VALUATION AND NEGOTIATION
OF FIBER OPTICS

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IRWA, CHAPTER NO. 1
VALUATION SEMINAR
APRIL 26, 2011
Understanding the Origin of Fiber Optic Lines and its Valuation
QUESTION

WHAT RAILROAD HAD THE ONLY IN HOUSE APPRAISAL DEPARTMENT IN THE UNITED STATES?
ANSWER:

- SOUTHERN PACIFIC TRANSPORTATION COMPANY (SPTCo)
QUESTION:

WHO IS CURRENTLY THE LONGEST LIVING PAST IRWA INTERNATIONAL PRESIDENT?
ANSWER:

- REXFORD M. SHAFFER, JR., SR/WA, CHIEF REAL ESTATE APPRAISER FOR SPTCo;


- HE CURRENTLY RESIDES IN CHICO, CA AND IS ENJOYING RETIREMENT.
QUESTION:

WHAT COMPANY WAS MORE SUCCESSFUL THAN ANY OTHER IN SUPPORTING STANDARDIZED APPRAISAL METHODOLOGY FOR APPRAISING TRANSPORTATION CORRIDORS?
ANSWER:

- SPTCo
SAMPLE CASE LAWS

- ATF IS AN ACCEPTABLE VALUATION APPROACH IN THE APPRAISAL OF TRANSPORTATION CORRIDORS; DOT V. SPTCo (OR APP) 749 p.2D 1233;
MORE SAMPLE LAW

• CALIFORNIA PUBLIC UTILITIES COMMISSION RULED IN FAVOR OF ATF;
  CITY OF VALLEJO V. SPTC0.
  P.U.C. APPLICATION 88-07-021, FILED JULY 18, 1988
MORE SAMPLE LAW

- SPTCo is entitled only nominal damages as a result of that diminished value of a transverse crossing; People ex rel. Dept. of Transportation v. SPTCo. (1978) 84 Cal. App. 3d 315
MORE SAMPLE LAW

THE COURT OF APPEALS SAID THE TRIAL COURT SHOULD HAVE CONSIDERED THE ATF APPROACH. SPTCo V. SANTA FE PACIFIC PIPELINES, (1999) 74 CL.APP.4TH 1232
One of the most basic principles of Eminent Domain Law is that the search for fair market value depends on what the property owner has lost as opposed to what the taking agency has gained or avoided. People v. SPTCo, Supra, 84 Cal App. 3d 315, 324

QUESTION:

WHAT COMPANY WAS THE FORMOST LEADER AND PIONEER IN THE PLACEMENT OF FIBER OPTIC LINES?
ANSWER:

- SOUTHERN PACIFIC COMMUNICATION COMPANY, A SUBSIDIARY OF SPTCo.; LATER RENAMED TO:
“Sprint”

acronym for

““Southern Pacific Railroad Intelligent Network of Telecommunications”"
The Appraisal of Real Property Encumbered by Fiber Optic Lines:
Corridor: “A long, narrow strip of land or real property rights for which the highest and best use is to provide an economic benefit by connecting the endpoints, and sometimes serving intermediate points along the way…”

*Dictionary of Real Estate, 4th edition.*
Special Purpose – “A limited market property with a unique physical design, special construction and materials, or a layout that restricts its utility to the use for which it was built.”*

*Dictionary of Real Estate Appraisal, 4th edition.*
If a market exists for a **limited market property**, the appraiser must search diligently for whatever evidence of market value is available.*

*Appraisal of Real Estate, 13th edition*
“However, it is sometimes necessary to render an opinion of market value in these situations for legal purposes.” In these cases, the appraiser must comply with the legal requirement, relying on personal judgment and whatever direct market evidence is available…*

Fair Market Value:

(a) The highest price on the date of valuation that would be agreed to by a seller, being willing to sell but under no particular or urgent necessity for so doing, nor obliged to sell, and a buyer, being ready, willing, and able to buy but under no particular necessity for so doing, each dealing with the other with full knowledge of all the uses and purposes for which the property is reasonably adaptable and available.

(b) The fair market value of property taken for which there is no relevant comparable market is its value as of the date of valuation as determined by any method of valuation that is just and equitable.*

*California Code of Civil Procedures §1263.320.
Search Begins:

For longitudinal easements and leases for real property of fiber optic lines
(1) MA – “Market Approach” (BEST)
(2) ATF – Across-the-Fence (BETTER)
(3) Survey Approach (GOOD)
MARKET APPROACH

• GATHER COMPARABLE EASEMENTS OR LEASES OF FIBER OPTIC COMPS

1. MAKE NECESSARY MARKET DERIVED ADJUSTMENTS
   A. TERMS AND CONDITION OF AGREEMENT
   B. MARKET CONDITION
   C. LOCATION
   D. PHYSICAL CHARACTERISTICS
MARKET APPROACH

Pro: A corridor is a specific use, which use is almost never related to uses of adjacent properties.

Con: (1) Part of the business component of the enterprise is included in MV approach. (2) MV does not fully consider economic differences for location adjustments. (3) MV takes into account “project influence.”
MARKET APPROACH

The railroad protested the school district’s valuation methodology for assessing the value of railroad easements solely upon the “comparable sales approach.” The Court went on to observe that the market approach was of little value when there are no truly comparable sales.*

ACROSS THE FENCE

ATF assumes that the value of the corridor is similar to the value of adjacent properties.
ATF methodology is based on the concept of alternative use as assignable land segments within the overall corridor. ATF is the Sales Comparison Approach modified to the degree that shape, size, topography, and access are disregarded.
ATF EXAMPLE

1000 miles x 5,280 ft x 5 ft wide x 50\%(subsurface) x $.20/ sq ft = $2,640,000
“ACROSS THE BOARD”

Also known as “Across the Region”. These values get their roots from “ATF” and include unit values that are easily applied and often based on a price per acre or price per mile.
**“ACROSS THE BOARD”**

Example:

1000 miles x 5,280 ft x 5 feet / 43,560 sq ft x $4,356/ Ac. = $2,640,000
“ACROSS THE BOARD”

In 1980’s and 1990’s SPTCo used the following ATB unit values for large Fiber Optic lines:
Rural Areas: $10,000/Acre
Urban Areas: $25,000/Acre
SURVEY APPROACH

Survey owners/users of fiber optic lines and other professionals to obtain “going rates and terms.”
SURVEY APPROACH

For illustration purposes only, we will assume a 1-mile fiber optic line for acquisition of an easement and/or lease, $20/sq ft ATF unit value, and a subsurface 144-strand fiber optic cable.
Port of Long Beach
Easements
Transverse Crossing
ATF for 3’ wide non-exclusive easement with a 50% discount for subsurface rights and air rights
Longitudinal Rights - Same as above

Lease (Annualized)
Transverse Crossing - Same as above but applying a 10% land rate
Longitudinal Rights - Same as above with 10% land rate

(Easement: 1 mile x 5,280 lf x 3 feet wide x $20/sq. ft. x 50% = $158,400)
(Lease: $158,400 @ 10% = $15,840/year)
Boston MTA

Easement
- Transverse Crossing
  - Overhead - $900
  - Subsurface - $1,200
  - Longitudinal Rights - $7.25/lf

Lease (Annualized)
- Transverse Crossing – NA
- Longitudinal Rights – NA

(Easement: 5,280 lf x $7.25/lf = $38,280)
(Lease: NA)
Union Pacific Railroad

Easement
- Transverse Crossing – ATF (minimum 10’ wide non-exclusive easement)
- Longitudinal Rights – ATF (minimum 10’ wide non-exclusive easement)

Lease (Annualized)
- Transverse Crossing – ATF (Same as above and with a 12% land rate)
- Longitudinal Rights – ATF (same as above with 12% land rate)

Minimum $2,000 nominal fee for administrative expenses

(Easement: 5,280 lf x 10 feet wide x $20/sq. ft. x 50% = $528,000)
(Lease: $528,000 x 12% = $63,360/year)
San Diego Gas & Electric

Easement
- Transverse Crossing – NA
- Longitudinal Rights – NA

Lease (Annualized)
- Transverse Crossing – NA
- Longitudinal Rights – NA

The San Diego Gas & Electric Company are users, for the most part, of transportation corridors only. As such, they do not lease right-of-way or provide easements for fiber optic lines. Rather, they secure primarily easements for their gas pipelines, and secure easements for their electrical transmission lines.

(Easeement: NA)
(Lease: NA)
Septa (Southeast Pennsylvania Transportation Authority)

Easement
  Transverse Crossing – NA
  Longitudinal Rights - $3/lf

Lease (Annualized)
  Transverse Crossing – 0 to 72-strand capacity: $2,100 - $2,722/annually
  73+ Strands capacity - $37.80/strand/annually
  Longitudinal Rights – NA

(Easement: 5,280 lf @ $3/lf = $15,840)
(Lease: NA)
WMATA (Washington Mutual Area Transit Authority)

Easement
- Transverse Crossing – NA
- Longitudinal Rights – NA

Lease (Annualized)
- Transverse Crossing – NA
- Longitudinal Rights – 144-strand fiber optic cable (formula) – approximately $1,305,018/year/mile for 45 miles, or

$5.49/lf

(Easement: NA)
(Lease: 5,280 lf @ $5.49/lf = $28,987/year)
City of Phoenix

Easement
  Transverse Crossing – NA
  Longitudinal Rights – NA

Lease (Annualized)
  Transverse Crossing – NA
  Longitudinal Rights - $0.95/lf/year

(Easement: NA)
(Lease: 5,280 lf x $0.95/lf/year = $5,016/year)
City of Burbank

Easement
  Transverse Crossing – NA
  Longitudinal Rights – NA

Lease (Annualized)
  Transverse Crossing – NA
  Longitudinal Rights - $1,000 to $1,350/mo

One-time connection fees: $550 to $1,925
Dark fiber - $200/fiber/mile

(Easement: NA)
(Lease: 5,280 lf x $3/lf = $15,840)
City of Portland

Easement
  Transverse Crossing – NA
  Longitudinal Rights – NA

Lease (Annualized)
  Transverse Crossing – NA
  Longitudinal Rights - $3.50 to $4/lf plus annual CPI adjustment

(Easement: NA)
(Lease: 5,280 lf x $4/lf = $21,120/year)
Contra Costa County

Easement
  Transverse Crossing – NA
  Longitudinal Rights – NA

Lease (Annualized)
  Transverse Crossing - $1.75/lf
  Longitudinal Rights - $1.75/lf

(Easement: NA)
(Lease: 5,280 lf x $1.75/lf = $9,240)
**State of California**

<table>
<thead>
<tr>
<th>Easement</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transverse Crossing</td>
<td>NA</td>
</tr>
<tr>
<td>Longitudinal Rights</td>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lease (Annualized)</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transverse Crossing</td>
<td>NA</td>
</tr>
<tr>
<td>Longitudinal Rights</td>
<td>NA</td>
</tr>
</tbody>
</table>

According to State of California Executive Order S-23-06, the State of California no longer charges for installing fiber optic lines in their right-of-ways, as an attempt to increase state use of broadband networks and advanced communication services that are anticipated to enhance the telemedicine for healthcare, distance learning for education, and better coordination in areas of public safety. However, nominal rates are charged based on administrative fees of $82/hour, at approximately 30 hours per transaction, equals a nominal fee of $2,460 per transaction.

(Easement: $2,460/transaction)
(Lease: $2,460/transaction)
Southern California Edison

Easement
  Transverse Crossing – ATF after adjusting 25 to 50% for vertical rights.
  Longitudinal Rights – NA

Lease (Annualized)
  Transverse Crossing – ATF after discounting 25 to 50% for allocation of vertical rights.
  Longitudinal Rights – NA

Southern California Edison does not allow the use of longitudinal rights, and the minimal amount of consideration is $1,000 for administrative expenses per transaction.

(Easement: NA)
(Lease: NA)
Value Ranges

Not including those administrative fee amounts, the range for a one mile fiber optic line used for an easement and a one year lease, include the following ranges:
Easement Value Range

$15,840 to $528,000
or
$3.00/lf to $100/lf
Lease Value Range

$5,016 to $63,360/year
or
$0.95 to $12.00/lf/year
The Market Approach is the most reliable method in appraising real property of fiber optic lines if reliable comparables are available, and without being commingled with business value and comparable locations.
The ATF or ATB approaches are reliable alternative approaches when good comparable fiber optic line market data is not available.
The Survey Approach, is the least reliable method in arriving at market value of real property of a fiber optic line.
In conclusion…
FIBER OPTIC RENTAL RATE STUDY

THURMAN HODGES, MBA, SR/WA
LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY
FIBER OPTIC RENTAL RATE STUDY

The market for the leasing of real property for fiber optic purposes is characterized with:

- A lack of information about prices for the use of ROW
- Many buyers and relatively few sellers
- Legal Issues that affect the leasing of real property for fiber optic purposes.
FIBER OPTIC RENTAL RATE STUDY

BACKGROUND & PURPOSE

- LACMTA has over 187 License Agreements for Fiber Optics Uses
- License Agreements provide for FMV rental rate adjustments every 3 years
- Determine an appropriate methodology for adjusting rental rate for fiber optic license agreements to fair market value.
FIBER OPTIC RENTAL RATE STUDY

Approaches

- Reviewed Internal Records
- Interviewed Appraisers
- Reviewed Consultant Reports
- Reviewed Methods Employed by other Transit Organizations, Public Entities, and Railroad Companies

- None of the Transit Organizations interviewed had a specific method for adjusting the rental rates for fiber optic agreements to market rent.

- Many of the organizations have a process that involved reviewing the rental rates charged periodically to determine if the rental rate schedule should be adjusted.
Boston Metropolitan Transportation Authority

- MBTA hired a consultant who performed an appraisal analysis of MBTA properties
- MBTA developed and submitted recommendations to the MBTA Board based on the analysis
## FIBER OPTIC RENTAL RATE STUDY

### TABLE I
**COMPARISON OF SCHEDULE OF CHARGES**

<table>
<thead>
<tr>
<th>Category</th>
<th>MBTA</th>
<th>SEPTA</th>
<th>MARTA</th>
<th>NJTA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber Optic</td>
<td>$2.17 - $8.32</td>
<td>$2,100</td>
<td>$2,000</td>
<td>$2,070 for data</td>
</tr>
<tr>
<td>Crossing</td>
<td>Per linear foot</td>
<td>0 - 48 Strand</td>
<td>Rent escalates</td>
<td>and long distance</td>
</tr>
<tr>
<td>Based on Zones</td>
<td>Capacity</td>
<td>4% annually</td>
<td></td>
<td>telephone service &gt;500 households</td>
</tr>
<tr>
<td></td>
<td>Rent escalates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>21/2 % annually</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>of CPI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiber Optic</td>
<td>$2,722</td>
<td></td>
<td>$1,104 for data</td>
<td></td>
</tr>
<tr>
<td>Crossing</td>
<td>49 - 72 Strand</td>
<td></td>
<td></td>
<td>and long distance</td>
</tr>
<tr>
<td></td>
<td>Capacity</td>
<td></td>
<td></td>
<td>telephone service &lt;500 households</td>
</tr>
<tr>
<td>Fiber Optic</td>
<td>$37.80/Strand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crossing</td>
<td>73+ Strand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Capacity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiber Optic</td>
<td>Price established</td>
<td></td>
<td>Price established</td>
<td>Price established</td>
</tr>
<tr>
<td>Longitudinal</td>
<td>through negotiations</td>
<td>through negotiations</td>
<td>through negotiations</td>
<td>through negotiations</td>
</tr>
</tbody>
</table>
# FIBER OPTIC RENTAL RATE STUDY

<table>
<thead>
<tr>
<th>Number of Strands</th>
<th>RATE</th>
<th>Rental Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
<td>$2,722.00</td>
<td>$2,722.00</td>
</tr>
<tr>
<td>360</td>
<td>$37.80</td>
<td>$13,608.00</td>
</tr>
<tr>
<td>432</td>
<td>$16,330.00</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE II**
# FIBER OPTIC RENTAL RATE STUDY

## Table III

### WMATA Fiber Pricing Rate Schedule

<table>
<thead>
<tr>
<th>Number of Fibers</th>
<th>Annual Rental Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 132</td>
<td>$5.52 per cable foot (base rate)</td>
</tr>
<tr>
<td>133 – 216</td>
<td>$0.0275769 per fiber per foot</td>
</tr>
<tr>
<td>Over 216</td>
<td>$0.0137855 per fiber per foot</td>
</tr>
</tbody>
</table>

### Mileage Discount for ROW Cable

<table>
<thead>
<tr>
<th>Length of Cable</th>
<th>Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 – 20.00 miles</td>
<td>N/A</td>
</tr>
<tr>
<td>20.01 – 40.00 miles</td>
<td>10%</td>
</tr>
<tr>
<td>Over 40.00</td>
<td>15%</td>
</tr>
</tbody>
</table>

### Dark Fiber Rate

<table>
<thead>
<tr>
<th>Annual Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.5281259 per fiber per foot</td>
</tr>
</tbody>
</table>
## FIBER OPTIC RENTAL RATE STUDY

<table>
<thead>
<tr>
<th>Category</th>
<th>MBTA</th>
<th>SEPTA</th>
<th>MARTA</th>
<th>NJTA</th>
<th>WMTA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber Optic Crossing</td>
<td>$832</td>
<td>$16,330</td>
<td>$2,000</td>
<td>$2,070</td>
<td>$1,059</td>
</tr>
<tr>
<td>432 Strand Cable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 foot ROW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LACMTA</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
</tr>
</tbody>
</table>
FIBER OPTIC RENTAL RATE STUDY

SUMMARY OF FINDINGS

- Transit Organizations recognize that the value of the use of their ROW for fiber optic uses is difficult to determine.

- None of the Transit organizations interviewed have developed a methodology for adjusting their rental rates for fiber optic uses to market value.

- Most of the Transit Organizations interviewed use consultants to help them determine how to set their rates.

- Most of the Transit Organizations interviewed have their Board of Directors approve the established fee schedule for the use of the ROW, including fiber optic uses.
FIBER OPTIC RENTAL RATE STUDY

The market for the leasing of real property for fiber optic purposes is characterized with:

- A lack of information about prices for the use of ROW
- Many buyers and relatively few sellers
- Legal Issues that affect the leasing of real property for fiber optic purposes.