

CRED

CELL TOWERS: GETTING TO FMV WITH ASSET LISTINGS

TECHNICAL LIFE OF EQUIPMENT
DEPRECIATION WITH SALVAGE VALUES

Tower Structure

FAA Obstruction Warning Light(s)

Equipment Shelter, Foundation, Entry Panel, HVAC, GPS

Site Stone & Fabric

Fencing, Guard Wire, Underground Grounding Ring(s)

Site-work Clearing, Grubbing, Grading

Mobilization, Tower Erection, Transportation

**WHY INVENTORY ASSETS of SITE TOWER
SITES IN LIEU OF USE OR REPORTED COST**



**RANDOM
SAMPLE TABLE
Handout**

Random Sample from Multiple States
RCN Lift Over Reported Taxpayer Cost

TOWER TYPES

Monopole

Self-Support

Guyed

Roof Mount

Stealth

Tree

Flagpole

Mast

Cross



Monopole



Self-SUPPORT





Guyed





Guyed Tower Compound



ROOF MOUNT



ROOF Mount





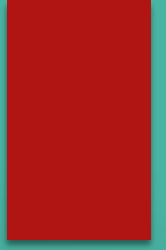


FLAG POLE





FLAG MAST or Cross



ANTENNA arrays

Tangible Personal Property of
Wireless Service
Providers

Antennas – Sector Panel / Omni
Dipole

Antenna Mounts

Co-Location Platform

T-Arm

Flush

Amplifiers

Coax Jumpers

Universal BTS System Configuration



ANTENNA ARRAY





ANTENNA ARRAY





ANTENNA ARRAY



EQUIPMENT COMPOUND

Tangible Personal Property

Tower Owner

Site Improvements

Grounding System

Tower Foundation

Site Fencing

Site Stone & Fabric

Site Landscaping

Tower Obstruction Lighting

Electric Meter Base





KOHLER. POWER SYSTEMS

50

DIESEL
FUEL
ONLY

210
GALLON
CAPACITY

SINGLE SIDE SERVICE
THIS SIDE
DO NOT BLOCK ACCESS







KOHLER

60

Asset Listing Comparison HANDOUT

Personal Property Account Summary

Vs

CRED Carrier Material List

Tower Asset Listing

Sample Inventory Workbook - Compatibility Mode - E... Search

File Home Insert Draw Page Layout Formulas Data Review View Help

Clipboard Font Alignment Number Styles Cells

RCN Cost - Asset Listing

Equipment	Unit	Qty	Unit Cost	Cost
Tower Structure				
ASR Registration Number		0		
Structure Height in Meters		0		
Monopole Direct Embedded	LnFt	0	-	-
Aggrate Backfill	Ton	0	-	-
Monopole Base Plate	LnFt	0	-	-
Concrete Foundation / Cassion	Each	0	-	-
Monopole Stealth		0	-	-
Tree	LnFt	0	-	-
Flagpole / Mast	LnFt	0	-	-
Water Tank	Each	0	-	-
Concrete Foundation / Cassion	Each	0	-	-
Self Support	LnFt	0	-	-
Mat / Pier & Pad / Drilled Pier Foundation	Each	0	-	-
Guyed	LnFt	0	-	-
Concrete Foundation / Cassion	Each	0	-	-
Anchor Fencing - 4' High	LnFt	0	-	-
Anchor Fencing - 6' High	LnFt	0	-	-
Anchor Fencing - 7' High	LnFt	0	-	-

Antenna Structure | Equipment Compound | Carrier 1

Sample Inventory Workbook - Compatibility Mode - E... Search

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Clipboard Font Alignment Number Styles Cells

	B	C	D	E	F	G	H	I	J	K	L
RCN Cost - Asset Listing											
Equipment Compound											
ASR Registration Number			0								
Area			SF	0	0	0					
Equipment & Improvements			Unit	Qty	Unit Cost	Cost					
*Strip Top Soil 4"			CuYd	0.00	-	-					
*Cut / Fill - Medium 2"			CuYd	0.00	-	-					
Base 6" Crushed Stone			Ton	0.00	-	-					
Fencing											
Chain Link - 6' High			LnFt	0	-	-					
Chain Link - 7' High			LnFt	0	-	-					
Chain Link - 8' High			LnFt	0	-	-					
Chain Link - 10' High			LnFt	0	-	-					
Double Gate - 6' High			Each	0	-	-					
Double Gate - 7' High			Each	0	-	-					
Double Gate - 8' High			Each	0	-	-					
Double Gate - 10' High			Each	0	-	-					
End Post - 6'			Each	0	-	-					
End Post - 7'			Each	0	-	-					
End Post - 8'			Each	0	-	-					

Antenna Structure **Equipment Compound** Carrier 1

Equipment compound Asset Listing

Wireless service Provider Asset Listing

Sample Inventory Workbook - Compatibility Mode - E...

File Home Insert Draw Page Layout Formulas Data Review View Help

Clipboard Font Alignment Number Styles

	B	C	D	E	F	G	H	I	J	K
1	RCN Cost - Asset Listing	Tangible Personal Property								
2	Wireless Service Provider									
3	ASR Registration Number		0							
4	Number of Sectors	0		0						
5	Number of Antennas per Sector	0		0						
6	Number of Shelters			0						
7	Equipment		Unit	Qty	Unit Cost	Cost				
8	Coax Jumper, 12', SCF12-500		Each	0	-	-				
9	Antennas		Each	0	-	-				
10	Antenna Mount(s)									
11	T Frame		Each	0	-	-				
12	V Frame		Each	0	-	-				
13	Low Profile Co-Location Platform		Each	0	-	-				
14	Monopole Triple T Arm		Each	0	-	-				
15	Monopole Compact		Each	0	-	-				
16	Monopole Flush Ring Mounts		Each	0	-	-				
17	XLD Non-Penetrating Roof Top Frame		Each	0	-	-				
18	XLD Rooftop Flushmount Overhang		Each	0	-	-				
19	Roof Top Parapet Overhang		Each	0	-	-				
20	Non-Penetrating Tripod		Each	0	-	-				
21	Handrail Antenna Pipe		Each	0	-	-				
22	RRUs		Each	0	-	-				
23	RRU Power Source & Rectifier		Each	0	-	-				
24	3' Microwave Drum		Each	0	-	-				

Carrier 1

Ready



Service Life

Replacement Life

Technical Life

L I F E E X P E C T A N C Y

WIKIPEDIA

Service life Vs. Technical Life

A product's service life is its period of use in service. It has been defined as "a product's total life in use from the point of sale to the point of discard", and distinguished from replacement life, "the period after which the initial purchaser returns to the shop for a replacement."

Service life represents a commitment made by the item's manufacturer and is usually specified as a median. It is also the time that any manufactured item can be expected to be 'serviceable' or supported by its manufacturer.

Service life is not to be confused with shelf life, which deals with storage time, **or “technical life”, which is the maximum period during which any item can physically function.** Service life also differs from predicted life, or MTTFMTBF (Mean Time to Failure/Mean Time Between Failures),

Experience has shown Assessors embrace Asset Listings and findings of Replacement Cost New ... but the questions still loom regarding Depreciation, Asset Listings and Salvage Value

What about Service “Useful” Life of telecom equipment ... our State depreciation tables value equipment below 10% in 7-Years

We’re bound by State depreciation Groupings ... yet we know there is equipment that has a Useful Life in excess of 13-Years

What is a Salvage Value for used towers and wireless equipment

ADVANCING RCN TO RCNLD



15-Years

20-Years

25-Years

40-Years

Or, Greater

What is the Technical Life of “Cold Steel”

Service Life Chart for
Hot-Dip Galvanized Coatings



**American
Galvanizers
Association
Handout**



Panel Antenna 6' / 8' – Single/ Double	15-Years
Copper Clad Ground Rod Electrodes	40-Years
Galvanized Steel Tower Accessories	65-Years
Telecom Shelters	50-Years
Back-up Generator	30-Years
Modular DC to AC Power Inverter	27-Years
Optical Fiber Cable	25-Years
FAA Obstruction Light	15-Years

Technical Life of Other Cell Tower Site Components

Cell Tower / Carrier Equipment			
Service Life (SL) & Uniform Code Index (UCI)			2/25/2018
Description	SL	Average SL	UCI
Galvanized Cold Steel - Tower Type		65	
Self-Supporting	65		2790.101
Guyed - 24" - 3 Leg / Anchor	65		2790.122
Monopole	65		2790.200
Back Haul Drums		20	2792.001
CATV / Telecommunication Satellite Dish		35	
Wire Mesh	35		2792.003
Fiberglass	35		2792.004
Telecommunication Equipment Shed(s)		47	
Wood Frame Site Built	39		2795.002
Veraflex Aggregate	50		2795.003
Fiberbond	50		2795.004
Aluminum	50		2796.004
Telecommunication Equipment Cabinet(s)		25	
Transmission Steel Cabinet	25		2796.002
Transmission Aluminum Cabinet	25		
Battery Storage Cabinet	25		
Galvanized Cold Steel - Ice Bridge		65	
Galvanized Cold Steel - Antenna Mounts		65	
Antenna 4' / 6' Single / Double		8	
Remote Radio Unit (RRU)		13	
GPS Transmitter / Receiver		10	
Compound Leasehold Site Improvements		48	
Grading and Rock Barrier	39		2120.000
Crushed Stone	39		2500.000
Galvanized Fencing with Guard Wire	65		2830.002
Power		18	
Back-up Generator	25		16210.30
VRLA 48V 240Ah Battery	10		
Commercial Wall Mounted HVAC		15	
Grounding Components		48	
Ground Rod Electrodes - Copper Clad	40		
# 2 Solid Copper Wire	40		
Ground Rod Connector - Galvanized	65		

CRED Depreciation Worksheet Categories		
Average Technical Life (ATL)		
Tower	Tower Accessories	Antenna
Antenna Structure	Ice Bridge	Panel Antenna
Concrete Pier	Antenna Mount	Microwave Drum
Ground Rod	Pre-designed Raised Platform	Equipment Shelter / Cabinet
Bare Copper	Trapeze	Concrete Foundation
GPS Antenna	Bare Copper	AC / DC Power Inverter
FAA Obstruction Lights	Ground Rod	Remote Radio Unit
Anchor	<i>48 Year ATL</i>	200A 1P Power Disconnect
Guy		Bare Copper
<i>46 Year ATL</i>	Leasehold / Compound Improvements	<i>34 Year ATL</i>
	Fencing	
Power Equipment	Power Meter Base	Transmission Equipment
Generator	Landscape Mat	PWR Rectifier 24V
Transfer Switch	Gravel	Surge Arrestor
Diesel Fuel Cell	Bare Copper	GPS Antenna
Battery Cabinet / Rack	Ground Rod	EVDO BTS Units
Back-up Batteries 12V 180A	<i>50 Year ATL</i>	Universal Radio Controller
24V Power Inverter		Ground Buss Bar
Automatic Power Controller	Analog / Digital Switch	Bare Copper
Foundation	Multi-port Ethernet Card	1 5/8" COAX Cable
Bare Copper	Dark Fiber	Fiber
Ground Rod	BBU Equipment Cabinet	24V DC Power Converter
<i>35 Year ATL</i>	Control Switch Module	<i>22 Year ATL</i>
	Automatic Power Controller	
	<i>28 Year ATL</i>	



	List Price	Used Price
▶ 150' Self-Support Tower	\$64,700	\$10,800
▶ 65' Pine Tree Monopole	\$75,000	\$ 9,950
▶ FAA Obstruction Light	\$ 8,750	\$ 3,995
▶ 190 AH North Star Battery	\$ 749	\$ 359
▶ 2 Bay Equipment Cabinet	\$11,780	\$ 2,995
▶ Aggregate Equipment Shelter	\$67,800	\$12,950
▶		

**Sampling of Cost of Used Salvage
Equipment
28% to 48% of list price**

SALVAGE VALUE REFERENCE SOURCES

TOWER DIRECT SALES

www.towersdirect.com

WIRELESS CLASSIFIED

www.wirelessclassified.com



**Secondary Market – Used And
Surplus Equipment Pricing**



Develop current Asset Listing(s)

Photograph assets in place and on-site

Require taxpayers to Unbundle their equipment by site

Obtain In-Service equipment dates from taxpayers

Consider Technical Life for equipment groupings

Revise composite residual cost with salvage values

Confidently ... allow site photos, asset listings, current pricing and a Summary Analysis fulfill your role in the presentation of the Preponderance of Evidence in supporting a current FMV of Cell Tower Site equipment

In Summary



... Perhaps Its Time
To Challenge ...
UNDERVALUATION

DUE DILIGENCE VIA RCN ESTIMATES, DEPRECIATED AND FACTORED WITH
INCOME AND SALES APPROACH IS COMPREHENSIVE, UNIFORM, FAIR &
EQUITABLE TO AVOID LOSS REVENUE IN TELECOMMUNICATIONS.