



## Expertise... Agility... Innovation

As a leading global provider of weather risk management products, the Sompo Global Weather team is dedicated to customizing weather protection solutions to our clients' unique weather-driven challenges.

With a depth of experience borne out of innovating weather risk management products since the market's inception more than 15 years ago, we not only offer our clients WeatherLock® and CommodityFlex® products but also provide key analysis and transaction structuring services. Our ability to execute within a short timeframe enables our clients to move quickly on opportunities that require speed and precision in a dynamic marketplace.

## Traditional Weather Protection Products

### WeatherLock®

- SnowLock®
- TempLock®
- RainLock®
- RiverLock®
- WaveLock<sup>SM</sup>

### CommodityFlex®

- PowerFlex®
- GasFlex®
- OilFlex<sup>SM</sup>

## Renewable Energy Products & Services

### WeatherLock®

- WindLock®
- SolarLock®
- HydroLock®

### ConstructionLock®

- Mitigates financial exposure to project completion delays due to weather
- Combines with production hedging to provide end-to-end project weather protection

### Project Risk Management

- Production Simulation
- WeatherLock® Structuring/Pricing/Execution

### Portfolio Risk Management

- Production Simulation for Refinancing
- WeatherLock® Structuring/Pricing/Execution for Asset Portfolios
- Overlay Hedges for Wind-Linked Bonds

### Sompo Global Weather Contacts

#### AMERICAS

**Michael Grundmeyer** | Director | Americas Origination  
Sompo Global Weather  
725 S. Figueroa Street, Suite 2100 | Los Angeles, CA 90017  
+1.713.553.7444 | mgrundmeyer@sompo-intl.com

#### EUROPE, ASIA AND AFRICA

**Ralph Renner** | Director  
Sompo Global Weather  
1st Floor, 2 Minster Court | Mincing Lane | London, EC3R 7BB  
+44 (0) 207 337 2873 | rrenner@sompo-intl.com

SOMPO GLOBAL WEATHER

**SnowLock®**

Financial Weather Risk Management



To learn more, visit us at:  
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## Snowfall Variability Creates Financial Uncertainty For Asset Owners And Snow Removal Contractors

To manage this risk, Somp Global Weather (SGW) has created SnowLock<sup>®</sup>, an innovative financial product that can be customized to address the challenges faced by businesses, property owners, municipalities and highway administrations exposed to high seasonal snowfall. Similarly, SnowLock<sup>®</sup> contracts can be structured to protect snow removal contractors whose profitability would be impaired by either low seasonal snowfall, or by high seasonal snowfall if modified by a fixed-price contract.

### The Snow Cost Index (SCITM)

The costs associated with winter snow removal do not accrue proportionally with cumulative seasonal snowfall. For example, a season with a single 20 inch storm will have vastly different costs than a season with twenty storms, each with 1 inch of accumulation. Therefore, SnowLock<sup>®</sup> contracts are based on a customized SCI<sup>™</sup> which uses cost inputs such as the following to develop a proxy for snow removal costs based on the severity of the storm.

- Salt
- Fuel
- Overtime
- Plowing
- Spreading
- Hauling

SnowLock<sup>SM</sup> can be indexed to a large number of weather stations and, in certain cases, zip code level snowfall data can be used to better capture local effects.

### The Snow Cost AnalyzerTM: Understanding Historical Trends Enables Improved Decision Making

SGW provides the Snow Cost Analyzer<sup>™</sup>, a proprietary tool which generates a long-term historical record of a client's customized SCI<sup>™</sup>, allowing for more informed decisions concerning variable-rate versus fixed-rate contracts, contract pricing, payout probabilities and portfolio management.

## The Challenge

A municipality in northern New Jersey (NJ) has entered into a snow removal contract with a local contractor and will be charged per storm based upon the amount of snow as shown in Figure 1. Over the past twenty years, the municipality has faced several snowy winters and would like to limit its maximum exposure to snowfall, thus reducing potential budget uncertainty.

### The Somp Global Weather Solution

SGW works with the municipality to structure a SnowLock<sup>®</sup> contract to meet its specific budget protection requirements. The Total column in Figure 1 shows the estimated costs – as represented by the SCI<sup>™</sup> – accrued for each snow event over the season which would then be compared to the SCI<sup>™</sup> deductible to determine the final payout.

<b>Location</b>	Newark, NJ
<b>Term</b>	1 Oct 2017 through 30 Apr 2018
<b>SCI Definition</b>	Specified in Figure 1
<b>SCI Deductible</b>	\$1,200,000
<b>Payout Limit</b>	\$1,800,000 in excess of the SCI Deductible
<b>Premium</b>	\$270,000 (15% of Payout Limit)

### Increased Budget Certainty

With SnowLock<sup>®</sup>, the municipality's snow management expenses will be capped at the deductible plus the premium, or \$1,470,000, as shown in Figure 2. This will enable the municipality to more confidently manage its budget without having to reallocate funds to snow management during snowy winters. An illustration of actual SCI<sup>™</sup> accrual for Winter 2015 – 2016 can be seen in Figure 3.

*These risk scenarios are examples and actual coverage is subject to the specifics of each issued product.*

Category	Snow Depth		Cost Components (\$000)				Total (\$000)
	Lower Bound	Upper Bound	Salt & Materials	Plow & Spread	Overtime	Fuel	
1	0"	2"	35	8	7	4	54
2	2"	4"	70	82	21	7	181
3	4"	6"	88	84	35	8	215
4	6"	8"	82	85	49	8	225
5	8"	10"	74	96	64	9	243
6	10"	12"	77	100	78	10	287
7	12"	14"	76	109	92	10	287
8	14"	16"	79	114	106	11	310
9	16"	18"	80	116	120	11	327
10	18"	20"	89	116	134	12	351
11	20"	22"	98	128	148	14	338
12	22"	30"	112	128	170	14	424

Figure 2 Snow Removal Contract Hedged vs Unhedged Cashflows

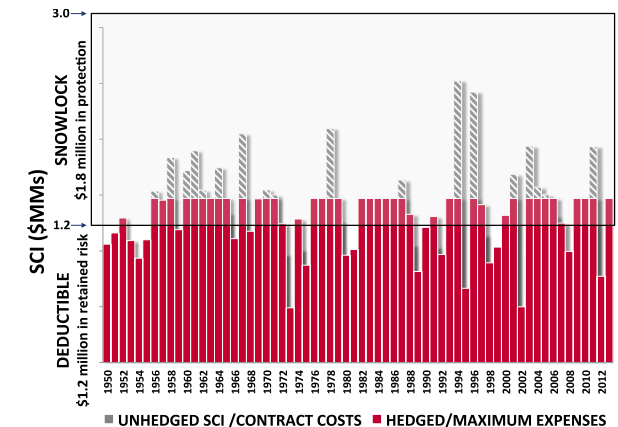


Figure 3 2015 – 2016 Winter Sci<sup>™</sup> Experience Newark, NJ

