Valuation Of Street Right-of-Way Used For Telecommunications Facilities

Principle

"Municipal Governments are entitled to receive revenues over and above direct costs associated with rights-of-way as compensation from corporations using public (municipal) property for profit, as federal and provincial Governments do today.

Background

Historically, telephone and cable television service providers existed within municipalities as monopolistic, sometimes government owned providers of basic telephone and television services. As such, these companies were often granted 'preferential' access to rights of way to provide their basic services to the general population under terms and conditions which may or may not have included financial compensation. The existence of these 'utilities' was viewed as a basic component of municipal infrastructure. On that basis, municipalities accepted certain direct or indirect cost burdens from telecommunications companies and did not require compensation for use of the right-of-way. This treatment as a basic municipal service provider is no longer appropriate, given recent changes within the telecommunication industry. Convergence, privatization, and deregulation have erased many of the obligations that municipalities had taken on to accommodate these companies.

Convergence is enabling each sector of the industry to provide a wide variety of overlapping non-essential, competitive services. Privatization means that costs absorbed by municipalities are a burden to the general municipal tax base, resulting in a subsidization of private corporations to the benefit of its shareholders. Deregulation has opened up direct competition for equivalent services meaning that the general municipal tax payers no longer benefit from the existence of any one company for the provision of telecommunication services.

As the owners of the street right-of-way, municipalities have an obligation to manage the land on behalf of municipal taxpayers .

To accomplish this, it has been and continues to be an appropriate practice to charge developers and others who wish to alienate street space for their purposes, a fee for use of the public space.

In view of the new telecommunications environment and the compounding use of scarce underground utility space for competing services, it is now appropriate to charge telecommunications companies a fee for the for-profit use of street space.

Purpose

The purpose of this report is to set out a method of determining the value of street space occupied by telecommunications facilities. Right of way fees are often expressed in the form of a percent of revenues. Looking at the actual value of the right of way on a lineal basis provides a method to determine if the value is adequately reflected in the more common percent of revenues approach. Other acceptable compensation could include telecommunications services or products, such as dark fibre, or a combination of the above.

How to determine a fair market value.
to determine a fair market value.

A number of alternatives or variations have been considered to establish fair market value for street right-of-way. Some discussion of these is included in Appendix A.

The following model is presented as it is simple to apply, and because it is similar to the concept used by many municipalities in setting commercial lease rates and in setting rates for the use of street right-of-way by private interests such as developments or sidewalk cafes.

The approach could be described as an easement analogy with the valuation being calculated as follows:

[Land Value of right of way by unit area] x **[length of area occupied]** x **[width of area occupied]** x **[rate of return]** x **[factor to recognize degree of alienation of area]** x **[use factor]**

Land Value
Value

We take this to be the market value of private lands adjoining the right-of-way for the purpose of the model. To simplify calculation and administration of the market value, we recommend that zones be developed in which property values are averaged to arrive at one rate per zone. As many zones can be established as seems reasonable, with the trade offs being the effort needed to develop the average values and the sensitivity of the changes from zone to zone. In most cases, two or three zones should be sufficient. These might be the downtown core; commercial and industrial areas outside the core and; residential areas. See Appendix A for discussion.

Length of Area Occupied
of Area Occupied

This would be the length of street occupied by one or more cables or ducts.

Width of Area Occupied
of Area Occupied

This would be the width alienated for other purposes which is the width of the duct plus half the minimum clearance required on either side that would be used to assign space to other major utilities.

For example, if the width of a duct is 1 meter and the minimum clearance required by the municipality is 2 meters on both sides to the nearest utility then the width alienated by the ducts' presence is 1m+(2m+2m)÷2=3m. In most cases, this width calculation will accommodate access holes and vaults which typically are considerably wider than the actual ducts and occupy valuable space at intersections.

If the municipality does not have a clearance requirement, then in no cases should the width be considered to be less than 2m

Rate of Return
of Return

This is the annual rate of return that a municipality expects to receive on the market value of it's property. A common rate of return is 10%.

Factor to Recognize Degree of Alienation of Area
to Recognize Degree of Alienation of Area

The market value of property relates to the exclusive use of that property. Occupation of property by a duct bank allows some temporary use of the surface for other purposes, although typically utilities can not be placed under the duct bank in the same alignment. A reasonable factor being used in a number of municipalities to value the subterranean space thereby alienated is 50% of the full market value. See Appendix A for discussion.

Use Factor
Factor

For most telecommunications installations, this factor would not be used. However, a number of factors might be considered under this umbrella by the municipality to modify the charge based on special conditions.

Sharing Factor — If a number of users share a duct bank or an alignment, the rate can be modified for each utility. This will encourage sharing and

	conservation of street space.
Essential Service Factor	An essential service such as water that is required by the municipality will pay a lower rate than a for-profit competitive business that has chosen to occupy the right-of-way.
Exclusive Rights Factor	An occupant that is an exclusive for-profit franchise holder within the city will pay an increased rate.
Depth and Disruption Factor	In general, shallow utilities i.e. Less than 1.5 m depth create more conflicts, and are exposed and relocated more often than deeper utilities. The deeper utilities therefore pay a reduced rate.
Hazard Factor	Occupants that in themselves present a loss of life risk, such as power and gas, will pay a higher rate.

Conclusion

The above formula can be used to establish a market value for street space occupied by utilities. Using the factors outlined, a municipality can apply the fee formula in a non-discriminatory manner. Similar users will be charged equitably for similar occupation of street right-of-way. The value derived can be used as one component to justify other more common forms of payment such as a % of gross revenues.

Appendix A

A

Background on model for valuation of street right-of-way on model for valuation of street right-of-way

Information was gathered from a number of cities including Vancouver, Edmonton, Ottawa-Carleton and Surrey regarding current practices and proposed approaches to property valuation. In addition, some material from the US was reviewed.

Rental of real property owned by municipalities to commercial interests is an ongoing part of a city's business. Rents are established with reference to market rents in the same area and/or with reference to the market value of the land. Similarly, when a commercial interest wishes to use a piece of street right-of-way, a fee is negotiated generally with reference to adjacent property values.

Consequently, the concept of valuing and leasing property controlled by municipalities is well understood. These properties are bought and sold on a regular basis and market rents are generally well established.

With street right-of-way, transactions are more rare and consequently, the process of valuing street right-of-way is less certain.

The bottom line really is what the right-of-way is worth to the user. What is the user willing to pay in the competitive environment? Unlike real property, there is not a lot of history to go on in street right-of-way. Until very recently, access to the street right-of way has essentially been given away. It is only now being seen as a scarce resource. As well, recent examples of charges for access have generally been on a percent of revenue basis rather than a linear charge, so it is very early to interpolate a linear value or to determine whether in the long term, those charges are high or low compared to the market.

As a result, most current models proposed rely in some way on valuation of property. These models should not be considered definitive, but should be used as a starting point or perhaps as a benchmark to determine if evolving negotiations yield a figure that is in the ballpark.

A number of models have been proposed to value street right-of-way occupied by utilities. Most models however, rely in some way on answering two basic questions.

1. What is the overall street right-of way worth?

2. What proportion of the overall street worth is represented by the space occupied by a utility?

Discussion

3. **What is the overall street right-of-way worth?**

Two concepts have been put forward to establish the value of the street and they are:

1) <u>To relate it to the value of adjoining property</u>

This can be considered a legitimate method because when street right-of-way is acquired or sold, the price is generally similar to the value of adjoining land on a square foot basis. If additional street space is required to accommodate traffic or utilities, then the option is to either buy the land outright or to buy an easement. In addition, the adjoining land depends on the presence of access to function, so the value of adjoining land is linked to the street.

2) <u>To relate it to the cost of developing a useable street</u>.

This is an attempt to move away from linking the value to adjacent property and to look at users as partners in a joint enterprise, sharing the costs and benefits.

There are a number of issues with alternative "b" that need to be further thought through and while it may have merit, as a starting point, we are focusing on the first alternative. For the purpose of this exercise, no compelling arguments were found to value the overall street right-of-way differently than adjoining property.

1. **What proportion of the overall street value is represented by the space occupied by a utility?**

Traditional models for valuing real property put the underground value at about 20% of the total value. This of course, is based on the fact that typical buildings have their most valuable space at street level and above.

In the case of street right-of-way however, a much more significant proportion of the overall value is contained in the below ground space because the form of development is quite different than on real property.

Furthermore, while below ground space generally has little revenue generating capability on real

property, on the street, it is a central component in the revenue generating capability of for-profit businesses such as central heating or telecommunications companies.
In addition to the value of the underground space to users, the alienation of underground space also limits what can be done with the remaining above ground portion and therefore, reduces the residual value of that portion. For example, the need for access to underground utilities limits the location of light rail lines, transit related infrastructure such as stations and shelters, foundations for overpasses, street light foundations, large trees, and street furniture.

As a result, the below ground space on street right-of-way must have a higher value than 20% of the space.

A figure that has been used by a number of municipalities for the underground value is 50% of the total street right-of-way value. An alternative figure is proposed in appendix B which is a variation on a traditional real estate formula.

The portion of the underground space alienated by a utility is not simply the "airspace" occupied by the conduit or duct bank for several reasons:

- Utilities are not generally stacked on top of one another longitudinally because doing so make access to the lower utility prohibitively expensive. Consequently, the presence of one utility alienates all the below ground space above and below it.

- Lateral separation between utilities is required for safety and cost reasons during construction and repair. As a result, the presence of one utility sterilizes the space on either side. Municipalities usually specify a minimum lateral clearance.

- Access holes and vaults for splicing and location of equipment are generally considerably wider than the conduits themselves and often occupy space at intersections, which is much scarcer due to the meeting, crossing, and turning of utilities.

- Lateral connections require additional space and create additional complications for utilities that must cross over or under them.

As a result of the above, we recommend that the space alienated by a typical duct bank be considered to be the width of the duct bank plus half the minimum clearance required on either side to the nearest utility. The adjoining utilities are considered to be responsible for half the clearance.

The overall value of the underground part of the right-of-way on a unit area basis can then be

applied to the width alienated to derive a value.

Appendix B

Subsurface Alienation Factor

The use of a subsurface alienation factor is based on the principle that a land value can be allocated to various horizontal slices of the land in question. This principle is used in the real estate industry in valuating easement rights over fee simple land. There is an analysis known as the Schmutz formula which arrives at an allocation of values for a fee simple parcel. This allocation was derived from his data and other professional's opinions more than fifty years ago. It apportions the fee value across a building as follows:

Surface	0' to 20' (1st floor)	45%	Subsurface	Basement	8%
	20' to 44'	20%		Sub-basement	
3%					
	Above 44'	17%		All below	2%
		82%			13%

The allocation totals less than 100% as it assumes a 5% percent severage loss given two or more separate ownerships within the building.

The Schmutz formula is intended for fee simple land value allocation and is therefore not appropriate for allocation in a transportation corridor. However, the same concept can be used in allocating land values within transportation corridors.

Land Value Allocation in Transportation Corridors

Empirical evidence or reference material to support land value allocation in transportation corridors comparable to the Schmutz formula for fee simple land is not available. However, it is reasonable to expect that those portions of a corridor which contain the greatest level of activity would contribute the highest portion of the overall value. For this purpose, the transportation corridor can be divided into four distinct zones of uses that are generally incompatible with one another. These are:

1. Street Level - From ground level to about 20feet high, this area contains uses related to vehicular and pedestrian traffic, utility poles, parking meters, traffic signs, landscaping and other sidewalk uses.

2. Overpass Level - Above 20feet, includes uses related to pedestrian overpass structures, elevated transit guideways, and street lighting.
3. Underground Utility Level - From ground level to 10 feet below grade this zone contains utility infrastructure including telecommunications plant.

4. Underground Transportation Level - Transportation facilities such as rapid transit lines need to be located below the underground utilities to avoid conflicts.

Based on advice from real estate experts, a reasonable allocation of land values based on general activity levels is shown in the attached figure “Transportation Corridor - Allocation of Land Values”. While this allocation is somewhat subjective, it more closely reflects land value allocation in the transportation corridor than on private development sites. The greatest level of activity in the four zones occurs at the street level and this zone therefore attracts the highest allocation of land value at 45%. The utility corridor is valued at approximately 25%, with the overpass and underground transportation levels attracting lower levels of allocation at 20% and 10% respectively.

The intensity of use of the utility zone is increasing significantly in larger cities with the entry of new players in the telecommunications industry and the trend toward undergrounding overhead lines. As the above allocation reflects activity levels in each of the zones, the relative value of the utility zone is increasing compared to the other zones.

CONCLUSION

This review suggests the use of a 25% subsurface alienation factor in the real estate evaluation model for valuing public right-of-way corridors for telecommunications and other underground utility uses. The above analysis and the real estate model allocate land values across the utility corridor based on intensity of use and assume the value of land is reflected by market values of private lands adjacent to the corridor. This analysis does not reflect the value to the user of the right-of-way and the ability of the user to pay for that use. However, this model can be used as a guide in the valuation of corridor use. It should be noted that some easement models use subsurface rates as high as 50%. This may well be appropriate in some circumstances and one should take into account possible unique factors such as structural, geological, design or demographic differences.