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By Robert Marinelli

With Risk Management

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tarting an organization is often described as a "risky venture" because it means pouring capital into unknown territory with an uncertain result. Why would anyone take such a risk? The answer is simple: Without taking a risk, gains cannot be made. Children learn by taking risks. Investors become wealthy by taking risks. Corporations grow by taking risks.

The reality is that all organizations take on risks that can affect their survival as a productive organization. Financial markets encounter risks associated with monetary exchange and interest rates. Businesses undertake credit risks when they bill a purchaser for a service or product. The simple act of employing someone entails taking a risk, which can be generally described as the risk of a bad hire or of losing a good hire. Some risks can be considered speculative, in that the organization can potentially make gains as a result. Municipalities, however, are largely confronted by pure risks those that can only result in a loss. It is how risks are managed that sets the survivors apart from the failures.

Risk management conjures up numerous definitions. The Insurance Institute of America, the leading educator in this arena, defines the term as the process of making and implementing decisions that will minimize the adverse effects of accidental and business losses. Generally speaking, risk management is a process that is integral to decision making—it's a tool to make outcomes more predictable and, therefore, less risky.

It used to be that "risk management" consisted solely of purchasing insurance. The purchase of insurance, however, is just a small part of any risk management program. There is much more to managing risks than contractual transfer. Organizations today have moved beyond transfer and into increased control efforts, higher retentions, and creative risk financing. Using risk management principles in the decision-making process can help municipalities find the proper balance of expenditures. Risk management programs are investments, and when properly implemented they can reap financial rewards by preserving precious public funds. >>

Robert Marinelli, ARM, CPSI, RSSP, is the MIIA Member Services Risk Control Manager.

Public Sector Risk

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Since municipalities are not in the business of making profits—and don't enjoy the financial flexibility and advantages of the for-profit sector—emphasis should be placed on preserving the funds that exist, particularly in these difficult financial times. Thus, risk management efforts should focus on specific risks such as financial risk, operating risk, credit risk, hazard risk, and reputation risk. Each is alive and well in every municipality. The management of operating, credit, hazard, and reputation risks work toward the greater goal of managing financial risk.

An operating risk is a potential loss due to a breakdown in equipment or technology. For example, a wastewater treatment plant would suffer losses in the event of a prolonged plant shutdown. Those

losses would be in the form of reduced fee collection (for services that are not rendered) as well as expenses to repair or shift the operations elsewhere.

Credit risk is the risk that those who owe taxes will not pay them. Although local governments have greater remedy strength in this area as compared to private corporations, uncollected taxes still present loss potential.

Hazard risks, the most commonly cited risk type, are those that result in losses associated with accidents or disasters, such as property losses, liability, and workers' compensation.

Reputation risk, although largely a factor in the for-profit sector, can also affect municipalities. A bad reputation, whether

real or perceived, can steer tax-generating entities away from a municipality.

The challenge to municipalities is to manage these risks to minimize the negative effects of losses.

Risk Management Process

Risk management is integral to any organization's decision-making process. There are five essential steps in the process:

1. Identify and analyze loss exposures. Risk cannot be calculated until exposures are identified. For example, a municipal fleet presents enormous exposure; it could result in losses such as auto liability, auto damage and injured workers. The number, type and condition of the vehicles determine the risk exposure. Heavy trucks like fire and dump trucks pose a greater exposure than non-emergency passenger vehicles because of the damage that may result in the event of an accident. Beyond vehicles, municipalities have buildings of varying sizes and conditions, miles of public roads and sidewalks, employees with various degrees of risk associated with their duties, public events, and exposures to hazards in the community. Identifying these exposures is the critical first step in managing risks.

An all-hazard risk assessment is a comprehensive look at hazard risks. Physical inspection, document review, and a little research can put the entire hazard potential into perspective. What kinds of activities are taking place on a work site? What equipment is used in the operations? How many employees are affected by hazards on the site? Are there external forces such as highways, railways, airports, chemical plants, landfills, or other factors that can create an adverse impact on the property and personnel? Historical loss data associated with hazards is a key indicator of the risks posed to the municipality. So, loss information is also key in risk assessment.

The Five-Step Risk Management Process

- 1. Identify and analyze loss exposures.
- 2. Determine the feasibility of keeping exposures from becoming losses.
- 3. Decide whether to keep and manage—or transfer—a risk.
- 4. Implement appropriate risk management techniques.
- 5. Monitor the results of risk management efforts.

- 2. Determine the feasibility of keeping exposures from becoming losses. Should identified risks be avoided? In many instances, they cannot be, so the focus turns to control. The municipality must determine the safeguards to prevent or reduce losses associated with unavoidable risks. If risk control is not feasible, then risk transfer should be considered. Risk transfer, a critical element of any risk management program, involves contractually shifting the obligation to pay for losses to another party. Contracting high-risk work like tree trimming to an outside contractor transfers the risk of injury to the contractor, freeing the municipality of that risk. Purchasing insurance for the municipal fleet transfers risk to the insurer. Some risks cannot be transferred, however. And in some cases, it is actually more cost-effective to keep the risk in-house. Self-insured retention for low-frequency/low-severity risks, although painful when submitting a payment warrant for losses, may reduce the overall cost of risk because insurance premiums will be lowered.
- **3.** Decide whether to keep and manage—or transfer—a risk. This is the critical point in determining if a particular exposure remains with the municipality. It is at this point that a decision is made as to whether to have the event, participate in the activity, buy the piece of equipment, create the department, and so on.
- **4. Implement appropriate risk management techniques.** This is where technical and procedural decisions are made. Organizational culture clashes can occur here, as change can be disruptive. Implementing risk management techniques requires buy-in from all involved parties for optimum results.

Suppose a city has no formal safety training program in place. Then, due to a number of preventable injuries, the city develops a safety training program. Implementation of this program should be formalized and adopted by the city council. This is the policy aspect that dictates the direction of management. Management must clearly articulate to staff why and how the program will be implemented. Staff must understand the goals of the program and be involved, when appropriate, in the development of training programs. This process ensures that all levels of city government are on

Real-Life Examples of Municipal Risk Management

The following are two realistic municipal risk management challenges, and how to address them:

DATA LOSS

The loss of valuable electronic records is a great concern for all organizations. A computer virus that infects a municipal server and erases all data could bring operations to a halt. How would a risk management process be implemented to manage and control this risk?

Step 1: Identify the risk. What could be lost, and what is the financial impact of the loss? Information stored in databases may not have much intrinsic value, but the intellectual and operational value may be immeasurable. Data recovery, involving forensic investigation and restoration, can be very expensive—if it is possible at all.

Step 2: Determine the feasibility of retaining and controlling the risk. In this situation, information technology is an integral part of municipal operations, and the risk cannot be avoided. Therefore, the municipality must determine

what techniques will be used to prevent the loss of data. Duplication is one sensible risk management strategy. Inventory, materials, or, in this case, data can be duplicated in order to avoid loss in the event the original is destroyed due to an unplanned event. When backup tapes are stored off-site, they are further protected from exposures such as fire, water damage, and other physical damage that could, potentially, affect the original data. Further protection could be achieved by using the risk control concept of segregation—the physical separation of data to spread the loss exposure. Critical information can be divided over two servers, rather than one, to avoid interruption should one server fail.

Step 3: Decide which backup technique is best for the organization. Is an on-site backup cost-effective? How are the backup media protected? Can the information be stored safely off-site? Should

additional servers be used to segregate vital information? Are additional protection measures needed? The answers to these questions are crucial in determining how much protection the organization needs. This is where the cost-benefit analysis comes in.

Step 4: Implement the data backup plan. A backup schedule is set, and media is stored in accordance with the determined backup method. Necessary software, hardware, property protection devices, and storage space are purchased in order to properly implement the data backup programs.

Step 5: Monitor the results of backup efforts. If no data is lost over a period of one year, chances are that the backup is effective. Luck can sometimes be a factor, but continued monitoring is necessary, as luck will eventually run out. If a data loss occurs and the onsite backup was unsuccessful, adjustments need to be made to the backup process. >>

board and that the program will have a greater chance of success. All too often, programs requiring support from all levels are developed in a vacuum, which is sure to be met with failure. Care should be taken to ensure the most effective implementation of risk management efforts.

5. Monitor the results of risk management efforts. The ice storm of 2008, for example, left many fallen and damaged trees in its wake, and many municipalities were pressed to clear roads, utility lines and public spaces of debris. Many municipalities contracted this work to outside tree service contractors, while others kept the work in-house. For those that kept the work in-house,

One injury to a municipal worker can negate any savings attributed to keeping the work in-house.

were risk control efforts put into place? Were those who operated the chainsaws properly trained? Was proper protective equipment purchased and used? And what were the results, in terms of losses? The results of the risk management process can be monitored by analyzing the costs of employee wages, overtime, and benefits, plus the cost of equipment and training, against the cost of an outside contractor doing the work. This bottom-line type of analysis must also include the cost of injuries to employees, damage to equipment and vehicles, and intangible costs like decreased employee morale. One injury to a municipal worker can negate any savings attributed to keeping the work in-house. Add on the reduced productivity resulting from absent

employees and increased workloads for the remaining staff, and the effect of taking on the risk can be very costly.

Risk management activities should be reviewed and revised in an effort to improve the overall financial outcome of the activity. In the ice storm example, extensive training should be budgeted, as a single loss can prove catastrophic.

Real-Life Examples of Municipal Risk Management, continued

BACK INJURIES

Each year a large number of municipal workers suffer back injuries related to the removal of manhole covers. Suppose a public works department experiences one back strain every year due to the lifting of manhole covers, and say the average claim is valued at \$15,000. Over a period of ten years, the town is looking at \$150,000 worth of back injuries associated with manhole covers. How would a process be implemented to manage this risk?

Step 1: Identify the trend, usually through a claims review or examination of loss runs. (The operations in this case cannot be outsourced.)

Step 2: Determine what techniques can be used to reduce or prevent further incidents—and ultimately lower costs. The town can provide training on how to properly use a bar to lift and move the manhole covers. The town can purchase a magnetic manhole cover lift.

The town can choose to reduce the activity and take its chances with blocked storm water systems (another risk altogether).

Step 3: Decide on the most effective techniques. Training is a good start, but its effectiveness varies depending on how the information is presented, the willingness of employees to internalize the information and apply it in the field, and the frequency of the training. A magnetic manhole cover lift takes one form of training out of the equation, though it presents another training opportunity. Engineered systems are always preferred over administrative systems (like rules and procedures). Clearly there are cost implications with engineering. A cost-benefit analysis should be performed.

Suppose the public works director proposes purchasing two magnetic manhole cover lifts, one for each of two crews, at a total cost of \$4,500.

Annual training will cost another \$2,500 in wages and resources. And annual maintenance costs \$250 for each lift. Suppose the life span of each lift is ten years. The initial investment, maintenance and training, spread out over the ten-year life span, is \$3,450 per year—or \$11,550 less than the \$15,000 the town could expect per year for back injuries if the lifts weren't used.

Step 4: Implement the control measures. This is when the equipment is purchased and training programs are funded, scheduled and administered.

Step 5: Monitor results. A reduction in the number of injuries and cost per injury will show the program to be effective. If manhole cover-related claims continue, the equipment needs to be checked, training needs to be re-examined, and a job safety analysis should be revised to ensure proper use of the equipment.

Robert Marinelli

Cost-Benefit Analysis

In the chainsaw example above, both the impact and probability of a loss can be very high. If the majority of highway employees will be working with chainsaws for an extended period of time, the risk of an injury increases due to the number of chainsaw operators. There's also a high risk of serious injuries due to the life-threatening nature of the equipment and the work, which means a potentially higher cost of risk. One fatality can eliminate all savings realized by keeping an operation in-house. Risk management efforts such as training and requiring protective equipment can lessen the impact and probability of a loss, which could make the project more financially palatable. Weighing the options in a cost-benefit model will indicate if additional risk control measures need to be put in place, or if transferring the risk is a better option. A little research can reveal the impact of an organization's efforts when compared to the probability of loss.

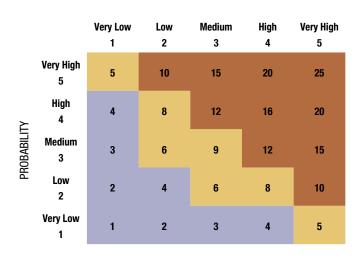
To do the cost-benefit analysis, spread the initial investment in risk management activities over the life span of the activity (e.g., a particular program or piece of equipment) and measure this against the predicted cost of *not* implementing the efforts. For example, does it make sense to purchase sewer inspection equipment, at a cost of \$100,000, to proactively address problem areas that have experienced sewer backups? The initial investment for videoscopes can be a tough sell to those holding the purse strings, even though the equipment is highly effective. For the purpose of the cost-benefit analysis, if the equipment has a useful life span of twenty years, the cost should be calculated over that span, regardless of when the actual payments are made. So, essentially, the sewer inspection equipment would cost \$5,000 per year. If the town's out-of-pocket expenses associated with sewer backups are historically greater than \$5,000 per year, then the initial expenditure may make good sense. (Of course, other factors also need to be considered, such as software updates and training, which should be included in the initial investment calculation.) Essentially, cost-benefit analyses look at the "pay now or pay later" impact of a risk management effort.

On its face, pouring funds into risk management programs for the purpose of controlling (preventing or reducing) losses seems like a win-win. There is, however, a point of diminishing returns. Funding risk control efforts for the items of highest risk will yield greater benefits. As funding for risk control increases, items with lesser risk can be addressed. Since those items pose less risk, however, the value of the benefits statistically begin to lessen. It is not cost-effective to fund risk management efforts to the point that all risk is eliminated. At a certain point, the cost of risk control will exceed the benefits, at which point risk transfer or risk avoidance may be necessary. Finding the optimal level of risk control can be challenging.

Because insurance markets will harden and soften, the optimum point for risk management investments is a moving target. Funding and implementing control measures, coupled with higher risk retentions (or self insurance), can be a cost-saving option in the long run. It is up to the municipality to determine its risk appetite, take steps to increase the predictability of losses, and continue to monitor the results of its efforts.

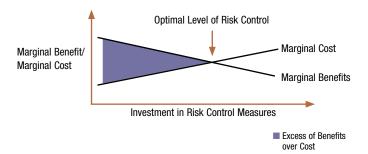
Cost-Benefit Analysis

IMPACT



Items in purple represent a low risk to the organization. Tan indicates that risk control efforts should be implemented. Items in brown should be considered for contractual risk transfer.

Optimal Level of Risk Control



Funding risk control efforts should start with higher-risk items. As funding moves into lower risk items, the value of the investment decreases. The challenge for municipalities is to find the optimal level of risk control.