TO: Mayor and Council
FROM: Cynthia Beach, Commissioner, Sustainability & Growth
RESOURCE STAFF: Lanie Hurdle, Director, Recreation & Leisure Services
Terry Shea, Rural Affairs Coordinator
DATE OF MEETING: 2010-02-02
SUBJECT: Canada Day Fireworks Display at Grass Creek Park

EXECUTIVE SUMMARY:

At the regular meeting of Kingston City Council on January 5, 2010 the following motion was brought forward;

THAT staff be directed to organize a fireworks display at Grass Creek Park during the evening of Canada day, with a budget not to exceed $20,000 and to be funded from the working fund reserve, for the year 2010.

The Motion was deferred and referred to staff in order to allow for a review of costs and funding services and

THAT Staff report back to Council at the first meeting in February 2010 with a budget not to exceed $20,000 and to be funded from the working fund reserve, for the year 2010.

Following this Council direction, staff have developed a budget for a fireworks display at Grass Creek Park taking into consideration fireworks event that used to occur on this site prior to 2005 as well as recent costs incurred during the New Year’s Eve event. Staff have also consulted with the Fire Department. The total budget for fireworks at Grass Creek Park is estimated at $16,600. This budget does not include the expansion of Canada day festivities that occur at Grass Creek Park during the daytime. It strictly provides an estimate to hold a (ten) 10 minute fireworks display at the Park.

The that the Pittsburgh Community Benefit Fund (PCBF) is currently considering a contribution of $5,000 to the event which, if approved by the PCBF, would reduce the City’s cost to $11,500.

RECOMMENDATION:

This is an information report only.
AUTHORIZING SIGNATURES:

ORIGINAL SIGNED BY COMMISSIONER
Cynthia Beach, Commissioner of Growth and Sustainability

ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER
Gerard Hunt, Chief Administrative Officer

CONSULTATION WITH THE FOLLOWING COMMISSIONERS:

<table>
<thead>
<tr>
<th>Commissioner</th>
<th>Consultation</th>
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<tbody>
<tr>
<td>Commissioner Thurston, Community Development Services</td>
<td>✓</td>
</tr>
<tr>
<td>Commissioner Leger, Corporate Services</td>
<td>N/R</td>
</tr>
<tr>
<td>Jim Keech, President, Utilities Kingston</td>
<td>N/R</td>
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</tbody>
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(N/R indicates consultation not required)
OPTIONS/DISCUSSION:

Background
Fireworks were held at Grass Creek Park on Canada Day until 2004. In 2005, the Canada Day Festivities event at Grass Creek Park was moved to an afternoon program from noon until 6pm to provide an opportunity for younger families to celebrate the day and to encourage participants to make their way downtown for the civic fireworks display in the evening. In 2008, staff reviewed potential locations in the east and west end of the City that could accommodate fireworks. The Fire Department was involved in this process. Grass Creek Park was identified as a suitable location to hold fireworks and was endorsed by Council in 2008 as a location to hold fireworks.

In January 2010, Council directed staff to report back on the costs and funding associated with displaying fireworks at Grass Creek Park in 2010. Staff reviewed services and programs required to organize the display of fireworks in addition to the current festivities held at Grass Creek Park. The following is a breakdown of the estimated budget for a total of $16,600.

<table>
<thead>
<tr>
<th>Service</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fireworks display</td>
<td>$10,000</td>
</tr>
<tr>
<td>Security – beach perimeter</td>
<td>$ 500</td>
</tr>
<tr>
<td>Security – in water perimeter</td>
<td>$ 1,000</td>
</tr>
<tr>
<td>Signage and barrier</td>
<td>$ 600</td>
</tr>
<tr>
<td>Portable toilets</td>
<td>$ 500</td>
</tr>
<tr>
<td>Park/Parking temporary lighting</td>
<td>$ 2,500</td>
</tr>
<tr>
<td>Beach clean up</td>
<td>$ 750</td>
</tr>
<tr>
<td>Staff costs</td>
<td>$ 750</td>
</tr>
<tr>
<td>Total</td>
<td>$16,600</td>
</tr>
</tbody>
</table>

It should be noted that the Fire Department can provide volunteer fire fighters and a pumper on site and therefore reducing cost associated with the event. As well, the Pittsburgh Community Benefit Fund (PCBF) is currently considering a contribution of $5,000 to the event. Should the PCBF approve this donation; cost to the City would be reduced to $11,500.

Other Points of Consideration
In a Memorandum dated July 18, 2003 from Kingston Fire and Rescue, a safety protocol for all fireworks describes designated setbacks from the area of ignition of the Fireworks. Provisions for safety are required as soon as the fireworks are on site. The applicable safety setback as described in the guidelines requires that the public be not less than 100 metres back from the working area. Based on prior experience, restricted areas would apply about six (6) hours before the fireworks display. This means that an area of 100 metres radius would be required to be cleared for fireworks set up and that public use would not be permitted in that area during that period of time. This 100 metres set back would include the washroom building within the Park.

Water safety patrol boats are required for the event to police water traffic and maintain a safe perimeter around fireworks site. Fire fighters are required to stand vigilant during and after the event in case of grass and/or marshland fires resulting from falling embers.

In 2008, the Kingston Environmental Advisory Forum (KEAF) provided a qualitative review of the likely issues associated with the relatively modest displays under consideration in Kingston, which included a display at Grass Creek Park. The conclusion indicated that provided normal recommended safety standards are implemented to keep sensitive receivers at a safe distance, there are unlikely to be any unacceptable adverse environmental impacts from displays staged at the proposed location.

EXISTING POLICY/BY LAW:

N/A
NOTICE PROVISIONS:

N/A

ACCESSIBILITY CONSIDERATIONS:

N/A

FINANCIAL CONSIDERATIONS:

Total estimated budget for the event is $16,600 and as per Council’s direction is to be funded through the Working Reserve Fund. Should a donation from the Pittsburgh Community Benefit Fund materialize, the Working Reserve Fund contribution will be reduced.

CONTACTS:

Lanie Hurdle, Director, Recreation and & Leisure Services
Terry Shea, Rural Affairs Coordinator

OTHER CITY OF KINGSTON STAFF CONSULTED:

Lesley Kimble, Assistant Supervisor, Recreation Services
Lynda Breen, Supervisor, Recreation Services
Gary Bullock, Deputy Fire Chief
Steve Dickey, Deputy Treasurer

EXHIBITS ATTACHED:

Exhibit A – Map of Grass Creek Park
Exhibit B – July 18th, 2003 Memorandum – Canada Day Public Fireworks Displays Safety
MEMORANDUM

TO: Lance Thurston, Commissioner of Community Services,
   Harold Tulk, Fire Chief

FROM: Robert N. Kidd, Chief Fire Prevention Officer

DATE: July 18, 2003

SUBJECT: Canada Day – Public Fireworks Displays Safety

Public fireworks displays were held in the City of Kingston at four venues on June 30th and July 1, 2003. Detailed applications for each of the displays were reviewed for fire safety prior to the events and fire prevention staff were present at each of the shows. The “Display Fireworks Manual,” (DFM) published by Natural Resources Canada and referenced by the Explosives Act and Ontario Fire Code, provided the basic criteria for our reviews. Summaries of the details of each venue follow:

Lions Civic Gardens - June 30, 2003

Description
The display was designed and conducted by Flash Point Productions of Kingston.

Physical limitations on the site and previous cases of fireworks debris striking adjacent properties and spectators were factored into the decision that only “low level” fireworks would be allowed. “Low level” fireworks are defined as fireworks designed to reach heights of 50m (165 feet) or less and Roman Candles having inside diameters of 50mm (2 inches) or less. The largest fireworks effects employed in this display were 45 mm Roman Candles labeled by the manufacturer as having a designed altitude of 31m (105 feet).

Safety Compliance
The required spectator safety clearance stipulated by the DFM for low level displays is 45m (150 feet) from all points measured to the firing site. Based on previous experience with the site geography and prevalent wind conditions the display supervisor agreed to increase the spectator clearance to 100m. Parks and recreation staff successfully ensured that this perimeter was established and maintained.

The DFM also requires a clearance of 300m (1,000 feet) to high hazard occupancies such as the Gardiners Road Esso station which is located only slightly over 100m from the firing ramp. To mitigate the risk, Eric Cook, owner of the service station, voluntarily closed his lot and shut down the pumps a short time prior to the display. Vehicles were prohibited from parking in the service station lot during the display.

Observations
The display was conducted in accordance with all pre-established conditions and clearances to spectators were maintained. There was virtually no wind present at the time the fireworks were being fired.
It was apparent that the large candle projectiles were reaching altitudes well in excess of the 30m (105 feet) design altitude labeled on the firing tube and appeared to be bursting at heights of well over 60m (200 feet). Fortunately the aim of the candles in conjunction with the lack of wind appears to be the only reason that debris did not fall into the crowd of spectators located immediately north of the pond. Debris did appear to reach the 45m point north of the firing ramp where the crowd would have been standing had we not increased the safety clearances.

The Esso Site was inspected on July 3rd. Numerous plastic shell fragments from the 45mm candles were recovered from the area around the pumps, the underground tank vents and fill connections and even from the traveled portion of Gardiners Road. It is obvious that, even in the absence of wind, dangerous debris was reaching distances of up to 150m (500 feet) downrange from the firing ramp. A slight south wind would have, in all likelihood, resulted in debris falling into the spectator area.

**Conclusion**
The Lions Civic Gardens site is completely unsuitable and potentially dangerous for continued “low level” fireworks displays. Following the display, licensed fireworks supervisors who had conducted the show and another, who had observed it as a spectator, offered their opinion to me that the site is not suitable for “low level” fireworks of this caliber. The danger of conducting “high level” displays at the site has been previously documented and proven by experience. There are provisions within the DFM for “ground level” fireworks displays which could be considered upon submission of a detailed proposal for the site.

**Grass Creek Park - July 1, 2003**

**Description**
The display was designed and conducted by Flash Point Productions of Kingston. The display was comprised of “high level” fireworks which included large roman candles and shells up to 8 inches in diameter.

The firing ramp was isolated to a beach area with a secure spectator security line established >100m behind the ramp. A clear fallout zone extending 200m over Lake Ontario was established and maintained in conformance with the DFM. Parks and Recreation staff were able to enlist the assistance of volunteers from CORK in maintaining the offshore perimeter.

**Safety Compliance**
All requirements of the DFM were met or exceeded at the site.

**Observations**
The Fire Prevention Officer monitoring the display noted that continuing attention is required to ensure that the adjacent marsh lands are not accidentally ignited by debris.

**Conclusion**
Grass Creek Park is suitable for continued “high level” fireworks displays.

**Royal Military College (Downtown Kingston) - July 1, 2003**

**Description**
The display was designed and conducted by Canazon Fireworks of Kingston. The display was comprised of “high level” fireworks which included large roman candles and shells up to 12 inches in diameter.
The firing ramp was isolated to a beach area with a secure spectator security line established >100m beyond the ramp. A clear fallout zone extending 200m over Lake Ontario was established and maintained in conformance with the DFM. Downtown Kingston organizers were able to enlist the assistance of the Canadian Coastguard in maintaining the offshore perimeter.

An area of the grass covered berms located adjacent to the firing ramp was wet down by Kingston Fire & Rescue volunteers prior to the event.

**Safety Compliance**
All requirements of the DFM were met or exceeded at the site.

**Observations**
The display supervisor reported that there is a recurring year to year problem with pleasure and commercial watercraft breaching the 200m fallout zone off of the firing ramp. There were persistent incursions into the zone this year which were addressed by broadcasting the required clearances over the maritime common frequency and by the Coastguard craft on duty approaching craft encroaching on the zone. The zone was cleared by the time of the display.

The RMC display included the firing of many large diameter shells. A significant amount of debris reached ground/water level. A small grass fire was ignited on top of the berm approximately 75m from the firing ramp (beyond the area wet down by firefighters).

**Conclusion**
The RMC site is suitable for continued high level fireworks displays. Additional planning is required for future displays to mitigate the risk of grass fires on the surrounding RMC properties as the result of fallout.

Lake Ontario Park (King Street) – July 1, 2003

**Description**
The display was designed and conducted by Flash Point Productions of Kingston. The display was comprised of “high level” fireworks which included large roman candles and shells up to 8 inches in diameter.

The firing ramp was isolated to a dock area south of 1000 King Street with a secure spectator security line established >100m behind the ramp. A clear fallout zone extending 200m over Lake Ontario was established and maintained in conformance with the DFM. The display supervisor aimed the display slightly southwest to ensure that spectators watching from Lake Ontario Park were well outside of the eastside limit of the fallout zone.

Parks and Recreation staff were able to enlist the assistance of volunteers from Kingston Yacht Club in maintaining the offshore perimeter.

**Observations**
There were no significant fire safety issues noted in connection with this display.

**Conclusion**
This location is suitable for continued “high level” fireworks displays.
Additional Comments

The fact is that fireworks are intrinsically hazardous and responsible for hundreds of reported injuries in Canada every year. Canadian and international studies show that the highest rates of injury occur with consumer of “family” fireworks. For this reason, Kingston Fire & Rescue continues to promote attendance at public displays as the safest means of viewing fireworks.

It must also be recognized that public displays are not without hazard and every possible means should be employed to mitigate public risk. We have received the following reports regarding incidents occurring in the first week of July:

- **July 1st**, Orangeville, Ontario:
  
  Hundreds of people were put in danger at a Canada Day fireworks celebration…when at least three of the colourful balls of fire shot into the crowd. A representative of Hands Fireworks stated that the product used may have been defective and that the company was “pushing the limit,” in terms of the kinds of fireworks it was presenting in the space available. (The Orangeville Banner).

- **July 2nd**, Bonita Springs, Florida:
  
  A fireworks display being assembled for a Fourth of July celebration erupted in flames Wednesday, setting off massive explosions that killed four people and injured two others, one critically. (CNN)

- **July 3rd**, Kilgore, Texas:
  
  Three workers were killed and six nearby homes were destroyed when display fireworks being loaded at a warehouse exploded. (Kilgore News Herald).

The preceding reports speak for themselves and underscore the need to carefully assess all future fireworks displays in the City of Kingston.

Note that a draft fireworks bylaw has been prepared and will now be forwarded to stakeholders for additional input.

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Robert N. Kidd,
Chief Fire Prevention Officer

Encl. Photographs: Lions Civic Gardens (Aerial)
  Esso Station
  Fireworks debris
c.c. file