

LESSONS LEARNED COMMISSION REPORT
Juneau Hydroelectric Power Crisis
(October 21st DRAFT)

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INTRODUCTION

By analyzing information related to the preparedness and response of the CBJ, AEL&P, and the public to the recent loss of hydroelectric power from the avalanches, prepare a report that recommends actions and promotes preparedness in the face of a similar event that might disrupt services that are essential to the community.¹

On April 16, 2008 a series of massive avalanches severely damaged five support towers of the Snettisham Hydroelectric transmission line. Approximately 1.5 miles of the power line, the major source of electric power delivery to Juneau, were destroyed.²

Early estimates from Alaska Electric Light & Power (AELP) suggested that it would take approximately three months to restore hydroelectric service to the community. In the meantime, power would be generated using diesel oil at a cost estimated to be five times more per kilowatt hour.

As this information came to light, it was apparent that though this was not a typical “disaster” which would imply that lives and property were at risk, it was a situation that would require rapid dissemination of public information to avert severe and widespread economic hardship. Individuals and businesses would need to take drastic conservation measures to mitigate the impacts. Less demand for electricity would translate to less use of diesel, and less use of diesel would mean less cost.

Through the unprecedented efforts of the CBJ government, AEL&P, the media, local businesses, the school district, non governmental organizations, the local legislative delegation, state agencies, and individual citizens, electric consumption was ultimately reduced by over 40%.

Fortunately, hydroelectric power was restored on June 1, 2008, only 46 days after the transfer to diesel and about 6 weeks ahead of the early projection. The speedy restoration by AELP, partnered with strong community conservation measures and financial assistance programs, greatly reduced the anticipated economic impacts. **Because of early problem identification, action, and response, a potentially serious crisis was averted.**

At the request of Mayor Bruce Botelho, the CBJ Lessons Learned Commission has examined the actions and events that shaped the response to this “sub-disaster” event in order to recommend effective planning and preparedness in the face of future such events.

AREAS OF FOCUS

This report focuses on an emergency services review to:

1. Evaluate CBJ’s and AEL&P’s preparedness and response to the energy and financial crisis triggered by the catastrophic avalanches on April 16, 2008.

¹ Mission Statement adopted by the Lessons Learned Commission at its June 25, 2008 meeting.

² “Assembly Agenda/Manager’s Report” for the April 17, 2008 Special Meeting.

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2. Identify areas where additional planning may improve preparedness for future similar crises.³

Since local, state, and federal agencies are devoted to preparedness and response work for disaster emergencies and so-called “mass casualty” events, this Commission did not examine plans for responding to the following disaster emergencies provided for in the CBJ *Emergency Operations Plan*:⁴

- earthquakes
- tsunamis
- disease epidemics
- Salmon Creek dam failure
- large fires
- explosions
- floods and other severe weather
- weapons of mass destruction
- cruise ship casualties
- airplane crashes
- Behrends Avenue avalanche zone

Other significant issues raised during this review that were outside the scope of this project are included in Appendix (4).

SNETTISHAM HYDROELECTRIC PROJECT BACKGROUND

In 1967, the U.S. Army Corps of Engineers began Construction of the Snettisham Hydroelectric Project. It came on line on December 1, 1973, offering 47.2 megawatts of electrical power to the Juneau power grid, a grid which is isolated from others that provide power to other communities. The 43-mile long transmission system delivers 85% of CBJ’s electricity.

During the first two years of operation, the Snettisham system was operated by the Alaska Power Administration. It suffered frequent and lengthy interruptions caused by failures of the transmission lines where they crossed over Salisbury Ridge. Because of constant outages and frustrated customers, the Corps of Engineers moved parts of the transmission line in 1976 to reduce failures. Since then, service from Snettisham generally has been reliable with few lengthy outages from failed transmission lines.

In 1998, the federal government (Department of Energy, Alaska Power Administration) sold the Snettisham Hydroelectric Project to the State of Alaska’s Industrial Development & Export Authority (AIDEA), which then contracted with AEL&P to manage the project until December 31, 2038.

Terms of the operations and maintenance relationship between the State of Alaska and AEL&P are specified in the *Operations and Maintenance Agreement* dated July 15, 1997. Terms related to power sales are specified in the *Agreement for the Sale and Purchase of the Electric Capability of the Snettisham Hydroelectric Project (Power Sales Agreement) between AEL&P (Purchaser) and Alaska Industrial Development and Export Authority (Authority)* dated July 15, 1998.

SNETTISHAM AVALANCHE SUMMARY

April 2008

³ CBJ Mayor’s letter of May 27, 2008 to MAC Services

⁴ www.juneau.org/emergency/documents/EOP2003.pdf

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On Wednesday, April 16, 2008, at approximately 3:54 a.m., AEL&P detected that the Snettisham transmission line had tripped off line. Later in the morning, AEL&P crews flew by helicopter to search for the problem. They discovered that two avalanches had damaged towers that supported the Snettisham line. Damage discovered:

- Tower 3/5⁵, a guyed 3-pole structure, was moderately damaged by one avalanche.
- Tower 4/6, a self-supporting structure, had been completely pushed off its foundation and destroyed by another.
- Wires connecting to Tower 4/6 had been pulled so hard that Towers 4/4 and 4/5 received minor damage.

Later the same day, AEL&P crews returned to the site. They discovered that, since the morning flight, additional avalanches had come down. Tower 3/5 was completely destroyed, and the wires were pulled so hard that the neighboring structure, Tower 3/4, a guyed tangent tower, was pulled to the ground and destroyed.⁶

At least three avalanches had destroyed and damaged towers over a 1.5 mile stretch of the Snettisham line. Despite the destruction, however, with the exception of a few homes in Thane, there was no interruption of power to the Juneau area. The switch to diesel back-up provided a seamless transition.

Also destroyed by the avalanches was the communications link to Snettisham. During the first afternoon, AEL&P employees went to Snettisham to re-establish e-mail and Internet communications.

At the time of the incident, there were still five feet of snow at Snettisham. AELP immediately requested permits to deploy explosives from a helicopter for avalanche control. By Sunday, April 18th, avalanche control work had begun to make the area safe for crews to work, and snow removal was underway to clear the staging area for equipment and materials.

EXECUTIVE SUMMARY

The massive avalanches on April 16, 2008 that destroyed significant portions of Juneau's main hydroelectric transmission line presented the community with a potentially severe economic crisis. Consumer costs for electricity increased five-fold because the cost of diesel fuel used to generate electricity, with back-up generators during the line outage was at an all-time high. Although hydroelectric power has been disrupted by avalanches before, diesel fuel was relatively inexpensive.

By most measures, the response to this "sub-disaster" was an unqualified success. Consider the following:

- The community immediately reduced its electricity consumption by 25%, and ultimately as much as 40%. According to the U.S. Department of Energy expert Alan Meier, this was unprecedented and the largest reduction in electricity use seen anywhere.⁷ These reductions were realized in part by a massive energy conservation campaign (triggered by the high cost of electricity) with extensive promotion by the local government, media, businesses, and non-profit organizations.

⁵ Tower nomenclature: Towers on the Snettisham line are identified by two numbers. The first number describes which mile of the line the tower is in (starting from Snettisham) and the second number tells which tower it is in that mile.

⁶ See www.aelp.com/reconnecting/reconmenu.htm for more information and photographs.

⁷ Lawrence Livermore National Laboratory, US Dept of Energy, "Powering Down in Juneau", posted on 18 June 2008 at the Livermore National Laboratory web news center. Note: This article provides a good account of Dr. Meier's visit to Juneau in addition to a narrative of the community's efforts. (See: <http://www.lbl.gov/publicinfo/newscenter/features/2008/EETD-alaska.html>)

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- The CBJ Assembly moved quickly to provide financial aid for the community's most vulnerable residents. The Juneau Economic Development Council (JEDC) and the human service sector, in coordination with Alaska Electric Light and Power (AEL&P), developed a program to provide this aid efficiently and with accountability.
- AEL&P, through a combination of engineering innovation, good weather, and hard work restored hydroelectric power within 6 ½ weeks. Most importantly, there were no lost-time accidents though responders worked in extreme terrain and exposed conditions.

As with any emergency, particularly one not experienced before, there are opportunities to improve preparation, response, and mitigation for future similar events. Throughout this paper a number of recommendations are presented for consideration to improve sub-disaster crisis response. Based on information obtained during this review, the most important recommendations are:

Crisis Preparedness and response

1. Update the avalanche risk assessment of the Snettisham Hydroelectric Project transmission line considering current technology and forecasting information.
2. Update preparedness and response plans to restore electricity to the community if power is disrupted by disaster emergencies based on the results of a revised risk assessment and include actions to communicate with the public.
3. CBJ should develop a sub-disaster crisis management system to coordinate response to future similar events with key organizations and businesses and to thoroughly communicate with the community.
4. Key organizations and businesses that provide critical, essential goods, services, and infrastructure should be involved in the community planning and preparedness process and be required to prepare their own risk assessments and contingency plans.

Community impacts and mitigation

1. Juneau residents took swift action to decrease energy consumption in response to the expected five-fold increase in the cost of electricity for 90 days.
2. A “community conversation” developed because many interested people shared their ideas and results on energy conservation actions that worked for them. This conversation was facilitated by web sites and blogs from CBJ, Juneau’s legislative delegation, social service agencies, non-profit organizations, and local news media.
3. Continued efforts by community leaders, businesses, and individuals are needed to maintain energy conservation gained during this crisis experience.
4. The community’s crisis management system should include a communication plan to inform all citizens about emergency situations and resulting public assistance programs that more effectively reaches the citizens who seem to never get the word.
5. More work is needed to improve financial assistance programs for the community’s crisis management system for future similar events involving social service agencies, non-profit organizations, and volunteers. CBJ should address financial assistance programs for crises in its sub-disaster crisis management system.

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RESPONSE TO THE HYDROELECTRIC CRISIS

INITIAL RESPONSE

“Nothing special” could characterize the first response and notification to the public about the event of the avalanches. It was business as was usual for any power disruption. Following the standard routine for reporting to the public, AELP provided information about the avalanche damage and resulting transfer to diesel power through the news media. No special calls were made to officials at CBJ. The mayor learned of the incident while listening to a local morning news broadcast.⁸

As he considered the event, however, the mayor began to anticipate possible impacts to the community, and contacted AELP’s president to talk about the situation. AELP welcomed the contact from the city and together, they planned a press conference for Thursday (17th).

Once information started flowing through the news media to the citizens, the interest for information increased dramatically. To meet the community’s “need to know” the media began seeking stories under a high sense of urgency.

CRISIS RESPONSE AND MANAGEMENT

Overview

Essentially, the event proved to encompass two-parts:

- (1) repair the hydroelectric transmission line to restore less expensive electricity; and
- (2) address and mitigate the financial impacts caused by a five-fold increase in electric rates.

Both CBJ leadership and AEL&P officials responded to the event, but no crisis management system was in place to formally coordinate their efforts. By the end of the first day, collaboration and coordination were starting to take place. Once CBJ and AEL&P starting working closely and getting through those early hours and days of overall crisis management, roles became clear and response, mitigation, and recovery objectives emerged. Daily 3 p.m. communications sessions were established by CBJ to coordinate work with AEL&P and keep the Juneau legislative delegation informed. On the second day of the crisis, CBJ and AELP held a joint press conference, but it wasn’t until almost a week later that officials of both organizations received joint training on crisis communications.

Recognizing there would be need within the community for conservation efforts and financial assistance to mitigate high energy bills, CBJ asked the Juneau Economic Development Council to coordinate the response among social service agencies and other non-profits.

Once financial assistance programs organized, JEDC and Catholic Community Services attended the daily communication meetings. Information gained from these meetings was used by attendees to update information on their web sites and to inform the local media. These sessions effectively improved communications with the public and eased their anxiety.

Unfortunately, the State of Alaska’s emergency management agencies did not participate in the daily communications meetings even though they were invited. State agency participation in these sessions would have helped overall understanding, coordination, and communications with the public. [Example: CBJ heard about the negative decision by the State Disaster Policy Cabinet to its request for a State of Alaska disaster declaration through the local media.]

AEL&P

AEL&P focused on its routine response to power interruptions, which include:

⁸ Consultants’ conversation with Mayor Bruce Botelho on June 23, 2008.

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1. Evaluate damages to the transmission line.
2. Assess hazardous conditions facing workers during restoration activities and require a “safety-first” approach to all work.
3. Take corrective action to restore hydroelectric power as soon as is safely possible.
4. Assemble a team of technical experts to develop engineering solutions to restore power.
5. Ensure the electrical power supply (provided by diesel generators) meets the community’s demands.

AEL&P senior management understood their role was to ensure there would be no interruption of electrical power (by bringing the diesel generators on-line) and to restore hydroelectric power as quickly as possible. Given the focus on these objectives, they did not consider the current cost of diesel and how dependence on it had the potential to create financial hardship on their customers. As a result, there was minimal understanding of the importance of coordinating with CBJ and communicating to the public. That realization came later in the first day, when the mayor contacted the president of AEL&P. Meanwhile, AEL&P and CBJ were acting independently, which created public confusion as to who was in charge and how each organization was responsible.

In the first several days following the loss of hydroelectric power, AEL&P moved aggressively to restore it. The leadership, management, and engineering staff engaged a group of expert engineering consultants in a “war room” to study ways to restore hydroelectric power safely, quickly, and at a reasonable cost. At the same time, customer service employees were handling a heavy workload of customer contacts, helping them to understand the situation and what they, as individuals, could do to mitigate the financial impacts of the crisis.

Internal communications among senior leadership and management who were focused on the high priority of restoring hydroelectric service were good, but they were unprepared for the effort and skills needed to respond to the public about the financial and conservation aspects of the situation. Those employees working on the front lines with customers often had difficulty getting the useful information needed to do their work because they were not included in the flow of information from senior leadership and management. The experience, professionalism, pride in the company, and work ethic of this “customer service” group motivated them to gather, evaluate and share information with customers. Staff gathered information from within AEL&P when the opportunities presented by sitting in on meetings and asking questions, and by paying attention to media stories to see what the public was being told.

The level of interest and demand for clear and detailed information was much higher than had been previously experienced. Senior management was not accustomed to the high volume of requests for information by the media and the public. Management soon realized, however, that sharing information (external communications) with government officials and the public was vitally important and made an effort to do so. Over time, AEL&P assigned a new company spokesperson, trained senior staff in communications, and took a more empathetic approach to dealing with their customers. By recognizing the need for clear and effective communication the company improved their relationship with the community and the public’s confidence in their efforts.

CBJ

The CBJ’s initial action was led by Mayor Bruce Botelho, who first heard news of the crisis during an early morning radio news program (6 – 8 a.m.). Later in the day, as he realized the magnitude of the problem and potential impacts of the crisis, the mayor contacted the president of AEL&P to start coordinating actions. It was not just the mayor’s leadership, but his persistence and work at all levels that initiated such a prompt and comprehensive crisis response.

Without a model for CBJ officials to follow, it was the mayor who took charge of the overall crisis management. His initial concerns were that the community be informed about what CBJ and AEL&P were doing to restore hydroelectric power (by AEL&P) and that they get help with mitigating the financial hardship to be imposed by the consumption of diesel-generated power.

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He personally phoned AEL&P, community leaders, state agencies, and legislators, and organized social service agencies and non-profit organizations to meet the emergency response and community impact needs as he identified them.

Throughout the first day, the mayor conferred with key officials and those who likely would be asked for assistance to help with restoring hydro electricity and mitigating financial impacts on the community. They included:

- Local state legislators
- Alaska's congressional delegation
- The Office of the Governor
- The Alaska Department of Military and Veterans Affairs/Division of Homeland Security and Emergency Management

While CBJ leaders understood that AEL&P was responsible for restoring hydroelectric power, they realized there was the potential for serious financial impact on the citizens and took responsibility to act in the public's interest. Departments organized internal actions for energy conservation, engaged community resources to develop financial assistance strategies, and communicated with citizens about the crisis situation and city actions.

City staff working in support roles – especially those handling the flow of information – were excellent. They all had a good understanding of the impacts on the community and its citizens and knew how to communicate with anxious callers wanting information. Although internal communications between them and senior officials were difficult at times because of the demands on senior officials to respond to rapidly changing developments, staff were resourceful. They got needed information by sitting in on meetings and by asking questions, and they shared what they learned with each other.

This internal communications difficulty was similar to that at AEL&P and is attributable to the lack of a good crisis management system that ensures the flow of information.

Overall, CBJ's ad hoc response to the hydroelectric crisis was impressive. Key to the success of the local government's efforts was the leadership and experience provided by the mayor, city manager, and the assembly and skills of CBJ staff working in support roles. Although the crisis was ultimately resolved well, such an ad hoc response is not an ideal response system.

LESSONS LEARNED & RECOMMENDATIONS

1. The "Safety First" approach of AEL&P and its contractors resulted in no lost-time accidents, though responders worked in extreme terrain and in exposed conditions.
2. AEL&P's "war room" resulted in good restoration plans that were quickly conceived, thoroughly vetted, and moved into action. Hydropower was restored in half the expected time.
3. CBJ (and others) should develop a sub-disaster crisis management system that deals with
 - a. fixing the cause of an event
 - b. mitigating financial impacts on those affected by the event.
4. CBJ's crisis management system should be based on the incident management system in its EOP. It should include:
 - a. An incident management system that establishes operational planning periods (e.g., 12 hours, 24 hours, weekly) to organize work and provide responder role clarification, response objectives, and a reasonable number of subordinates for each supervisor. These systems force individuals to plan, communicate, and coordinate work, and to periodically take breaks from the action.
 - b. Internal communication procedures for sharing information. These procedures should include

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- i. a situation status briefing at the beginning and end of each operational period with all staff responsible for communications.
- ii. communication objectives and assignments of people trained in public communications to take the lead to get accurate information to the media and the public in a timely manner. This includes front-line staff who deal with customers. Communication with the public is vitally important and requires considerable skill.
- c. A checklist of actions taken by the mayor during this crisis for consideration by the lead crisis manager.
- d. A method to consider and deal with potential impacts on the community including, but not limited to, stress and financial impact.
- e. Communication with State of Alaska disaster emergency management officials. Even though the State of Alaska Department of Veterans Affairs was invited by the mayor to participate in daily teleconference meetings, and the mayor was assured of the department's participation, it did not happen.
- f. The identification and gathering of experts in various fields to identify, study problems, and brainstorm solutions. Possible participants include:
 - i. technicians and construction personnel
 - ii. safety experts
 - iii. economists
 - iv. social service professionals
 - v. environmental experts

OVERALL COMMUNITY RESPONSE

Energy Conservation

Late in the day on April 16, 2008, it became apparent that Juneau's electric rates would rise to five times the pre-avalanche KWH rate. This rate would continue until the lines from Snettisham were restored, estimated at 90 days. Given three months at a five-fold increase, it was clear that everyone would experience significant impact. To mitigate the costs, state and local government agencies, residents, and businesses, realized they would need to immediately and significantly reduce electric consumption. The best illustration of how well they did is reflected in Figure 1 below.

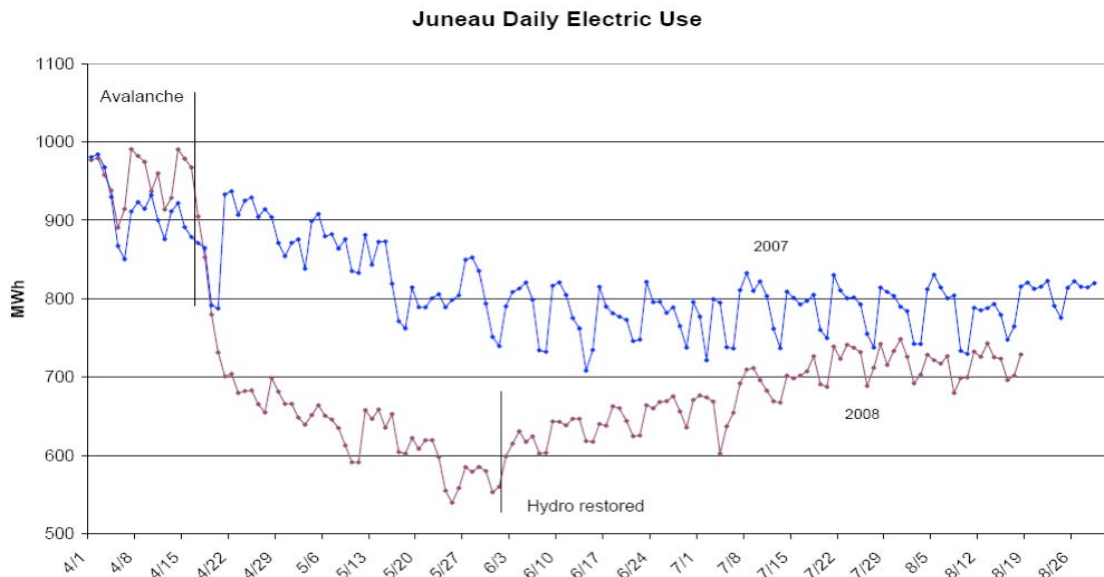


FIGURE 1: Comparison of Daily Use of Electricity between 2007 and 2008 during the Crisis Period.

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The mayor was perhaps the first and most vigorous proponent of energy conservation. It was not just his leadership, but his persistence and work at all levels that effected such a prompt and comprehensive campaign.

As a result of Mayor Botelho's request to the U.S. Department of Energy through the Alaska Congressional delegation, Dr. Alan Meier, came to Juneau on April 28 to provide technical advice. Dr. Meier, a scientist at the US Department of Energy's Lawrence Livermore Laboratory in Berkeley, California is considered one of the world's leading experts in energy conservation.

"Even before I arrived," Dr. Meier said, "Juneau had already reduced its electricity use by about 20 percent. Now (late May) its electricity use is down 40 percent compared with before the avalanche. This is the largest saving in electricity use that I have ever seen."⁹ Dr. Meier's review of Juneau's energy conservation activities and his participation in community discussions were helpful feedback for community leaders for this aspect of the response. Though public turnout to his events was light, observations and insights were reported in the news and disseminated through the community, helping to raise awareness and encouraging conservation.

Other key ways energy conservation measures were disseminated included:

- a. news broadcasts and talk shows on local radio stations
- b. articles in the local daily and weekly newspapers
- c. "chats" on internet blogs
- d. posts on web sites, for example: AEL&P, CBJ, social service agencies, non-profit agencies, local radio stations, and the Juneau Empire's "Power Line."
- e. pamphlets with tips for energy conservation were distributed by CBJ in a mail-out of 17,000 to homes and businesses
- f. pamphlets with tips were mailed by AEL&P in its billings during the crisis.
- g. frequent newsletters (*Juneau Energy Update*) were posted by the Juneau Legislative Delegation on their web site¹⁰
- h. information sent home with students by the schools
- i. an energy conservation competition in the district's schools sponsored by The Juneau Economic Development Council (JEDC)

A "community conversation" evolved with many people wanting and willing to share information on ways to conserve energy that made sense for individuals, families, neighborhoods, and throughout the community. The result of this ongoing community conversation was the quick and significant decrease in energy consumption.

Immediately after the power lines went down, the Juneau Economic Development Council engaged the Juneau School District to encourage the schools and the students to conserve electricity. JEDC developed a contest that would reward the school that was able to have the greatest reduction (%) in electricity usage from May 2008 compared to May 2007. The reward was up to \$500 worth of science equipment to the winning school. The effort by the school district (and each school) was very impressive with overall school electricity consumption down by almost 40%. In the end, JEDC gave two awards:

- \$500 of science equipment to Auke Bay Elementary School for reducing their electricity consumption by 51.8%
- 250 of science equipment to runner-up Dzantik'i Heeni Middle School for reducing their electricity consumption by 46.12%.

⁹Lawrence Livermore National Laboratory, US Dept of Energy, "*Powering Down in Juneau*", posted on 18 June 2008 at the Livermore National Laboratory web news center. (See:

<http://www.lbl.gov/publicinfo/newscenter/features/2008/EETD-alaska.html>)

¹⁰ www.akdemocrats.org/juneau

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Businesses and government actions to conserve energy were important. CBJ government decreased its electric consumption by 30%. Most businesses changed their electric use by reducing lighting/heating/cooling, and encouraging employees to be mindful of how they could reduce power usage. Some switched to their own generators, shifting demand from AEL&P.

Though the mayor personally visited businesses to encourage reduced power consumption there were a few businesses involved in the tourism industry that resisted, fearing a negative impact on business.

One of the largest single electric users in the community, the State of Alaska recognized on its own how its consumption affected the crisis facing Juneau. In an email advisory to all state employees on April 21st the Commissioner of the Department of Administration described steps state government was taking to conserve energy and provided information on how individuals could help by modifying personal habits. The department's Division of General Services, which manages multi-department state office buildings and leased office space, changed their building settings for lights, heat, elevator use, and cooling of state-owned and operated buildings. Compared to June 2007 this resulted in a 13 ½% savings during the June billing period. Additionally, General Services sent letters to every lessor of state-leased office space asking for them to take energy conservation actions.

One conservation measure not embraced by the community was water use. In a letter to the editor published in the Juneau Empire, the mayor asked that citizens reduce their use of water citing that the CBJ sewage treatment and water pumping plants require large amounts of electricity to operate – approximately 20% of the municipality's total demand. Though conserving water translates into conserving electricity, efforts to get households to reduce water use were largely unsuccessful. Some possible reasons:

- There was no campaign focused on reducing water consumption as there was for electricity conservation.
- Water use is not tied directly to household electricity bills.
- Water consumption data was not shared widely with the public as was energy consumption. (Only the CBJ web site provided water consumption information.)
- There may be fewer options to reduce water use than there are to reduce electric use.
- No concrete suggestions were offered for water conservation, e.g., fewer flushes, shorter showers

Further study of water conservation aspects would be helpful when planning for additional energy conservation in periods of long electric disruptions.

The following is a list of activities and efforts, in no particular order, that helped to conserve electric consumption. The contribution of each effort to the overall reduction in use cannot be quantified. Each, however, contributed to a community-wide momentum, providing individuals with information to optimize conservation.

- Department of Energy Specialist Dr. Alan Meier visited Juneau to provide technical advice on energy conservation. JEDC organized Dr. Meier's activities during his visit.
- JEDC sponsored an energy conservation competition for schools in the Juneau School District. The school district then evaluated conservation efforts at each school to assess which had the greatest reduction in energy consumption. At the Back-to-School breakfast on August 29th, JEDC awarded the winner \$500 for its science programs.
- JEDC developed a logo and launched a conservation campaign.
- JEDC made Kill-O-Watt meters available for use.
- CBJ department heads conducted a day-long brainstorming session to identify energy saving measures throughout the municipality.
- Juneau Commission on Sustainability organized *Re-Energizing Juneau: A Community-Wide Conference on Energy Use*.
- CBJ and AEL&P used media outlets for daily broadcasts on the community's conservation progress and to pass along tips and methods to reduce consumption.

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- CBJ mailed 17,000 pamphlets to homes and businesses entitled, *What YOU can do to reduce your electric bill (and other useful info)*. (A copy is attached in Appendix 5.)
- CBJ maintained a crisis website (juneau.org/energy) to provide official news on the incident, as well as statistics on electric and water use.
- Juneau Empire created a special web-site and a posting in the Wednesday print edition entitled, *The Powerline*, with stories, tips and links for conservation. The web site provided a daily “energy scorecard” that tracked consumption from April 16th through June 1st.
- AEL&P created the website, *Reconnecting Juneau*, which offered information on city-wide conservation, electric rates, and transmission line repair.
- SAGA and United Way rolled out the *Energy Efficient Lifestyle Solutions* (EELS) program. Upon request a two-person team would visit homes and identify options for reducing energy use.

Through interviews and responses to requests for information by the LLC, many in the community expressed concerns about energy conservation and the vulnerabilities of Juneau’s energy supply system, which became evident with the short-lived crisis and the escalating price of fossil fuels. There was concern not only with the community’s shortcomings in energy emergency preparedness, but also with increasing global instability that can threaten Juneau’s energy and other supply chains. This potential for such situations poses dire ramifications for Juneau’s social and economic sustainability,¹¹ and the Juneau Commission on Sustainability is considering these issues while considering how the community’s energy situation can be improved.

Assistance to Individuals and Families

Once CBJ officials, the media, and concerned citizens fully understood the impacts of the Snettisham avalanches (within the first 24 hours), the community as a whole realized that the avalanche-induced five-fold jump in electric rates would greatly impact Juneau’s most income vulnerable. CBJ officials and social service agencies began working together to identify mitigation, while CBJ senior staff and assembly members began considering financial aid options. Knowing that JEDC’s Executive Director had special crisis management experience from working disasters in other countries, the mayor requested that he coordinate working groups among community organizations to address financial and outreach efforts for the most vulnerable. His experience served the community well in this work.

In a proactive move, the United Way Board of Directors met in emergency session two days after the avalanche.

On May 1, 2008 the CBJ Assembly met in special session to adopt an emergency resolution appropriating \$3,250,000 to the city manager. Monies were to be used for a grant to the United Way of Southeast Alaska to provide energy assistance to residents, a loan to the Juneau Economic Development Council to provide energy assistance to small businesses, and to implement city energy conservation measures. Funding was provided through the CBJ budget reserve.¹²

From these monies an initial grant of \$1,000,000 was provided to United Way to provide for immediate energy assistance loans and/or grants to help economically vulnerable residents and non-profits pay their higher electric bills. To develop and administer the program, United Way turned to one of its member organizations, Catholic Community Services (CCS). CCS is one of Juneau’s largest social service organizations and has adequate infrastructure to manage and account for such an emergency program. As a starter, CCS searched for similar programs in the nation to serve as a model. They found none. So, between May 2nd and May 7th, United Way and CCS – with input from AEL&P – built an emergency assistance program from scratch. The program, quite elegant in its simplicity and efficiency

¹¹ Conversation with Sally Schlichting, Chair of the Energy/GHG Committee for the Juneau Commission on Sustainability.

¹² [http://www.juneau.org/clerk/Resolutions/Res2442\(am\)-Grant_United_Way-Loan_JEDC-Conservation_Measures.pdf](http://www.juneau.org/clerk/Resolutions/Res2442(am)-Grant_United_Way-Loan_JEDC-Conservation_Measures.pdf)

LESSONS LEARNED COMMISSION REPORT

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- Paid a portion of the approved applicant's electric bill directly to AEL&P.
- Did not remove a household's incentive to continue energy conservation efforts.
- Maintained confidentiality.
- Consisted of a simple one-page application where the applicant provided verification of eligibility by attaching:
 - ✓ A letter from a social service agency that was already assisting the client in some manner, or
 - ✓ A 2007 IRS 1040 form.
- Allowed the applicant to cite extenuating circumstances if they did not meet initial assistance eligibility guidelines.

The program provided grants to daycare and childcare providers without regard to income thresholds. United Way was concerned that if these small daycare businesses closed because of high energy costs, the entire community would be placed under additional hardship.

CCS found that the program was difficult to administer because each application required individual processing, including income verification. They discovered they could reduce costs and staff time by

- Accepting donations and assistance from local agencies, businesses and volunteers (including professionals working below market rates).
- Designing an efficient process to review applications.
- Contributing in-kind office space, IT support, and utilities.
- Working with AEL&P to send bill payments directly to AEL&P for those receiving assistance.
- Asking for and receiving cooperation and support from Alaska Department of Health and Social Services and area agencies which mailed out qualification letters to potential applicants. (ADH&SS mailed out 2,300 letters to qualifying households.)

The actual cost of administration and implementation by Catholic Community Services was approximately 17.6%. The United Way administration fee was 1%.

Assistance to individuals on their electric bills included:

- 2199 approved applications
- 14 denied applications
- \$407,311 paid directly to individual AEL&P accounts
- Average applications by income level:
 - Under 200% of federal poverty: (~55% of estimated eligible)
 - 200 to 250% of federal poverty: (~7.0% of estimated eligible)
 - 250 to 300% of federal poverty: (~5.0% of estimated eligible)

Catholic Community Services estimates that approximately 3,000 households in Juneau were eligible for assistance (See table 1). By the end of September 2008, only 2,199 households had applied.

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| # in Household | Level 1 | Level 2 | Level 3 |
|----------------|--|--|--|
| | Pay approx 70% of increase <u>Gross Annual Income</u> | Pay approx 50% of increase <u>Gross Annual Income</u> | Pay approx 30% of increase <u>Gross Annual Income</u> |
| 1 | 0 to \$26,000 | \$26,001 to \$32,500 | \$32,501 to \$39,000 |
| 2 | 0 to \$35,000 | \$35,001 to \$43,750 | \$43,750 to \$52,500 |
| 3 | 0 to \$44,000 | \$44,001 to \$55,000 | \$55,001 to \$66,000 |
| 4 | 0 to \$53,000 | \$53,001 to \$66,250 | \$66,251 to \$79,500 |
| 5 | 0 to \$62,000 | \$62,001 to \$77,500 | \$77,501 to \$93,000 |
| 6 | 0 to \$71,000 | \$71,001 to \$88,750 | \$88,751 to \$106,500 |
| 7 | 0 to \$80,000 | \$80,000 to \$100,000 | \$100,001 to \$120,000 |
| 8 | 0 to \$89,000 | \$89,001 to \$111,250 | \$111,250 to \$133,500 |

Above 8, add for each additional member: Level 1 +\$9,000; Level 2 + \$11,250; Level 3 + \$13,500
(Levels 1, 2, 3 are based on 200%, 250% and 300% of Federal Poverty Income Guidelines - Federal Register January, 2008)

Table 1: Assistance Eligibility Levels

CBJ, social service agencies and civic groups thoroughly canvassed the community to contact those eligible for assistance. Applications were available and advertised at numerous locations and on websites (CBJ, AEL&P, Juneau’s legislative delegation, social service agencies, and non-profit organizations). Publicity through the Juneau Empire and radio stations KTOO, KJNO, and KINY was prominent. As mentioned earlier, ADH&SS mailed out 2,300 letters to eligible households.

Although no information is available as to why all eligible households have not applied for assistance, it is possible that demographic estimates of household incomes are not accurate. Representatives of Catholic Community Services and United Way at the Lessons Learned Commission public hearing indicated that there seems always to be people who don’t get the word no matter what communication efforts are made. Further study of this phenomenon is needed to improve outreach.

Some people who applied did not meet income guidelines, but the application for assistance contained a special section that invited them to report any special circumstances for consideration. Even so, there were some who felt the established guidelines were too narrow.

In the final analysis the average subsidy was \$185 per household. That was only 85% of the original estimate, which was based on previous usage and an estimation of reasonable conservation measures. The reduction is likely due to conservation measures beyond those estimated.

Another view of financial redress was expressed in a grass-roots movement that developed in the early days of the crisis. The Juneau People’s Power Project (JPPP) objected to AEL&P’s passing the increased costs of providing diesel generated power on to the consumer. They tried to encourage citizens not to pay the extra cost of electricity above the per kilowatt rate prior to the avalanches. This group also objected to the community’s reliance on a private utility without community oversight and the lack of state involvement in resolving the crisis. They expressed concern about the precarious position they saw concerning the community’s energy supplies and held a “WE WON’T PAY” rally on the capitol steps. They also initiated and sponsored an unsuccessful local ballot initiative petition to address these concerns.¹³

Assistance to Non-profits

The CBJ grant to United Way of Southeast Alaska included funds for assistance to nonprofit agencies with facilities in the social service and arts sectors. The CBJ appropriation was supplemented with \$1,000 from the Juneau Community Foundation and \$10,000 from British Petroleum. Key Bank set up an emergency relief account that allowed citizens to donate at any Key Bank for this purpose and raised \$2,716 from individuals throughout the state. These funds were matched by Key Bank. Through these efforts, sixteen nonprofit agencies received funds for a total of \$39,226.50.

¹³ www.juneaupeoplespowerproject.org

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Assistance to Businesses

Small businesses can be adversely impacted by crises such as this one, especially if they are prolonged (several months, for example, as this one was first estimated to last). Many operate on a small margin of profit, and passing increased costs on to the customer can discourage continuing business. When essential goods and services are the commodities, increased prices force customers into difficult purchase decisions. These decisions have an effect on the volume of sales, so finding a price point that will recoup losses from the crisis demands without reducing the impacting the profit margin is a difficult challenge.

To help with the power costs impacting business the CBJ appropriated \$500,000 to the JEDC for small business loans. JEDC staff developed policies, procedures and forms to launch the Business Electricity Loan (BEL) Program. The BEL Program was designed to provide short-term 3% fixed-rate loans to fund 70% of the Cost of Power Adjustment of for-profit businesses.

At the close of this program on September 15th, no applications had been filed and there were no inquiries to JEDC during the program. This may be due to the short duration of the financial impact. If the situation had been prolonged and resulted in several months of higher electricity billings, small businesses operating on thin margins likely would have needed some assistance.

The US Small Business Administration (SBA) began to offer working capital loans of up to \$1.5 million at an interest rate of 4 % with terms up to 30 years. According to the SBA, its "Economic Injury Disaster Loans" could be used to pay fixed debts, payroll, accounts payable and other bills that cannot be paid because of the disaster's impact. As of the middle of September, there had been no applications for this loan program. The deadline to apply for this loan is February 16, 2009.

LESSONS LEARNED & RECOMMENDATIONS

1. Document and archive the practices that were employed to reduce electricity use so that they are retrievable for future crises.
2. Identify strategies to relate water consumption to electric consumption in order to encourage conservation. Promote this conservation measure immediately, along with other ways to reduce electric consumption.
3. Develop a crisis management system in preparation for the next crisis that "spreads the load," tasks employees at all levels, and coordinates crisis management through a planning and communications process.
4. Ensure that the human service sector is strong and has the capability to assist during times of crisis by encouraging community support for them, both financially and with volunteers, during non-crisis periods.
5. Document and archive the assistance that was provided to non-profits and consider additional methods of support. Efforts during this crisis were valuable and many non profits took advantage of the program that was funded through the generosity of other non-government organizations and businesses.
6. Form a work group with entities which provided financial assistance during the crisis to develop a plan for addressing future events. This planning effort should address the following issues:
 - a. In cooperation with the State of Alaska identify the most vulnerable populations and a best estimate of their numbers to plan targeted programs and anticipate costs.
 - b. With input from the social services sector, determine whether setting assistance thresholds based on percentages of poverty income levels is the best model for distributing financial assistance.
 - c. Develop procedures to ensure that
 - i. crisis management teams can quickly establish bank accounts to receive individual and corporate contributions for public assistance, and that
 - ii. information on how to contribute is thoroughly publicized.

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- d. With the help of social service and public safety agencies, develop a strategy to reach those who seem never to get emergency/crisis notification and follow-up. This should result in action steps for the CBJ crisis management plan.
- e. Review the business loan program to determine why it was perceived at first as necessary, but not ultimately used. Based on the review, develop financial assistance programs to small businesses as part of the pre-planning for sub-disaster crises.

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CRISIS PLANNING AND PREPAREDNESS

CBJ states that effective preparedness and mitigation activities can significantly reduce the effects of disasters on a given entity.¹⁴ As part of this examination, the preparedness of AEL&P, CBJ, and the residents has been reviewed in light of this crisis.

ALASKA ELECTRIC LIGHT & POWER

AEL&P is prepared for disasters. The company maintains a month's supply of food and supplies for each employee and their dependents, providing employees with the assurance that they can work during an emergency without worrying about family. AEL&P also has the following emergency plans and conducts internal emergency management exercises each year.

- *Disaster Contingency Plan* for responding to natural and man-made disasters
- *Emergency Action Plan* for area-wide outages
- *Disaster Recovery Plan* for restoring electrical services under disaster conditions

They use checklists for steps to take in a crisis, including implementing incident command and control. Unfortunately, these plans do not address those aspects of crisis management that are beyond the company's internal actions to restore electricity outages – in this case, the financial impacts on customers and effective crisis communications with them.

Specific AEL&P preparedness actions critical to the success of the restoration project included:

- No time was lost due to accidents because of a "Safety First" approach. (Particularly notable because responders worked in extreme terrain and in exposed conditions.)
- A seamless transfer to diesel-powered generators provided no break in electric service. The generators were serviced, operable, and ready to go on line. In fact, only a few homes along Thane Road had a power outage. The rest of Juneau slept through the 3:54 a.m. avalanche unaware of the transfer to diesel generation of power.
- Long-term contracts were negotiated for large amounts of fuel.
- People and equipment were mobilized rapidly and sent to the site.
- Changes to the existing contract for the Lake Dorothy project streamlined financial aspects to restoring the transmission line.
- A good supply of spare parts for repairs to the towers was on hand as part of the normal emergency planning.
- Brainstorming sessions for problem-solving were well-organized. Ideas were listed and systematically evaluated with criteria developed by the company.
- A plan was in place for power cost adjustment specifically for this kind of incident.
- An emergency line of credit with AEL&P's bank was in place for this type of incident.
- Mutual aid agreements with other utilities were pre-arranged. Note: AEL&P had offers of assistance from several utilities. One utility, Thomas Bay Hydro near Wrangell, had a specific size of guy wire that AEL&P was able to borrow and replace at a later time. This saved time with making the repairs.

Snettisham Transmission Line Failure

Some in the community expressed concern that this event should have been anticipated and measures taken to prevent the catastrophic damage. They questioned whether AEL&P had appropriately planned and prepared for avalanche events.

¹⁴ www.juneau.org/emergency/index.php

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When the Army Corp of Engineers located the transmission line towers in the 1960's and 70's, the cost of fuel for the back-up diesel generators was relatively inexpensive so the concerns for balancing costs were minimal. Because of the current high cost of diesel fuel for back-up power generation, the issue of avalanche proofing gains momentum. According to a report by avalanche specialist Bill Glude and his associates:

“The Corps of Engineers located it (transmission line) quite well given the state of the art in the 1960s when it was designed, but from an avalanche standpoint several transmission structures are not located optimally and the line remains vulnerable to avalanche damage. Other technologies like splitting wedges, diversion berms, reinforced transmission structures, avalanche-specific transmission structure and conductor design, and active avalanche release were known at the time, but were not in common use on power lines in North America then. We as a community inherited the line's avalanche vulnerability from a previous generation.”¹⁵

Raytheon Engineers and Constructors completed a risk assessment and evaluation of the Snettisham facilities in 1997 to determine insurance needs.¹⁶ They found that avalanche disruption of the transmission lines was a risk of low frequency but nonetheless a probability. They recommended that the operators plan for an average of 11 days per year for power outage due to avalanche or other mishap. Again, in 1997, these were acceptable risks if Juneau's generators were maintained as backup. (Note: Risk assessments eventually become out-dated. They should be reviewed annually and updated when assumptions and situations change, and technology advances.)

Avalanche Damage Prevention or Mitigation

The April avalanches were 100-year avalanches. Thus, there is a 1% chance that another 100-year avalanche will occur in 2009. Bill Glude notes that 30-year avalanches (3.3% probability each year) can also damage Snettisham transmission lines. Based on historical patterns, the Juneau area is at the beginning of a 20-year climate cycle that likely will increase the number and intensity of avalanches.¹⁷ Since this could result in more frequent transmission line disruptions and use of high cost diesel generators for back-up operations, AEL&P is exploring options for avalanche damage mitigation.

According to Glude, a combination of structural and active operational avalanche mitigation can likely protect the line well against 30-year events and moderately well against up to 100-year events.¹⁸ Working with Glude, AEL&P is currently conducting an inventory of all avalanche paths and creating maps. Engineering firms plan to make avalanche dynamic calculations (impact force modeling) that will allow for the design of protective structures for line towers. Additionally, AEL&P and Glude are developing a program for avalanche forecast and explosive release.

CITY & BOROUGH OF JUNEAU

CBJ maintains a variety of disaster plans for leading a community response to incidents that include:

- Avalanche damage and injury in vulnerable neighborhoods¹⁹
- Chemical, radiological and nuclear incidents
- Bio-terrorism
- Mass casualty treatment and movement for 500 or more people
- Shore-side response for cruise ship casualties

¹⁵ Glude, W, Sharaf D, and Pfeiffer N, *The April 2008 Snettisham Avalanche Cycles*, 2008, p 12-13

¹⁶ *Facility Evaluation and Risk Assessment (AIDEA Project No. 96-004), Volume 1, SNETTISHAM HYDROELECTRIC PROJECT* by Raytheon Engineers & Constructors, February 1997.

¹⁷ This does not factor in global warming (consultant conversation with Bill Glude on August 11, 2008).

¹⁸ Glude, p.17

¹⁹ Concerns about preparedness and response to an avalanche in downtown have been raised as a significant concern in the community as a result of this crisis; however, this situation is outside the scope of this project. This plan can be located at www.juneau.org/emergency/documents/AvplanAdopted.pdf.

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- Airport accidents
- Salmon Creek dam failure

Other hazards scheduled for plan development include:

- Transportation Accidents
- Hazardous Materials
- Volcanic Ash
- Erosion

These plans are contained within or connected to CBJ's *Emergency Operations Plan* (EOP). The Assembly adopted the EOP by resolution on July 14, 2003 without any recommendations for exercising (testing by simulation) the plan. As a result, these plans have not been frequently exercised, a common problem in communities with limited resources and time.

Besides the loss of hydroelectric power, there are other events that could trigger a crisis in the community because of their potential to threaten safety or create financial and social hardships. These events, called "sub-disaster crises" are defined by this report as:

Events where lives and property are not threatened, but which nonetheless require a rapid response to mitigate threats to safety and the effects of economic and social hardship whether through disruption to business, transportation, and/or communications.

These are some possible examples:

- Transportation incidents of significance, especially:
 - damage to the Juneau-Douglas bridge
 - lost or reduced airport services
 - damage (e.g., landslides, bridge washout) to major road choke points
- Barge service interruptions that affect fuel oil and food supplies
- Disruptions to lower 48 suppliers (mainly Seattle) which lead to fuel and food shortages
- Loss of communications systems, e.g., telephone (landline & mobile), Internet, and outside television networks
- Loss of drinking water supply
- Loss of wastewater treatment and solid waste disposal

There are no community preparedness and response plans for such sub-disaster crises. Without a plan and crisis management system to follow, responding to these events likely would follow an ad hoc fashion that may or may not work well. To have a consistently effective response requires a modification to the EOP incident command system to include sub-disaster crises.

This plan could be developed through a community preparedness and planning process that includes key officials and skilled community leaders with experience and knowledge in these areas. Information contained in this document could help the planners to develop a checklist of actions that would initiate the rapid start of a well-organized and comprehensive response.

PERSONAL AND HOUSEHOLD PREPAREDNESS

Many people are not aware that their well being starts with taking personal responsibility to prepare for disaster emergencies. Far too often people rely solely on the government to come to their rescue. They do not understand the government's limited ability to respond to everyone's needs "right now."

There are many actions that individuals and households can and should take to reduce their vulnerability to disasters and crises. Juneau residents can make sure that they are prepared for events that cut off power, telephone, and/or transportation for several days. Appendix (3) provides details and references for additional information about personal and household preparedness.

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Individual behavior is a key to survival. It is important to prepare mentally for response to an emergency. Amanda Ripley, in her book, The Unthinkable: Who Survives When Disaster Strikes – and Why, describes experiences of people who have survived disasters such as airplane crashes, floods, and fires. Paying attention to safety briefings and actively participating in emergency drills (e.g., fire and evacuation drills) saves lives. By mentally envisioning one's response to a potential emergency, a person will be more likely to escape/survive a disaster.

LESSONS LEARNED & RECOMMENDATIONS

1. AEL&P's efforts to increase transmission line protection should include CBJ oversight.
2. AEL&P and the state should perform an updated risk assessment of the transmission line, including dangers caused by avalanches, landslides, and other potential natural disaster threats caused by weather and geological-related events. The risk assessment should consider the applicability of new technologies to mitigate the risks.
3. Plans should be developed for avalanche control along the Snettisham transmission line system. These plans should be based on the risk assessment and updated avalanche control techniques, to include surveillance and periodic inspection of the transmission line system.
4. AEL&P should consider asking the state (AIDEA) to finance necessary avalanche protection improvements to the Snettisham transmission line system based on an updated risk assessment.
5. AEL&P needs to supplement their crisis response with plans that address financial hardship and public communication. Their current procedure facilitated the swift restoration of hydro power and minimized economic hardship, and the addition of public connection will enhance the plan.
6. AEL&P should update their emergency plans by incorporating the innovative engineering corrective actions used to restore the system during this event.
7. CBJ officials should undertake sub-disaster response planning and preparedness adding separate plans (or annexes to the EOP) that are tailored to each sub-disaster crisis event identified in this planning process. National Response Framework principles provide an excellent structure to develop sub-disaster crisis management systems.
8. The assembly should allocate funds and schedule an annual comprehensive citywide sub-disaster crisis exercise that would involve everyone in CBJ government from the mayor on down. Businesses and agencies providing essential goods and services should be encouraged to participate.
9. Businesses and organizations that provide critical services, goods, and infrastructure which could be affected by sub-disaster emergencies should prepare contingency plans, provide employee training, and conduct exercises.
10. CBJ officials should actively encourage Juneau citizens to take actions to reduce their vulnerabilities. This effort should include workshops and help with a basic, fill-in-the-blank, individual/family/neighborhood plan. Civic groups like Scouting organizations or the Civil Air Patrol could assist by taking on this work as a civic project. Elements of these outcomes should include:
 - more awareness of potential disasters and crises
 - preparation of family disaster plans
 - preparation of home disaster kits
 - establishment of a network of family, friends and neighbors to work together

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PREPAREDNESS FOR SIMILAR COMMUNITY CRISES

OVERVIEW

Compared to the early days of the Snettisham Hydroelectric Project operations, power supply to Juneau has been very reliable. These recent years of excellent service delivery lulled the general population, so the unexpected major disruption caused by the April 16th event and its resultant expectation of financial hardship caught people off-guard. As Juneau's citizens and businesses anticipated the financial impacts, many felt overwhelmed. A few were outraged. Some of these sentiments are summarized in the following general statements:

- How could this happen (in this day-and-age)?
- They [AEL&P] should have been prepared.
- They should have known about this and done something to prevent it.
- We shouldn't have to pay for increased costs of diesel generated electricity and the repairs to restore hydroelectric power.

Living through this crisis raised questions not only about the vulnerabilities in power supply to the community, but about other potential disruptions to key services, supplies, and infrastructure. Is Juneau prepared for the impacts of sub-disaster events?

A large-scale disaster emergency would likely disrupt the community's essential services and infrastructure. And, it is possible that an incident could disrupt multiple systems at once. Federal, state, and local governments plan and prepare for responses to these kinds of incidents. But, as citizens of Juneau learned from the hydroelectric crisis, some of these disruptions can occur without being a true disaster emergency and still incur far-reaching impacts on individuals, families, and small businesses.

Planning, preparing for, and responding to these kinds of disaster emergencies are complex and difficult tasks.

DISASTER EMERGENCY PREPAREDNESS AND RESPONSE OVERVIEW

This section of the report provides an overview of the current large-scale disaster emergency preparedness and response network and systems in-place, with recommendations to improve readiness for sub-disaster crises.

People living almost anywhere in Alaska face the potential of being affected by emergencies caused by natural disasters, e.g., earthquakes, tsunamis, landslides, avalanches, fires, severe weather, floods, so-called man-made (or technological) events, and weapons of mass destruction. Most people understand living in these conditions and expect government to be ready and respond.

All levels of government continually take steps to prevent, deter, prepare for, and mitigate such disaster emergencies. Briefly, the national emergency response process for major disasters:

- **Local government** responds to the event, supplemented by neighboring communities and volunteer agencies. If overwhelmed, local government turns to the state for assistance.
- **State government** responds with state resources, such as state agency support and the National Guard.
- Simultaneously, a **damage assessment** is performed by local, state, federal, and volunteer organizations to determine losses and recovery needs.
- A **major disaster declaration** is requested by the governor, based on the magnitude of the incident and the damage assessment, with an agreement to commit state funds and resources to the response and long-term recovery effort. Note: A local disaster declaration by the local government is usually needed to move this step to the State of Alaska for consideration.

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- The **president** approves the state disaster request (or FEMA informs the state governor it has been denied). This decision process can take a few hours or several weeks depending on the nature of the disaster.
- The **federal government** provides response assistance with a wide array of capabilities and resources, as requested by the state.

Appendix (3) provides a detailed discussion of the national system for planning and responding to disaster emergencies. It includes specific details that describe how states and local governments coordinate their efforts under the systems established by the National Response Framework. The Appendix also provides an overview of the CBJ disaster emergency response system, as it fits within the national and state system. This appendix includes specific information about how individuals, families, and neighborhoods can be better prepared for those early hours and days following a disaster.

SUB-DISASTER CRISIS RESPONSE

The principles, roles, and structures that organize how a community responds to crises such as the loss of hydroelectric power are extremely important. Without a good understanding of those factors and good organization for the response, there is usually prolonged confusion, lack of coordination, poor communications, and an unsettling appearance of confusion to lower-level responders and those impacted by the crisis.

As seen in the hydroelectric crisis, there were issues, concerns, and frustrations expressed by Juneau citizens that resulted from unanticipated impacts. The response was deeper than the restoration of hydroelectric power. It included dealing with the financial, emotional, and physical impacts on citizens over several weeks. Even though AEL&P and CBJ shared information with each other, and each communicated with Juneau's citizens, there could have been more effective organization with joint planning, coordinated efforts, and communication with the citizens through a joint crisis management structure.

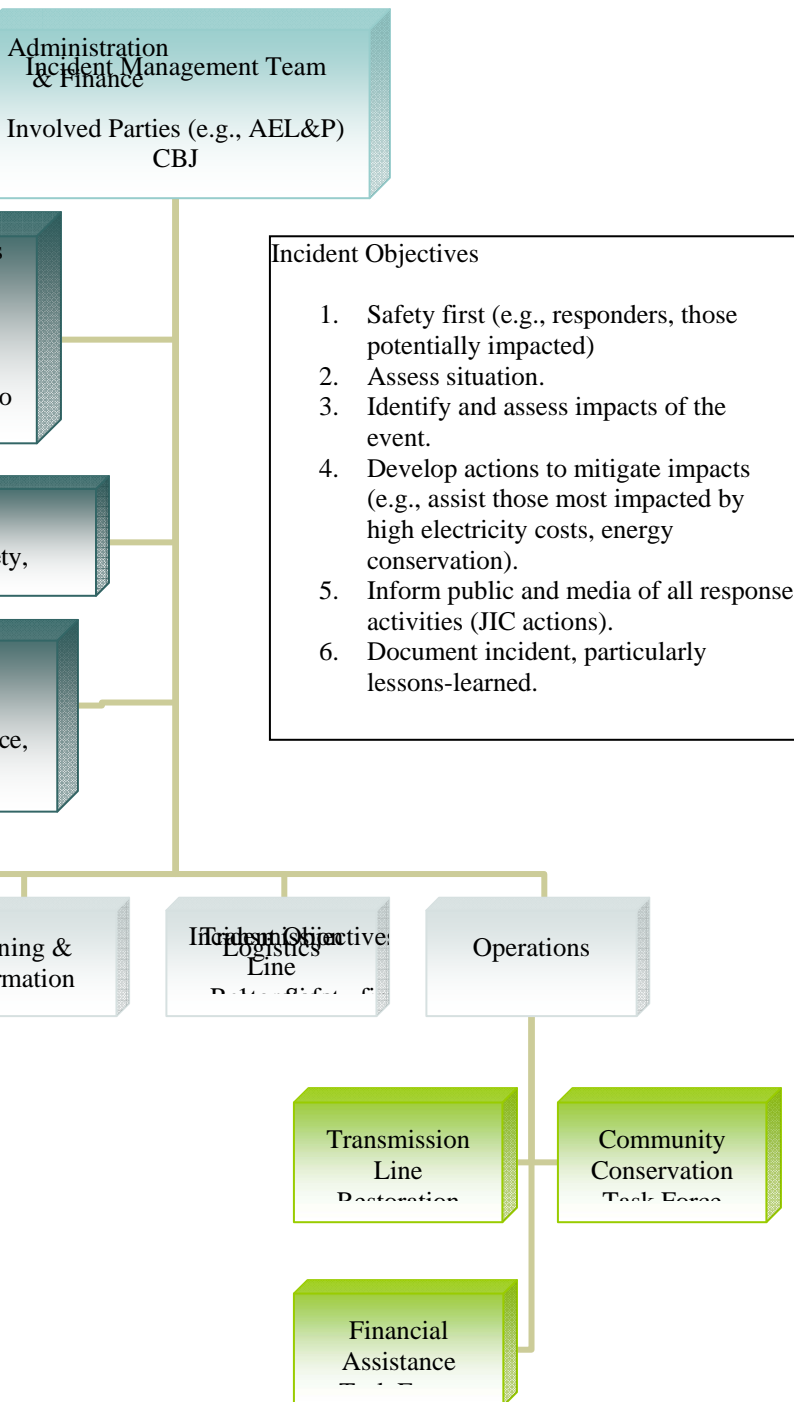
The Incident Command System (ICS) used throughout the nation for disaster emergencies under the National Response Framework (Appendix 3) can be used as a model to design sub-disaster crisis management systems for events that Juneau potentially faces. It is not limited to disaster emergencies, however, and can even serve as a framework to organize, plan, and execute other major community events such as parades, celebrations, and conventions.

Using this crisis as an example, a sample basic incident management structure (Figure 2) and management process (Table 2) for a sub-disaster crises appears on the following pages. It can be used as a starting point to develop a sub-disaster crisis management system. Key to successfully using such a system will be initial and refresher training for those anticipated to fill positions.

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Figure 2: Sub-disaster Crisis Management System Organization Chart (sample)



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Table 2: Example Incident Management Planning Cycle for the Juneau Hydroelectric Power Crisis

| Activity/Time | 2008 Snettisham Avalanche Response Planning Cycle Adapted from NIMS Outlines |
|--|---|
| Incident 0 hour | Avalanche destroys transmission towers. |
| Initial Actions 0-8 hours | Initial assessment and action by first responders including notifications. Diesel generators immediately brought on line. AEL&P begins assessment of damage. City officials notified. |
| Incident briefing Day One (early) | AEL&P president briefs mayor and city manager on the situation, current activity and incident potential. They discuss possible ramifications and impact on the community. They agree to meet face-to-face the following morning. |
| Prepare for first incident managers' meeting Day Two | AEL&P continues with its line restoration activity. CBJ schedules a meeting with organizations and agencies that can assist in the response. The CBJ Emergency Programs Manager, who will be the designated Planning Section Chief (PSC), works on incident objectives and organizational structure with input from the mayor and city manager. |
| First Incident Managers' Objectives or Strategy Meeting Day Two | In a meeting facilitated by the PSC, the AEL&P president, mayor and/or city manager establish their roles and responsibilities. They agree on incident objectives and organizational structure (see Figure 1), immediate tasks and action items, staffing and other resource needs, division of tasks, and management of information flow. The overall strategy is: <ul style="list-style-type: none"> 1. AEL&P will continue line restoration work (task force) and keep the community informed as to their progress. 2. Two additional task forces will be formed to undertake energy conservation and provide assistance to most vulnerable. 3. A joint information center will keep the community informed, support conservation efforts and provide information on financial assistance. |

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| | |
|---|---|
| <p>First Inter-agency Incident Response Meeting (con't)</p> <p>Day Two or Three</p> | <p>In a meeting facilitated by the CBJ Emergency Plans Coordinator (PSC), the incident managers (AEL&P President, Mayor and/or City Manager) meet with the following groups:</p> <ul style="list-style-type: none"> • CBJ Dept Heads • CBJ Assembly members as appropriate • AEL&P managers, as appropriate • Juneau Economic Development Council • Juneau Sustainability Commission • Chamber of Commerce • United Way Board • State and Federal Representatives • Other civic groups, as appropriate <p>During the meeting:</p> <ol style="list-style-type: none"> 1. Attendees receive a complete status/situation report. 2. The incident managers propose incident objectives and organizational structure. Immediate tasks are identified. 3. The PSC leads an open discussion to clarify priorities, objectives, assignments/tasks, issues, and concerns. 4. By the end of the meeting, volunteers are assigned to the various task forces and groups in the organizational chart. 5. Closing comments are made by incident managers. <p>Decisions, assignments, and action items are recorded by the planning section's documentation unit.</p> |
|---|---|

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|---|--|
| <p>Tactics Meetings for Each Task Force</p> <p>Day Three</p> | <p>For this initial meeting, the community conservation task force and financial assistance task force meet together, to ensure efforts are not duplicated and resources are available for the tasks. Subsequent task force meetings may be held separately. (Note: The transmission line restoration task force is run solely by AEL&P and does not need community support.)</p> <p>Attendees at the tactics meeting continue (1) volunteers and staff assigned to each task force during the Inter-agency meeting, (2) members assigned to the joint information center (JIC), (3) PSC and (4) staff logistic support. The incident managers should not attend this meeting.</p> <p>The PSC facilitates the meeting. The agenda includes:</p> <ol style="list-style-type: none"> 1. Review of current and projected situation. 2. Review of objectives and accountability (ownership) of each objective. 3. Discussion of tasks and resources required to address each objective. Resource shortfalls are identified. Logistics staff are assigned as necessary to address shortfalls. 4. Safety and security concerns are reviewed. (Ex. Risks of turning off street lights.) 5. JIC outlines information flow procedures. 6. The PSC summarizes the meeting and lists all issues and concerns that are not addressed and will require additional consultation or research. (Open Actions Tracking) |
| <p>Preparation of Comprehensive Incident Action Plan</p> | <p>Using input from the Tactics Meeting, the PSC works with each task force leader to prepare an action plan. The action plan includes the response organization, objectives, tasks to address each objective, task assignments with projected delivery/completion dates, and unresolved issues (open actions).</p> |
| <p>Incident Managers Planning Meeting</p> <p>Day Three</p> | <p>The PSC presents the comprehensive incident action plan to the incident managers (AEL&P president, mayor and/or city manager). Additional attendees include task force leaders, logistics and finance staff, JIC, state and federal representatives or liaison, and safety/security managers, if necessary.</p> <p>The incident managers hear from each entity, ask questions, provide guidance and direction, and approve the plan or require additional revision.</p> |
| <p>Comprehensive Action Plan Implemented, Progress Assessed</p> | <p>The incident action plan is distributed widely so that each individual and organization understands the priorities, objectives, and tasks.</p> <p>The PSC tracks progress on each task and keeps the incident managers informed.</p> |

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| <p>Second Incident Managers' Objectives or Strategy Meeting</p> <p style="text-align: center;">Day Five</p> | <p>This meeting starts the second planning cycle. At this meeting the incident managers meet with the PSC and other specialists, as necessary, to:</p> <ol style="list-style-type: none"> 1. Review and update key decisions, priorities and incident objectives. 2. Review procedures including information flow, cost sharing and accounting, safety and security and unresolved issues. 3. Discuss and review their individual workload and adjust accordingly. |
| <p>Second Inter-agency Incident Response Meeting</p> <p style="text-align: center;">Day Five</p> | <p>This meeting is similar in participation and format to the first inter-agency meeting but is more focused on mission accomplishment. Facilitated by the PSC, it includes:</p> <ol style="list-style-type: none"> 1. Situation report. 2. Comments from the incident managers including a review or update of items discussed during the preceding incident managers' objectives and strategy meeting. 3. Open discussion of priorities, objectives, assignments/tasks, issues, and concerns. 4. Closing comments from the incident managers. <p>New or revised decisions, assignments, and action items are recorded by the planning section's documentation unit.</p> |
| <p>Continue Response Planning Cycle with the Second Tactics Meeting</p> | |

DELIVERY OF KEY SUPPLIES BY THE MARITIME INDUSTRY

Juneau citizens are very dependent on freight barge lines for consumer goods. As there is no land-route link with either the Lower 48 or the rest of Alaska, over 90% of Juneau's food and goods comes from Seattle on container deck barges operated by Alaska Marine Lines (AML) or Northland Services. The loss of one barge due to grounding or other mishap would be noticed in the fresh produce and dairy sections of food stores within days.

AML and Northland Services operate up to 12 tugs and barges throughout Southeast Alaska, and there is adequate back-up in the case of vessel accidents and casualties. The barge lines are not generally susceptible to labor disruption since they are not served by unions. In addition, most of the containers loaded in Seattle do not come directly from a specific international port. Therefore, Juneau is no more susceptible to a major port disruption than any other lower-48 community.²⁰ However, if Seattle roads or infrastructure were crippled by a major disaster emergency (e.g., earthquake), the effect on Juneau's supply system would be devastating.

Although Juneau has three independent fuel suppliers, the sole contract barge and tug company supplying fuel to Southeast Alaska is K-Sea Transportation, a large North America company. Though there could be some minor disruption to fuel delivery to the community in the event of a fuel barge and tug casualty, K-Sea Transportation has several barges and tugs that operate throughout Alaska and have the capacity to provide more if needed.

²⁰ The October 2002 labor dispute at west coast ports threatened delivery of goods to Anchorage. Juneau was not as affected because AML and Northland could load stockpiled inventories or goods from east coast ports.

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Fuel Oil

Many wonder if Juneau's supplies of heating oil and diesel for generators could ever be in jeopardy. Considering the scenario of a winter disruption in hydroelectric power during a period of maximum heating oil consumption could help to answer this question.

During the post avalanche efforts AEL&P estimated the daily demand needed for diesel fuel to replace the delivery of hydroelectric power at 100,000 gallons per day--3,000,000 gallons in a 30-day month. According to Juneau's three oil suppliers, the normal monthly maximum fuel oil demand in the middle of winter for the entire community could be 1,800,000 gallons. Under these conditions that would mean a need of 4,800,000 gallons per month or an increase of over 250%.

Juneau's fuel tank farm capacity is over 6,000,000 gallons with 3.5 million of that capacity normally reserved for heating oil and diesel.²¹ Under normal conditions, a fuel barge carrying between 1.5 to 3.0 million gallons of refined product (gasoline, diesel, aviation gas) arrives from Seattle every 10 to 14 days to replenish the tank farms. Juneau also receives a monthly barge from Nikiski, Alaska with a 3 million gallon capacity. The three suppliers have contingency plans in the event that extra fuel is needed and believe they can meet the demand by adjusting loads or ordering additional barges. Indeed, these plans were successfully tested during the avalanche response when AEL&P estimated a need for 100,000 gallons more of diesel fuel per day.

Since K-Sea Transportation has several barges and tugs that operate throughout Alaska and have the capacity to provide more if needed, the maritime fuel transportation element is sound. As for local delivery of fuel, each of the three local fuel suppliers use truck companies for local delivery. Truck capacity under maximum demand conditions appears to be adequate.

The most vulnerable link in the fuel oil supply system is the supply source, not the transportation links. But since Juneau receives its fuel oil products from two separate refineries, one located in Seattle and the other in Nikiski, disruption of both sources is unlikely.

Juneau consumes 3-4 million gallons per month of diesel, gasoline, and aviation gas, combined. Without rationing, an extended disruption of fuel deliveries by barge would result in fuel shortages within approximately three weeks affecting vehicle transportation, airplane travel, and operation of machinery and equipment. A single barge delivery, however, would extend Juneau's supplies for up to two weeks during periods of peak demand.

Food

Most of the food delivered to Juneau grocery stores and "quickie-marts" arrives weekly on AML or Northland Services tugs and barges. Grocery stores have the ability to store foods for a limited time. If there were a long-term disruption of the food supply system, there likely would be a minimum supply of one to four weeks for nutritional canned and dried foods, depending on whether or not there was a "panic run" by shoppers eager to stock up. It is likely that supplies of fresh produce and dairy products would rapidly disappear. One grocery store owner indicated that a high priority is placed on supplying essential foods for babies and children.

The length of available food supply following a disruption event is variable and depends on complex factors that need further study. Each store has a different capability to house inventory that is not on its shelves, and people's demand for product likely would increase with any indication of a supply shortage.

²¹ No 2 heating oil is roughly equivalent to diesel although automotive/truck diesel must now meet ultra-low sulfur requirements. Home heating oil does not. Also note that in the winter much of the diesel oil is actually blended with No 1 oil (kerosene) to prevent cold weather gelling.

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One large grocery store reported a contingency plan if the main distribution center for Juneau is unable to operate. In that event, it would call several distribution centers in the Northwest to supply Juneau with food. From store's perspective, the only limiting factors for delivering food to Juneau during a crisis situation would be transportation from the Seattle area and offloading in Juneau at undamaged port facilities.

Over the years, there have been minor disruptions to Juneau's food supply due to vessel casualties; however, none of them has caused a food shortage crisis. There is good coordination and cooperation between the suppliers, transporters, and grocery stores. In the event of a significant disruption to the community's food supplies, it appears that sufficient lead time exists to develop alternative supply systems.

OTHER TRANSPORTATION SYSTEMS

Loss of road access to Douglas Island, or between the valley and downtown has occasionally been listed as a community concern, though no action plans or checklists have been developed to address these concerns. While prolonged loss of road transportation corridors between the valley and downtown Juneau are unlikely, the loss of the bridge from earthquake or being struck by a vessel is somewhat more likely. It would be prudent for the community to have a response plan to mitigate the effects of such an event.

DRINKING WATER SUPPLY AND WASTEWATER TREATMENT

Unless there is a catastrophic disaster emergency, such as an earthquake, it is unlikely that all drinking water and wastewater facilities would go off-line at the same time.

Drinking water supplies and wastewater treatment facilities are located in several places throughout the community. Occasionally, there have been minor disruptions to the systems, but CBJ personnel have been expert at quickly restoring the services.

Natural and man-made/technological disasters and attacks by those trying to cause mass casualty can threaten drinking water supply; however, under such circumstances protecting drinking water has a high priority in the disaster emergency planning and preparedness of local, state, and federal agencies. At CBJ risk assessments, security plans and emergency response plans (all confidential) are in place and follow the federal, state, and local guidelines.

Availability of power to the wastewater treatment system is critical for safe operation, and auxiliary power is limited. If the treatment system is not able to treat wastewater safely, it will be discharged as "under-treated" until the system is restored.

CBJ's wastewater treatment system operators maintain a plan for the short disruptions that are the usual experience. Additionally, they conduct informal training and exercises. However, there has been no risk assessment and there is no formal plan to prepare for, and respond to an event that would significantly disrupt the system.

Both drinking water supply and wastewater treatment systems have high priority needs for power to keep them operating properly. Conserving energy by these utilities is limited, because most of their power needs are for operating essential equipment.

COMMUNICATIONS SYSTEMS

Telecommunications, Internet, and television systems are vitally important to Juneau to keep the community connected with the rest of the nation and world. Disruptions for long periods would adversely affect business, government, and people's lives.

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According to one Alaska-based company that provides voice, video (cable) and data communication services, being prepared to respond to disruptions is an important aspect of their services.²² There are power, cable, and satellite back-up systems. If power is lost, they have battery and generator systems that will keep communications systems operating for several hours. All the major facilities can be powered by diesel back-up generators. Satellite signals for news networks have provisions for back-up operation. There are multiple inputs on satellite service. If a primary satellite is lost, the signal is automatically tripped over to the next satellite.

Although the local television station (KATH) has several satellite back-up systems to continue network broadcasts and has the ability to broadcast from its local station if it loses raw feeds from the networks, KATH is dependent on power and has no back-up generator. KATH is co-located with KINY/KSUP radio station and can broadcast it's signal over their system, if it loses video capability.

LESSONS LEARNED & RECOMMENDATIONS

1. An incident management system, designed for the unique circumstances of the crisis, should have been jointly designed and implemented by CBJ and AEL&P during the early stages of this event. In the absence of a structured crisis management system unique to this event, it was the talent and hard work of individuals and organizations, working independently, that contributed to the success of the early stages of the response. A crisis management system would have improved communication and coordination between these organizations to provide a consistent message to the community.
2. The city manager and CBJ Assembly should strengthen and encourage the stated position description of the Emergency Programs Manager to develop and run the incident management process.
3. The CBJ Assembly should define what constitutes a city emergency, referenced in this report as a "sub-disaster crisis."²³
4. CBJ should develop a community sub-disaster crisis management system. The system should include specific plans for each identified sub-disaster crisis event. Interested citizens should be encouraged to participate in this project, and resulting plans should be exercised.
5. Companies in the business of providing key services and goods should
 - a. perform risk assessments of their operations
 - b. prepare contingency plans for response and mitigation of emergencies and crises, and
 - c. regularly train key employees to maintain a response readiness.
6. Fuel oil suppliers and grocery stores should develop contingency plans to mitigate a disruption to critical supplies.
7. Businesses, organizations, individuals, and families should have contingency plans to mitigate a disruption to food and fuel.
8. CBJ should conduct a thorough risk assessment of the community's food supplies to understand food storage limitations and vulnerability to transportation disruptions. Plans should be developed to mitigate impacts of a food shortage.
9. Food suppliers should develop action plans to receive commodities from West Coast ports other than Seattle in the event the Seattle supply line is disrupted. These alternate ports might include Vancouver or Prince Rupert, British Columbia.
10. The CBJ EOP should develop crisis management plans to address:
 - a. Loss of the Douglas Island Bridge
 - b. Sufficient fuel to operate the drinking water supply and wastewater treatment systems
 - c. Drinking water and wastewater treatment system emergency plans. This would include an updated risk assessment.
 - d. Training and exercising key CBJ staff identified as responders in plans.

²² Consultant conversation with Rusty Trammel, GCI Juneau

²³ "City Will Wait for Electric Bills Before Deciding Spending Plan" article in the Juneau Empire, dated May 18, 2008.

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11. Sub-disaster crisis exercise scenarios should be developed that test the communications systems' readiness to deal with disruptions.

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SUMMARY

There are always lessons-learned from events that can lead to improvements on how those events are handled next time. Some may want to know what went wrong and look to place blame. Others want to make sure that what the community learned from the experience (e.g., energy conservation) is not lost. Government officials want to learn from events so they can do a better job providing services to citizens. This report is intended to give useful information to a wide range of people who may use it for different purposes.

Owners/operators of organizations and businesses that provide critical, essential goods, services, and infrastructure. AEL&P experienced a disruption to its hydroelectric services provided to the community which led to a dramatic increase in costs to its customers. They were adequately prepared to restore that service to normal conditions quickly (less than 6 ½ weeks). However, they were initially not well-prepared to deal with the community reaction to the event. Lessons-learned from the event by AEL&P will help the company prepare better for a similar future event. These lessons may benefit other businesses and organizations that could face similar situations. Taking inventory of their preparedness (risk assessment) and upgrading their plans and training can help to manage and mitigate impacts in the event of a crisis.

City & Borough of Juneau. A talented group of leaders – mayor, city manager, a few senior officials, and support staff – worked tirelessly using an ad hoc approach to take care of the citizens during the crisis. Much of the work was accomplished without a systems approach to crisis management. Recommendations for developing a crisis management systems approach are a major outcome of this report.

In addition to the focus on the April – May 2008 crisis, this report raises concerns about readiness to respond to other potential community-wide sub-disaster crises. There are numerous recommendations to ensure that CBJ develops a community crisis management plan and CBJ officials take the lead to ensure key businesses and organizations that provide critical, essential goods and services plan and prepare for responding to events in order to mitigate crisis impacts.

Juneau Citizens/AEL&P Customers. The loss of hydro power and shifting over to expensive diesel fuel generators for electricity affected everyone in the community. The situation resulted in limited outage by a few people. Sharing of information and constructive suggestions to mitigate impacts with the public by AEL&P and CBJ through the media and web sites, along with good reporting spawned a positive public attitude. The response by the community to conserve electricity was nothing short of amazing. There was a tremendous sense of people pulling together as a community to make the best of the situation and help those who would be severely affected by high electricity rates.

There are many recommendations in this report to capture the lessons-learned to be better prepared for another community-wide crisis – not only for an electricity crisis, but other situations that could stress the community financially and/or threaten essential services that protect public health and safety.

An added feature of this report is information concerning what individuals, families, and neighborhoods can do to be better prepared for disaster and sub-disaster crises. The more people are aware of vulnerabilities and the better prepared they are to deal with crises before the government can assist, the better people's outlook and attitude will be during response and recovery. This will improve the community's ability to respond as a whole and enhance its ability to get things back to normal.

Finally, being prepared in Southeast Alaska for anything – especially harsh environmental events that disrupt regions, communities, families, and individuals – has been a way of life for tens of thousands of years for the first inhabitants. Tlingit people are always getting ready. Being 100% ready mentally, emotionally, and spiritually all of the time is more than a way of life, it is a mindset ... a level of consciousness. Being prepared is a matter of Alaska Native culture, and it has served the people well.

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All people can learn from the Tlingit perspective on being prepared. It starts with understanding one's environment and its forces and figuring out ways to co-exist in harmony with the surroundings. It includes thinking through the events that can threaten peace and harmony in one's surroundings (assessing risk, in emergency management terms) and being prepared to deal with those threats physically, mentally, emotionally, and spiritually (planning to prevent (when possible), respond effectively, mitigate impacts, and return to normal living, in emergency management terms).

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APPENDIX 1

CHRONOLOGY OF SIGNIFICANT EVENTS AND ACTIONS

| Date | Event or activity |
|-------------|--|
| 16 Apr | At 3:54 a.m., an avalanche 1.5 miles wide and approximately 3 miles from the Snettisham Power House downs one transmission tower and badly damages four others. At 10:00 a.m., a second avalanche downs additional towers. |
| 16 Apr | AEL& P commenced "war room" meetings to start internal planning for repairs to the transmission line. Early meetings focused on possibilities for repair, logistics and arrangements for mobilizing men and equipment, setting up a camp at Snettisham, and gathering drawings and engineering data on the towers that were destroyed. |
| 17 Apr | CBJ issues a local disaster declaration. |
| 17 Apr | First joint press conference held by CBJ and AEL&P |
| 18 Apr | CBJ Department heads meet to start developing energy conservation action plan for CBJ facilities. |
| 18 Apr | Juneau Economic Development Council convenes a meeting of leaders from community organizations and businesses to explore the implications of the sudden increase in electricity costs on Juneau's economy, with special attention to the effects on families, businesses and non-profit organizations. |
| 22 Apr | AEL&P and their consultants begin a two-day brainstorming session to set the direction for the repairs and determine the best way to restore hydroelectric power transmission. |
| 23 Apr | CBJ department heads report to mayor on CBJ energy conservation actions. |
| 24 Apr | Assembly Finance Committee considers ways to help provide a safety net for immediate relief on electric bills. |
| 24 Apr | Communications consultant holds joint media training with AEL&P and CBJ officials and a joint communications plan is developed. |
| 25 Apr | First daily 3 p.m. joint teleconference involving AEL&P, CBJ, and Juneau legislative delegation (State of Alaska invited). |
| 25 Apr | Juneau Commission on Sustainability announces "Re-Energizing Juneau: A Community-Wide Conference on Energy Use," will be held on May 10 th , 10:00 a.m. to 6:00 p.m. at the Mendenhall Mall. |
| 28 Apr | Assembly meets in Special Session and adopts Emergency Ordinance 2008-17, providing a Temporary Sales Tax Exemption for sales of "Cost of Power Adjustments" (COPA) on Electrical Power. |

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- 28 Apr Dr Alan Meier, an energy conservation specialist from the Lawrence Livermore Lab in Berkley arrives to spend three days in Juneau advising a variety of organizations on energy saving methods and practice.
- 1 May Assembly meets in Special Session and adopts Emergency Appropriating Resolution 2442(am), appropriating \$3,250,000 to the City Manager for a grant to the United Way of Southeast Alaska, and a loan to the Juneau Economic Development Council, for energy assistance to residents and small businesses, and for energy conservation measures (funding provided by the budget reserve).
- 8 May Applications for temporary avalanche-related electric bill assistance are made available through United Way and Catholic Community Services.
- 10 May Re-energizing Juneau, an emergency all-day forum is held in Mendenhall Mall.
- 12 May The Assembly passes Resolution 2444 – “Requesting State Reconsideration of its Decision Denying a Disaster Declaration for the April 15, 2008 Snettisham Avalanches.”
- 12 May “Juneau Unplugged: Live more. Use less.” community campaign is unveiled. The campaign encourages individuals, community groups, and businesses to use the logo and slogan.
- 16 May AEL&P offers to fund independent audit of the cost of power adjustment (COPA) and a report on “lessons learned” from this disaster.
- 16 May The U.S. Small Business Administration announces the availability of low-interest Economic Injury Disaster Loans to small businesses economically impacted by the increased cost of electricity as a result of the avalanches.
- 20 May Senators Stevens and Murkowski introduce a bill to establish a program to monitor avalanche threats on federal land.
- 22 May Revised applications for City-funded, privately-administered temporary avalanche-related electric bill assistance are produced. Expanded program includes households at 300% of federal poverty guidelines. (For example, a family of four with \$79,500 annual income is now eligible for assistance.)
- 29 May Applications for City-funded, JEDC-administered Business Electricity Loan Program are made available.
- 1 Jun AEL&P announces that it completed repairs to the transmission lines and restored Snettisham hydroelectric power to Juneau at 9:17 p.m. Sunday evening. AEL&P reports that “customers will not see the reduced rate until their next billing period.”
- 2 Jun Assembly amends its resolution regarding emergency grants and loans so that the law conforms to the grant and loan programs that are being implemented following negotiations with the agencies.
- 12 Jun Mayor appoints Lessons Learned Commission to review the CBJ, AEL&P, and community response to the April avalanches.

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APPENDIX 2

SUMMARY OF RECOMMENDATIONS

The following compilation of lessons learned and recommendations are formatted as a checklist through which community leaders can develop plans. These items have been distilled from the report and are organized by responding entity.

CBJ should take the overall lead to identify potential community impacts in all major events. From that point they should take responsibility to assign work priorities, form work groups, and assign responsible parties to take action.

PREPAREDNESS

City & Borough of Juneau

- ❑ The city manager and CBJ Assembly should strengthen the authority of the emergency programs manager to develop and manage the incident management process.
- ❑ The CBJ Assembly should review and list events that would constitute a “community sub-disaster crisis.” CBJ’s emergency programs manager should develop community crisis management plans based on that list.
- ❑ The CBJ manager, in cooperation with the mayor, should review any major events that are not on the list to consider secondary and tertiary impacts that might indicate the need for community response. If any are identified, a response should be initiated.
- ❑ CBJ should develop and train for a community sub-disaster crisis management system. Officials who anticipate working in the midst of a crisis should be prepared ahead of time. This means planning, training, and exercising plans. Community volunteers who want to participate should be encouraged and included.
- ❑ Features of the crisis management system should include:
 - National Response Framework principles for disaster emergencies.
 - A community risk assessment for sub-disaster crises.
 - Identification of key CBJ staff to appoint to a CBJ crisis management team. These staff members should be trained to perform their crisis management functions and participate in sub-disaster crisis drills and exercises.
 - A financial assistance plan for crises that create community financial hardship.
 - The identification of key organizations and businesses that provide critical, essential goods, services, and infrastructure. Where possible, these entities should be involved in the CBJ’s planning and preparedness process. They also should be required to prepare their own risk assessments and contingency plans.
 - Plans for an annual, comprehensive, citywide sub-disaster crisis exercise (a major test of all plan elements) that involve everyone in CBJ government, from the mayor on down, plus the identified key businesses and organizations.
 - A plan to test crisis management communications as an objective of every drill.
 - A listing of key organizations and businesses that have contingency plans and provide employee and volunteer training for people identified in their plans as responders.
 - A checklist of the actions taken by the mayor during the Snettisham event that can be provided to the lead crisis manager.

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- A method to review and modify plans and preparations that based on the lessons learned from training, exercising plans, and managing actual crises.
- ❑ CBJ should keep the community informed about possible events and how the city is prepared to handle them.
- ❑ CBJ officials should encourage Juneau citizens to take actions that will reduce their vulnerability to disaster and crisis and prepare them to help others. Such an effort could include workshops and development of a basic fill-in-the-blank individual/family/neighborhood plan. Groups like scouting organizations or the Civil Air Patrol could assist as a civic project.
- ❑ CBJ should document and archive the practices employed to reduce electricity use as a reference for future events. Preparation and distribution of a pamphlet with this information would be helpful.
- ❑ CBJ should monitor AEL&P's efforts to increase transmission line protection.
- ❑ CBJ should regularly update risk assessments and emergency plans for drinking water and wastewater treatment systems. This should include a backup plan to ensure energy generation is available for drinking water and wastewater treatment systems.

AEL&P:

- ❑ AEL&P and the State of Alaska should perform an updated risk assessment of the transmission line, including potential dangers, e.g., avalanches, landslides, and other natural disaster threats resulting from weather and geologically related events. The risk assessment should consider new technologies for mitigation.
- ❑ Based on the risk assessment and updated avalanche control techniques, develop plans for avalanche control to include surveillance and periodic inspections.
- ❑ Based on an updated risk assessment, discuss financial assistance from the Alaska Industrial Development and Export Authority (AIDEA) to fund avalanche protection along the Snettisham transmission line system.
- ❑ Update emergency plans. Address risk assessment issues, document innovative engineering actions incorporated during this crisis, and provide for improved communication with the public and its customers.
- ❑ Continue with pre-arranged contracts and funding sources, strategic staging of spare parts, mutual aid agreements with other utilities, and good relationships with contractors. It is also hoped AEL&P can continue an emergency line of credit.

Key Organizations & Businesses

- ❑ Key organizations and businesses that provide critical, essential goods, services, and infrastructure should
 1. Participate in community planning and preparedness.
 2. Prepare their own emergency/crisis preparedness and response contingency plans based on operational risk assessments.
 3. Ensure their contingency plans have an effective communications component. Include objectives and assign trained communications personnel in all crisis management planning. Accurate, helpful, and articulate information presented timely to the media and the public is critical.
 4. Train employees and exercise their plans on a schedule that keeps key employees trained and ready for action.

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5. Modify preparations and plans based on lessons learned from training, exercising plans, and managing actual crises.
 - ❑ Fuel oil suppliers and grocery stores should develop contingency plans for disruptions of critical supplies.
 - ❑ In anticipation of a disruption in the Seattle supply line, action plans should be developed to receive commodities from alternate West Coast ports, e.g., Vancouver or Prince Rupert, British Columbia.
 - ❑ Each key organization should be prepared with spare parts, back-up supplies, back-up power, additional personnel, additional space, agreements for financial and contractual assistance, and mutual aid similar to AEL&P's pre-arrangements as described in this report.

Citizens

- ❑ Individuals, families, and neighborhoods should take action to reduce their vulnerabilities to disasters and crises. Elements for this action include
 - awareness of the potential for disasters and crises
 - preparation of family disaster/crisis plans
 - assembly of a home disaster kit
 - establishment of a network of family, friends and neighbors that can work together

CRISIS RESPONSE ORGANIZATION & MANAGEMENT

Incident Management

- ❑ Develop the sub-disaster crisis management system as a modification of CBJ's incident management system in the EOP and include:
 - an evenly divided workload involving employees at all levels
 - a planning cycle with action plans for each cycle
 - core objectives for all responders
 - forced, regular breaks
- ❑ Provide special training for all who are assigned to external communications. These people must understand key public communications principles to develop effective press releases, coordinate press briefings and conferences, and distribute information in a timely manner.
- ❑ Include internal communication procedures to share information with front-line staff who deal with customers. These procedures should include, at a minimum, a situation status briefing at the beginning and end of each work shift.
- ❑ Assign someone with good judgment and experience to evaluate offers of assistance, new technologies, new equipment, and suggestions.
- ❑ Improve support and coordination between CBJ and State of Alaska disaster emergency management officials.
- ❑ Establish brainstorming sessions for problem-solving in a "war room" atmosphere. Such well-organized meetings with a systematic method to evaluate ideas can be valuable, as it was for AEL&P in this event.

Financial Assistance

- ❑ Incorporate lessons learned from financial assistance programs as part of sub-disaster crisis management plans.

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- ❑ Partner with the State of Alaska and the community's social service sector to determine how many people may be considered financially vulnerable. Develop assistance plans, estimate program costs, and determine how to reach those most in need.
- ❑ Nurture strong crisis or disaster response from the human service sector by encouraging community support for them during non-crisis periods. Support should include both monetary and volunteer. A strong human service sector ensures capability to assist in crisis. Agencies should consider this aspect of their services in campaigns for donations and volunteers.
- ❑ Develop procedures for crisis management teams to establish a bank account to receive individual and corporate contributions for public assistance. Include procedures to publicize the accounts and how to contribute.
- ❑ Work with social service and public safety agencies to develop a strategy to reach the "20% who never get the word" for emergency/crisis notification and follow-up.
- ❑ Review the business loan program employed during this crisis to determine why it was perceived as necessary, but ultimately, not used. Based on the review, develop plans to include financial assistance to small businesses for sub-disaster crises. In the planning, consider a phased assistance program based on thresholds of impact magnitude and duration.

Energy Consumption

- ❑ Examine methods to tie water consumption to electricity consumption in order to promote reduced electricity consumption in the future.
- ❑ Continue efforts to conserve energy as a CBJ objective. Many who testified or sent comments encouraged continued energy conservation. Since restoration of lower-cost hydroelectric power, consumption has been steadily rising. Providing daily information on the consumption of electricity and diesel fuel during the crisis appeared to have a significant impact on conservation. CBJ and the Juneau Empire are encouraged to resume providing this information and include water consumption rates to promote conservation of these vital resources.

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APPENDIX 3

DISASTER EMERGENCY PREPAREDNESS AND RESPONSE

A DETAILED OVERVIEW

National Response Framework²⁴

The National Response Framework defines the principles, roles, and structures that organize the nation's response to disaster emergencies. It is a guide to how the nation conducts an all-hazards response, built upon scalable, flexible, and adaptable coordinating structures to align key roles and responsibilities that:

- Describes how communities, tribes, states, the federal government, private-sectors, and nongovernmental partners work together to coordinate national response.
- Describes specific authorities and best practices for managing incidents.
- Builds upon the National Incident Management System (NIMS), which provides a consistent template for managing incidents.

The following is an overview of the provisions of the National Response Framework to help in the understanding of general response components that are in-place for disaster emergencies.

National Incident Management System (NIMS)

Throughout the nation, management of disaster emergency response operations is organized under the National Incident Management System. NIMS unifies federal, state, and local lines of government for incident response. It establishes standardized incident management processes, protocols, and procedures that all responders – federal, state, tribal, and local – will use to coordinate and conduct response actions. With responders using the same standardized procedures, they will all share a common focus, and will be able to place full emphasis on incident management when a disaster emergency occurs – whether caused by terrorism or a man-made/technological or natural disaster. In addition, national preparedness and readiness in responding to and recovering from an incident is enhanced because all of the nation's emergency teams and authorities are using a common language and set of procedures.

Incident Command System (ICS)

NIMS establishes ICS as a standard incident management organization with five functional areas – command, operations, planning, logistics, and finance/administration – for management of all major incidents. This system has become the nationwide standard for responding to all-hazards incidents under the National Response Framework.

Incident Commander (IC)

Under NIMS, the Incident Commander is the individual with overall responsibility for all response activities, including the development of strategies and tactics and the ordering and release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site. When multiple command authorities are involved, the incident may be led by a unified command.

Unified Command

To ensure further coordination, and during incidents involving multiple jurisdictions, agencies, and other organizations, the principle of unified command has been universally incorporated into NIMS. Multiple officials who have jurisdictional authority or functional responsibility for response to the incident

²⁴ www.fema.gov/emergency/nrf

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coordinate the efforts of many jurisdictions, and work together to make joint decisions on objectives, strategies, plans, priorities, and public communications. The involved party (owner/operator of an involved business) is included in the Unified Command.

Joint Information System (JIS)

NIMS organizational measures enhance the public communication effort. The Joint Information System provides the public with timely and accurate incident information and unified public messages. This system employs Joint Information Centers (JIC) and brings incident communicators together to develop, coordinate, and deliver a unified message. This ensures that federal, state, and local levels of government are releasing the same information during an incident. (Note: Media organizations are not controlled by the JIC. The media will receive press releases and usually participate in press conferences and briefings, and they will develop their stories as they normally do.)

Local Response

The City and Borough of Juneau government preparedness for major disaster emergencies is described in its Emergency Operations Plan (EOP). The purpose of the CBJ Emergency Operations Plan is described in its entirety below:

“[T]o provide general guidelines and principles for planning, managing, and coordinating the activities of the CBJ government before, during, and after major emergencies and disaster events. Specifically, the plan is intended to:

- a. Provide a single comprehensive plan for providing disaster or emergency response and recovery services, using all available resources for the protection of lives, property, and the continuance of government.
- b. Identify and assign to CBJ departments and agencies, various responsibilities and tasks for emergency and disaster response operations. Define who does what and when.”

City & Borough of Juneau

CBJ maintains a variety of disaster plans for incidents that include:

- Avalanche damage and injury for vulnerable neighborhoods.²⁵
- Chemical, radiological and nuclear incidents
- Bio-terrorism
- Mass casualty treatment and movement for 500 or more people
- Shore-side response for cruise ship casualties.
- Airport accidents
- Salmon Creek dam failure

Other hazards scheduled for plan development include:

- Transportation Accidents
- Hazardous Materials
- Volcanic Ash
- Erosion

These plans are contained within or connected to the Emergency Operations Plan (EOP) for CBJ. The Assembly adopted the EOP by resolution July 14, 2003 without any recommendations for exercising (testing by simulation) the plan. These plans have not been frequently exercised or tested, which is a common problem in communities with limited resources and time.

²⁵ Concerns about preparedness and response to an avalanche downtown have been raised as a significant concern in the community as a result of this crisis; however, this situation is outside the scope of this project. The Avalanche plan can be located at www.juneau.org/emergency/documents/AvplanAdopted.pdf for more details.

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The Basic Plan of the CBJ Emergency Operations Plan discusses the following topics in detail:

- Concept of operations
- CBJ department responsibilities
- Readiness conditions
- CBJ authorities
- Risk analysis
- Specific plans for the following potential disaster emergencies
- Avalanche
- Hazardous materials (HAZMAT) incidents
- Incidents involving cruise ships
- Terrorism/Weapons of Mass Destruction

The Emergency Programs Manager (EPM), under the general direction of the City Manager, plans and coordinates all facets of emergency preparedness for the City.²⁶ The EPM's duties include:

- advising the city manager, mayor, and assembly on matters of homeland security and emergency response
- establishing relationships with local, state, federal, and volunteer organizations on matters of emergency response
- staffing the Juneau Local Emergency Planning Committee (LEPC)
- chairing the Southeast Alaska Metropolitan Medical Response System (MMRS) steering committee
- sitting on the State of Alaska Emergency Response Commission (SERC)

CBJ has adopted the Incident Command System (ICS) for organizing local government resources and responding to disaster emergencies. The EOP provides that ICS is used for small incidents and for large-scale emergency situations. In a limited incident, the incident commander and one or two individuals may perform all the functions. In a larger emergency situation, each function may be assigned to a separate individual. In rare occasions, the ICS field structure will be extended and supported by activation of the CBJ Emergency Operations Center (EOC), located at the CBJ police headquarters.

CBJ's incident commander (IC) is the individual responsible for overall management of all incident operations at the incident site. In a large event with more than one emergency site, there may be more than one IC. In such cases, overall coordination reverts to the EOC.

A Unified Command (UC) may be implemented during an incident to ensure a coordinated multi-agency response. It is used where there is more than one agency with incident jurisdiction. Agencies work together through their designated incident commanders at a single command post and establish a common set of objectives, strategies, and a single Incident Action Plan (IAP).

Although the CBJ "incident commander" as described in the National Response Framework is responsible for all aspects of the overall incident management, the position is not pre-designated in the EOP. The city manager is essentially the pre-designated CBJ IC (under the NRF) since he is assigned as the civil defense director for the CBJ and is responsible for overall CBJ emergency operations and for assuring that coordinated and effective emergency response systems are developed and maintained within the CBJ. The city manager's duties are to:

- maintain overall responsibility for CBJ emergency operations
- advise the mayor as soon as possible of details of major incidents
- chair the Policy Group (composed of the mayor, city manager, city attorney, and others as determined by the city manager)

²⁶ Emergency Programs Manager Position Description (PCN 01013, approved 7/31/07)

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- serve as EOC Director with primary responsibility for EOC direction and control
- approve public information bulletins and broadcasts prior to release by the Public Information Officer (PIO)
- serve in a coordinating capacity for most emergency functions
- serve in a support capacity for evacuation, public information, and communications
- prepare disaster declarations pursuant to CBJ Code and State Statute
- develop guidelines for departmental reaction to disaster such as curtailing services or sending employees home

The role of the CBJ Assembly is to:

- set overall policy for the CBJ emergency response organization
- back up the mayor with the deputy mayor in long term events and name who will assume the mayor's duties on an alternating shift schedule
- approve disaster declarations, orders and regulations
- approve issuance of formal requests to the governor's office for state or federal assistance
- identify funding sources for authorized emergency expenditures
- authorize and approve post-disaster recovery operations

The responsibility of the CBJ mayor in disaster emergencies is to:

- advise the CBJ Assembly on the nature of the incident
- convene the Assembly as soon as is practical for approval of emergency declarations and disaster relief actions
- participate in the CBJ Policy Group
- act for the city manager when necessary to authorize news releases prepared by the public information officer
- monitor the emergency response
- serve as CBJ spokesperson with the assistance of the public information officer to inform and reassure the public

Citizens should be encouraged to become more involved in the community's disaster preparedness activities by joining CBJ's Community Emergency Response Team (see www.juneau.org/emergency/CERT.php).

State Response

The Division of Homeland Security and Emergency Management (DHS&EM) in the Alaska Department of Military and Veterans Affairs (DMVA) is the foremost agency within the executive branch of state government to assist the governor to fulfill the statutory responsibility of responding to disaster emergencies. In the event of a disaster, the state's responsibility is to save lives and property by coordinating all state, federal, and private sector efforts to adequately support, but not usurp, local operations.

The Division of Homeland Security and Emergency Management is the lead agency for accomplishing this mission.²⁷ It provides disaster emergency response direction and guidance to state agencies, local governments, tribal governments, and private sector organizations through the *State of Alaska Emergency Response Plan (2004)*.²⁸ This plan ensures coordination of state and local resources with federal response actions consistent with the National Response Framework (NRF), and adopts the National Incident Management System (NIMS).

²⁷ Except for responses to oil and hazardous substance releases (lead agency: Alaska Department of Environmental Conservation), wildland fires (lead agency: Department of Natural Resources), State search and rescue (lead agency: Department of Public Safety). DHS&EM plays a supporting role for these exceptions.

²⁸ www.ak-prepared.com/plans/acrobat_docs/Alaska_Emergency_Response_Plan.pdf

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The *Concept of Operations* for disaster emergencies in Alaska provides that

1. Emergency planning and disaster response lies first with individuals and heads of households.
2. If individuals and families cannot respond effectively, local officials are to direct local disaster response operations.
3. If local resources are unable to respond adequately to an incident, they can request state assistance.
4. If it appears that the combined resources of local and state agencies will be inadequate, the governor may ask for federal assistance.

The Alaska Department of Military and Veterans Affairs, Division of Homeland Security and Emergency Management handles complex programs and prepares for coordinating responses to disaster emergencies using many tools. Detailed information about how they accomplish their duties and how individuals, families, and volunteers play roles can be found at their web site (www.ak-prepared.com).

Federal Response²⁹

When an incident occurs that exceeds – or is anticipated to exceed – state, tribal, or local capabilities and resources, the federal government will provide assistance to support the state response upon request of the governor. The principal federal official for domestic incident management is the Secretary of Homeland Security. The Department of Homeland Security coordinates other federal agency support at the national, regional, state, and field levels.

Personal and Household Preparedness

Far too often in disaster emergencies, people rely solely on government to come to their rescue without understanding the realities of the early hours and days after a disaster emergency and the government's ability to respond to everyone's needs. The CBJ web site for emergency preparedness (www.juneau.org/emergency) provides excellent information on how individuals, families, and neighborhoods can be better prepared for those early hours and days following a disaster. This information is worth repeating:

There are many activities that individuals and households can undertake to reduce their vulnerability to disasters. First and foremost, residents can endeavor to educate themselves regarding their exposure to hazards and can plan to reduce or eliminate the potential for loss. Information regarding Juneau-area hazards can be found on this Web site [www.juneau.org/emergency].

The American Red Cross is an excellent source for information on household preparedness. Their [web site [www.redcross.org]] provides information that] can help you and your family create a disaster plan as well as provide you with more information on disasters themselves, Red Cross services, and general health and safety information.

Juneau residents can further reduce their vulnerability to local hazards by making sure that they are prepared for an event that cuts off power, phone, and transportation for several days. Sometimes the simplest steps can make a big difference during a crisis. The following suggestions may help you begin:

- *Work with your family to create a disaster plan. Decide how you will react, where family members should meet, and what items you might need.*
- *Assemble a home disaster kit with such items as flashlights, batteries, canned food, blankets, and other items you might need in a disaster.*
- *Learn to shut off power, gas, and water to your home.*

²⁹ www.dhs.gov

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- *Ensure that pets and livestock will be cared for in a disaster. Keep food and supplies for your pet in your home disaster kit.*
- *Establish a network of friends and neighbors who are willing to work together in a disaster. If each household is prepared for a disaster, the community as a whole will be able to recover more quickly.³⁰*

The State of Alaska, Department of Military Affairs, Division of Homeland Security and Emergency Management provides comprehensive guidance information on citizen preparedness through its web site (www.ak-prepared.com). Of special interest to Alaskans should be the “7-Day Survival Kit.”³¹ This is a 24-week, step-by-step plan to develop a personal disaster preparedness kit suitable for the kinds of potential disaster emergencies Alaskans may face.

More Disaster Response Information

Good starting points for further understanding of the national, state, and local disaster response system can be found on the web sites for the following organizations (among others):

- City and Borough of Juneau (www.juneau.org/emergency)
- Alaska Department of Military and Veterans Affairs/Division of Homeland Security and Emergency Management (www.ak-prepared.com)
- U.S. Department of Homeland Security (www.dhs.gov)
- Federal Emergency Management Agency (www.fema.gov)
- American Red Cross (www.redcross.org)

³⁰ www.juneau.org/emergency/Personal_preparedness.php

³¹ See link in “Of Interest ...” sidebar at www.ak-prepared.com

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APPENDIX 4

ISSUES FOR SUBSEQUENT CONSIDERATION

During the review of information surrounding the April 16th event and public input, other potential crises were identified that did not fall within the scope of this project. The following items have been listed as worthy of further consideration.

Economic Disruption Below A Sub-Disaster Event

- commercial fisheries disruption
- tourism changes, for example:
 - a Jones Act reinterpretation limiting foreign cruise ships in U.S. ports
 - state waste water permit restrictions that may reduce port calls to Juneau
 - loss of moorage space
- unusually high sustained fuel oil prices
- local employment changes
- housing market “crash”/housing shortage
- public financial assistance programs improvements to help citizens and small businesses cope with financial hardships caused by any crisis affecting the community’s economy
- unusually high air travel costs
- reduction in air service

Community Energy

- improvements suggested
 - CBJ oversight of AEL&P operations
 - a community-wide forum to explore key energy strengths and weaknesses to develop specific measures and strategies to addressing them. (Juneau’s Commission on Sustainability should be a key player in this work.)
 - topics for discussion recommended
 - diversification of the community’s energy sources and its suppliers
 - long-term community energy use, with conservation policies, strategies, and actions
 - improvements to the diesel powered generator back-up system (e.g., efficiency, age, air quality, cost)
 - additional alternatives for more efficient back-up electrical generation
 - water consumption and conservation policies, strategies, and actions
 - improvements to the community waste management system
 - continued reporting of daily electric consumption rates.
- concerns expressed
 - rates set by the Regulatory Commission of Alaska (RCA) and other financial matters governing AEL&P as a private utility
 - public utility vs. private utility for electricity supply
 - utility rate setting and billing system by AEL&P
 - AEL&P’s ability to finance damage costs without passing them to consumers

Other concerns:

- avalanche monitoring and control in vulnerable areas throughout the CBJ

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APPENDIX 5

PUBLIC RESPONSE TO THE LLC

Website Questionnaire

The following questions were posted on the Lessons Learned Commission web site, with a request for input from citizens in response to those questions:

The Lessons Learned Commission requests public input to its review process of the Community's electricity crisis experienced as a result of the avalanches on the AEL&P Snettisham on April 16, 2008. Please send your responses to the following questions to the LLC Consultants at lessonslearned@ci.juneau.ak.us.

1. *Please tell us what was done well and should be repeated in other similar situations by the following entities?*
 - *CBJ*
 - *AELP*
 - *Media Outlets*
 - *Businesses*
 - *Citizens*
 - *Others*
2. *What could have been done better?*
3. *How/where did you get the best information and answers to your questions?*
4. *Do you agree with how support monies were allocated? (Yes or No)*
 - *\$1 million to United Way for utility bill assistance*
 - *\$0.5 million to Juneau Economic Development Council for business loans*
 - *\$0.25 million to the City Manager to implement energy conservation measures*
5. *Did you participate in any financial assistance programs? If so, please explain.*
6. *Please list and briefly explain any other recommendations you have.*
7. *Also, please list any particularly creative ideas.*
8. *Please describe how the experience has changed your habits in electricity usage.*
9. *Has this experience changed your habits in other ways (e.g., fuel consumption, water consumption, other)?*

The following people responded to the request for comments from the web site.

- Catherine Fritz
- Deanna Mac Phail
- Dot Wilson
- John and Michelle Morrel
- Terri E. Fagerstrom
- Dan Hopson
- Bill B
- Rick Angell
- Anne Fuller
- Bill Leighty
- Michael Hekkers
- Dick Farnell
- Beth McEwen
- Kristy Lundstrom
- Bob Doll
- Jo Boehme

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Public Hearing

The following people spoke at the public hearing held on August 20, 2008.

- Randy Satak (self)
- Rosemary Hagevig (Catholic Community Services)
- Brenda Hewitt (United Way)
- Bill Leighty (self)
- Bob Doll (self)
- Scott Willis (AEL&P) provided comments at the request of LLC Commissioners to talk about financial aspects (payment of repairs, rates, fuel costs, and independent audit)

All comments were considered by the Commissioners and consultants with full appreciation for their content. The responses are included in the records on file for the Lessons Learned Commission.

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APPENDIX 6

FORMS, BROCHURES, AND DOCUMENTS

Attached are copies of the following documents of interest collected by the consultants during the Lessons Learned Commission work.

1. RESOLUTION OF THE CITY AND BOROUGH OF JUNEAU, ALASKA, Serial No. 2440: A Resolution Ratifying the City Manager's Declaration of a Local Disaster Emergency, adopted 17 April 2008.
2. RESOLUTION OF THE CITY AND BOROUGH OF JUNEAU, ALASKA, Serial No. 2444: A Resolution Requesting State Reconsideration of its Decision Denying a Disaster Declaration for the April 16, 2008, Snettisham Avalanches, adopted 12 May 2008.
3. RESOLUTION OF THE CITY AND BOROUGH OF JUNEAU, ALASKA, Serial No. 2442(am): An Emergency Appropriation Resolution Appropriating \$3,250,000 to the Manager for a Grant to the United Way of Southeast Alaska, and a Loan to the Juneau Economic Development Council, For Energy Assistance to Residents and Small Businesses, and For Energy Conservation Measures, Funding Provided by the Budget Reserve, adopted 1 May 2008.
4. CBJ's brochure entitled *What YOU can do to reduce your electric bill(and other useful info)* mailed to Juneau households.
5. Juneau's Legislative Delegation *Juneau Energy Emergency Newslette*, Issue #1 dated April 23, 2008.
6. "CBJ ENERGY SAVINGS, by Department as reported to the City Manager at April 23, 2008 meeting"
7. "Juneau Unplugged, Live more, use less" brochure
8. Juneau Unplugged, Catholic Community Service Application form for individual financial assistance program
9. JEDC Business Electricity Loan Application form
10. SBA fact sheet about economic injury disaster loans
11. "School Energy Challenge" brochure

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1.

APPENDIX 7

BIBLIOGRAPHY

Agreement for the Sale and Purchase of the Electric Capability of the Snettisham Hydroelectric Project ("Power Sales Agreement") between AEL&P ("Purchaser") and Alaska Industrial Development and Export Authority ("Authority") dated July 15, 1998.

The April 2008 Snettisham Avalanche Cycles, 2008, Glude, W, Sharaf D, and Pfeiffer N, (See www.juneau.org/clerk/misc/news_items/20080512SnettAvalancheReport_final_small.pdf).

Assembly Agenda/Manager's Report for the April 17, 2008 Special Meeting.

City and Borough of Juneau Emergency Operations Plan, Basic Plan, dated July 15, 2003 (www.juneau.org/emergency/documents/EOP2003.pdf).

City and Borough of Juneau Position Description for the Emergency Programs Manager (PCN 01013), date stamped May 29, 2008.

City and Borough of Juneau Report of: HAZARD ANALYSIS, Carson Dorn, Inc., March 2001.

City and Borough of Juneau Urban Avalanche Response Plan, February 2004 (www.juneau.org/emergency/documents/AvplanAdopted.pdf).

"*City Will Wait for Electric Bills Before Deciding Spending Plan*" article in the Juneau Empire, dated May 18, 2008.

Facility Evaluation and Risk Assessment [AIDEA Project No. 96-004], Volume 1, Snettisham Hydroelectric Project, Submitted to: Alaska Industrial Development and Export Authority by Raytheon Engineers & Constructors, Bellevue, WA, February 1997. (pages 4-1 through 4-13 and 6-1 through 6-5)

ICS-210/300 Incident Command System Training Manual (U.S. Coast Guard)

Juneau Electricity Crisis, Summary of Organizational Response, Juneau Economic Development Council, August 1, 2008.

"*Learning to Be Your Own Best Defense in a Disaster*," New York Times (nytimes.com) August 5, 2008 article by Tara Parker-Pope.

National Incident Management System Incident Command System Emergency Responder Field Operating Guide (ERFOG) (DRAFT), dated 24 May 2007, Federal Emergency Management Agency.

National Response Framework, U.S. Department of Homeland Security, Effective March 22, 2008, (www.fema.gov/pdf/emergency/nrf/nrf-core.pdf).

Operations and Maintenance Agreement signed by AIDEA (State of Alaska) and AEL&P, dated July 15, 1997.

Powering Down in Juneau, Lawrence Livermore National Laboratory, US Dept of Energy, , posted on 18 June 2008 at the Livermore National Laboratory web new center. (See article on web site: www.lbl.gov/publicinfo/newscenter/features/2008/EETD-alaska.html).

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Reconnecting Juneau, Alaska Electric Light & Power web site article (See www.aelp.com/reconnecting/reconmenu.htm).

State of Alaska Emergency Response Plan, Alaska Department of Military and Veterans Affairs/Division of Homeland Security and Emergency Management, dated November 16, 2004 (www.ak-prepared.com/plans/acrobat_docs/alaska_emergency_response_plan.pdf).

The following web sites were used by MAC Services to gather information during the development of this report.

- Alaska Department of Military & Veterans Affairs: www.ak-prepared.com/dmva/
- Alaska Division of Homeland Security and Emergency Management: www.ak-prepared.com
- Alaska Electric Light & Power: www.aelp.com
- American Red Cross (www.redcross.org)
- Catholic Community Services for Juneau, Alaska: www.ccsjuneau.org
- City and Borough of Juneau, Alaska: www.juneau.org
 - Comprehensive web site for energy conservation, April 16h avalanche report, and related information for the crisis (with many other helpful links): www.juneau.org/energy
 - Emergency Operations Plan: www.juneau.org/emergency/documents/EOP2003.pdf
- Energy Star (Environmental Protection Agency & U.S. Department of Energy): www.energystar.gov
- Federal Emergency Management Agency (FEMA): www.fema.gov
- Juneau Economic Development Council: www.jedc.org
- Juneau Empire:
 - Home: www.juneauempire.com
 - Powerline: www.juneauempire.com/powerline
- Juneau's Legislative Delegation: www.akdemocrats.org/juneau
- Juneau Unplugged (community campaign): www.juneauunplugged.com
- Juneau People's Power Project: www.juneaupeoplespowerproject.org
- The Leighty Foundation: www.leightyfoundation.org
- United Way of Southeast Alaska: www.unitedwayseak.org
- U.S. Department of Energy: www.energy.gov
- U.S. Department of Homeland Security: www.dhs.gov

Contacts providing information to MAC SERVICES, LLC

A. AEL&P

- Tim McLeod
- Scott Willis
- Eric Erikson
- Gayle Wood
- Connie Hulbert
- Martha Penrose
- Sarah Brickey
- Stella Barton

B. City & Borough of Juneau

- Mayor Bruce Botelho
- Rod Swope, City Manager
- David Stone, Assembly
- Maria Gladziszewski, Special Assistant

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- Mike Branum, Emergency Planning Manager
 - Liam Carnahan, Water Utility Superintendent
 - Scott Jeffers, Wastewater Treatment Superintendent
 - Angela Hull, Executive Assistant
 - Nikki Corazza, Admin Manager/Clerk
 - Diane Cathcart, Admin Manager
 - Beth McEwen, Deputy City Clerk
 - Patricia deLaBruere, Deputy Airport Manager
- C. Communications**
- Rusty Trammel, GCI
 - Charlie Ellis, KATH TV
- D. Community & social service agencies**
- Brian Holst, JEDC
 - Barb Schetter, JEDC
 - Brenda Hewett, United Way
 - Rosemary Hagevig, Catholic Community Services
 - Kevin Ritchie, Catholic Community Services
- E. Food Supply**
- Vhee Batac, General Manager, A & P Markets(Foodland)
 - Ben Williams, owner Alaskan & Proud Markets
 - Melinda Merrill, Fred Meyers (Portland, OR)
- F. Media**
- Bob Hale, Publisher, Juneau Empire
 - Mike Plett, Managing Editor, Juneau Empire
 - Kate Golden, Reporter (business & natural resources), Juneau Empire
 - Kim Marquis, Assistant News Editor, Juneau Empire
 - Jeff Brown, KTOO radio
- G. Science experts**
- Bill Glude, Avalanche assessment
 - Dr. Alan Meier, U.S. Department of Energy
- H. State of Alaska**
- Vern Jones, Dept. of Administration (General Services)
 - Gareth Jones, Dept. of Administration (General Services)
- I. Transportation Industry**
- Tom Satre, Northland Services
 - Jim Cawdrey, Petro Marine
 - Don Reid, Alaska Marine Lines
- J. Other**
- Sally Schlichting, Juneau Commission on Sustainability
 - Judy LaRochelle, Juneau People's Power Project (JPPP)
 - Bill Burk, JPPP
 - Vincent Hayden, JPPP
 - Mike Orford, JPPP
 - Cheryl Moralez, JPPP
 - Don Bremner, Tlingit
 - Tom Gemmell, emergency management consultant

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