

SUMMARY OF JUNE 2013 FLOOD EMERGENCY RESPONSE AND INITIAL RECOVERY EFFORTS

This report summarizes The City of Calgary's emergency response and initial recovery efforts related to the June 2013 flood. The activities outlined occurred during the 14 days when The City's second-ever State of Local Emergency (SOLE) was declared, beginning June 20 and ending on July 4.

CALGARY EMERGENCY MANAGEMENT AGENCY

The Calgary Emergency Management Agency (CEMA) coordinated The City's response to the flood, overseeing the efforts of 29 Business Units, 12 external members, seven invited partners and approximately 7,000 City staff who assisted in emergency response and initial recovery activities.

Under the terms of the provincial Emergency Management Act (R.S.A. 2000 c E-6.8) and The City of Calgary Emergency Management Bylaw (#23M2008), CEMA is designated as the civic body responsible for the coordination of disaster planning, response and recovery within The City of Calgary. The City has designated the Fire Chief as the Director of CEMA.

The Alberta Emergency Management Act allows The City to procure assets and resources to prevent, combat or alleviate the effects of an emergency or disaster, restore essential facilities, distribute essential supplies, and provide, maintain and coordinate emergency medical, welfare and other essential services.

The Municipal Emergency Plan (MEP) is activated when an event requires coordinated, active management of multiple agencies or centralized decision-making to mitigate impact. It outlines policies, operations, and roles and responsibilities for the Corporation and CEMA members when the Municipal Emergency Plan is activated. The plan also identifies when and how a SOLE may be declared.

Through its Comprehensive Emergency Management Model, CEMA coordinates the efforts of its staff, City Business Units and external members and partners in the non-emergency and emergency phases of emergency management: risk assessment, mitigation, preparedness, response, recovery and rehabilitation. This model, refined in Calgary, has been adopted by the Conference Board of Canada for use by its Council on Emergency Management and has been incorporated into two ISO technical standards.

The phases of the model have been used to outline the key activities that took place in preparation for, and in response to, the June 2013 flood.

PHASE 1: RISK ASSESSMENT

Each year, CEMA produces a Corporate Hazard Identification and Risk Assessment (HIRA) that identifies the human-caused, natural, and technological hazards with the potential to impact The City of Calgary and its communities. By assessing the probability and impact of various events, the HIRA informs The City's mitigation activities, emergency response planning and business continuity planning.

The HIRA has identified flooding as a high probability and high impact risk for Calgary. In June 2005, the Bow River achieved a one in 20-year return peak flow rate and the Elbow River

reached a one in 40-year return peak flow rate. In June 2013, the Bow River reached an approximate one in 100-year return peak flow rate while the Elbow River, upstream of the Glenmore Dam, achieved an approximate one in 500-year return peak flow rate.

Each June, regular snowmelt and rainfalls typically result in saturated ground throughout the watersheds. In June 2013, these saturated soil conditions were exacerbated by more than 200mm of rainfall in the Bow River watershed and close to 300mm in the Elbow River and High River watersheds between June 19 and 22. This rainfall contributed to rapid melting of a relatively high snow pack still in the watersheds, and the convergence of these three events resulted in the massive flooding that occurred in Calgary and throughout southern Alberta.

PHASE 2: MITIGATION

Each year, events identified in the HIRA as high probability and high impact inform the planning of CEMA and other City Business Units. As a result, Business Units have implemented various flood mitigation strategies over the years to reduce the impact of potential flood events on citizens, businesses and City infrastructure. Through astute reservoir management, the Elbow River water flows downstream of the Glenmore Reservoir were reduced from an approximate one in 500-year return peak flow rate to a flow equivalent to an approximate one in 100-year event. This helped mitigate damage to downstream communities and allowed time for their evacuations.

Following the 2005 flood, Calgary Disaster Services along with other Business Units developed 74 recommendations to improve The City's preparedness and response specific to flood events. With the support of Council, the majority of the recommendations, which spanned 10 Business Units, were completed by 2008 with a few continuing in implementation through the 2009-2011 business planning cycle.

During the 2013 flood, the actions resulting from those recommendations served to reduce flood damage to certain areas, improve the accuracy of evacuation planning and enhance emergency response and recovery coordination.

PHASE 3: PREPAREDNESS

Maintaining an ongoing state of preparedness

To ensure continuous improvement in The City's emergency management planning and response, a review of the MEP is completed after most activations of the plan. CEMA refines roles, responsibilities, coordination and communications outlined in the plan to ensure effective, timely management of future events.

CEMA uses an "all hazards" approach to managing incidents and maintains a number of key emergency response plans designed to provide key operational information during the initial stages of a variety of emergency scenarios, including flooding.

CEMA leads a range of training and mock disaster exercises throughout the year involving City Business Units and external members. Since the opening of the new Emergency Operations Centre (EOC) in October 2012, 312 agency members have received emergency management training and CEMA led two flood-related exercises in addition to exercises focused on other man-made and natural disasters.

CEMA also works within Calgary's communities to educate citizens on how to prepare for a variety of emergencies. The Household Emergency Action Plan provides direction on what individuals should do when they encounter particular emergency situations and what information and supplies they need to sustain themselves for 72 hours. The annual Disaster Alley event brings together CEMA and its agency members to provide demonstrations, educational sessions and materials to help citizens prepare for emergencies. The 2013 Disaster Alley event held at McMahon Stadium provided emergency preparedness information to 5,000 citizens.

Monitoring conditions prior to flooding

Each year, CEMA monitors dozens of potentially threatening severe weather events. Regular seasonal flood monitoring procedures were operating within The City of Calgary throughout the months of May and June in 2013, which involved both Water Services and CEMA. The Water Emergency Operations Centre (H2OC), which oversees issues that affect public health and safety with respect to water, wastewater and stormwater service, had been activated and deactivated as deemed necessary throughout the season.

On June 17, Environment Canada issued a weather advisory indicating 50mm to 75mm of rainfall was expected between June 19 and 21, with some areas of the foothills expected to receive 100mm. On June 19, Environment Canada adjusted their estimates to 100mm to 150mm of rainfall. On the same day, Transalta Utilities, which manages several dams upstream on the Bow River, provided water flow estimates of 235 to 292 cubic metres per second (CMS) from its Bearspaw dam.

Based on data from its extensive monitoring program, Water Services commenced lowering of water levels in the Glenmore Reservoir on the evening of June 16 to accommodate for rainfall in Calgary and the watersheds. The H2OC was partially activated on June 19 based on the Environment Canada and Transalta Utilities estimates. Updated forecasts from Alberta Environment and Environment Canada indicated the potential for flooding within Calgary city limits early in the morning of June 20. In addition, upstream municipalities and communities began reporting emergency situations.

At 5:50AM on June 20, Environment Canada issued a flood watch for the Elbow River upstream of the Glenmore Dam. At 8:45AM, it issued a flood warning for the Bow and Elbow rivers. CEMA personnel staffed the Municipal Emergency Operations Centre (EOC) at 6:00AM and alerted Agency members to attend the EOC at 8:11AM, the MEP was activated at 8:28AM and a SOLE declared at 10:16AM.

The City was challenged with ensuring timely evacuations of communities due to rapid and significant changes in water flow estimates provided by Transalta Utilities. Over the course of 12 hours starting the morning of June 20, Transalta Utilities' water flow estimates for the Bow River increased from 400CMS to 1,700CMS. In several instances, there was very little time between notification and actual changes in flows, which placed additional pressure on resources, planning and evacuations.

Ultimately, 200mm of rain fell in the Bow River watershed and close to 300mm in the Elbow River watershed. During the peak of the flood, the Bow River reached 1,750CMS, an approximate one in 100-year return peak flow rate, and the Elbow River reached 1,240CMS above the Glenmore Dam, an approximate one in 500-year return peak flow rate.

Preparing for flooding

As the likelihood for widespread flooding became evident, CEMA activated the MEP at 8:28AM on June 20. This included the opening of the EOC from June 20 to July 7. The EOC is the central hub of an extensive network of communication and control centres that assist participating agencies with the management of large-scale emergencies and disasters. The EOC is opened when the emergency may have citywide impact or requires coordination of resources to assist on-scene commanders and ensure the rest of the city is adequately serviced and protected. Information from field staff, other levels of government, external agencies and the public regarding ongoing events is transmitted to and from the centre.

Table 1 lists the CEMA members and partners in attendance at the EOC to assist with emergency response and initial recovery efforts during the 2013 flood.

Table 1: CEMA Members and Partners at EOC During 2013 Flood

City Business Units		External Members	Invited Partners
• City Auditor's Office	• City Clerk's Office	• Alberta Emergency Management Agency	• Building Owners and Managers Association
• Development & Building Approvals	• City Manager's Office	• Alberta Health Services	• Calgary Search and Rescue
• Law	• Assessment	• Alberta Health Services -EMS	• Canadian Red Cross
• Land Use Policy & Planning	• Transportation Infrastructure	• Alberta Environment and Water	• The Salvation Army
• Roads	• Calgary Transit	• ATCO	• Calgary Airport Authority
• Transportation Planning	• Waste & Recycling Services	• Telus	• Canadian Pacific Railway
• Water Resources	• Water Services	• Calgary Catholic School District	• Department of National Defence
• Environmental & Safety Management	• Community & Neighbourhood Services	• Calgary Stampede	• Shaw Cable
• Recreation	• Parks	• Calgary Zoo	• Transalta Utilities
• Calgary Fire Department	• Animal & Bylaw Services	• Calgary Board of Education	
• Office of Land Serving & Housing	• Human Resources	• Greater Southern Separate Catholic Francophone Education Region	
• Information Technology	• Infrastructure & Information Services	• Greater Southern Public Francophone Education Region	
• Corporate Properties & Buildings	• Fleet Services	• Energy Resource Conservation Board	
• Customer Service & Communications	• Finance & Supply	• ENMAX	
• Calgary Police Service		• Environment Canada	

Due to the potential widespread impact and magnitude of the flooding, a State of Local Emergency (SOLE) was declared at 10:16AM on 2013 June 20. During a SOLE, The Director of

CEMA can allocate funds as necessary to ensure appropriate, timely response and recovery efforts, conscript resources as required and assign additional authorities to emergency response personnel.

As water flow estimates provided by Transalta Utilities continued to increase, CEMA relied upon inundation maps in the Flood Emergency Reference Manual to identify communities that may be impacted. These maps proved to be extremely accurate and a vital resource for mitigation and evacuation planning. CEMA was challenged to quickly produce mapping in the EOC that identified specific evacuation zones that could easily be shared with field staff conducting the evacuations. As indicated by the Flood Emergency Reference Manual, 16 temporary berms were constructed throughout the city to help protect communities and infrastructure. Sandbags and flood tubes were also used in areas throughout the city to help divert water from homes and businesses. Efforts were reprioritized as water flow updates were received from Transalta Utilities.

PHASE 4: RESPONSE

Ensuring public safety

In addition to the municipal EOC, other tactical operations centres activated over the course of the event to direct the efforts of their field staff, serve as a central point for collection of information relevant to their individual operations and provide information to the EOC. In addition to the H2OC, the Police Tactical Operations Centre, Fire Department Tactical Operations Centre, Enmax Electrical Event Command Centre and Roads Operations Centre all activated to provide support to the EOC.

Community evacuations took place throughout the day on June 20. As communities were identified for evacuation and maps prepared, CEMA utilized uniformed staff from Business Units, including police officers and firefighters, and external members to go door-to-door in many communities to notify residents to evacuate. These efforts were supported by broad-based communications efforts, including press releases and posting of information on the City web site and social media. Through authority granted by the Alberta Emergency Management Agency, CEMA used the Alberta Emergency Alert System in Calgary to interrupt local media broadcasts and alert Calgarians to the need to evacuate along the rivers.

Within 24 hours of the evacuation notice, the Calgary Fire Department performed more than 400 rescues of citizens who could no longer safely escape their home and initiated shelter-in-place directives for others who could not be removed.

As evacuations began, plans were developed in the EOC for Enmax to conduct staged de-energizing of communities to ensure public safety throughout the flooding. At the height of the flood, 39,837 metered customers and five LRT stations were affected.

Over 800 kilometres of roadways were closed during the flood, including 20 bridges across the city. In addition, 93 kilometres of pathways and 30 parks were closed. Transit modified routes in flood-affected areas as the event progressed and roads and bridges were closed. Most city schools, with the exception of some high schools in non-flood areas that were holding diploma exams, were closed from June 21 to June 26 to ensure the safety of students and staff.

Approximately 160 firefighters from Edmonton were brought in to supplement Calgary's response to the flood and to allow the Calgary Fire Department to maintain adequate fire and rescue response coverage across all parts of the city, including those unaffected by the floods.

The Canadian military arrived on June 21 to assist with river bank stabilization and sandbagging efforts. Canada Task Force 1 (Vancouver) and Canada Task Force 2 (Calgary), nationally recognized urban search and rescue teams of over 60 persons each, assisted with performing wide-area searches, pumping water from facilities and homes and conducting rapid damage assessments.

CEMA and its agency members managed the full or partial evacuation of 32 communities, representing approximately 80,000 citizens¹, within a 15-hour period. Citizens were safely evacuated or provided shelter-in-place instructions with one fatality reported as a result of flood. By comparison, during the 2005 flood, 1,500 citizens were evacuated.

Over the course of EOC operations, CEMA also helped coordinate response to several additional significant public safety events that would have resulted in the EOC opening on their own, including a gas leak in an Inglewood condominium complex, a CP Rail train derailment on the Bonnybrook Bridge, Canada Day events and the Stampede Parade.

Protecting critical infrastructure and Calgary's water

During the flood, City staff and members of Canada Task Force 2 helped pump water and deploy sandbags to prevent water from entering key Telus sites and Enmax vaults in order to protect critical telecommunications and electrical systems. These efforts were essential in ensuring emergency facilities could continue to operate and 9-1-1 services remained available.

As a result of the proactive de-energization of electrical substations in advance of flood waters reaching them, significant damage was avoided. This prevented the long-term loss of these substations as well as electrical equipment in flood-affected buildings.

Calgary Transit evacuated 350 buses from its Victoria Park garage in advance of floodwaters reaching the building. The loss of those vehicles would have impacted Transit services and potentially resulted in the need for replacement of these buses.

Finally, as a result of measures undertaken since the 2005 flood, Water Services was able to protect and maintain Calgary's drinking water supply throughout the 2013 flood. Water use restrictions were put in place to help ensure demand did not exceed system capacities.

Maintaining core services to citizens

ENMAX redirected substation services in flood-affected areas to other substations to allow as many citizens as possible in non-flood zones to remain with power and support critical infrastructure.

Transit services in non-flood affected areas ran as usual with no cancelled routes in these areas. Transit services in flood-affected areas were detoured, altered and cancelled as evacuation zones increased, and route information was constantly updated through the Transit web site and Twitter feeds.

Some non-essential City services were placed on hold during the floods to allow City staff to respond effectively to the emergency situation. Due to the elevated public safety and animal-sheltering role taken on by Animal & Bylaw Services, the intake of citizen complaints was temporarily suspended during the peak of the flood, except for those that posed an immediate danger to the public. The City's blue cart recycling program was suspended for almost two

¹ As of 2013 October 2 (Source: CEMA)

weeks due to the re-prioritization of workforce and equipment that normally provides this service. Regular garbage collection was not affected by this disaster, other than those areas that became inaccessible due to the flood.

Preserving essential communications

Throughout the flood, The City's 9-1-1 telephone lines remained available to allow citizens to access emergency assistance. In preparation for expected higher call volumes due to flooding, Public Safety Communications temporarily increased staffing levels by 25 per cent. Call volumes increased upwards of 85 per cent over the first two days of the flood, and remained about 35 per cent higher for the six following days. Due to flooding of a neighbouring emergency call centre, 9-1-1 calls from the Foothills Regional Emergency Services Commission were also redirected to Public Safety Communications for a period of time during the flood.

The City's 3-1-1 service served as a critical source of help for the public. Due to flood waters entering the Municipal Building on June 20, The City's 268 exchange phone lines were damaged leaving all of these numbers unavailable, including the 3-1-1 line. 3-1-1 service was down for less than an hour until the back-up system was implemented, which provided access to 12 lines. The following day, 3-1-1 had 48 lines operational with reduced functionality. 3-1-1 handled an estimated 100,000 calls in the first two weeks of the flood including almost 13,000 flood-related service requests, such as calls for assistance with water pumping, property damage assessments and sewage backup.

As a result of the 2005 floods, plans were developed to move The City's servers and key technology infrastructure from the basement of the Municipal Building to the municipal EOC to ensure continuity of operations in the event of future disasters. Much of this work had been completed prior to the 2013 flood.

During the 2013 flood, The City's web site became the hub of flood-related information, logging over 1.1 million site visits. Issues with the network infrastructure resulted in the site crashing the afternoon of June 20. Information Technology, which tripled its on-call staff to assist the EOC and the other tactical operations centres, worked quickly to redirect citizens to The City's blog.

Over 140 media releases were issued and the Director of CEMA, His Worship Mayor Nenshi and other Business Unit and external member representatives held regular media briefings. Information was also shared through social media outlets to ensure citizens remained up to date on developments.

PHASE 5 AND 6: RECOVERY AND REHABILITATION

The original SOLE expired on June 27. Due to the magnitude and ongoing impacts of the flood event, the Director of CEMA requested and received an extension to the SOLE. This allowed The City to continue to provide immediate access to resources and an expedited approval process to assist affected citizens, businesses and critical infrastructure. Through the SOLE, the Director of CEMA worked in close concert with the City Manager and His Worship Mayor Nenshi to collaboratively identify areas of resource need and expenditures.

The SOLE was lifted on July 4, 14 days after it was originally declared. During the SOLE, EOC recovery efforts maintained the same level of intensity and resources as in the response in order to expedite Calgarians returning to their residences and businesses and the restoration of City Services.

The CEMA Emergency Social Services (ESS) program is a planned emergency response program intended to meet the immediate physical and psychological needs of individuals impacted by emergencies or disasters. CEMA ESS plays a significant role in initial recovery efforts and is specifically intended to assist citizens displaced by emergencies or disasters by facilitating access to temporary lodging and other necessary social services.

Establishing reception centres for evacuees

Hours before evacuations commenced, CEMA ESS had fully mobilized and started formulating plans for how to assist displaced citizens. Five reception centres opened within about 12 hours of the declaration of SOLE. As the number of evacuation zones increased, so did the number of reception centres with a total of nine centres and four dormitories being opened by June 21. In one of the shelters, Shaw provided large screen televisions and free Wi-Fi service to allow evacuees access to information regarding the flood, community re-openings and recovery efforts.

Additional City staff from a range of Business Units were used to help staff the centres, which provided much-needed manpower, however required a significant amount of just-in-time training to ensure these staff had the knowledge and information required. There were approximately 3,800 citizens registered into the CEMA ESS system, with shelter for 2,800 people and 68,000 meals provided.²

CEMA ESS worked with Alberta Health Services to ensure medical care was provided to evacuees as needed, and also coordinated with other external members to ensure the other physical and emotional needs of citizens at the centres were met. CEMA ESS worked with Community & Neighbourhood Services to develop a Housing Cohort plan after the first few days of initial emergency sheltering to better manage the differing needs of evacuees. This allowed for further medical assessment and support, identification of appropriate housing environments, consolidation and alignment of resources and provision of information and transportation when evacuees were able to return to their homes. CEMA ESS continued to support evacuees until July 10 when responsibility for evacuees was transferred to Community & Neighbourhood Services, which managed the Interim Housing program.

Assisting vulnerable populations

The City assisted ten non-profit agencies and seniors' residences with evacuating and finding accommodations for their program participants. These non-profit agencies, located in the downtown core, East Village and Bowness, assist individuals struggling with poverty, homelessness and addiction. While some of these agencies had well developed emergency response plans to guide their actions during a disaster, others did not, which placed a larger burden on the ESS system to ensure these individuals were sufficiently supported.

Transit dispatched buses to transport the large groups needing to leave these facilities as well as 144 Access Calgary vehicles to transport over 500 people in wheelchairs in flood-affected areas to safe facilities. Transit staff also assisted with the safe loading and unloading of seniors at care centres.

CEMA ESS worked with reception centre staff and external partners to identify appropriate, accessible facilities that could house these individuals. Additional medical and emotional support services were coordinated and provided as necessary to ensure the continued health and safety of these citizens.

² As of 2013 October 16 (Source: CEMA)

Providing support and relief to impacted citizens

Intensive recovery efforts to return citizens to their homes and businesses occurred in parallel with emergency response activities.

CEMA coordinated a staged re-entry of citizens back into their communities as floodwaters receded and areas were deemed safe. Nine Community Support Centres were established in flood-impacted communities to provide returning residents with information on how to assess if their property was safe for re-entry. The Centres provided locations for residents and volunteers to meet with members from the Calgary Fire Department, Development and Building Approvals, Calgary Police Service, Alberta Health Services, Enmax and ATCO. Residents could also request additional assistance in performing assessments from teams of Enmax, ATCO, City and Fire inspectors. Additionally, the Centres acted as logistics centres providing bottled water, gloves, masks, flood restoration documents and other equipment and materials to assist with re-entry. Schools and other community facilities were used as designated areas for food distribution, provincial debit card distribution and volunteer muster points.

Re-energizing of communities began just after noon on June 21 as areas were assessed safe for resumption of electrical service. Within nine days of the declaration of the SOLE, the citywide electrical grid was restored and all communities were re-opened for residents to access and assess their properties.

Initial recovery efforts focused on remediating homes by removing water and waste as quickly as possible. Members of Canada Task Force 1 and 2 pumped water from homes and within six days of the SOLE declaration, 95 per cent of residential pumping requests were completed.

Schools and other community facilities were designated as drop-off points for flood-related debris. In addition, Waste & Recycling Services, supported by a number of independent local businesses, reallocated resources and schedules to remove garbage and waste from flood-affected areas. Landfill hours were extended and landfill tipping fees were waived for commercial and residential customers clearing flood-related debris. In total, over 98,000 tonnes of flood-related waste were removed from Calgary communities.

Additional efforts were made to provide relief to citizens impacted by floods. The City offered free day camps were provided to families affected by floods with over 200 children participating. In addition, on-street parking bans were lifted for non-flood areas to accommodate the use of trailers and recreational vehicles to temporarily house flood victims.

Mobilizing community volunteers

On June 24, there was a volunteer drive at McMahon Stadium to assist those impacted by the flood. Six hundred volunteers were needed to assist with clean up in several communities, and 6,000 people showed up to offer their help. Over the following days and weeks, volunteers were directed to Community Support Centres where they were provided information on the exact streets and homes requiring assistance. These Community Support Centres registered more than 3,100 volunteers and received over 3,000 requests for help and supplies.

Supporting the timely, safe resumption of businesses

To allow for emergency response and initial recovery efforts to take place, City businesses located downtown were encouraged to allow employees to work from home during the initial days of the flood. A phased reopening of downtown began on June 24 as The City worked in concert with Enmax to coordinate a staged reenergizing of the downtown core. Within eight days of the SOLE declaration, the core's electrical grid was fully restored.

Within six days of the SOLE declaration, 100 per cent of all roads in the core were swept clean. Within eight days, following the completion of residential pumping requests, The City increased its water-pumping services for businesses. In addition, teams of inspectors, comprised of ATCO gas representatives, Enmax representatives, gas and plumbing inspectors, building inspectors, fire inspectors and health inspectors, were deployed to assess businesses for re-entry. Within nine days, 300 metres of new road was laid on Macleod Trail beside the Stampede Grounds and it was re-opened to support downtown commuters.

Of the approximately 18,000 homes and businesses assessed by inspection teams, 29 remain structurally compromised³. Of the 4,000 businesses directly affected by the flood, just 25 remain closed with only 12 not expected to reopen⁴.

Assessing and repairing key City infrastructure

Within six days of the SOLE declaration, 85 per cent of roads in flood areas were re-opened and 100 per cent of downtown roads were swept clean. Within two weeks, all vehicular bridges in the city had been inspected and re-opened.

To support the quick resumption of LRT service, over 34 million litres of water were removed from the CP, Cemetery Hill and 42nd Avenue tunnels, two tunnels were repaired and 100 metres of new track were fully rebuilt by the Erlton station within 13 days of the SOLE declaration.

Within two weeks of the SOLE declaration, 94 per cent of pathways, 83 per cent of downtown parks and 53 per cent of parks in flood-affected areas were also re-opened.

During the flood event, the Bonnybrook Wastewater Treatment Plant was completely inundated, resulting in significant damage to equipment. Recovery and repair efforts were initiated by Water Resources and Water Services during the SOLE as soon as water levels receded. By the middle of July, the Bonnybrook WWTP was operating within regulatory compliance requirements.

The flood affected 48 per cent of workspaces managed by Corporate Properties and Buildings, including five administrative buildings and four fire stations located in and around the downtown area. Damage assessments of City buildings were started within 48 hours of the SOLE to allow remediation and repair work to begin immediately.

Seven public facilities were impacted by the flood, including fitness and aquatic centres, pools and golf courses. Six reopened within four days of the SOLE declaration.

Maintaining City operations vital to residents and businesses

CEMA was in the process of working with City Business Units to establish more formal and consistent Corporate-wide business continuity plans prior to the flood. Many Business Units were able to quickly and seamlessly adapt their operations to the loss of personnel and workspaces, however more work is required to ensure similar results in all Business Units and apply lessons learned from the flood. Moving forward, CEMA has identified an opportunity to engage Business Units to develop comprehensive business continuity plans that align with other Business Units using the same guidelines and templates.

³ As of 2013 October 3 (Source: CEMA)

⁴ As of 2013 September 19 (Source: CEMA)

Human Resources and Corporate Properties took the lead in staff reassignment and relocation planning during the flood to identify skill sets that could be utilized elsewhere and workspace alternatives for City staff displaced from flood-affected buildings. Staff were assigned to other buildings or worked from home to ensure City business could resume as quickly as possible. Within 15 days of the SOLE declaration, 95 per cent of City sites were connected to the network and phone service.

As a result of the Municipal Building being flooded, temporary service centres were opened in each quadrant of the city beginning June 25 to allow citizens to pay property taxes, which were due during the flood, and receive help with permit applications. Intensive efforts were made to repair the damage caused to the Municipal Building to allow staff to safely return as soon as quickly as possible.

All recreation facilities were closed for two days at the height of the flood as staff were reassigned to assist at reception centres. By June 23, four aquatic and fitness centres were reopened to provide recreational opportunities for Calgarians. Within four days of the SOLE declaration, all remaining facilities were re-opened, with the exception of one damaged aquatic and fitness centre, one athletic park and the two facilities still in use as reception centres.

Outside of flood-affected areas, bus schedules remained as usual with no change to schedules. In flood-affected areas, some routes were detoured or cancelled to ensure safety of citizens and staff. Within eight days of the SOLE declaration, Transit had all bus routes back in service, and within 13 days all LRT service was restored. Restoration of LRT service was considered a major milestone considering the section of track that had to be fully reconstructed, the number of flooded underground tunnels and the amount of flood debris in affected areas.

To ensure citizens could continue to have access to safe drinking water, water use restrictions were put in place for City, business and residences between June 22 and 29 to reduce the burden on water treatment plants.

Fostering community spirit and pride

In support of the reopening of Calgary to residents and visitors, Canada Day activities and fireworks took place just 11 days after the SOLE declaration. Due to flood damage in Prince's Island Park, this event, which also marked the re-opening of the city's core, took place at other designated event locations throughout the downtown.

City staff and external partners worked diligently to ensure roads, LRT stations and bus routes were reopened to support the start of the 2013 Stampede on July 5. Fifteen days after the SOLE declaration, the Stampede kicked off with its annual parade through downtown. The parade route as well as Stampede events and schedules were modified to accommodate for facilities unavailable due to flooding.

Establishing continuity in Calgary's recovery

While emergency response and initial recovery efforts prevented and mitigated damages to some of Calgary's critical infrastructure and communities, hundreds of residents are still dealing with the impact of damages to their homes and businesses. The City continues to oversee the rebuilding of roadways, pathways, parks, facilities and amenities.

The focus of this report is on the emergency response and initial recovery efforts that occurred during the 14 days of the SOLE declaration. On June 22, the Recovery Operations Centre Steering Committee, consisting of members of The City's Administrative Leadership Team, was

established to begin planning for Calgary's long-term recovery. The Recovery Operations Centre Steering Committee created the Flood Recovery Task Force to oversee the long-term community restoration, rehabilitation and resiliency of the city. The Recovery Director will provide all further reporting of recovery efforts to Council.

The Municipal Emergency Plan remains activated as of 2013 October 30 to allow the Recovery Operations Centre Steering Committee to maintain its structure in leading recovery and restoration efforts for The City.

NEXT STEPS

CEMA has undertaken efforts to evaluate The City's response to the June flood to ensure all opportunities to improve preparedness, mitigation, response and recovery in future disaster events are considered.

CEMA conducted an internal review of its response and initial recovery efforts from an emergency management perspective and has identified opportunities for improvement. CEMA also led a Corporate-wide debrief where all Business Units and Agency members were invited to identify strengths, challenges and opportunities for improvement in the City's coordinated response. In addition, CEMA has retained the Conference Board of Canada to conduct an independent assessment of its emergency management and response efforts as they relate to best practice. The Conference Board has started its work and will have the report completed in the second quarter of 2014.

The Conference Board of Canada findings, along with those from the Corporate and CEMA debriefs, will be presented to Council, including recommendations that may have budget implications, no later than June, 2014. The recommendations and direction from Council will guide future disaster planning and emergency management objectives for The City. The Recovery Operations Centre Task Force will be continuing working for some time and are reporting to Council on restoration efforts separately.