

**THE COMBINED
EMERGENCY SERVICES
FOUNDATION**

REPORT ON TRIP TO THE USA

From

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**VICTORIA STATE EMERGENCY
SERVICE**



Introduction

I departed for the USA on 11 October 1997 and returned on 3 November 1997. My trip involved visits to three state emergency management agencies, a number of counties (parishes in Louisiana) and in some cases county emergency management agencies, and a conference on flood warning systems in St. Louis.

Worthy of note was the hospitality I received in the USA, particularly from the emergency management agency personnel. They were generous with their advice and knowledge and offered material to the point of overload. That exchange of information has not ceased with my return to Australia and information is still flowing both ways via the Internet. This is an element of the CESF scholarships of which the Foundation should be cognisant and proud. The networks that have been set up are not limited to the period of a particular trip and will go on virtually forever.

For the purposes of this report I will discuss;

- A number of miscellaneous items which are either of interest on their own or explain items referred to in other parts of the report,
- the structure, roles etc. of the three state emergency management agencies, with emphasis on flood plain management but with other factors considered,
- the general county situation but with an emphasis on the County of St. Charles in Missouri and its emergency management agency,
- the conference on flood warning systems, technologies and preparedness, and
- information on methodology and techniques gained on the trip which I believe can be useful to the Victorian emergency management system.

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NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

As in Australia, there is no normal insurance available in the USA to protect a resident against the cost of a flood event. Unlike Australia, the USA federal government intervened in 1968 and provided finance for a flood insurance scheme that is administered by the state emergency management agencies and sold by private insurance brokers. The latter group operates on a commission basis whilst the actual risk is taken by the federal government.

There are a number of "rules" which have to be complied with for the flood insurance to be available to householders and these are mainly to do with building regulations and zoning. This means that the local planning authority, normally the local jurisdiction, has to agree with all the guidelines before the community can participate in the NFIP and flood insurance is available to their residents.

The Federal Emergency Management Agency (FEMA) has flood mapped the whole of the USA and hence has designated areas as flood plain. A variety of information is contained in the flood maps, such as:

- Common physical features like major highways, secondary roads, lakes, railway lines, streams and other waterways.
- "Special Flood Hazard Areas"
- Base (100 year) flood elevations or depths
- Flood insurance risk zones
- Areas subject to inundation by the 500 year flood

This allows a resident, insurance agent or FEMA to

- Identify Special Flood Hazard Areas
- Identify the location of a specific property in relation to special flood hazard areas
- Identify the base (100 year) flood elevation at a specific site
- Identify the magnitude of flood hazard in a specific area
- Locate regulatory floodways
- Identify undeveloped coastal barriers, where flood insurance is not available.

Although the scheme has been generally successful, there has been some problems where the local authorities have a vested interest in not complying with the guidelines. In one of the counties in Tennessee, for example, there is a significant tourist development in an area which the federal government has designated flood plain. To comply with the insurance guidelines the county would have to refuse planning permits for any new development and for any renovations and/or add-ons which equal half the value of the property. Because of pressure from business people they have not agreed to the guidelines and their residents are unable to access flood insurance.

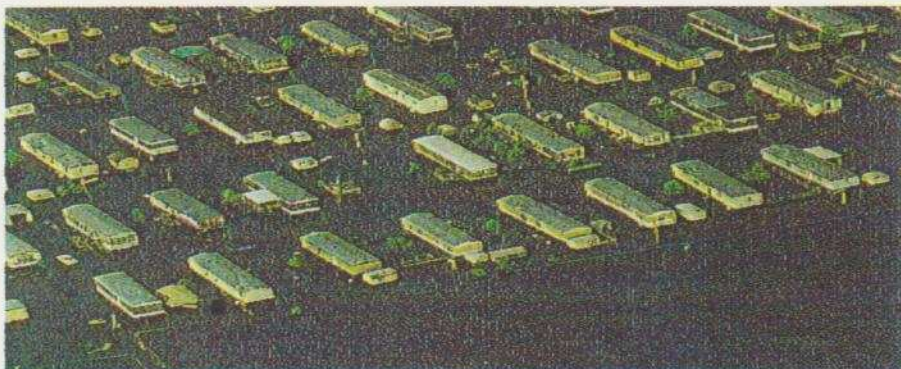
HAZARD MITIGATION GRANT PROGRAM (HMGP)
(FLOOD BUY-OUT SCHEME)

Put simply, this is a scheme to buy property that is located in the designated floodplain and move the families to non-threatened locations. The actual purchasing is done by the community (local jurisdiction) and the homes in question are either moved or demolished. The purchased properties are then maintained as community open space. It is only available to communities participating in the NFIP.

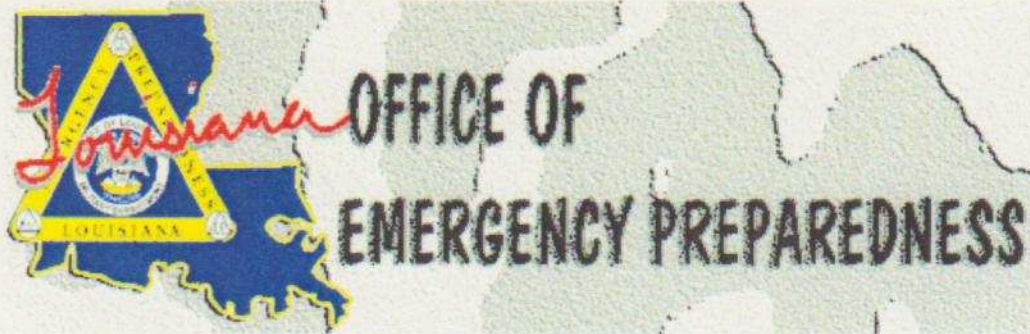
It is looked at as the only long term solution to flood problems and most of the federal mitigation funds are now being put into this scheme. It must be appreciated that the scheme is voluntary and expensive for the authorities in the short term as the buy-out price is calculated by an independent valuer who is instructed to ignore the flooding aspects of the property. Despite the short term costs the scheme is seen as long term cost-effective because of the number of people that will no longer require, almost annually, some form of compensation or relief money. The costs of "buy-out" are shared between the federal and other governments on a 75% to 25% basis.

The mitigation funds provided to the states are 15% of the flood damage that has occurred last year so the interesting situation arises that funds for prevention (mitigation) are provided after the event. This does not mean that federal funds after a declared disaster only total 15% of the damage, but just that proportion of the money allocated to mitigation.

There are examples of the success of the buy-out scheme and the following photographs demonstrate it vividly. They were taken at the same location in Missouri during the significantly large floods of 1993 and 1995. In between those floods the authorities had convinced that community to accept buy-out.



LOUISIANA OFFICE OF EMERGENCY PREPAREDNESS (LOEP)



The Louisiana Office of Emergency Preparedness is located in the capital city of Louisiana, Baton Rouge. The agency is managed on a day to day basis by an Assistant Director although he reports to a Director who is a Brigadier General and the Adjutant General of Louisiana. This means that the Brigadier General is also in charge of the National Guard and does ensure that there is excellent cooperation between the LOEP and the Guard. The LOEP has only 32 full time staff but it must be emphasised that every local government area, or parish as they are known in Louisiana, has a full time emergency management person. A significant part of the parish person's salary is paid by the LOEP although most of this money consists of re-directed federal funds.

The LOEP has community awareness, training and emergency management planning roles and administers the federal flood insurance and buyout schemes. During "declared disasters" they activate a large State Operations Centre in which positions are provided for virtually every government agencies and a number of critical private agencies such as telephone companies. Disasters can be "declared" at local (parish), state or national levels and as soon as they are, the LOEP has control over the whole operation. It answers directly to the State Governor and even has control over the State Treasury.

The hazards that Louisiana faces are many and varied but include;

- flooding from the Mississippi River
- largest concentration of industrial chemical plants in the USA, along the banks of the Mississippi
- three nuclear power stations
- hurricanes
- storm surge after hurricanes.

To really appreciate the flood and storm surge threat in Louisiana one has to gain an understanding of the state geography. Suffice to say that the highest point in the whole state is Mount Driskill which is only 535 feet above sea level. Highway 10/12, which goes through Baton Rouge and runs East-West, virtually forms the line on which the LOEP assess their most threatened areas. All land south of that highway is either only a few feet above sea level or is below sea level. New Orleans, for example, has an average land height of 5 feet below sea level and has 30 extremely large pumps operating 24 hours per day just to keep the city dry.

Lake Pontchartrain on which New Orleans is located on the southern side, acts as a buffer for the authorities when the Mississippi is in flood. By manipulating sluice gates in the levee

system, flood water is diverted from the river to the lake and large areas of swamp land. Of course there is a limit to the amount of water that the swamp and lake can take and flooding of populated areas does occur every year. A rise in non-structurally protected waterways of just 6 inches can mean significant flooding over large areas.

The LOEP's main nightmare is the thought of a storm surge following a category 4 or 5 hurricane with an on-shore wind at high tide. There is no recorded incident of this, but it would flood virtually all the land south of the highway 10/12 including New Orleans and would involve the evacuation of approximately 2 million people. It would also mean the flooding of all the chemical industries and the results of that would be extremely serious.

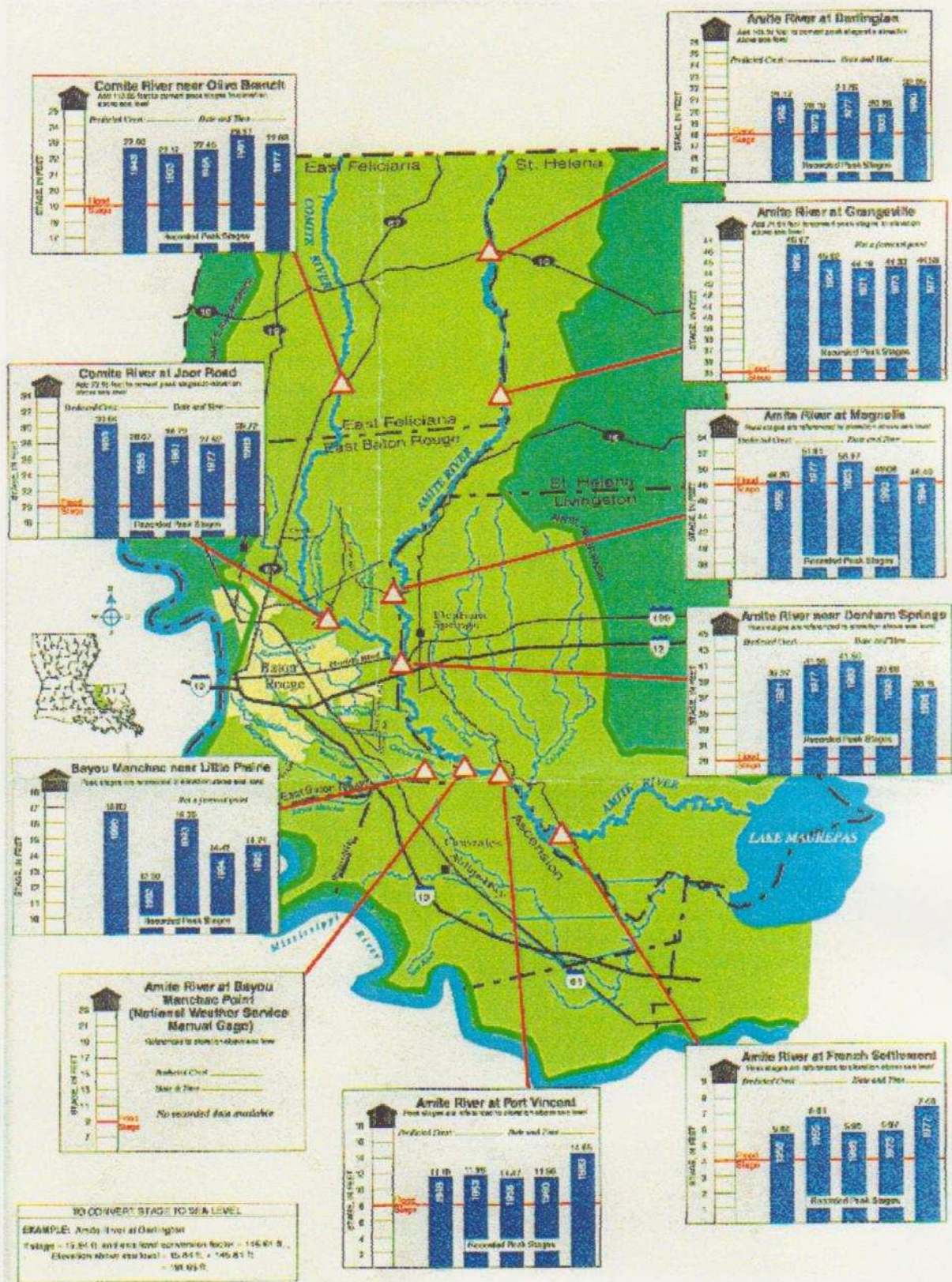
On the positive side, the flood warning and prediction system is sophisticated and efficient. All river gauges throughout the state are fed to the United States Geological Survey agency by either normal radio links or by satellite. In specified locations, such as the LOEP operations centre, they are able to view either in mapping form or by tables, the gauge readings from every river.

Their method of educating the community as to flood warnings and disseminating those warnings is worthy of note. They, in cooperation with the other agencies including the United States Geological Survey, produce a series of "Flood Tracking Charts". These are distributed to householders and show them, in the context of the river(s) nearby, the historical results of various river gauge heights. By referring to the charts the householder can relate predicted gauge heights to flood events of yesteryear. An example of such a chart is shown over page.

Actual flood warnings are disseminated to the community using all types of media but especially commercial radio. They are either provided to the radio stations to be read with normal programming or, by utilising special equipment which the station has to include as part of their licensing agreement, the LOEP can broadcast warnings over all, or selected, radio stations in the state. These messages are restricted to 2 minutes and many, such as those concerning the nuclear power stations, are pre-recorded. In the main they will direct people to where they can get more detailed information.

Along the principal highways, evacuation routes are listed and off-ramps are numbered and labelled for evacuation centre purposes. Each area along the highway also indicates the frequency of the local radio stations which would be broadcasting any warnings. With an evacuation of the South, for example, people would head North along the highway and the highway patrol would be instructed to close all off-ramps until out of the danger area. People would then be directed to the first evacuation centre until it was full, at which time that particular off-ramp would be closed. This would then direct people to the next off-ramp where the same procedure would be followed.

FLOOD TRACKING CHART-AMITE RIVER BASIN-LOUISIANA



MISSOURI STATE EMERGENCY MANAGEMENT AGENCY



General

The State Emergency Management Agency (SEMA) in Missouri is located in the state's capital, Jefferson City. Other than the normal corporate services and executive branches, it has three branches that deal with emergency management;

- Natural and Technological Hazards Branch
- Operations Branch
- Disaster and Mitigation Assistance Branch

SEMA administers the federal flood insurance and buy-out schemes and Missouri has been the most successful state in the USA with the implementation of the latter scheme. \$100 million has been spent on moving people from the floodplain and in severe floods during 1995 there were 2,000 less families affected than similar floods in 1993. However, SEMA estimates that there are over 216,000 households in Missouri located in designated flood plains so there is still considerable work to be done.

SEMA carries out a considerable amount of training for local government officials, emergency service organisations and key personnel in private organisations. Accommodation and meals are provided to students but no travelling or associated allowances are paid. The training concerned is a combination of courses run on behalf of FEMA or those developed by SEMA itself. They have only 2 full-time training people, one of whom is almost completely devoted to writing exercises or teaching other people to write exercises. Despite the lack of people dedicated to training they deliver more than seventy courses annually by using staff from other areas and, in particular, trained volunteers.

SEMA identifies people in the community who have developed an interest about a particular subject and wish to participate as a course presenter. They train them on the particular subject and presentation skills, and then allow them to present modules of courses at which they are assessed. Eventually the volunteer manages a complete course on an unpaid basis using resources and accommodation provided by SEMA.

Although SEMA is part of the Missouri National Guard and is collocated with the National Guard at their state headquarters, the Director SEMA reports to the State Governor. In times of 'declared disasters' when the SEMA controls the operations of all other state agencies, the Governor and other state officials locate themselves in an area adjacent to the State Operations Centre. Their main threats are flood and storm, and they also deal with 2 nuclear power plants.

The operations centre itself is extremely large and very sophisticated. When it is fully manned during an emergency there are positions for over 100 people. It has the facilities to project a number of images on large screens including mapping, hazard warnings and TV broadcasts. The technical facilities of the centre are controlled from a central control room which has a view of the operations area and is staffed by people skilled in mapping and similar computer applications. They have the ability to talk on HF and VHF radio to their own personnel around the state and also able to communicate with key state agencies such as the Highway Patrol. This means that any key agency personnel present in the operations room can be provided with the means of radio communication to their own agency.

The centre is exercised regularly and for actual operations has 3 levels of activation. At the lowest level only SEMA staff are involved. When the situation is such that SEMA assess a possible escalation of the event, personnel from key state agencies attend the centre. At times of declared disasters all positions are filled.

Missouri has a significant flood threat due to the presence of the Mississippi, Missouri and other large rivers. There are some difficulties with the identification of flood situations due to the role played by the United States Army Corps of Engineers which basically controls all levee banks in the USA and also determines whether a river is in flood. Unlike Australia which has 3 levels of flooding, (Minor, Moderate and Major), they only have one flood category. In other words, as far as the Corps are concerned, there is either a flood or not.

This results in the Corps of Engineers declaring a flood because of the height of the river when there has been no overtopping of the levee bank. As far as SEMA is concerned the situation is "nuisance only" and the population should not be alarmed. It must be recognised that the situation for the Corps is very difficult in some areas because of the local politics. Although they have the overall authority they are obliged to deal with "levee boards" which can come from groups of farmers, residents or local government. Hence, they may be dealing with a board in one area that wants the levees at a certain height and 2 miles away another board wants a different height.

Warnings are disseminated by a variety of means but mainly to local government (county) level. However, they are also part of the emergency Broadcasting System and one of the radio stations in Jefferson City is designated as the focal station for warnings under its licence agreement. SEMA send the appropriate message to the station and it is responsible for broadcasting it from its own transmitter and also distributing it to other radio stations.

TENNESSEE EMERGENCY MANAGEMENT AGENCY (TEMA)



TEMA headquarters is located in Nashville and is collocated with its parent body, the Tennessee Military Department. This means they have a close relationship with the Tennessee National Guard. TEMA has small staff numbers of just over sixty, most of whom operate out of the Nashville headquarters. They do have 3 regions and some staff operate out of the regional offices.

TEMA has two basic areas of responsibility:

- Community awareness, education, mitigation, planning and training, and
- Operational control during “declared disasters”.

As has Victoria, Tennessee is adopting a risk management approach to emergency management planning and TEMA was very interested in our (VICSES) “facilitator package” for leading local government through the risk management process.

One interesting aspect of TEMA compared to the agencies in other states, is their direct control over all federal monies supplied under the auspices of emergency management. Whether the particular “bucket” (their term) was an annual allocation or specific project based, it was paid into their budget and distributed by them.

As with the other state emergency management agencies, TEMA administers the federal flood insurance and buy-out schemes. As far as the latter is concerned they have an excellent example of a variation to the scheme in a small Tennessee community. Due to being located on the side of a creek, a number of residents were flooded every year and had agreed to be “bought-out”. However, the town administration, although happy of ridding themselves of the annual flooded residents problem, were not particularly happy at losing a number of good rate payers. The administration then proposed that;

- The residents concerned were “bought-out” by the federal government.
- The houses in question would be inspected by the authorities and assessed whether structurally sound enough to move.
- If sound, the house would be moved at the expense of the resident, to flood free land supplied at no cost by the town authorities.

The result is a win-win situation where the local authorities rid themselves of an annual problem that requires relief funds but retain their ratepayer base.

The state emergency operations centre, which like the other states was quite large and is activated during large emergencies and the "declared disasters". The last Friday of every month they have a short meeting in the centre for all personnel who would attend during normal operations. The meeting will usually include a short "emergency management talk" but the main purpose is to get everyone to know each other. With so many agencies represented in the centre during an operation there is the inevitable turnover of personnel. The monthly meeting is intended to reduce the associated problems of non-familiarity with other people and the room itself.

They have a minimum of 4 exercises per year and these exercises but are normally "table-top". They are also required by federal statute to have at least 2 special exercises per annum on each of the 2 nuclear power plants in Tennessee. More practical exercises, where actual field resources are used, are normally held at regional or local levels.

Of particular note was the method of activating personnel using electronic means, with a device and software on a normal PC. The system, which is manufactured by a Tennessee company, is known as the "Communicator" and it allows an automatic contact with personnel by dial up means. The contact can be to a telephone number, pager or fax machine and gives the recipient a message. That person then rings the system and by submitting a PIN number automatically records an acknowledgement of the contact. At any time the person initiating the callout can, on screen or printed copy, get a report on who has been contacted.

There is no limit on the number of people that can be on the list or on the number of contact points for a particular person. The system will try, for example, a home phone number first and if that is not answered try a mobile phone. If there is still no response it could try a pager or fax. Many of the messages that may be sent out by the system are pre-recorded and the duty officer only has to select the appropriate message for the incident, and select "go".

Although the Communicator is designed for operations type callout for emergency services it has been adapted by some small Tennessee communities for flood warning. Where there are a number of residents regularly affected by floods, they have tied the river gauge system to a Communicator. When the river reaches a specified height the Communicator dials the residents and warns them. As the river rises, the Communicator will automatically change the message and, if relevant, expand the group of residents it is contacting. At any time, the local authorities can check as to whom has been contacted and whether they have acknowledged that contact.

TEMA runs training courses on behalf of FEMA and a number of its own courses. They also coordinate applications for attendance at the FEMA college in Maryland. They achieve all this with a very small number of permanent training staff and by using "contract providers". Each year they call for trainers to tender for the provision of courses and believe that the competitive nature of this system affords a very cost effective result. They find that few large training companies can be bothered with the specialist nature of the courses and generally speaking, the contracts go to small one or two person companies.

COUNTY OF SAINT CHARLES

The County of Saint Charles is in the Saint. Louis area and is of historical significance to the USA. The city of Saint Charles was founded in 1769 by Louis Blanchette, a French-Canadian hunter and fur trader and became the departure point for most of the pioneers heading to the West on the Santa Fe and Oregon trails. It became officially a city in 1808 and served as the capital of Missouri between 1820 and 1826. Its historical ties to the opening of the American West is demonstrated by the list of famous pioneers who lived in the city, including Daniel Boone.



The County of Saint Charles did not become prominent in the pioneering history of the USA by accident, but because of two great trading rivers. As can be seen from the map on the left, the county has in its boundaries the junction of the Mississippi and Missouri Rivers and it became one of the focal points of the river trade. That junction, and those of other significant rivers, now affords the county a flood risk of considerable size. In the floods of 1995, for example, in some parts of the county water was 37.5 feet above normal.

The farm house shown below demonstrates the severity of the flooding and it must be noted



that the farmhouse is typical of that part of the country. Two story design and very tall.

The potential for this type of flood event has resulted in the county having its own emergency management agency which is located in the city of St. Charles.

SAINT CHARLES EMERGENCY MANAGEMENT AGENCY (SCEMA)

When one compares Saint Charles with an Australian local government equivalent, for example Geelong, it appears surprising that they would have their own emergency management agency. It probably reflects both the size of the problems that the county can face and the general American attitude concerning coordinating bodies for emergencies.

SCEMA has four permanent staff and they are all located adjacent to their emergency operations centre which is part of the county police headquarters. During operations, both within the centre and in the field, SCEMA supplements its staff with trained volunteers.

The agency's funding is almost completely from local government although they do receive some funds from the State. The latter is usually tied to specific projects that are generally of a community awareness type. They also run some training courses on behalf of the Missouri State Emergency Management Agency.

The SCEMA emergency operations centre is relatively unsophisticated compared to the state agencies. However, when one considers that it is local government the array of equipment and facilities is quite impressive. They do have projected digital mapping of their operational area including overlaid river level gauge heights. Their communications area comprehensively covers all the relevant communications systems in the county and during operations is staffed completely by volunteers. They are also tied in with the RACES (Radio and Civil Emergency System) which is an off-shoot of the Amateur Radio Society.

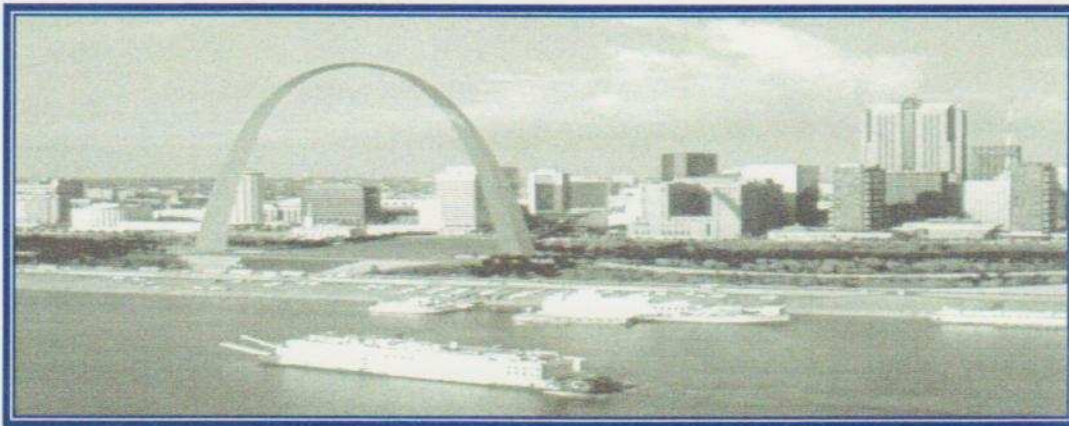
Of particular note is SCEMA's system for contacting at-risk groups such as hospitals and schools. Each of the groups has a special radio receiver which is located, during their particular hours of operation, in a place which is always manned. When an emergency occurs that threatens some or all of the groups in question, SCEMA can broadcast a warning tone, followed by a message. In other words at the receiver end they first receive tones similar to a pager tone, and then the text of the particular warning. There is no facility for the groups in question to transmit back to SCEMA although they can communicate via normal means. This system is quite unsophisticated and not particularly expensive, but it does provide a means of informing large numbers of people very quickly.

During the 1995 floods there were twelve schools threatened by the flood waters and there was only a relatively short time to act on this. (There had been 14 unforeseen breaks in the levee banks.) Using the warning system described above all the schools were evacuated in time.

Of particular interest to me was the design of the flood boats used by SCEMA which were considerably larger than those used by VICSES. They were of punt design and approximately 6.5 metres long, but still only had a 40HP outboard motor. This compares to the 4.5metre boats VICSES uses, with 60HP outboard motors.

Conference on Flood Warning Systems, Technologies, and Preparedness

Second National Conference and Exposition of the
National Hydrologic Warning Council (NHWC)
Incorporating the 10th Annual Conference of the
Southwestern Association of ALERT Systems (SAAS)



October 29-31, 1997
St. Louis/Frontenac Hilton
St. Louis, Missouri

The conference in St. Louis was attended by representatives from all the relevant government agencies in the USA, local government, emergency managers and people from private companies. In addition to the USA people there were representatives from Australia, the U.K., Portugal and China. The conference agenda is attached to this section of the report and was a mixture of the technical (hydrological and electronic), operational and sociological aspects of flood warnings.

There was the occasional frustration at conferences where sessions are being run concurrently where two subjects of interest were being covered in different rooms at the same time. On the other side of the ledger there was sometimes the occasion when neither sessions available at any one time particularly appealed.

Many of the presentations will take some time to analyse for the possible benefits to Victoria's emergency management arrangements and, in particular, flood strategy. Indeed there will be a considerable amount of follow up material coming from the USA and some flowing back the other way and an interest Internet group has been formed from some of the attendees.

The conference agenda follows, and then in note form, some of the most interesting aspects presented.



Conference Agenda

Tuesday, October 28, 1997 (Room Locations in Bold)

2:00 pm - 7:00 pm Pre-Registration and check-in **Hospitality Suite**

Wednesday, October 29, 1997

8:00 am - 5:00 pm Registration and check-in

8:30 am - 12:00 pm Workshop Session A/Bus Tour

Workshop 1A: **Anatole**

Effective Use of Weather Information

Workshop 2A: **La Café**

The Whole Enchilada: A Workshop on Developing a Comprehensive Flood Warning Program

Workshop 3A: **Monmartre**

The QNX Operating System as a Foundation for Flood Warning and Data Collection System

Workshop 4A: **Pommard**

Warning Coordination, Communication, and Decision Making

Workshop 5A: **Dauphine**

"Show Me the Payoff", An Almost-Real Flash Flood Experience

Bus Tour of NWS WFO **Meet in Lobby**

1:00 pm - 4:30 pm Workshop Session B/Bus Tour (repeated from morning)

Thursday, October 30, 1997

8:30 am - 7:00 pm Vendor Exposition **Vendor Exposition Hall**

8:30 am - 10:00 am Session 1 - Plenary **Ambassadeur Ballroom 1,3,5**

"Introductions, Welcomes, and Keynote Speakers"

10:30 am - 12:00 pm Session 2 - Plenary **Ambassadeur Ballroom 1,3,5**

"National and International Focus on Flood Preparedness"

12:00 pm - 1:30 pm LUNCH **Ambassadeur Ballroom 2,4,6**

Speaker: Major General Murray Sagsveen, North Dakota National Guard

1:30 pm - 3:10 pm Session 3A - Concurrent **Ambassadeur Ballroom 1,3**

"Progress Since the '93 Mississippi Floods"

Session 3B - Concurrent **Ambassadeur Ballroom 5**

"Heavy Rainfall Forecasting and Climatology"

3:45 pm - 5:00 pm Session 4A - Concurrent **Ambassadeur Ballroom 1,3**

"NWS Approach to Flood Forecasting"

Session 4B - Concurrent **Ambassadeur Ballroom 5**

"Federal Regulatory Issues"

7:00 pm - 9:00 pm ANNUAL AWARDS BANQUET **Ambassadeur Ballroom 2,4,6**

Friday, October 31, 1997

7:00 am - 8:00 am	BREAKFAST (buffet)	Ambassadeur Ballroom 2,4,6
8:00 am - 9:45 am	Session 5A - Concurrent <i>"Interagency Cooperation in Developing a Local Flood Warning Program-I"</i>	Ambassadeur Ballroom 1,3
	Session 5B - Concurrent <i>"Computer Application Developments in Local Flood Warning"</i>	Ambassadeur Ballroom 5
10:15 am - 11:30 am	Session 6A - Concurrent <i>"Interagency Cooperation in Developing a Local Flood Warning Program-II"</i>	Ambassadeur Ballroom 1,3
	Session 6B - Concurrent <i>"Internet Applications in Flood Warning Programs"</i>	Ambassadeur Ballroom 5
12:00 pm - 1:30 pm	LUNCH <i>Speaker: Dr. Robert Hirsch, U.S. Geological Survey</i>	Ambassadeur Ballroom 2,4,6
1:30 pm - 3:10 pm	Session 7A - Concurrent <i>"New Approaches to Flood Warning Preparedness"</i>	Ambassadeur Ballroom 5
	Session 7B - Concurrent <i>"The Floods of '97 and the Lessons Learned"</i>	Ambassadeur Ballroom 1,3
3:30 pm - 4:30 pm	Session 8 - Plenary <i>Panel Discussion on "The Future of Flood Warning"</i>	Ambassadeur Ballroom 1,3

Of particular interest was:

- The development of a community flood warning system and plan in the City of Roseville, California. The committee structure that enabled a comprehensive program to be developed and the interaction between technical consultants, members of the community and the emergency services.
- A training program for "fast water rescue".
- Communicating with the public properly, compared to purely issuing flood warnings.
- The approach of flood forecasting and warning in the United Kingdom, and particularly their community awareness program.
- Some quite dramatic case studies of the mitigating effects of flood plans and warning systems where such had been instigated between floods.
- The use of the Internet in receiving weather information and disseminating flood warnings.
- The use of the Internet in disseminating river gauge information.
- Some cases where private companies, with a vested interest in having advanced warning to protect their property, are funding flood warning systems for the whole community.

RECOMMENDATIONS AND OUTCOMES

From my trip, in addition to information which will continue to flow between VICSES and a number of agencies and individuals in the USA, I perceive the following outcomes:

- VICSES will put forward to the Bureau of Meteorology a proposal to produce jointly "Flood Tracking Charts" based on the Louisiana model. This would then be a joint state and federal project and presumably would be funded by each. It also possible that funding could be obtained from other grant areas such as the Rural Access Program.
- The Australian agent for "The Communicator" will be in Melbourne in January and will pay me a visit. It is my intent to arrange a demonstration of the system to the emergency services and also get more detail concerning the use of it for community flood warning.
- The program on "fast water rescue" will be integrated into the VICSES training program.
- The UK community flood awareness program will be used as a model for a similar program in Victoria.
- The VICSES use of the Internet will be expanded to experiment with the dissemination of flood warnings.
- The concept of private enterprise funding community flood warning systems be introduced in targeted areas of the state. Geelong would be a perfect example where this should work.
- The emergency radio broadcast system be put before the National Communications Advisory Group
- The Tennessee (contract) and Missouri (volunteer) training policies be investigated by VICSES
- The VICSES local government planning and risk management facilitator packages be sent to the Tennessee and Missouri Emergency Management Agencies for them to use if they want. If and when they do use the packages VICSES will be acknowledged.