TO: Mayor and Council

FROM: Cynthia Beach, Commissioner, Sustainability & Growth

RESOURCE STAFF: Brian McCurdy, Cultural Director, Cultural Services Department
Colin Wiginton, Manager, Cultural Services Department

DATE OF MEETING: 2010-05-04

SUBJECT: Relocation and Restoration of the Locomotive “The Spirit of Sir John A.”

EXECUTIVE SUMMARY:

The purpose of this report is to update Council on the current status of the planned relocation and restoration of “The Spirit of Sir John A.” and to seek additional funds and approvals to complete this project in advance of the 100th anniversary of the locomotive to be celebrated in 2013 as well as the bicentennial celebration of Sir John A. Macdonald’s birth in 2015.

“The Spirit of Sir John A.” is one of Kingston’s most significant and most photographed icons. The locomotive was built in Kingston in 1913 by the Canadian Locomotive Company Ltd. and was in active service until 1960. In 1966 it was saved by the Kingston JayCees and subsequently gifted to the City in recognition and celebration of Canada’s Centennial in 1967.

As one of the largest artifacts in the civic collection, the prominent location and physical appearance of the “The Spirit of Sir John A.” is extremely important not only because it represents Kingston’s industrial past, but also because it functions as a major tourist attraction and symbol of civic pride.

“The Spirit of Sir John A.” has been allowed to fall into a state of neglect and disrepair. Over the years little attention has been paid to regular maintenance, a fact that now impacts its structural integrity and overall safety. Much of the locomotive has corroded, significant areas of metal cladding have been removed and the rails upon which it sits are no longer secure. All of these issues are cause for concern but, are reversible if the appropriate action is taken.

In 2007 an initial Survey of Findings and Recommendations was submitted to Council by a volunteer-led group known as the ‘Engine 1095 Restorers’. Based on their collective experience and expertise, this group offered an overall assessment of the locomotive and made a case for its restoration along with a proposed course of action and budget for the necessary work. At the time their proposal was approved by Council and $170,000 was directed toward the project with the understanding that the volunteers would raise a matching amount of money.

For a number of reasons no more work was done on “The Spirit of Sir John A.” until January 2009 when staff submitted an Information Report that outlined renewed action on the part of staff working in collaboration with the volunteer group. For the benefit of Council this Information Report outlined the necessary steps, studies, assessments, consultations, timelines and
budget needed to relocate, restore and shelter the locomotive. The report also identified that the current condition of the locomotive and the need to construct a new, purpose-built foundation were the most pressing issues to be addressed.

It is now being proposed that, based on the work done to date and the most current information gathered, what is required to restore and preserve “The Spirit of Sir John A.” in a timely and cost effective manner is a two-stage project as follows:

1. Relocate the locomotive to a new, purpose-built foundation; and
2. Restore the locomotive to its historic appearance.

The relocation of the locomotive is deemed to be a necessary first step in order to stabilize “The Spirit of Sir John A.” and is planned to be completed in 2010. Once that work has been done, the restoration process can be completed in 2011, thus spreading the project expenses out over a period of two years. At a later date it is also recommended that a protective shelter be constructed to house the locomotive as the most effective way to maintain it in the long term and minimize the impact of outside forces such as weather and vandalism.

In order to ensure an acceptable level of community involvement and support, it is also recommended that Council enter into a Stewardship Agreement with the Southern Ontario Locomotive Restoration Society (SOLRS), a volunteer-led organization recognized for the significant work it has done restoring and operating historic locomotives in various locations throughout Ontario.

Such a Stewardship Agreement offers the most effective approach to take for a number of reasons, including the fact that the ‘Engine 1095 Restorers’ group made the decision to incorporate as a local chapter of SOLRS earlier this year. This alignment with SOLRS is significant because it will help build momentum and capacity for the project and provide the local chapter with the support needed to access additional expertise, to build its membership and to solicit community support through fundraising initiatives that can be used to help defray project costs.

Entering into a Stewardship Agreement with SOLRS is also advisable because it provides a framework that will ensure that “The Spirit of Sir John A.” is restored in the most appropriate manner possible. It will also help to clarify the roles and responsibilities of staff and volunteers working on behalf of this project; provide access to specialized expertise, labour and materials; and reduce the overall project costs by collaborating with a volunteer-run organization with a proven track record to raise funds, obtain in-kind donations and complete the restoration work expertly and appropriately.

**RECOMMENDATION:**

THAT the Mayor and Clerk be authorized to execute a Stewardship Agreement acceptable to the Director of Legal Services with the Southern Ontario Locomotive Restoration Society (SOLRS) to facilitate the restoration of “The Spirit of Sir John A.” in the short-term as well as for its on-going maintenance and care in the long term; and

THAT the Mayor and City Council approve the allocation of additional funds in the amount of $642,500 to be funded from the Municipal Capital Reserve Fund through debt financing to complete the relocation and restoration of “The Spirit of Sir John A.” within Confederation Park.
AUTHORIZING SIGNATURES:

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

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

CONSULTATION WITH THE FOLLOWING COMMISSIONERS:

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Consultation</th>
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</thead>
<tbody>
<tr>
<td>Terry Willing</td>
<td>Community Development Services</td>
<td>N/R</td>
</tr>
<tr>
<td>Denis Leger</td>
<td>Corporate Services</td>
<td>✓</td>
</tr>
<tr>
<td>Jim Keech</td>
<td>President and CEO, Utilities Kingston</td>
<td>N/R</td>
</tr>
</tbody>
</table>

*(N/R indicates consultation not required)*
OPTIONS/DISCUSSION:

Kingston’s most significant, and most photographed, symbol of its industrial past is the former CPR locomotive No. ‘1095’ built by the Canadian Locomotive Company Ltd. in Kingston in 1913. After many years of service the 1095 was rescued from the breakers by the Kingston JayCees in 1966 and repainted in the Canadian Locomotive Co Ltd. shops. Subsequently it was gifted to the City of Kingston in celebration of Canada’s Centennial in 1967 and put on public display using an existing piece of track located behind the old Kingston & Pembroke Railway Station in front of City Hall. Although not a railroad custom, the 1095 was re-named ‘The Spirit of Sir John A.’ at that time in recognition of the important link between Kingston, Canada’s first Prime Minister and the expansion of rail service across the country that was central to the realization of the “National Dream”.

As one of the largest artifacts within the civic collection, the prominent location and physical appearance of the 1095 is extremely important because it represents Kingston’s industrial past and the many skilled craftsmen who built the locomotive as well as the significance of the Canadian Pacific Railways and the role it played in nation building. For over 40 years the 1095 has also functioned as an important tourist attraction and its central location within the City has made it one of the most recognized and photographed landmarks in Kingston. For these reasons “The Spirit of Sir John A.” has come to symbolize many things – the importance of the locomotive industry to the history and economy of Kingston, the expansion of rail service across the country and its impact on Canada and the importance of Sir John A. Macdonald as a local and national political figure who founded the CPR and helped to shape this country.

More importantly, however, “The Spirit of Sir John A.” exists as a symbol of civic pride.

Historical Significance:

The presence of the 1095 in Kingston provides a crucial link to the City’s industrial past having been built by the Canadian Locomotive Company Ltd. (CLC), formerly located on the Kingston waterfront. For 114 years the CLC (and its many predecessors and successors) was a major supplier of locomotives to the CPR, delivering nearly one-third of its fleet over a number of decades. During the course of its history the CLC built approximately 3,000 steam, electric and diesel engines making it Canada’s second largest commercial builder at the time, a long and productive history that ended in 1971 when the CLC was demolished.

The 1095 was one of 25 such models built by the CLC for the CPR and made its debut in 1913. Initially it was put into service out of Winnipeg and then Southern Ontario before completing its service life out of Montreal in 1960 when steam locomotives fell out of favour and many branch lines were closed. As a symbol of 19th century technology and industry the continuing existence of the 1095 points to a significant period in Kingston and Canada’s history that demands to be preserved and maintained. It also helps to illustrate a significant aspect of Kingston’s history by positioning it as an important political and industrial hub.

Contemporary Context:

The 1095 was presented to the City of Kingston as a Centennial gift and renamed “The Spirit of Sir John A.” by the Kingston JayCees in 1966. It’s location in front of City Hall is significant because that part of the City originally functioned as a train yard from 1885 until the 1960s. Its placement on an original piece of track adjacent to the former Kingston & Pembroke Railway Station is also significant because it accurately represents the history of the site that provided a crucial harbour/rail interface.

Since that time “The Spirit of Sir John A.” has become an iconic symbol of Kingston but, unfortunately, it has also suffered due to a lack of attention, with little consideration paid to regular maintenance beyond the occasional coat of paint and the addition of a wrought iron fence. Over the years pieces of the locomotive have been removed or gone missing, it has been vandalized and it has also been subject to the elements. As a result it has fallen into a general state of disrepair and is so badly rusted in...
some places that the structural integrity of the locomotive has been compromised. Nature has also asserted itself with moss and weeds growing out of various crevices and sprouting up through the wheels.

In the summer of 2009 the locomotive received some superficial attention when a group of volunteers working with staff from Cultural Services spruced up both the locomotive and the site. At the time weeds were removed and fresh pebble ballast was spread over the tracks. The locomotive was also pressure washed and modest repairs were made to certain elements, including the handrail that had come loose. The struts that had been welded to the train to help secure the fence were also removed, improving the overall look of the locomotive. In spite of these minor repairs the locomotive remains in dire need of restoration in order to secure its structural integrity and protect it from the impact of weather and vandalism but, more importantly, to retain its historical significance and reassert its value as a featured landmark and tourist attraction.

**Current Conditions:**

While the exterior of the locomotive has been repainted from time to time, it appears that no other measures were taken to help preserve the locomotive when it was taken out of service or when it was put on display. As a result both the water tank and the coal storage sections of the tender, which are riveted steel structures, have suffered extensive and significant corrosion. In recent years it was also identified that the boilers and cylinders were insulated with asbestos covered with steel sheeting. As a result the asbestos was removed in order to resolve any concerns, a requirement that involved the removal of large sections of steel cladding that were never replaced. This action significantly altered the look of the 1095 and seriously undermined its structural integrity as well as the accuracy of its historical appearance.

Of particular concern, however, is the fact that the original wooden ties that support the locomotive have rotted and the rails are no longer secure. As a result the southeast corner of the tender is sinking, a fact that lead a group of local volunteers to identify for Council that this might constitute a safety concern that could result in the locomotive starting to list and, potentially, tip over in time.

**Assessment of the Initial Survey of Findings and Recommendations:**

On September 19, 2007 an initial Survey of Findings and Recommendations regarding “The Spirit of Sir John A.” was submitted to Council by a volunteer-led group of interested citizens and engineers who referred to themselves as the ‘Engine 1095 Restorers’. At the time the Survey was undertaken by a core group of five volunteers who were qualified to do the work by virtue of their experience in locomotive manufacturing and maintenance as well as their involvement in railroad and local history groups. With the approval of the City’s Culture and Heritage Division, they submitted their Survey of Findings and Recommendations that:

- offered an overall assessment of the locomotive and tender;
- argued that it was worthy of restoration;
- proposed a course of action; and
- provided a budget.

As part of this Survey of Findings and Recommendations the budget identified that Council would need to contribute a total of $170,000 to the project and that the volunteer-led group would fundraise an additional $170,000 to complete the project as outlined. As a result of this submission Council passed the following motion:

**THAT** the Kingston Municipal Heritage Committee endorse and recommend that Council recognize the work of an ad hoc group of interested citizens and engineers known as the ‘Engine 1095 Restorers’;
THAT the Committee believe the restoration of the historic appearance of Engine 1095 ‘The Spirit of Sir John A.’ is a worthy item and request that Council direct staff to consider the inclusion of an allocation of $170,000 for this restoration over the next five years, as required.

As indicated, the report identified that the volunteer-led group would fundraise $170,000 toward the restoration of the locomotive to match the $170,000 requested from City Council for a total project budget of $340,000. In developing and presenting this budget it was also assumed that the work could be completed without involving City staff and by relying on volunteer labour and the in-kind donation of materials in order to complete the work. Additionally all the ancillary costs associated with completing a project of this complexity were not captured, including project management and administration fees; consultant and assessment fees; development charge, building permit and site plan approval fees; and any costs associated with managing the site itself within Confederation Park.

Following the submission of this initial Survey of Findings and Recommendations the proposed project failed to progress for a number of reasons, including the loss of a key volunteer and changes in City staff. Following this period of disruption a subsequent Information Report was submitted by staff to Council in January 2009 that outlined renewed action on the part of Cultural Services working in collaboration with the remaining volunteers who continue to comprise the volunteer ‘Engine 1095 Restorers’ group. This report outlined the necessary steps, studies, assessments, consultations, timelines and budget needed to relocate, restore and shelter the 1095 by 2013 which marks the 100th anniversary of the locomotive.

This report also identified that the most pressing issues to be addressed were the current condition of the locomotive and the replacement of the supporting structure that requires the construction of a new, purpose-built foundation. The report also identified two possible locations within Confederation Park and favored the option of moving the locomotive 10 meters south of its current location, a recommendation based on an historical precedence that also helps to maintain the high profile of the locomotive within the park. Also, in order to preserve and maintain the integrity of the locomotive, the report identified the need to construct a shelter to protect the locomotive and minimize the impact of weather and vandalism.

Mission Statement:

The purpose of this project as proposed is to restore “The Spirit of Sir John A.” to its historic appearance and to provide for its long term preservation and maintenance for the benefit of the Kingston community and visitors to the area. In order to complete this project in a timely and cost effective manner it has been identified that it will be necessary to initiate a two-stage project as follows:

1. Relocate the locomotive to a new, purpose-built foundation; and
2. Restore the locomotive to its historic appearance.

The relocation of the locomotive is deemed to be a necessary first step in order to stabilize “The Spirit of Sir John A.” and is planned to be completed in 2010. Once that work has been done then the restoration process can be completed in 2011, thus spreading the project expenses out over a period of two years. At a later date it is also recommended that a protective shelter be constructed to house the locomotive as the most effective way to maintain it in the long term and minimize the impact of outside forces such as weather and vandalism.

In order to ensure a successful outcome, it is important that the two-stage project be completed by the end of 2011 and that a shelter is built to house the locomotive in advance of 2013 that marks the 100th anniversary of the building of the 1095. This will also ensure that “The Spirit of Sir John A.” is presented at its best when the bicentennial of Sir John A. Macdonald’s birth is celebrated in 2015.
Performance Specs:

In preparing for the restoration of “The Spirit of Sir John A.” it is important to note that the locomotive has not been operational since it was put on display in 1966. It is the opinion of the ‘Engine 1095 Restorers’ working in collaboration with staff and the project consultants that the restoration not preclude the possibility of making the locomotive fully operational again at some point in the future. The main aim of any restoration project involving industrial artifacts should be to retain as much as possible the existing machinery in order to preserve its unique historical features and functions. As a general rule, the restoration of a large industrial artifact should be managed so that it appears as it did when it was operational unless that is not possible for reasons that can be appropriately justified. Auxiliary systems form part of the history and authenticity of the artifact so a restoration project also should be respectful of the original designs, materials and functions as well.

For the purposes of this project it is intended that the restoration will include a complete documentation of the locomotive in its current state and it will also strive to retain the original fabric of its construction wherever possible. Any re-fabrication of the structure required will be completed in a way that replicates the original design and using methods and materials appropriate to the period where possible. In this regard the restoration work will maintain and respect the historical fabric and construction of the locomotive as much as possible.

Proposed Project Phases:

As outlined in the Mission Statement it is proposed that this project will consist of a two-stage project as follows:

Phase 1 – Relocation, including Consultation, Approvals, Construction and Relocation

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Activity Description</th>
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<tbody>
<tr>
<td>Summer 2008</td>
<td>Stage One Archaeological Assessment of Confederation Park completed</td>
</tr>
<tr>
<td>April 2009</td>
<td>Public meeting with concept art and location options to gain public feedback and input</td>
</tr>
<tr>
<td>May 2009</td>
<td>Pre-consultation with the KMHC</td>
</tr>
<tr>
<td>Dec 2009</td>
<td>Consultants commissioned to develop relocation and restoration report</td>
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<tr>
<td>Jan 2010</td>
<td>Geotechnical, archaeological and environmental assessments of proposed location</td>
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<tr>
<td>April 2010</td>
<td>Recommendation Report submitted to City Council</td>
</tr>
<tr>
<td>June 2010</td>
<td>Approval of relocation and restoration plan by City Council and the KMHC</td>
</tr>
<tr>
<td>June 2010</td>
<td>Site plan approval/permits</td>
</tr>
<tr>
<td>Sep 2010</td>
<td>Construction of purpose-built foundation, including archaeological assessment of foundation plasters</td>
</tr>
<tr>
<td>Oct 2010</td>
<td>Relocation of locomotive and tender</td>
</tr>
<tr>
<td>Oct-Dec 2010</td>
<td>Landscape around new location and previous site of the locomotive</td>
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Phase 2 – Restoration of “The Spirit of Sir John A.”

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Activity Description</th>
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<tbody>
<tr>
<td>April-Oct 2011</td>
<td>Restoration of the locomotive</td>
</tr>
<tr>
<td></td>
<td>(Completed under the auspices of a Stewardship Agreement with the Southern Ontario Locomotive Restoration Society based on specifications developed by ERA Architects Inc.)</td>
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Phased Project Budget

Moving forward the budget for this proposed project consists of a combination of approved and requested funds and is based on upset maximums. It also includes a 10% contingency fund. What are not included are the funds that have the potential to be raised by the former volunteer ‘Engine 1095 Restorers’ group functioning as a local chapter of the Southern Ontario Locomotive Restoration Society (SOLRS).
An allowance of $25,000 has been included to allow for costs that may arise as a result of unforeseen Designated Substance Review and Health & Safety issues. This allowance would only be used if absolutely necessary and any unused allowance would be returned to the Municipal Capital Reserve Fund.

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<thead>
<tr>
<th></th>
<th>Approved</th>
<th>Requested</th>
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<tr>
<td>Phase 1 – Relocation</td>
<td>$170,000.00</td>
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<td>Phase 2 – Restoration</td>
<td>$322,500</td>
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<td><strong>Designated Substance/Health &amp; Safety Allowance</strong></td>
<td>$25,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$170,000.00</strong></td>
<td><strong>$642,500</strong></td>
<td><strong>$812,500</strong></td>
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**Work Completed to Date:**

Once it was determined that the construction of a purpose-built foundation would be required to stabilize “The Spirit of Sir John A.” it proved necessary to complete a number of studies and assessments and to engage a series of consultants and stakeholders before any restoration work could begin. To date, much of this work has been completed making it possible to proceed with the relocation and restoration of the locomotive in accordance with all existing procedures, policies and protocols as required. Costs for this work were disbursed from the funds ($170,000) previously approved by Council. This proved necessary as the locomotive could not be restored without doing this procedural work first, a requirement that had not been captured in the budget prepared as part of the initial Survey of Findings and Recommendations.

Included in the work completed to date are the following:

**Studies and Assessments**

- Heritage Impact Statement of Confederation Park
- Stage 1 Archaeological Assessment of Confederation Park
- Project pre-consultation with the KMHC
- Geotechnical Testing of proposed new location for “The Spirit of Sir John A.”
- Environmental Assessment of “The Spirit of Sir John A.”
- Archaeological Assessment of the proposed new location for “The Spirit of Sir John A.”

**Consultations**

- ERA Architects – Public Meeting – Concept shelter design options and proposed new location (April 2009)
- Internal staff meeting – KEDCO, BIA, Chamber of Commerce (April 2009)
- Pre-Consultation – KMHC – Concept shelter design options and proposed new location (May 2009)
- ERA Architects/SOLRS – Restoration Assessment – (December 2009)
- Ontario Ministry of Culture – Archaeological requirements for the new foundation location (December 2009)
- Planning - Internal discussions – Site plan approval (January 2010)
- Project Management – Real Estate and Construction Services – Foundation and relocation (January 2010)
- Parks Planning – Internal discussions – Implications for Parks and Recreation Master Plan (February 2010)
Community Involvement and Support:

Along with the procedural work that it has been completed to date, staff have been working with the volunteer ‘Engine 1095 Restorers’ group to foster community involvement and support for this project.

‘Engine 1095 Restorers’

Perhaps what is most significant about this project is the fact that it was initiated by an enthusiastic and dedicated group of interested citizens who value the “The Spirit of Sir John A.” as an example of 19th century technology and industry as well as an important symbol of civic pride. Initially working under the auspices of the Kingston Division of the Canadian Railroad Historical Association, it is as a result of their interest and efforts that City Council demonstrated a willingness to support the restoration of the locomotive for current and future generations of residents and visitors.

Southern Ontario Locomotive Restoration Society (SOLRS)

In an effort to build further support for this project, the volunteer ‘Engine 1095 Restorers’ group recently made the decision to incorporate as a local chapter of the Southern Ontario Locomotive Restoration Society (SOLRS). This alignment with SOLRS based in S.T. Thomas, Ontario was a very important step to take at this juncture in the project because it helps to build momentum and capacity. SOLRS itself is a volunteer-led group with a membership of approximately 250 people that is working toward becoming a world-renowned organization dedicated to the preservation and operation of steam locomotives. They are already recognized for the significant work they have done restoring and operating historic locomotives in various locations throughout Ontario. Most recently this includes a project in Windsor, Ontario where SOLRS restored the ‘5588’, a locomotive very similar to the 1095 that is also located in a high profile public park along the City’s waterfront.

An alignment with SOLRS is also significant because it provides the local chapter with the support needed to access additional expertise, to build its membership and to solicit community support through fundraising initiatives. It also provides the local chapter with third party liability coverage for any work done by its members and volunteers on restoration projects. Part of SOLRS’ mandate also focuses on the importance of public education that will help the newly-formed local chapter to build awareness, enthusiasm and funds through programming, including talks, tours, special events and provision of web-based resource material.

SIFE (Students in Free Enterprise)

Through existing contacts at St. Lawrence College the volunteer ‘Engine 1095 Restorers’ group worked with graphic design students to devise a logo and develop a poster to promote “The Spirit of Sir John A.” and their proposed restoration project. This initial relationship has now evolved into a partnership with the SIFE Program that provides opportunities to work with leaders in business and higher education to mobilize students to make a difference in their communities and to develop the skills necessary to become socially responsible business leaders.

At St. Lawrence College students are currently facilitating a series of competitions involving secondary school students that will direct 75% of the proceeds raised toward the restoration of “The Spirit of Sir John A.” as part of an initiative they have called “Engine o f E ntrepreneurship”. In 2010 the winning school was announced during the First Capital Days Program in Kingston’s Market Square in mid-June. The partnership between the volunteer ‘Engine 1095 Restorers’ group and this program is significant on a number of levels not only because it will help to foster public awareness and raise much needed funds, but also because it speaks to a kind of community involvement and support that engages young people in this project as well.
Stewardship Agreement:

In order to build on the community involvement and support already achieved, it is recommended that Council once again show their support for the ‘Engine 1095 Restorers’ group by formally acknowledging their formation of a local chapter of the Southern Ontario Locomotive Restoration Society (SOLRS) and entering into a Stewardship Agreement with SOLRS to complete the necessary restoration work. This is advisable at this juncture in the project because it would provide a framework within which to achieve the following:

- Recognize the former ‘Engine 1095 Restorers’ group as a charitable organization with increased capacity;
- Clarify the roles and responsibilities of staff and volunteers working on behalf of this project;
- Gain access to specialized expertise, labour and materials appropriate to this project;
- Ensure that the locomotive is restored appropriately;
- Benefit from SOLRS ability to provide third party liability coverage for members and volunteers;
- Reduce overall project costs by collaborating with a volunteer-run organization with a proven track record; and
- Develop a collaborative maintenance plan that will help to ensure the future preservation of the locomotive.

Using the model of a Stewardship Agreement will enable the City to take advantage of a unique and cost effective partnership between the City of Kingston and a volunteer-run organization with a proven track record. The success of this arrangement will also depend upon adherence to the appropriate procedures, policies and protocols as required as well as the involvement of professional consultants and services as needed. This will be the responsibility of staff who will work to ensure that the project is managed appropriately while also working in collaboration with SOLRS to leverage their experience and expertise as needed to facilitate the restoration of the locomotive and support its on-going preservation and maintenance.

Volunteer Support for the Restoration:

When the volunteer ‘Engine 1095 Restorers’ group submitted their Survey of Findings and Recommendations to Council in 2007 they envisioned a large proponent of volunteer work and expertise being involved in the restoration of the locomotive. As this project has developed relationships have been developed and connections made to support this recommendation with the introduction of SOLRS as a volunteer-led organization with particular expertise in this field. To date, this group and its associated chapters have restored six locomotives similar to “The Spirit of Sir John A.” in communities across Ontario. Taking advantage of this experience and expertise, the ‘Engine 1095 Restorers’ have decided to form as a local chapter of SOLRS as the best way to approach the restoration of the locomotive. As such the restoration budget proposed reflects the fact that the project relies on the fact that the majority of the work will be done by SOLRS with the support of the local chapter. Using SOLRS to do this work rather than employing local contract labour will result in an estimated cost savings of $117,000.

Designated Substance Review:

The City will commission a modified Designated Substance Review (DSR) to identify the presence of any designated substances that may be present on or within the locomotive. The results of this review will be used to outline specifications for any work that needs to happen on or around the locomotive and the site. The DSR will also be used to identify remediation work to be carried out by licensed contractors versus work that can be done by SOLRS in accordance with all necessary safety practices and protocols.

Next Steps
Following approval by Council, work can begin immediately to complete the relocation of “The Spirit of Sir John A.” in 2010 and to begin the restoration work that is planned to start in 2010 and be completed in 2011.

**Phase 1 – Relocation, including Consultation, Approvals, Construction and Relocation**

- **May 2010**: Consultants commissioned to complete “as built” drawings for the purpose-built foundation
- **July 2010**: Final project approval by City Council and KMHC, also Site Plan Approval completed
- **July 2010**: Stewardship Agreement signed with SOLRS
- **Aug 2010**: Building permits approved
- **Aug 2010**: RFP issued for contractor to construct purpose-built foundation and contractor to move locomotive
- **Sept-Nov 2010**: Construction of purpose-built foundation, including archaeological assessment of foundation pilasters
- **Nov 2010**: Relocation of locomotive and tender
- **Oct-Dec 2010**: Completion of landscaping around new location and previous site of the locomotive

**Phase 2 – Restoration of “The Spirit of Sir John A.”**

- **April-Oct 2011**: Restoration of the locomotive
  - (Completed in partnership with the Southern Ontario Locomotive Restoration Society based on specifications developed by ERA Architects Inc.)
- **Oct 2011**: Development of maintenance plan
  - (Completed in partnership with the Southern Ontario Locomotive Restoration Society)

**EXISTING POLICY/BY LAW:**

Given the nature of this project it has been necessary to adhere to Provincial policy guidelines, including the Ontario Heritage Act and Planning Act (Ontario). Given the prominent location and significance of the “The Spirit of Sir John A.” additional resources have also been referenced, including the Downtown Action Plan and the Parks and Recreation Master Plan, City of Kingston.

**NOTICE PROVISIONS:**

There are no notice provisions with this report.

**ACCESSIBILITY CONSIDERATIONS:**

The relocation and restoration of “The Spirit of Sir John A.” will provide an opportunity to make this significant asset as accessible as possible through the development of the site in ways that improve on existing conditions. Pathways will be designed to improve access and these plans will be developed in accordance with the Accessibility Consultation Policy. The final designs will also be prepared according to the 2009 City of Kingston Facility Accessibility Design Standards.

**FINANCIAL CONSIDERATIONS:**

The costs associated with this project are outlined in the body of the report. The capital costs associated with the relocation and restoration of “The Spirit of Sir John A.” is estimated at $787,500 including the $170,000 already committed by Council. Of this amount $465,000 will be required to relocate the ‘1095’ in 2010 and $322,500 will be required to complete the restoration of the locomotive in 2011. It is recommended that this amount be financed through debt financing through the Municipal Capital Reserve Fund.
CONTACTS:

Cynthia Beach, Commissioner, Sustainability and Growth 613-546-4291, ext. 1150
Brian McCurdy, Cultural Director 613-546-4291, ext. 1354
Colin Wiginton, Manager, Cultural Services 613-546-4291, ext. 1357
Steve Dickey, Deputy Treasurer, Financial Services 613-546-4291, ext. 2370

OTHER CITY OF KINGSTON STAFF CONSULTED:

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Lanie Hurdle, Director, Parks and Leisure Services 613-546-4291, ext. 1231
Speros Kanellos, Director, Real Estate and Construction 613-546-4291, ext. 3133
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EXHIBITS ATTACHED:

Exhibit “A” – Site Plans
Exhibit “B” – Restoration Strategy and Outline Specification
Exhibit “C” – Restoration Schematic Drawing
East (Park) Elevation
Scale 1:200
A03

West (Ontario St) Elevation
Scale 1:200
A03
THE SPIRIT OF SIR JOHN A. LOCOMOTIVE RESTORATION, PHASE 2
RESTORATION STRATEGY AND OUTLINE SPECIFICATION
MARCH 25, 2010

The principles that have developed for conserving heritage buildings are applicable also to operating industrial artifacts and machinery, such as beam engines or moving machinery such as cars, traction engines or steam locomotives. No specific conservation charter exists in Canada for industrial heritage conservation.

The fundamental issue underlying all conservation approaches is the balance between preserving existing fabric and reasserting the design intent. In the case of retaining an industrial artifact in operational condition, the latter principle becomes more important.

In the case of “The Spirit of Sir John A.” the locomotive has not been operational since it became a static display in 1967, but it is the wish of Cultural Services that its conservation should not preclude making it fully operational again in the future.

In Ontario the two heritage guides that are most commonly used, and based on the highest standards defined in international architectural heritage charters, are the Parks Canada Standards and Guidelines for the Conservation of Historic Places in Canada and the Ontario Ministry of Culture’s Ontario Heritage Tool Kit. These principles are summed up in the Ontario Heritage Trust’s “Eight Guiding Principles in the Conservation of Historic Properties”. As adapted for a steam locomotive they are as follows:

Preamble

The following guiding principles are ministry statements in the conservation of historic properties and are based on international charters, which have been established over the century. These principles provide the basis for all decisions concerning good practice in architectural conservation around the world. Principles explain the "why" of every conservation activity and apply to all heritage properties and their surroundings.

1. RESPECT FOR DOCUMENTARY EVIDENCE:
   Do not base restoration on conjecture.
   The locomotive should be documented before any process occurs in its conservation.

   Fortunately original design drawings of this class of locomotive are available to confirm the accuracy of previous alterations and to guide future repair and restoration work.
2. **RESPECT FOR THE ORIGINAL LOCATION:**
Do not move buildings unless there is no other means to save them.

This principle does not apply to moving machinery.

3. **RESPECT FOR HISTORIC MATERIAL:**
Repair/conserve - rather than replace building materials and finishes, except where absolutely necessary.

The main aim of conservation should be to retain, and to maintain as much as possible the existing machinery in order to preserve its historical and unique qualities. As a general rule, the locomotive should be repaired to the same appearance that it had when it was last operated, unless and until decisions are made otherwise. All auxiliary systems form part of the history and authenticity of the locomotive.

Minimal intervention maintains the historical content of the resource.

4. **RESPECT FOR ORIGINAL FABRIC:**
Repair with like materials.

Protect and repair the original fabric of the locomotive as far as possible, rather than replace it, to maintain the link with the original makers and their craftsmanship, provided that repair ensures the locomotive’s design and structural integrity, which is the basis for its future potential operation.

Proper repairs will ensure that the locomotive survives as a truly representative example that future generation can study, learn, experience and enjoy, when artifacts of the Steam Age have become even more rare.

5. **RESPECT FOR THE ARTIFACT’S HISTORY:**
Do not restore to one period at the expense of another period.

Adaptation to operational needs is part of the history of technological innovation and evolution. The enlargement of the coal box, for example, to extend the locomotive’s operating range is part of its story, which restoration to its original condition would sweep away.

6. **REVERSIBILITY:**
Alterations should be able to be returned to original conditions. This conserves earlier artifact design and technique.

Any changes made to the locomotive as part of its current life as a static display should be reversible without damaging original parts, to allow for if to be brought up to an operational standard again.
7. **LEGIBILITY:**
New work should be distinguishable from old.

This principle has limited application for operating machinery. It is possible to make subtle distinctions for non-operating elements or components, such as cab seating, so that no-one is deceived into believing a restored item is original. For operating parts or equipment, replication needs to exactly match the original for functional reasons, although of necessity salvaged replacement parts may be subtly different from the originals.

8. **MAINTENANCE:**
With continuous care, future restoration will not be necessary.

With regular upkeep, major conservation projects and their high costs can be avoided. The true nature of restoration of any sort of machinery is to achieve its working order.

**OUTLINE SPECIFICATION**

**GENERAL**

**Repair**

- Repair existing fabric to match original structural and functional characteristics where technically and economically feasible
- For example,

**Replacement**

- Where the replacement of parts is necessary, it should be done "in-kind"
- Use the same materials, methods of manufacture and fastening as the originals for replacements
- Make new parts as faithful operating copies of the originals as if they were period replacement parts, where possible, and as facsimiles in outward appearance where functional parts are not feasible
- Make static replacement parts, such as the boiler cladding, in steel plate to match the original type (or better) and thickness, so that such replacements will be usable if the locomotive is restored to operational status
- If no original parts survive to be used as a pattern, then base the design of new parts on site evidence, on original design drawings, failing which drawings of a closely related class of locomotive from the same manufacturer, or failing that, on traditional engineering methods and practices of that time period.

**Salvage and Storage**

- Preserve and store separately any old parts removed from the locomotive for replacement, as they may be of historical and technical importance.
LOCOMOTIVE

1. **Replacement of Boiler cladding**
   - Match original plate thickness
   - Preform plate to profiles to suit boiler and firebox
   - Butt joint plate sections with \( \frac{1}{4} " \) expansion gap and cover with plate strap approximately 2” wide to match original
   - Secure cladding with mechanical fasteners to match original
   - Prepare and paint cladding with heat resistant, non-epoxy paint, primer plus 2 finish coats

2. **Replacement of Cylinder Cladding**
   - Follow specification for boiler cladding

3. **Removal of sand dome and pressure dome insulation**
   - Allow for possible removal of asbestos insulation beneath domes
   - If present, comply with the requirements of the Ontario Regulation 345 for the removal and disposal of asbestos insulation as a hazardous material

4. **Opening and refurbishing of smoke box**
   - Ease smoke box door hinges and seatings to make door operational for inspections and interpretation
   - Clean out rust and treat smoke box with rust consolidator

5. **Provision of smoke stack closer**
   - Fabricate closer from sheet steel as removable cap
   - Detail edge so that it is not visible from the ground
   - Fasten with machine screws for later possible removal
   - Paint to match new boiler cladding

6. **Provision of 1 buffer beam**
   - Fabricate beam to match existing dimensions from softwood
   - The large size will probably require a West Coast species, such as Douglas Fir
   - Match existing fastening of beam

7. **Replacement of cow catcher**
   - Remove existing catcher, which is not original, and discard
   - Fabricate new catcher in welded steel to match pattern in original design drawings or used in same or similar class of locomotive
   - Paint to match overall bodywork

8. **Replacement of cab wood floor**
   - Investigate details of original floor and type of wood used
   - Fabricate from wood species specified in original design drawings or used in same or similar class of locomotive
• Fasten to original points in cab
• Paint or treat wood to match original
• Prepare shop drawings of proposed benches for Owner’s and Architect’s review

9. Replacement of cab wood benches
• Investigate details of original benches and type of wood used
• Fabricate from wood species specified in original design drawings or used in same or similar class of locomotive
• Prepare shop drawings of proposed benches for Owner’s and Architect’s review
• Fasten to original points in cab
• Paint or treat wood to match original finish

10. Cab access stairway
• Shop fabricate access stairway and landing to approved design drawings from galvanized steel and with mechanical fasteners
• Stairway will be designed to be self supporting, will not bear on locomotive and be movable to avoid unauthorized access
• Provide shop drawings for construction and erection details
• Arrange for installation by metal workers
• Paint stairway to distinguish from locomotive, but not to emphasize its presence

11. Provision of new cab closure screen
• Shop fabricate transparent framed screen to close cab for security with access door to approved design drawings
• Screen will be designed with aluminum framing and polycarbonate glazing to be light weight, demountable for special occasions, permit ventilation of the cab when closed and be distinguishable as a modern intervention
• Prepare shop drawings of proposed benches for Owner’s and Architect’s review
• Secure screen to new fastening points. Minimize the visual impact of these fastenings

12. Restoration of locomotive plate metal bodywork
• Match original plate metal thickness
• Match riveted repairs to tender, carried out by the original workshop, as far as possible
• Make patches rectilinear and true, and limit visual impact by combining small adjacent patches into one patch
• Secure cladding with mechanical fasteners to match original
• Prepare and paint with non-epoxy paint, primer plus 2 finish coats

13. Reconditioning of motion, rods and valve gear
• This is a long-term objective after the locomotive is restored and its condition stabilized

14. Repainting of locomotive frame and bodywork
• The underlying layers of the paint build-up on the locomotive predate the 1980's and may contain lead-based compounds
• Conduct tests to determine lead content of paint
• Determine whether existing paint is loose or could mostly be encapsulated by a suitable new paint coating
• Use scrapers, abrasive paper, wirebrushing or other hand impact tools to remove loose or scaling paint, non-adhering rust and other foreign matter.
• If lead is present, comply with the requirements of the Ontario Regulation 345 for the removal, protection of the site and disposal of paint as a hazardous material
• Prepare for painting by removing oil, grease or other soiling with solvents and handwork
• Paint frame and bodywork with non-epoxy paint, primer plus 2 finish coats

15. Replacement of marker lights
• Replace with salvaged lights or accurate replicas

16. Replacement of cab gauges, regulator, fire door levers
• Replace with salvaged components or accurate replicas

17. Replacement of cab wood windows and frames
• Investigate details of original wood window frames and sash, and type of wood used
• As far as possible, repair existing by piecing in with new wood and low modulus epoxy fillers formulated for woodwork
• Where necessary fabricate new elements from wood species specified in original design drawings or used in same or similar class of locomotive
• Prepare shop drawings of proposed new elements for Owner’s and Architect’s review
• Install and fasten new frames and sash to match original methods
• Paint or treat wood to match original finish

18. Replacement of brake pressure lines
• Replace brake lines to rear driving wheels on both sides of locomotive to match existing at front of locomotive
• Fabricate from steel and make potentially fully operational
• Install and secure by original methods

TENDER

20. Removal and replacement of coal box wood extension
• Match size and wood species for boards and framing of extension to existing
• Reconstruct coal box to match existing in size, configuration and details
• Paint frame and bodywork with non-epoxy paint, primer plus 2 finish coats

21. Restoration of coal box plate metal bodywork
• Remove fasteners between coal box and frame and remove to adjacent location for repair
• Match original plate metal thickness
• Match riveted repairs to tender, carried out by the original workshop, as far as possible
• Make patches rectilinear and true, and limit visual impact by combining small adjacent patches into one patch
• Secure cladding with mechanical fasteners to match original
• Prepare and paint with non-epoxy paint, primer plus 2 finish coats

22. Rebuilding of wood deck under coal box of tender

Coal box deck
• Match existing softwood species, dimensions and method of fastening of existing
• Use pressure-treated wood for replacement deck
• Establish strength characteristics for softwood species in 1913. Maintain dimensions and alter wood species to hardwood if deck is not sufficiently strong
• Use Eastern Hard Maple as hardwood alternative
• Secure deck elements together and fasten to tender frame with fasteners to match existing

23. Repair of frame of tender
• Examine frame and identify areas of rust and potential loss of strength
• Coordinate with structural consultant and await repair instructions
• Repair frame under project cash allowance
• Repairs may require welded steel plate

24. Repainting of tender
• The underlying layers of the paint build-up on the tender predate the 1980's and may contain lead-based compounds
• Conduct tests to determine lead content of paint
• Determine whether existing paint is loose or could mostly be encapsulated by a suitable new paint coating
• Use scrapers, abrasive paper, wirebrushing or other hand impact tools to remove loose or scaling paint, non-adhering rust and other foreign matter.
• If lead is present, comply with the requirements of the Ontario Regulation 345 for the removal, protection of the site and disposal of paint as a hazardous material
• Prepare for painting by removing oil, grease or other soiling with solvents and handwork
• Paint frame and bodywork with non-epoxy paint, primer plus 2 finish coats

25. Provision of 2 buffer beams
• Fabricate beam to match existing dimensions from softwood
• The large size will probably require a West Coast species, such as Douglas Fir
• Match existing fastening of beam

26. Reconditioning of axle bearings and bogeys
• This is a long-term objective after the tender is restored and its condition stabilized

27. **Repair of springs**
   • This is a long-term objective after the tender is restored and its condition stabilized

End of Specification