SUBJECT: Sponsorship for Hamilton and Scourge 2009 Archaeological Survey (CS09037) (City Wide)

RECOMMENDATION:

(a) That the Hamilton and Scourge 2009 Archaeological Survey and work plan (the “Project”), attached as Appendix “A”, be approved in principal, subject to such technical changes as may be prudent or required by the Ontario Ministry of Culture;

(b) That the Project be sponsored in full by YAP Productions; and,

(c) That the General Manager of Community Services be authorized to execute any and all necessary documents (including agreements), in a form satisfactory to the City Solicitor, in order to facilitate the Project, and/or to otherwise deal with the data or other materials produced pursuant to the Project.

Joe-Anne Priel
General Manager
Community Services Department

EXECUTIVE SUMMARY:

In 2008, the City of Hamilton conducted an archaeological research survey on the Hamilton and Scourge National Historic Site. The Hamilton and Scourge are two schooners that sank in Lake Ontario in 1813. For the purposes of the 2008 research survey, Parks Canada acted as the City of Hamilton’s archaeologists (and held the required archaeological license). ASI Group, a marine and environmental engineering firm based in St. Catharines, provided project management and technical support. The
project was funded principally by a 2006 Council approved capital project (7100658605) plus in-kind donations and support from the Canadian Navy and Coast Guard.

Previous plans for the site development process included returning to the site for follow-up work in 2010. The results of the 2008 project indicated there were significant concerns for the stability of the site and suggested accelerating the scheduled plan to return to the site to occur in the year 2009; however, no funds were requested in the 2009 capital budget for on-site work.

City of Hamilton staff has been approached by ASI Group, with a proposal which would fund archaeological research in 2009 under Parks Canada direction and ASI technical support (the work plan is attached as Appendix A to Report CS09037). Under this proposal, the cost of the work of the archaeologist (Jon Moore of Parks Canada) and the project technical support (ASI Group) would be fully sponsored and paid for by YAP Productions. A profile of the YAP Productions is attached as Appendix B to Report CS09037. City funds to undertake this initiative would be limited to staff time and minimal operating expenses, not to exceed $1,000.

Typically, sponsors, donors and suppliers of donations-in-kind receive a nominal benefit (e.g. logos on publications, acknowledgements at receptions). For this archaeological research initiative YAP will receive commercial benefit in the form of data for a documentary and the City will be positioned to conduct an operational activity of the Hamilton and Scourge fulfilling the City’s cultural resource management mandate.

The level of sponsorship and commercial benefit represents a significant deviation from standard sponsorship practise within the Culture Division but does afford an opportunity to further the work of the project at minimal cost to the City of Hamilton. The resulting documentary produced by YAP will contribute significantly to public awareness of the heritage significance of the site.

**BACKGROUND:**

The *Hamilton & Scourge* are two schooners that sank in Lake Ontario in 1813. The two schooners are located 11 km off St. Catharines in 80 meters of water and are virtually the only ships of their kind that survived intact from 200 years ago. The United States Navy transferred ownership of the vessels to the Royal Ontario Museum (ROM) in 1979. The ROM transferred ownership of the vessels to the City of Hamilton in the same year. The Hamilton and Scourge site is recognized internationally as an extremely important marine archaeological site.

In 2005, the City of Hamilton installed a security system, which alerts local police of suspicious activity on the surface of the lake over the site. While making use of very sophisticated technology, the system does not have the capability to monitor the site itself.

Quagga mussel infestation and the risk of unauthorized diving on the vessels have increased, mussels are partially covering the site, and it is known that at least one unauthorized dive took place in 2001.
In 2006 the Ontario Heritage Act was amended to provide greater protection to significant and vulnerable marine archaeological sites in Provincial waters. The *Hamilton & Scourge* is one of the sites identified for protection. Regulations under the Act limit access to the shipwrecks to provincially licensed marine archaeologists. The licences have a strict set of conditions, which must be met before issuance.

In order to meet custodial obligations to this internationally significant site, it is imperative to maintain a program of regular monitoring and research. To assess accurately the current condition of the vessels, the City of Hamilton studies the underwater site using Remotely Operated Vehicles (ROVs) and various remote sensing systems.

In 2008, an archaeological survey of the site revealed increased mussel infestation and strong evidence of unauthorized diving taking place on the vessels.

When initially developed, the stated goal of the project was to raise one or both of the vessels in order to preserve and display them on dry land or a shallow water tank. This approach is no longer being actively planned. Instead, the project is examining *in situ* monitoring, on-going studies with Remotely Operated Vehicles (ROVs), and interpreting the site through a variety of media including ‘real time’ streaming video displayed on large theatre screens, replicas and exhibits.

Current standards of practice established by UNESCO, for the protection of the underwater cultural heritage sites, recommends the preservation of underwater heritage *in situ*. Wholesale recovery of large vessels is an appropriate method of marine cultural heritage preservation only in exceptional circumstances such as the imminent total loss of the heritage resource.

The project goal is now to preserve the site, and interpret the heritage to Canadians and Americans. As part of that on-going work, the project conducts planning and research activities on the two schooners.

Responsibility for the project resides within the City’s Culture Division. Work is conducted by volunteers and as a special portfolio of the Hamilton Military Museum Coordinator under the direction of the Manager of Museums and Heritage Presentation.

**ANALYSIS/RATIONALE:**

The results of the 2008 project (significant mussel infestation and unauthorized diving) indicate the need to accelerate the research process. An accelerated research process will gather the maximum amount of historical information while it is still available and will provide definitive information on the condition of the vessels and the rate of mussel growth sooner. In turn, the time frame for the completion of a long term plan for the site can be brought forward.

The Culture Division does not have Council approved funding for this work in 2009. To conduct the work this year requires securing another source of funding. The visibility on the vessels is typically very poor through most of the year. A short ‘window’ exists during
May and early June. It is unlikely that another source of funding would be available in this time frame.

It is important to emphasize that this is primarily an archaeological research project not a film production. The data will be collected by the Project Archaeologists (Parks Canada staff working under agreement to the City of Hamilton) and their technical support (ASI Group of St. Catharines). The project therefore meets the requirements for the issuance of an archaeological license by the Ontario Ministry of Culture. The license has not yet been issued but officials at the Ministry have indicated this will be issued pending City of Hamilton approval of the 2009 work plan. Parks Canada has also indicated their willingness to participate based on the City’s approval of the work plan.

The sponsor (YAP Productions) has agreed to pay for the cost of the on-site work (estimated value $160,000) in return for sharing of the data and any additional footage created by YAP with their camera crew. In discussions between City of Hamilton staff, Parks Canada, ASI and YAP, the understanding has been established that the City of Hamilton and Parks Canada will use the collected information for research and planning purposes. YAP will use the information to produce a documentary for broadcast.

The Culture Division frequently makes use of sponsorship opportunities for the support of special events, exhibits and publications. Sponsors, donors and suppliers of donations-in-kind receive some level of recognition, usually at a value much less than their contribution (e.g. logos on publications, acknowledgements at receptions). This occurred during the 2008 Hamilton and Scourge dive when Parks Canada, the Canadian Navy and the Canadian Coast Guard contributed in kind support to a level of many thousands of dollars. In return, the contributors to the project received logo placement, letters of acknowledgement and public recognition.

In this instance, however, YAP will receive a very significant commercial benefit (data for a documentary), at least equal to the value of their contribution. The initiative does, however, afford an opportunity to further the work of the project, a core operational activity of the Hamilton and Scourge/Culture Division, at minimal cost to the City of Hamilton. The documentary produced by YAP will contribute significantly to the public awareness of the heritage significance of the site.

**ALTERNATIVES FOR CONSIDERATION:**

Alternatively, the 2009 work would be postponed. The identified concerns regarding the condition and possible rapidly advancing decay would not be addressed.

**FINANCIAL/STAFFING/LEGAL IMPLICATIONS:**

**Financial:**
Minimal, not to exceed $1,000

**Staffing:**
Minimal, within re-allocating existing work plans
Legal:
Legal will review any contracts prior to execution by the City.

**POLICIES AFFECTING PROPOSAL:**
None

**RELEVANT CONSULTATION:**
Archaeological Licensing Unit, Ontario Ministry of Culture
Jon Moore, Underwater Archaeologist, Parks Canada, Underwater Archaeology Unit
Legal Services, Finance & Corporate Services Department

**CITY STRATEGIC COMMITMENT:**
By evaluating the “Triple Bottom Line”, (community, environment, and economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.

- **Community Well-Being is enhanced.** ☑ Yes ☐ No
  Arts, culture, archaeological and cultural heritage are supported and enhanced.

- **Environmental Well-Being is enhanced.** ☑ Yes ☐ No
  Ecological function and the natural heritage system are protected.

- **Economic Well-Being is enhanced.** ☑ Yes ☐ No
  Cultural industries are enhanced.

- **Does the option you are recommending create value across all three bottom lines?** ☑ Yes ☐ No

- **Do the options you are recommending make Hamilton a City of choice for high performance public servants?** ☑ Yes ☐ No
PROPOSED ROV DIVE PLAN

Drafted by: ASI Group Ltd. (Darren Keyes and Bob Clarke) & Parks Canada (Jon Moore)
Prepared for: City of Hamilton and YAP Films

HAMILTON SHIPWRECK
2 days, 3 ROV dives per day, 2-3 hours per ROV dive.
Day 1 (Hamilton)
Dive 1 - Inspection of mooring(s) if required. Conduct reconnaissance dive with ASI’s Seaeye Falcon ROV and minor external inspection checks (e.g., check rope attachment on pivot gun). Pre scout openings for internal hull entry. Possibly collect small artifact(s) for topside documentation and sampling
Dive 2 - Conduct internal video inspection using ASI’s LBV ROV or unspecified micro-ROV with attempts to reach all corners of internal spaces from various access points (i.e., hatches, companionways, and stern galleries). Use the Seaeye Falcon to assist with internal hull inspection work and to video smaller ROV operations where possible.
Dive 3 - Same as Dive 2.

Day 2 (Hamilton)
Dive 1 - Complete supplemental dual-axis sonar coverage of the Hamilton to same detail level as for the Scourge site using the Seaeye Falcon reconfigured for dual-axis sonar profiling.
Dive 2 - Use the Seaeye Falcon to supplement still photo coverage of exterior surfaces with greater frequency of still photo taking versus 2008 Condition Survey. Collect mussel and algae samples for species determination. Collect other material condition samples and/or conduct non-destructive scientific tests.
Dive 3 - Use Seaeye Falcon to return recovered artifact(s) to site and assess condition of human remains if possible. Selected removal of polypropylene ropes.

SCOURGE SHIPWRECK
2 days, 3 ROV dives per day, 2-3 hours per ROV dive.

Day 1 (Scourge)
Dive 1 - Inspection of mooring(s) if required. Conduct reconnaissance dive with ASI’s Seaeye Falcon ROV and minor external inspection checks (close-up check for cutlass hilt on deck at gun S3, images of damaged starboard quarter from
various angles, check of lakebed for fallen structure below starboard quarter, check gun P5 for exact attachment point of polypropylene line, etc.). Pre-scout openings for internal hull entry. Possibly collect small artifact(s) for topside documentation and sampling

Dive 2 - Conduct internal video inspection using ASI’s LBV ROV or unspecified micro-ROV with attempts to reach all corners of internal spaces from various access points (i.e., hatches, companionways, and stern galleries). Use the Seaeye Falcon to assist with internal hull inspection work and to video smaller ROV operations where possible.

Dive 3 - Same as Dive 2.

Day 2 (Scourge)

Dive 1 - Use the Seaeye Falcon to supplement still photo coverage of exterior surfaces with greater frequency of still photo taking versus 2008 Condition Survey. Collect mussel and algae samples for species determination. Collect other material condition samples and/or conduct non-destructive scientific tests.

Dive 2 - Use Seaeye Falcon to return recovered artifact(s) to site and assess condition of human remains if possible. Selected removal of polypropylene ropes.

Dive 3 - If time permits, use Seaeye Falcon to carry-out additional dual-axis sonar coverage of the Scourge if time permits OR carry out other additional archaeological tasks (no specifics yet).

The proposed dive plan has created to set the tasks out from highest to lowest priority. ASI Group will carry out the dive plan and fulfill the project goals on a “best-effort” basis subject to time limitations and/or weather delays.

The highest priority is the penetration of the ships’ interior spaces. Yap Films, in consultation with ASI Group, Jon Moore/Parks Canada and the City of Hamilton, has the right to ensure that its filming goals have been attained before moving on to other tasks. This includes the decision to move the area of study from the Hamilton to the Scourge.

We also are proposing to visit the Tiller wreck site for one 12-hour day. This will allow Mike and Warren Fletcher an opportunity to dive and document this wreck. Jon Moore (Parks Canada) and Nancy Binnie (Canadian Conservation Institute) are interested in participating with this diving as well.

Possible archaeological goals, drafted by Jon Moore of Parks Canada on February 7, 2009, for the proposed diving on the Tiller wreck are:

**TILLER WRECK**

1 day with diving only (i.e., no ROV work). Low impact diving practices to be employed.
• Overall HD video coverage of wreck with divers in shots to gain appreciation of relative size of the *Hamilton & Scourge* in comparison.
• Detailed HD video coverage of hull features for comparison and contrast with *Hamilton & Scourge*. (Question of wreck penetration needs to be discussed with the Ministry of Culture).
• Close-up video of mussel coverage with divers in frame.
• Collection of mussel samples for species determination from different parts of the hull and surrounding lakebed (Are there differences between the debris field and on-wreck mussel populations?).
• Detailed examination of mussel matt surrounding wreck to gain appreciation of its characteristics. (What can the Tiller wreck mat tell us about the mats surrounding the *Hamilton & Scourge*?).
• Deposit pig bone sample(s) at wreck for short to long term monitoring study of mussel attachment affects on bone (to be discussed with Nancy Binnie and might require follow-up by other partners).

In order for this project to move forward we are proposing as a minimum to use our Seaeye Falcon ROV with sonar, digital stills, and carrying an HD camera (to be supplied by YAP) for archaeological investigations exterior to the shipwreck’s hulls. ASI's Falcon could be used for collecting dual-axis profile sonar data, collecting wood core and mussel samples, collecting small artifact(s), and polypropylene rope removal. For internal hull inspection work, we propose four possible options which each will have additional costs associated with them:

Option 1 – ASI will supply our Seabotics LBV ROV with sonar, standard video camera and 2000 foot umbilical. The LBV ROV will be able to navigate to the wrecks from the mooring locations because of the long umbilical. The activities of the LBV ROV can be filmed in HD using the Seaeye Falcon ROV.

Option 2 - ASI can operate a rented micro-ROV, like a VideoRay Explorer, (supplied by YAP) which comes standard with a 570 line/0.3 lux colour tilt camera, compass, depth sensor, and 500 ft umbilical or the VideoRay Pro3-GTO which comes standard with a 570 line/0.1 lux tilt camera, a rear facing black and white camera, a single function manipulator/gripper, and a 500 ft umbilical.

Option 3 - ASI can rent and supply a commercial off-the-shelf (COTS) HD camera and modify our Seaeye Falcon to fully integrate the HD camera. The cost to purchase and install two new electronics boards (2), required for full HD camera integration, for the ROV is $12,500.00 alone.

Option 4 - YAP Films continues to research and supply a small micro-ROV with integrated HD camera to employ on this project. Please call if you have any questions or would like to discuss this further.
Budget Estimates

Supply of CCGS Griffon by Canadian Coast Guard (CCG) for mooring installation and removal only $ NIL
As a result of discussions between ASI and CCG, CCG has agreed to contribute the installation and recovery of the moorings required for this project at no cost.

Mobilization/Demobilization (ASI): $ 46,750.00
Includes:
• all preparation and transport costs for ASI equipment & ASI personnel.
• project management costs, mooring configuration planning and ASI’s participation with mooring installation and removal.

Field Operations – Hamilton & Scourge Inspection Work (ASI) – 12 hour days: $ 59,160.00
Includes:
• ASI equipment & ASI personnel (6)
• Project manager, project engineer, ROV pilot/technician, and an ROV pilot, dive boat captain, and transfer boat operator.
• Supply of ASI SeaEye Falcon ROV, ASI Dual-Axis Profiling Sonar, and all associated equipment. Also includes supply of 70 foot dive vessel (the ASI Clipper) and 25 foot survey boat (ASI Surveyor) for personnel transfers to/from shore and emergency standby.
Cost would be $ 14,790.00 per 12 hour work day. We propose 2 days of underwater
survey work at the Hamilton site and 2 days of underwater inspection work at the Scourge site; 4 days in total. (4 days at $ 14,790.00/12 hr day)
Overtime Rate of $ 1,050/hr after 12 hours
Standby Rate of $3,500.00/day or $292.00/hr

Field Operations – Tiller Wreck Inspection Work (ASI) – 12 hour day: $ 6,800.00
Includes:
• ASI equipment & ASI personnel (3)
• Project manager, boat captain, dive supervisor/deckhand.
• Supply of 70 foot dive vessel (the ASI Clipper) and 25 foot survey boat (ASI Surveyor) for personnel transfers to/from shore and emergency standby. Cost would be $ 6,800.00 per 12 hour work day. We propose 1 day of diving
inspection work (to be conducted by YAP personnel using YAP’s dive equipment) at the Hamilton site. (1 day at $ 6,800.00/12 hr day)
Overtime Rate of $ 510.00/hr after 12 hours
Standby Rate of $1,700.00/day or $142.00/hr

Data Editing, Processing, and Final Report Preparation (ASI): $ 27,600.00
• Includes all data editing, processing, and preparation of a final report. Also includes reporting fee of $5,000.00 for Parks Canada which could be deducted and paid directly to Parks Canada if that is preferred.
• Three copies of the final report will be supplied. Submission of a detailed report will be a requirement of the archeological license. Copies will need to be provided to Ministry of Culture, Parks Canada, and City of Hamilton. Extra copies can be provided for an additional charge.

TOTAL ESTIMATED COST $ 140,310.00 *

OPTIONS
Option 1 - $1,250.00/day
ASI will supply our Seabotics LBV ROV with sonar, standard video camera and 2000 foot umbilical. The LBV ROV will be able to navigate to the wrecks from the mooring locations because of the long umbilical. The activities of the LBV ROV can be filmed in HD using the Seaeye Falcon ROV.

Option 2 - Approximately $500.00-750.00/day (door-to-door) plus shipping costs
ASI can operate a rented micro-ROV (supplied by YAP), like a VideoRay Explorer which comes standard with a 570 line/0.3 lux colour tilt camera, compass, depth sensor, and 500 ft umbilical, or the VideoRay Pro3-GTO which comes standard with a 570 line/0.1 lux tilt camera, a rear facing black and white camera, a single function manipulator/gripper, and a 500 ft umbilical.

Option 3 - TBD
ASI can rent and supply a commercial off-the-shelf (COTS) HD camera and modify our Seaeye Falcon to fully integrate the HD camera. The cost to purchase and install two new electronics boards (2), required for full HD camera integration, for the ROV is $12,500.00 alone.

Option 4 - TBD
YAP Films continues to research and supply a small micro-ROV with integrated HD camera to employ on this project.