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REPORT ON THE  
La Frontera Fire  
for  
City of Round Rock



June 15, 2010

By:

**MANAGEMENT ADVISORY GROUP, INC.**

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Lake Ridge, Virginia 22192  
(703) 590-7250

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June 15, 2010

Mr. Jim Nuse  
City Manager  
City of Round Rock  
221 E. Main Street  
Round Rock, Texas 78664

Dear Mr. Nuse:

Management Advisory Group, Inc. (MAG) is pleased to provide the enclosed report to the City of Round Rock in reference to a review of the La Frontera fire incident of December 2008.

The five year review of progress since the original 2005 MAG study will be provided under separate cover. This will allow for focused analysis on the fire event and the progress review.

Chief Neville and I have had a cooperative relationship with all parties in this review and have developed helpful recommendations for your consideration. Interviews with all parties have remained confidential. Therefore, findings and conclusions are a function of the entire data gathering and interviewing effort.

We appreciate this opportunity to be of service to the City of Round Rock.

Sincerely,

Donald C. Long, Ph.D.  
Management Advisory Group, Inc.  
4000 Genesee Place, Suite 205  
Lake Ridge, Virginia 22192  
Phone: 703.590.7250

## **Review of the La Frontera Fire Incident for the City of Round Rock, Texas**

### **Project Goal:**

The purpose of this report has been to review and evaluate the Fire Department's operations at the "La Frontera" fire incident that occurred in December 2008.

### **Overall Project Approach:**

#### **Data Review:**

MAG reviewed relevant reports made by the Round Rock Fire Department, internal memos, state level reports, recordings, media reports, and relevant written documentation that were available.

#### **Personal Interviews:**

During MAG's primary onsite visit, MAG conducted personal interviews with numerous City officials and Fire Department personnel.

#### **Work Plan Overview:**

The following briefly describes the overall approach and methodology for this project.

### **TASK 1.0: INITIATE PROJECT**

#### **Objectives:**

- Identify objectives for the review, and assess how well the initial work plan accomplishes those objectives.
- Establish a *mutually agreed-upon* project work plan, time line, deliverables, and monitoring procedures that will lead to the successful accomplishment of all project objectives.
- Collect and review existing operational data, information, agreements, *relevant* policies and procedures, and any prior studies, or reports.

#### **Activities:**

1.1 Meet with City Manager and relevant City and Department management, project management, relevant staff and others to establish working relationships.

1.2 Discuss the objectives of the project. Identify policy and issue concerns to be addressed during the review.

1.3 *Obtain pertinent reports* relevant to the review, such as:

- concerns expressed by union officials;
- Department operational SOPs/SOGs.

1.4 Finalize the:

- data collection approach;
- interview plan and tentative schedule and interview guide; and
- interim milestones and deliverables.

## **TASK 2.0: CONDUCT LEADERSHIP INTERVIEWS**

### **Objectives:**

- Identify views of officials concerning the Department's performance at the La Frontera incident.

### **Activities:**

2.1 Work with the Project Manager to finalize the interviewee list.

2.2 Establish a final interview schedule that is convenient to all parties.

2.3 Conduct interviews as scheduled.

2.4 Summarize and analyze interview results

2.5 Develop summary report of interviews, in a consolidated format.

## **TASK 3.0: CAPTURE INPUT FROM SELECTED FIREFIGHTERS**

### **Objectives:**

- Identify concerns and satisfactions at the Department's incident operations.
- Identify strengths and weaknesses illustrated at the incident.

### **Activities:**

3.1 Develop interview questions for service providers.

3.2 .Capture critical data in reference to incident operations

3.3 .Conduct RRFD personnel interviews, including all chief officers at the La Frontera fire, union leaders, dispatchers on duty at the time of the event, and fire cause investigator.

3.4 Meet with Williamson County EMS representatives and officers and staff from other responding departments.

3.5 Review feedback obtained from these interviews

3.6 Consolidate data and observations from firefighters within the report to the City, without individual attribution of incumbents

#### **TASK 4.0: IDENTIFY AND EVALUATE ISSUES DEVELOPED**

**Objectives:**

- Build a series of observations and recommendations focused on study objectives.

**Activities:**

4.1 Review performance of personnel, apparatus and equipment at incident.

4.2 Offer recommendations for future operations.

4.3 Provide a *draft* report on the results of all previous tasks.

#### **TASK 5.0: PREPARE A FINAL REPORT AND PLAN**

**Objective:**

- Prepare a report that provides observations and recommendations developed above.

**Activities:**

6.1 Discuss draft report findings and recommendations with appropriate parties.

6.2 Receive and review technical feedback on the draft report.

6.3 Make technical adjustments to the draft to produce a final report

6.4 Engage in appropriate discussions.

**As noted in the cover letter and earlier in this report, the purpose of this report is to review and evaluate the Fire Department’s operations at the “La Frontera” fire incident that occurred in December 2008. The five year review of progress since the original 2005 MAG study will be provided under separate cover.**

## **A UNIQUE AND CHALLENGING FIRE**

On December 8, 2008, the Round Rock Fire Department (RRFD) faced the largest, most complex and most difficult incident in the history of the City and the Department, the La Frontera fire. The fire faced by the RRFD on that day in December, 2008 was an extraordinary challenge due to several factors:

- Concealed nature of the area of origin;
- High winds driving the fire;
- Confused nature of the incident command structure;
- Awkward and ineffective initial attack;
- Failure of the firewall design used on the structure;
- Lack of any organized pre-fire inspection of the building by the RRFD;
- Failure of the RRFD to effectively utilize recalled and mutual aid resources;
- Inappropriate use of heavy streams; and
- Failure of the RRFD to exercise appropriate damage control tactics.

## **RESTATEMENT OF KNOWN FACTS AND EVENT ANALYSIS**

The passage of time between the incident and this review precludes a detailed analysis of the fire itself and the control measures attempted by the RRFD. However, interviews with some of the participants of the control efforts and review of the available documents allows a broad, necessarily approximate, portrayal of the fire and the RRFD efforts to control it.

### **Ignition and Initial Fire Extinguishment Effort by Construction Personnel**

The fire was reportedly ignited by welding operations on the southwest corner of the exterior of the building. The first party to respond to reported smoke from that location was the Assistant General Contractor for the building. He stated he saw smoke emanating from the western exterior wall and discoloration of the wall. He attempted to extinguish the fire with a dry chemical extinguisher but found it ineffective. It is the opinion of the RRFD Fire Investigator that the fire extended from the exterior into the roof structure above the 4<sup>th</sup> floor.

### **Two Nearly Simultaneous, Geographically Close Events**

A Round Rock Fire Department company, previously dispatched and assigned to a natural gas leak a few hundred feet west of the subject building was advised of the fire by construction workers. The company officer investigated and found light black smoke coming from the roof at

the southwest corner of the structure. He subsequently radioed Round Rock Dispatch for a “heavy box” (expanded) dispatch to the location.

### **Initial RRFD Response: Rescue Unit**

Upon arrival of the first unit (a Rescue Unit) dispatched as a result of his request, he directed the officer to the 4<sup>th</sup> floor to investigate the smoke. The Rescue Officer found “smoke and a small amount of fire” when he reached the 4<sup>th</sup> floor. After pulling some ceiling, the Rescue Officer directed attack on the fire (apparently in the attic area), with an ABC dry chemical extinguisher and a water extinguisher, as his apparatus was not equipped with hose.

*Technically, this initial action might seem to be in violation of recognized best practices due to fewer than four firefighters being on the immediate scene to meet the “two in/two out” requirement (The company working the gas leak were a few hundred feet to the west). However, in the judgment of MAG, that action could be justified because the fire had the appearance of being in its insipient stage.*

*If the Rescue units are to be dispatched to fires as independent units, the RRFD should consider equipping these apparatus with a limited amount of 1.75 or 1.5 inch hose with appropriate adaptors (e.g., 2.5” to 1.5”) and upon procurement of new apparatus, a small pump and water tank. It should be remembered; however, that prior to arrival of additional units, firefighter safety considerations would restrict fire attack to insipient fires or those instances where serious injury or a fatality might be averted by immediate action.*

The Rescue Officer quickly discovered the fire had extended beyond their point of attack. It seems probable that at this stage, unbeknown to the officer, the wind had already driven the fire into the roofing material and extended it well into the attic. For undetermined reasons, the officer did not utilize the heat sensing technology carried on his Rescue apparatus at this time to determine the extent of the fire

### **Incident Command Issues**

The Rescue Officer reports that at this point he was unsure if he or the Senior Officer who responded to the nearby gas leak was in charge of the fire. Unable to reach that Officer by radio, he directed the next arriving company (a Quint) to extend their aerial ladder to the 4<sup>th</sup> floor and use their ladder pipe as a standpipe and deploy a hand line on the attic fire.

*To MAG, it is understandable why this unusual circumstance would lead to confusion as to the incident command structure. It might have been clearer had the officer at the gas leak simply created two Incident Command System (ICS) Branches (“Gas Branch” and “Structure Branch”) and assumed the Incident Commander (IC) position for both incidents, or alternatively turned command of the gas incident over to his Driver-Operator and assumed command of the La Frontera incident.*

*In MAG’s view, three aspects of the use of the aerial seem worthy of additional examination:*

- 1) Although justified in some cases, tying up an aerial in the manner done initially inhibits its use for any subsequent use (e.g. rescue of civilians or firefighters, elevated stream, upper story access, etc.);*
- 2) Generally speaking, it is better practice to place aerials in front of rather than behind fire growth; and,*
- 3) Establishment of a hydrant supplied water source would generally be called for when an officer knows that his apparatus was to be used to supply water via its aerial water way.*

The fire attack was joined by another company shortly after the hose line from the aerial was deployed. This additional assault on the fire apparently had little or no effect as the Rescue Officer reported to the Command Post that the fire “had gotten ahead of” the attacking companies and recommended that a trench cut be made.

*Typically, a trench cut is thought of as a cut across the roof, from outside wall to outside wall on the exposed/fire side of a fire wall to relieve the heat exposure to the wall. If feasible, ceiling is pulled on both sides of the wall to allow observation and cooling. A hose line[s] is usually positioned on both sides of the wall to add cooling (fire side), and/or to extinguish any breach of the fire wall by the fire (cool side).*

It was not clear at this time to the Rescue Officer just who the Incident Commander (IC) was or who was the Operations Chief. The Captain, the first arriving Rescue Lieutenant, the Fire Chief and Assistant Chief believed Chief Charles Dittman made those assignments. According to the official report from Battalion Chief Charles Dittman, the Captain on scene at the gas leak had assumed Incident Command of the La Frontera fire and appointed the Rescue Lieutenant as

Operations Chief. However that occurred the gas leak incident was left without an officer in charge. For some period of time the BC assumed responsibility for firefighter accountability. It was reportedly the BC's intention to use the incident as a training opportunity for his subordinate officers. The result was that for a critical period of time, some officers were reportedly unsure, as to their responsibilities.

*This was an unusual assignment of positions. Typically, a senior officer arriving at the scene of a fire in a structure of the size and complexity of the La Frontera building assumes command, assigning his subordinate officers in ICS positions as he saw fit (e.g., Division Supervisors, Operations Chief, Plans Chief, etc.). Under the National Incident Management System – Incident Command System, the function of firefighter accountability, if not handled by the IC (smaller incidents) is typically assigned to the Plans Chief or his subordinate, the Resource Status Officer (“Restat”).*

Shortly thereafter, upon his arrival, the Fire Chief changed those assignments making the BC the Incident Commander and the officer originally working the gas leak, Operations Chief, while he (the Fire Chief) assumed a recognizance role. At some later time, radio traffic indicates the Fire Chief assumed the roles of both IC and Operations Chief.

*In MAG's opinion, incident management would have been more effective if, at this point, the Chief would have immediately assumed command and initiated the National Incident Management System-Incident Command System (NIMS-ICS). Using NIMS-ICS as the model, the organization for this fire might have looked as follows:*

### **Incident Commander (IC)**

- This position fulfilled by the Fire Chief as overall commander of the scene.

### **Public Information Officer (PIO)**

- Reports directly to the IC
- Functions as the voice of the IC for all media interface  
NOTE: MAG has seen organizations using other than Fire Department personnel for this position.

**Safety Officer (Safety)**

- Reports directly to the IC
- Tours the entire incident scene to monitor and assess safety hazards
- Has authority of the Incident Commander to halt any operation he feels unsafe
- Frequently confers with IC, Plans, Ops, and Logs

NOTE: Although preferably filled by a Chief Officer, a Captain could be used  
NOTE: Although preferably filled by a Chief Officer, a Captain could be used. The use of a “mutual aid officer” could be considered when the Department’s resources are stretched thin.

**Liaison Officer (Liaison)**

- Reports directly to the IC
- Responsible for coordinating involvement of Assisting Agencies (agencies without legal jurisdiction for the incident). In this case the Williamson County Emergency Medical Service and the Pflugerville and Georgetown Fire Departments

**Planning Chief (Plans)**

- Reports directly to the IC
- Responsible for recommending an Incident Action Plan to the IC and the following:
  - Situation Status-Tracks the fire situation-Maintains the Tactical Work Sheet- may be delegated to the Sitstat Unit Leader
  - Resource Status- Tracks all resources assigned to the fire-Checks in all resources-may be delegated to the Restat Unit Leader (this function could be assigned to a trained, non-uniformed City employee when the Department’s resources are stretched thin).

**Operations Chief (Ops)**

- Reports directly to the IC
- Responsible for implementing the IC’s Incident Action Plan (IAP)
- Has immediate command of all resources assigned fire control through subordinate officers:
  - Division Supervisor- Reports to the Ops-Responsible for operations within a specific geographic area of the incident (in this case the 4<sup>th</sup> floor, hence “Division 4” or controlling the roof fire, hence “Roof Division”)

- Group Supervisor-Responsible- Reports to the Ops-Responsible for a specific functional aspect of the incident (in this case ventilation, hence “Ventilation Group”)

### **Logistics Chief (Logs)**

- Reports directly to the IC
- Responsible for all service and support needs of the fire including the following:
  - Food-Responsible for ensuring that all personnel committed to the fire have adequate food and water, including distribution of food-may be delegated to the Food Unit Leader
  - Medical- Responsible for providing immediate care for personnel assigned to incident including transport to hospital if necessary-may be delegated to the Medical Unit Leader
  - Rehabilitation- Responsible for providing medical evaluation and treatment, food & fluid replenishment-resting location-typically co-located and managed with the Medical function-May be delegated to the Rehab Unit Leader.
  - Supply- Responsible for obtaining any supplies necessary for incident control-In this case air cylinders and air cylinder recharging equipment

NOTE: The use of a non-uniformed City employee or “mutual aid officer” could be considered when the Department’s resources are stretched thin.



### **Initial Ventilation and Trench Cut Efforts**

The first attempt at ventilation suffered from communication confusion resulting in a rectangular cut (dimensions were estimated between 4' x 5' and 8' x 10') rather than the anticipated trench cut. This apparently had no effect on limiting fire extension.

The second attempt at accomplishing a trench cut was unsuccessful when firefighters were unable to penetrate the roof. At first, due to a misunderstanding between Building Department officials and the RRFD officers on the scene, it was believed this lack of success was due to the roof construction being too thick for RRFD saws. Later it was assumed that the cut had been attempted over a construction element that barred saw penetration.

*The firefighters attempting this cut were reportedly exposed to intensive heat and smoke from the fire. This would indicate they had made the attempt too close to the advancing fire and did not have sufficient time to cut an "inspection hole" to determine an appropriate cutting location. The decision on where to place the trench cut was apparently made by the team attempting the cut. In MAG's opinion, that decision should have rested with the Division Supervisor in command on the 4<sup>th</sup> floor. This is an excellent example of how pre-incident inspections can make fire operations more effective, efficient, and safe.*

The fire, driven by a wind gusting to over 20 miles per hour, appears to have extended over fire walls by burning within the roofing mat laid on top of the fire walls. This method is reportedly in compliance with the current Round Rock building code.

*Two large insurance company officials interviewed regarding this roofing/fire wall interface indicated that neither company would recognize the installed system as a firewall/space containment device due to its failure to penetrate the roof structure.*

### **Water Application**

Meanwhile, the application of water from elevated heavy stream appliances from aerial ladders, appears to have had, at best, inconsistent effect on the spreading fire. The use of the elevated streams resulted in a buildup of water on the 4<sup>th</sup> floor and in the collapse of the 4<sup>th</sup> and 3<sup>rd</sup> floors. There was no apparent organized attempt by RRFD personnel to drain the water build-up from the floors.

*This result is consistent with the review team's experience with heavy streams used on roofs. In MAG's view, it is often the case that the roof itself protects the burning material from the water stream so that the streams, for the most part, are interacting with the flames rather than cooling the burning mass inside – thereby providing little fire control. Further, the heavy streams can actually work at odds with ventilation efforts by inhibiting the free exhaust of smoke and heat. Water build-up is typically mitigated by finding means to drain the water from the floors (e.g. braking of toilet bowls, opening sliding glass doors, breaching outside walls). This would typically have been directed by the Division Supervisor for the 4<sup>th</sup> floor, but any firefighter or officer should have recognized the hazard (both to the structure and themselves).*

A “mystery” heavy stream appliance was placed in service from the ground which apparently had no effect on fire control, but did cause fire fighters inside the building some discomfort until it could be shut down. No one interviewed could provide information on the objective of this stream nor the origin of the command which caused its use.

*Hose placement and water supply issues appeared to plague fire control efforts throughout the fire. The difficulty in finding fire department connections for supplying the standpipes was indicated as a delaying factor in putting lines in play on more than one occasion. MAG believes this is attributable to a lamentable lack of pre-incident inspection by RRFD companies. There was also some reported confusion/delay over responsibility for providing hydrant supply lines for the elevated streams.*

### **Control of the Fire**

Control of the fire was ultimately achieved by securing a trench cut some distance from the fire and defending that position with hose lines above and below. According the Assistant Chief's official report two additional trench cuts were made. The first was determined to be too far in front of the fire. Consequently the Assistant Chief (the officer in charge on the roof) initiated a second cut, with hose streams above and below, closer to the fire.

*This would seem to justify the overall strategy for fire control (i.e. use of a trench cut to protect a fire wall, thereby limiting the extension of the fire).*

## Related Issues

Other issues surfaced as a result of the interviews:

- Personnel exhaustion was a major issue at this incident with some firefighters and officers being active at the scene for up to 14 hours with only inconsistent rehabilitation provided. *A commonly accepted practice is to limit structural fire fighting efforts, without a protracted period of rehabilitation (rest, hydration, blood pressure check, etc.), to the period utilized in using two or three at most, air cylinders. Some firefighters reported to MAG that they used up to eight cylinders without adequate rehabilitation.*
- Recalled personnel were not always organized into effective teams (with officers or acting officers). *This would make accurate firefighter accountability difficult if not impossible.*
- Mutual aid, while obviously being warranted, was not utilized to any extent. Reportedly, the only outside agencies utilized in active fire control activities were from the Pflugerville Fire Department which were dispatched on the initial alarm under a automatic aid agreement and the Georgetown air recharging unit. Reportedly, the PVFD arranged regular relief of their personnel, independent of fire command.

*While many of those interviewed made much of the refusal by the IC (Fire Chief, at this point) to accept assistance offered by the Austin Fire Department, it seems reasonable to MAG that he believed the fire to be nearly under control at that point in time.*

- Feeding was addressed by the Fire Chief by directing the purchase of what he believed to be an adequate supply of sandwiches and “energy drink”. However, many firefighters reported having no sustenance, other than water, for the entire duration of the fire.

*While arrangements to procure adequate amounts of food were made, the incident distribution did not appear to be well organized. The feeding issue as well as the*

*lack of adequate rehabilitation functions appears to be the result of inadequate “logistical support” for the incident.*

## **CONCLUSIONS**

The La Frontera fire would have been a challenge for any department of any size due to the factors enumerated above. Those challenges were even more overwhelming for a department having little experience with large volume, multi-story, complex fires. As is the case sometimes made against the military, fire agencies sometimes prepare for the “last event”. In Round Rock’s case that would have been one or two story structures with the fire normally limited to one or two compartments.

It is in the best interests of the community for fire agencies (as well as other municipal services) to prepare for an event everyone hopes and believes will never happen - the disaster (an event which overwhelms the normally available resources. Based on our review of the La Frontera fire, the Round Rock Fire Department must re-orientate itself to confront the larger built environment it is now facing. It will largely be a matter of procedures, protocols, and training, but the Department should also consider it’s apparatus, equipment and deployment of same.

Some of the factors mentioned above will continue to challenge the RRFD for the foreseeable future because they are an element of the built environment and meteorological realities in Round Rock. Others can be mitigated by the City with an investment of time, effort and money.

## **RECOMMENDATIONS:**

- 1) *Initiate large and small scale incident management exercises utilizing National Incident Management System-Incident Command System protocols (NIMS-ICS). The large-scale exercises should include mutual aid fire agencies and the Round Rock Police Department and other agencies (RR Public Works, WCEMS, Public School System, etc.) that may provide mitigation services in case of disaster. Particular attention should be paid on the concept of “Unified Command” as recommended by NIMS-ICS.*

- 2) *Initiate strategy and tactics study sessions involving all officers with particular attention to ventilation practices, the use of heavy streams, aerial ladders, and damage control (salvage functions). The opportunity to use officers from larger, more experienced (in large-scale fires) for such training should not be overlooked.*
- 3) *Initiate pre-incident inspection requirements of all larger buildings under construction.*
- 4) *Consider means of amending building code to mitigate shortcomings of currently authorized firewall design as exemplified at the La Frontera fire.*
- 5) *Implement/review, mutual and automatic aid agreements with all surrounding fire agencies including the Austin Fire Department.*
- 6) *Implement a RRFD emergency management plan to include:*
  - 6.1. *Department management during extreme demand periods*
  - 6.2. *Organization of recalled personnel*
  - 6.3. *Sufficient reserve apparatus and equipment to appropriately utilize recalled personnel.*
- 7) *If the Rescue units are to be dispatched to fires as independent units, consider equipping that apparatus with a limited amount of 1.75 or 1.5 inch hose with appropriate adaptors (e.g., 2.5" to 1.5"), and upon procurement of new apparatus, the addition of a small pump and water tank. .*
- 9) *Consider training City personnel other than RRFD personnel for certain non-IDLH (Immediately Dangerous to Life and Health) positions for major incidents*