional Limitations	80%	
External Limitations	50%	
Depreciated Cost	\$7,361	
Replacement Tree Installation	\$350	
Aftercare	\$400	
Other Cost?	\$0	
Total Additional Cost	\$750	
Total Cost	\$8,111	
Assignment Result	\$8,100	

**Appraising Trees with Curable Defects**

Large truck impacted a scaffold branch, causing it to tear out of the tree.
TFT cost solution = \$7,800 pre-loss

Percent trunk area remaining at 4.5' above grade	
Value of remaining trunk area	
Percent canopy remaining	
Value of remaining canopy	

Curable Defects



	Pre-Loss TFT	Post-Loss TFT (depreciated)
DBH	18"	18"
Trunk Area	201	201
Unit Cost	\$63	\$63
Basic Cost	\$12,663	\$12,663
Health	90%	
Structure	70%	
Form	100%	
Condition Rating	70%	
Functional Limitations	80%	
External Limitations	100%	
Depreciated Cost	\$7,091	
Replacement Tree Installation	\$300	\$300
Aftercare	\$400	\$400
Total Additional Cost	\$700	\$700
Total Cost	\$7,791	
Assignment Result	\$7,800	

Repair Work	Cost
Total Repair Cost	
Difference From Pre-Loss	

Cost of Repair

Company Name	Estimated Repair Cost
Company A	\$1000
Company B	\$800
Company C	\$500

Median Estimate	
Average Estimate	
Actual Cost Incurred	

Cost Forwarding



Basic Calculation

Installed Tree Cost (P)	\$1,482
Interest Rate (r)	3.25%
Years to Parity (t)	100
Basic Cost $C = P (1+r)^t$	_____

Interest Rate

	P	r	t	Basic Cost
30-yr Mortgage	\$1,482	3.75%	100	
30-yr Treasury Bond	\$1,482	2.28%	100	
10-yr Treasury Bond	\$1,482	1.70%	100	
Prime plus 2%	\$1,482	4.50%	100	
Savings Account Yield	\$1,482	0.10%	100	

Years to Parity

	P	r	t	Basic Cost
Height Increment	\$1,482	3.25%	30	
Annual Rings	\$1,482	3.25%	110	

Paired Sales Technique



Comparable Properties



1022 Renell St



1061 Nordoff St

Property	1022 Renell St	1061 Nordoff St
Sale Price	\$ 355,000.00	\$ 330,000.00
Sale Date	March 13, 2018	April 1, 2018
Bedrooms	3	3
Bathrooms	2	2
Square Footage	1268	1281
Lot Area	5005	4968
Tree	Canary Island Pine	No Trees
Sale Price Difference	<hr/>	

Hedonic Regression Technique



Percentage of Landscape Value



Value of Real Estate		\$650,000
Landscape Contribution (6% of Total Value)		
Trees	60%	
Turf	20%	
Garden	15%	
Other	5%	

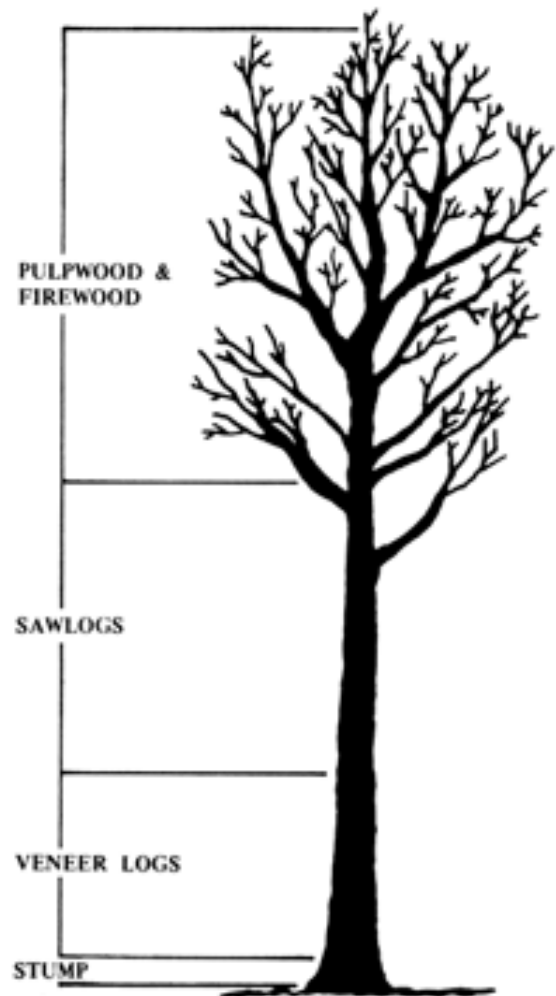
Timber Value



Timber Value

Wood Price: \$4.64 / board-foot

Sawlogs	Board-Feet	Market Price	Value
1.0 x 22"	170	\$4.64	
1.0 x 16"	70	\$4.64	
0.5 x 12"	20	\$4.64	
Total			



Pulpwood Value

Weight	2.41 tons
Market Price	\$35/ton
Value	



Orange Tree



Produces	1000	oranges per year
Wholesale Price	\$0.10	per orange
Interest Rate	10%	

Annual Income	
Present Value	

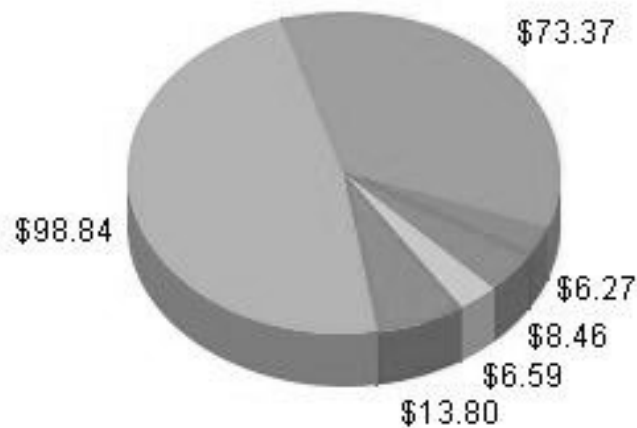
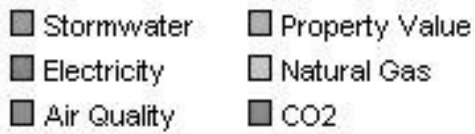
**Hitachi Monkey Pod Tree**

Annual Income	\$400,000	\$400,000
Interest Rate	10%	9%
Present Value		



iTree Streets Benefits Calculator

This **24 inch Black oak** provides overall benefits of: \$207 every year.



Black oak
Quercus velutina

Benefit	Annual Benefit	Interest Rate	Present Value
Property Value	\$98.84	5%	
Stormwater	\$73.37	5%	
Electricity	\$13.80	5%	
Air Quality	\$8.46	5%	
Natural Gas	\$6.59	5%	
CO2	\$6.27	5%	
TOTAL	\$207.00	5%	



Cedars are protected trees by municipal ordinance. Tree owner cuts down the tree. Municipality issues fines based on the “appraised value” of the tree. What is the value of the tree?



Method	Output
Reproduction Direct Cost Technique	\$500,000
Reproduction Trunk Formula Technique	\$20,347
Cost Forwarding	\$25,252
Direct Income Capitalization	\$0
Indirect Income Capitalization	\$4,740
Timber Value	\$1,206
Paired Sales Technique	\$15,000
Hedonic Regression Technique	\$2,300



Real estate investor wants to decide whether the property is worth more with the historic oak or with an additional bedroom.



Method	Output
Reproduction Direct Cost Technique	\$2,500,000
Reproduction Trunk Formula Technique	\$97,666
Cost Forwarding, 4% interest rate, \$500 installation cost	\$179,461
Indirect Income Method	\$8,650
Paired Sales Technique	\$45,000
Hedonic Regression Technique	\$14,400
-----	-----
Cost of Construction of the Addition	\$40,000
Appraised Value Added by Proposed Addition	\$100,000



County enlarges a right-of-way and takes 40 feet of an adjacent vacant forested parcel through eminent domain. Parcel was intended for single family residence development. How much should the landowner ask to be compensated for the trees?



Method	Output
Reproduction Direct Cost Technique	\$8,000,000
Reproduction Trunk Formula Technique	\$120,127
Cost Forwarding	\$40,542
Timber Value	\$8,654
Pulpwood Value	\$456
Paired Sales Technique as % of canopy cover	\$8,000

Golf Course Fire Insurance Claim



- ◆ Coast Live Oak (*Quercus agrifolia*) damaged by a wildfire.
- ◆ Golf course insurance policy covers appraised loss for trees “in play.” This tree is “in play.”
- ◆ Coast Live Oak is naturally adapted to survive fire. Half of the tree was burned beyond recovery.
- ◆ Immediately after the fire, this tree was entirely brown. This photo was taken three weeks after the fire, and several branches are seen to be resprouting.

Golf Course Fire Insurance Claim



	TFT Pre-Loss (total loss)	TFT Post-Loss (depreciated)
Trunk Area	2108 sq in	
Unit Cost	\$62	\$62.00
Basic Cost	\$130,711.25	
Health	90%	
Structure	80%	
Form	100%	
Condition Rating	80%	
Functional Limitations	100%	
External Limitations	100%	
Depreciated Cost	\$104,569	
Replacement Tree Installation	\$350	
Aftercare	\$400	
Other Cost?	\$0	
Total Additional Cost	\$750	
Total Cost	\$105,000	
Difference		

Percent trunk
area lostValue of trunk
area lostPercent canopy
lostValue of canopy
lost

Cost of Repair

Repair Work

Cost

Total Repair Cost

Golf Course Fire Insurance Claim



Reconciliation

Method	Output
TFT Total Loss	
Depreciated TFT	
% Canopy Loss Technique	
% Trunk Area Loss Technique	
Cost of Repair	
Assignment Result	

Conclusion:

Homeowner Association Anticipated Construction Damage



- ◆ Tree is owned and maintained by the gated community homeowners association.
- ◆ Homeowners Association board is concerned that property owner will damage the tree as a result of planned construction.
- ◆ Asks for an appraisal of the value of the tree that would need to be compensated if it were damaged or lost to assist in the negotiation process.
- ◆ No damage has been done.
- ◆ Although the CCRs say the HOA owns the tree, they do not specify an appraisal method for damages.

Homeowner Association

Anticipated Construction Damage



	TFT Pre-Loss
Trunk Area	1225 sq in
Unit Cost	\$45
Basic Cost	
Health	
Structure	
Form	
Condition Rating	
Functional Limitations	
External Limitations	
Depreciated Cost	
Replacement Tree Installation	\$300
Aftercare	\$400
Other Cost?	
Total Additional Cost	
Total Cost	
Result	

Homeowner Association Anticipated Construction Damage



Paired Sales Technique

Comparable Property	Subject Property	789 Rhodes Dr	6777 Druden Ave
Selling Price	\$3,090,000	\$2,569,000	\$10,050,000
Date	July 23, 2016	January 4, 2016	May 13, 2016
Bedrooms	5	6	8
Bathrooms	5	4	6
Square Footage	5,500	5,150	10,089
Lot Size	15,006	12,089	43,011
Tree	One Stone Pine	No Trees	Two Stone Pines, 8 other trees various species
Lakefront	NO	NO	YES

Can Paired Sales Technique method be used?

Hedonic Regression Technique

Value of Real Estate		\$3,090,000
Landscape Contribution	8%	
Tree	65%	
Turf	20%	
Other	15%	

Homeowner Association

Anticipated Construction Damage



Cost Forwarding

	P	r	t	Basic Cost
30-yr Mortgage	\$714	3.75%	55	
30-yr Treasury Bond	\$714	2.28%	55	
S&P 500	\$714	8.00%	55	
Prime plus 2%	\$714	4.50%	55	
Savings Account Yield	\$714	0.10%	55	

Reconciliation

Method	Output
Reproduction: Trunk Formula Technique	
Cost Forwarding	
Hedonic Regression Technique	
Paired Sales Technique	
Assignment Result	

Conclusion:

Boundary Line Tree Construction Damage



Before



After



Boundary Line Tree Construction Damage



- ◆ Boundary line Yucca trees damaged by construction activity.
- ◆ Property line passes through the trunks of the trees, making them co-owned by both property owners.
- ◆ Neighbor claims that trees were posing a nuisance to the new driveway, so he made a chainsaw cut along the property line through the center of the trunks.
- ◆ Assignment is to appraise the damages to the co-owned asset.

Boundary Line Tree Construction Damage



	TFT Pre-Loss	TFT Post-Loss
Trunk Area	1417 sq in	573 sq in
Unit Cost	\$45	\$45
Basic Cost	\$63,765	\$25,785
Health	80%	
Structure	70%	
Form	70%	
Condition Rating	70%	
Functional Limitations	60%	
External Limitations	100%	
Depreciated Cost	\$26,781	
Replacement Tree Installation	\$400	\$400
Aftercare	\$400	\$400
Other Cost?		
Total Additional Cost	\$800	
Total Cost	\$28,000	
Difference		

Boundary Line Tree Construction Damage



Percentage Canopy and Trunk Area Lost

Percent trunk area lost	
Value of lost trunk area	
Percent canopy lost	
Value of lost canopy	

Hedonic Regression Technique

Value of Real Estate		\$1,200,000
Landscape Contribution	4%	
Boundary Trees	15%	
Other Trees	50%	
Other	35%	

Boundary Line Tree

Construction Damage

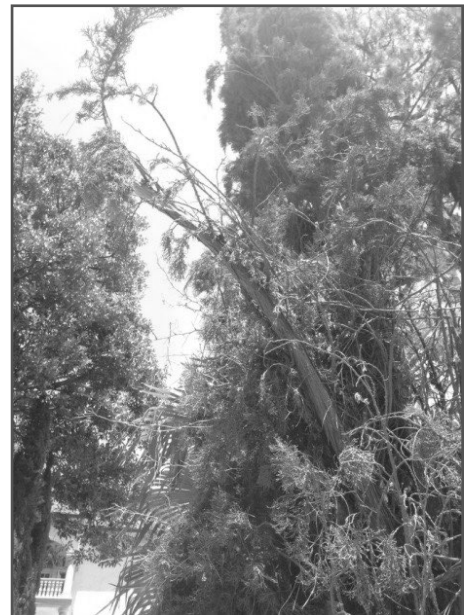


Reconciliation

Method	Output
TFT Total Loss	
Depreciated TFT	
% Canopy Loss Technique	
% Trunk Area Loss Technique	
Hedonic Regression Technique	
Assignment Result	

Conclusion:

Film Shoot Location Tree Damage



Film Shoot Location Tree Damage



- ◆ Los Angeles mansion is often used as a location for photo and video production
- ◆ A row of Italian Cypress trees were damaged when an overly zealous landscaping company pruned them back with machetes.
- ◆ The trees will have no problem surviving the pruning, but the aesthetic appearance of the uniform planting has been noticeably reduced.

- ◆ **Income Approach**
 - ❖ The mansion was used as an exterior for a popular prime-time television show and many other regular wedding photo shoots.
 - ❖ Property owner procured evidence of the following:
 - ◆ Income generated by the film shoots
 - ◆ Letters from several production companies that cancelled film shoots as a result of the damage to the landscape.
 - ◆ Screenshots and photos from prior film and photo shoots showing the Cypress trees featured in the background
 - ❖ Film shoots use both interior and exterior. Some do not use the driveway, but some do. Property owner states that approximately 30% of all film shoots use the driveway and Italian Cypress trees as a location.
 - ❖ \$12,000 was generated in film shoot rental income last year for the entire property.

- ◆ **Cost Approach**
 - ❖ Trees were planted when the driveway was installed.
 - ❖ A water feature running the length of the driveway runs along the root zone of every tree, leaving approximately 3 feet between the water feature and the retaining wall.
 - ❖ To perform a direct replacement of these trees, the water feature would have to be removed and rebuilt to allow space for the replacement tree root balls.
 - ❖ Small trees could be planted in the current planter spaces, but the time to parity would be 20 years, and income would continue to be lost during that period of time.

- ◆ **Market Approach**
 - ❖ There are no comparable properties to provide sales comparison
 - ❖ The trees cover very little of the square footage of the land, but are the most visible on the property.

Film Shoot Location Tree Damage



Reproduction Direct Cost Technique

Task	Estimated Cost
Remove existing trees, grind stumps	\$4,500
Remove and rebuild water feature	\$26,000
Install 10 new 25-foot Italian Cypress trees	\$175,000
Total Cost	\$205,500

Reproduction Trunk Formula Technique

TFT Total Loss	\$11,000
TFT Depreciated Loss	\$440

Indirect Income Capitalization (iTree)

iTree Annual Benefits per tree	\$204
Number of Trees	10
Annual Benefits for line of Cypress trees	
Interest Rate	
Present Value of Benefits	

Film Shoot Location Tree Damage



Percentage Canopy and Trunk Area Lost

Percent canopy lost	5%
Value of lost canopy	
Percent canopy lost	0%
Value of lost trunk area	

Hedonic Regression Technique

Value of Real Estate		\$3,100,000
Landscape Contribution	3%	
Cypress Trees	30%	
Other Trees	30%	
Other	40%	

Direct Income Capitalization

Total Annual Rental Income	\$12,000
Percentage Using Cypress Trees	30%
Rental Income Lost Due to Tree Damage	
Interest Rate	
Present Value of Income Stream Lost	

Film Shoot Location Tree Damage



Reconciliation

Method	Output
TFT Total Loss	
TFT Difference between Pre- and Post- Loss	
% Canopy Loss Technique	
Reproduction Direct Cost Technique	
Hedonic Regression Technique	
Direct Income Capitalization	
Indirect Income Capitalization	
Assignment Result	

Conclusion: