ANGLE and LINE

A Quarterly Newsletter by COWAN ASSOCIATES, INC.
Engineers • Designers • Surveyors
Serving Business, Municipalities, and Industry since 1958

PREPARING FOR DISASTER

by J. Cheryleen Strothers

June 1, 2006 marked the beginning of a new hurricane season. Although no one has control over naturally occurring events, preparing for emergencies is the responsibility of the officials of all levels of government from local to federal.

The Pennsylvania Emergency Management Services Code (Title 35) requires all county and municipal governments (i.e. city, borough, township, etc.) to have an emergency management program. This program must consist of:

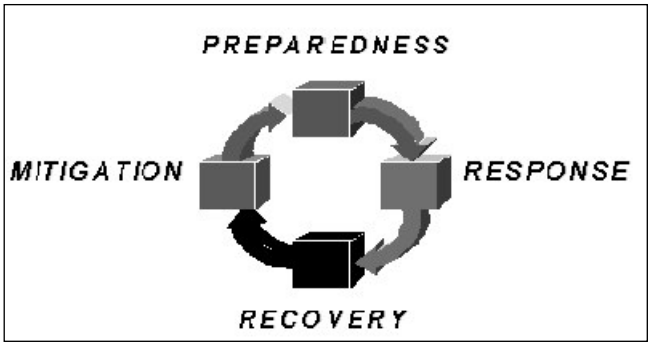
1 A trained Emergency Management Coordinator (EOP)
2 An Emergency Operations Plan (EOP)
3. A functioning Emergency Operations Center (EOC)

Prior to the enactment of this law, emergency management was funded through federal grants earmarked for civil defense in the event of a nuclear attack. After Tropical Storm Agnes (1972), Pennsylvania legislators determined that common emergency response functions designed to handle manmade disasters could also be used for natural disasters. Therefore, Title 35 was developed and enacted in 1978.

According to Title 35, Emergency Management is defined as the judicious planning, assignment, and coordination of all available resources in an integrated program of prevention, mitigation, preparedness, response and recovery for emergencies of any kind, whether from attack, manmade or natural sources. In simpler terms, Emergency Management is planning, analyzing, conducting and maintaining programs to minimize loss of life and injury, minimize damage to property, and restore the community to pre-disaster conditions.

Disasters do not just suddenly appear, they have a lifecycle. In essence, hazards can and do exist in all communities, but it takes some other event or accident to turn it into a disaster. One of the most important responsibilities of the local municipality is to prepare and implement an Emergency Operations Plan (EOP). The EOP must be flexible enough to be useful for any type of incident and specific enough to deal with known isolated hazards within the community. In order to develop a functional EOP, one must look at the phases of an emergency, namely mitigation (prevention), preparedness, response and recovery.

Although the phases of emergency management are visualized as having a circular relationship, with each phase interacting with the previous and subsequent phases, a functional EOP must start with the mitigation section. The term "mitigation," as it relates to emergency planning, refers to activities that can reduce the likelihood of a disaster or reduce the effects of a disaster. Examples of mitigation activities range from simple zoning regulations which prevent construction within flood prone areas to complex series of recommendations to gradually reduce the hazards which currently exist. Along with being the first phase in emergency planning, it is also one of the most difficult and time-consuming parts of emergency management. The first crucial step in developing mitigation activities is preparing a hazard vulnerability assessment. This assessment starts with identifying the hazards that exist within the community and determining how vulnerable the community is to each hazard. Once the hazard vulnerability assessment is completed, plans and steps can be developed to either eliminate the hazard or reduce the potential effect of a disaster.



Of course, it is impossible to eliminate all hazards or potential for disaster, so the next phase of emergency planning is preparedness. As the term implies, preparedness is the preparation for response to a disaster. Preparedness activities are designed to help save lives and to minimize the effect of an emergency by preparing people to respond appropriately. To properly plan for any response, the municipality must have:

1. A plan for response.
2. Trained personnel to do the responding.
3. The necessary resources with which to respond.

The preparedness phase of emergency management is the heart of emergency planning because it specifies how the

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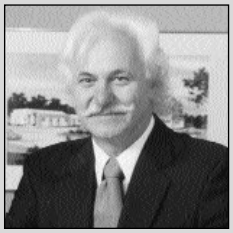
PRESIDENT'S CORNER



At COWAN ASSOCIATES, INC., we understand that client retention and "word-of-mouth" advertising by our clients is essential to our company's long-term success. Building on 48 years of client management experience and our own passion to deliver best-of-breed engineering solutions for people and their environments, Cowan Associates provides comprehensive program management which builds client loyalty through delivery schedule and cost controls. Equally important to our clients is our ongoing effort to reward our best performers among our team, thus reducing employee turnover and enabling our clients to expect long-standing working relationships with our project managers. By creating a self-sustaining client and employee centric corporate culture, we experience repeat business, client and employee satisfaction. In highly competitive markets, there is a big difference between satisfied customers and completely satisfied – or loyal – customers. The former, if they have a choice, can easily switch to one of our competitors, while loyal clients will stay longer with our company and recommend our services to others. The key to creating "loyalty" among our customers is anticipating their needs while we provide "experiences" that meet their expectations.

Success comes through communication with our clients and employees. For this reason we formulated that COWAN ASSOCIATES, INC. projects shall be planned, designed, and constructed to:

Serve the purposes specified by owner or client.
Be constructable by customary methods with equipment and labor readily available.
Have the projected service life.
Be the best for the money spent, as required by owner or client.
Conform to all pertinent legal requirements.

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municipality will assign emergency functions to carry out the EOP. A properly designed plan defines the roles of local officials in the emergency management structure. It also specifies the individuals who will be responsible for all aspects of disaster response such as emergency services, logistics, administration, supplies, resources and documentation.

It can be seen that many people are involved in managing a disaster during the response phase. In order to have continuity in command and direction, an emergency staff must be assigned and an emergency operation center must be available for use. This operation center must be centrally located at an area isolated from the scene of the disaster. It must be properly equipped for monitoring the progress of the incident.

Once the emergency operations plan is written, it cannot just sit on a shelf and wait for something to happen. It is important for the municipality to exercise the plan to determine any deficiencies. Also, the plan must be re-evaluated to update hazard vulnerability, available resources and other important parts of the plan.

Is emergency planning easy? Absolutely not. Is it an important function for all municipalities? Absolutely. In order to assist local governments in emergency planning, Federal Emergency Management Agency and Pennsylvania Emergency Management Agency both provide training courses and guidelines for emergency management planning. With this federal and state training assistance, your local municipality will be better prepared to respond to and recover from any emergencies or disasters within their borders than they have ever been before.

Most likely, members of your local government have participated in such training and are the first contact for you, as a resident, to obtain information on how to respond to and recover from an emergency event.

Having been involved in emergency services and emergency planning in Perkasie Borough for many years, I have seen the many advances made in the training and preparedness levels within the local communities. Exercises ranging from tabletop to live programs have heightened the responders' understanding of the importance for proper management of a major incident. As the years come and go, I am encouraged by the new levels of enthusiasm toward emergency planning which are being displayed by the elected officials and volunteers involved, and am confident that the work that has been put into the system will succeed in protecting life and property during a disaster.

PLAYGROUND SAFETY

by Eugene R. Marks
NPSI Certified Playground Safety Inspector

Playgrounds are a fundamental part of a child's learning and development. Each play area should be safe, encourage exploration and present the child with a variety of activities which strengthen motor skills. Unfortunately, more than 2,000 children are treated in U.S. hospital emergency rooms each year for injuries associated with playground equipment. Most of these injuries are due to falls from the equipment onto the ground. Presently there is no national law or safety standard for public playground equipment. Only a few states have passed legislation pertaining to playground safety. Pennsylvania is not one of them. Without governmental inspection, playground owners are entirely responsible for proper installation and maintenance of equipment.

Several handbooks have been written concerning playground safety. The two more widely used publications are:

1. Standard Consumer Safety Performance Specification for Playground Equipment for Public Use, American Society for Testing and Materials (ASTM), F1487-05.

2. Handbook for Public Playground Safety, U.S. Consumer Product Safety Commission (CPSC), Pub. No. 325.

The ASTM standard establishes recognized safety standards which address injuries identified by the CPSC. The CPSC handbook includes guidelines for designing, constructing, operating and maintaining public playgrounds. Both publications provide guidelines for playgrounds used by children ages 2 through 12. These guidelines

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MEMORIES OF JAMES LEISTER, P.E. (April 18, 1936 - May 4, 2006)

In May 2006, CAI lost a firm builder. Jim joined CAI in January 1965, and served as CAI's President from 1978 until retirement in 1998. He was a Quakertown boy who graduated from Lehigh University in 1959, married his high school sweetheart, worked, lived, and died here.

If you needed help he was there with an answer, idea, or reference. If you needed friendship, he was there. He was a great guy, boss, and good friend. Those of us who worked with him and those of you who knew him through his activities and projects will sorely miss him.

Jim liked to tell us that he was "just a dirt road engineer," as he described his early schedule including surveying in the morning, office work in the afternoon, and municipal meetings in the evening since there were then only 5 employees at Richard S. Cowan, Consulting Engineers. He tried to bolster this self-depreciating image by telling us that his first job here was "designing a chicken coop," but nobody ever agreed with his rudimentary description of his abilities. Jim liked best to remain in the background, gently guiding, but always putting employee and client welfare first.

In his farewell article in the first "Angle and Line," Summer 1998, he reported that while his "projects were never monumental in size, they were positive improvements regarding the welfare of the citizens." Those are monuments in and of themselves.

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have been formed to minimize the likelihood of life-threatening or debilitating injury. They do not claim to prevent all injuries.

Playground fatalities reported to the CPSC resulted from falls, entanglement of clothing, head entrapment, or impact by equipment. Nearly 75% of all playground equipment-related injuries resulted from falls. Children have died by having their hood drawstring caught on slides or other playground equipment. Spaces which allow a preschool child's torso to pass through may not allow his head to pass through the same space due to their unique body dimensions at that age. To address these issues, general areas that need attention when caring for a playground include the following:

Location – Consider the slope and drainage of the land. The play area should be away from streets or other potential hazards. If fencing is used to contain playground activity, it should not prevent observation by supervisors.

Equipment Design – Identify and eliminate sharp edges, protrusions, pinch/crush points, and possible head entrapment areas. Specific gauges and templates are used to identify these hazards. Platforms must be kept below maximum heights. Handrails, guardrails and barriers must be included where required.

Use Zones – Allow space between equipment that is free of obstacles which could be run into or fallen onto. A swing, for example, needs a larger use zone than a merry-go-round, and should be kept to the perimeter of the playground. Stationary equipment, like a sandbox, may be placed in the interior of the play yard. Play areas should be organized to avoid conflicting activities that would have children running between different activities. Separate areas should be designated for preschool children (ages 2 to 5 years) with appropriately sized equipment to serve their specific developmental levels.

Protective Ground Surfacing – Equipment must not be placed over concrete, asphalt or hard packed earth. Proper surface material should be maintained at its required depth. Wood chips, double shredded bark mulch, engineered wood fibers, sand, gravel and matting can be used as protective surfacing. Generally, the most practical material used is engineered wood fiber. This is a more uniform material and provides better protection than regular wood chips or shredded bark. Six inches of engineered wood fiber will protect a playground surface as compared to a required depth of ten inches for wood chips.

Proper Installation and Maintenance – Assembly should not deviate from the manufacturer's instructions. Proper anchoring of equipment is very important. After assembly and before use, equipment should be thoroughly inspected by a qualified person. The type and amount of use dictates the time between future routine inspections. Simple things such as loose bolts and normal wear on equipment will lessen structural integrity and create a hazardous environment for children.

Signage and Labeling – Playground signage should be placed at each entrance to the playground. At a minimum, the sign must indicate the age group for which the area was designed. Adult supervision should be strongly recommended. Labeling on equipment should indicate the manufacturer's name and serve as a constant reminder that proper surfacing material must be maintained.

If playground owners take a proactive approach, many accidents can be avoided. Conducting a certified playground safety audit and routinely performing equipment inspections can greatly reduce the potential for serious injuries and associated costly lawsuits. Records of audits, inspections, manufacturer's specifications, and playground injuries should be kept on file to support proper playground operation.

The National Playground Safety Institute (NPSI) was officially established in 1993 by the National Recreation and Park Association (NRPA). NPSI acts as a national clearinghouse and information resource specializing in public use playground issues. NPSI also heads a playground safety-training program that compliments the standards and guidelines of the ASTM and CPSC. The Institute has trained over 7,000 Certified Playground Safety Inspectors worldwide.

Cowan Associates, Inc. has personnel who have completed this training and are certified by the National Playground Safety Institute. Cowan has been involved with several playground design and construction projects. Now, to provide a complete and safe end product, we are qualified to perform playground audits and safety inspections. Assistance in implementing a comprehensive safety program for your playground is available at your request. Please call 215-536-7075, Extension 142.

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ANGLE and LINE

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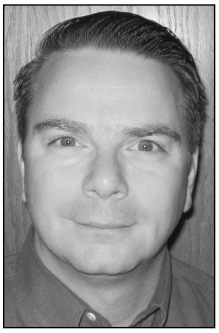

Joining Cowan Associates, Inc. as a landscape architect, Robert Whartenby comes to the team with 17 years of experience in land development, educational facilities planning, and project management. He holds a Bachelor's Degree in Landscape Architecture and a Master's Degree in City and Regional Planning from Rutgers University, New Jersey. He is also a licensed Landscape Architect in New Jersey and Pennsylvania.

Robert has considerable experience as a landscape architect, planner and project manager through his former employment with Langan Engineering and Schoor DePalma. He also has the unique experience of having been in the proverbial "client's seat," serving as a regional manager for site acquisition, predevelopment, and site feasibility for the New Jersey Schools Construction Corporation. Prior to joining Cowan Associates, Inc., Robert was the senior project manager for a 400,000 square foot high school in central New Jersey. This challenge involved managing numerous consultants and the construction manager while maintaining an aggressive construction schedule and conservative budget.

His capabilities will further enable the firm to offer new services, reach new clients, and participate in diverse and exciting projects.

Cowan Associates, Inc. would like to congratulate David Perry on his successful completion of the written examination for Electrical Inspector, One and Two Family Dwellings. The certification module which Dave completed is established by the National Certification Program for Construction Code Inspectors, and is required to perform electrical inspections of residential construction. Dave's continued education in the building code administration field will allow Cowan Associates to continue to provide services as a certified third party inspection agency, administering the Pennsylvania Uniform Construction Code.

CAI

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