Moran Center, Burlington, Vermont: A U.S. EPA Brownfields Sustainability Pilot

By Christopher De Sousa

SITE HISTORY

In the middle of the 19th Century, Burlington, Vermont was one of the largest lumber ports in the nation. As was common practice at the time, extensive filling of the shoreline was conducted in order to create new land to expand industrial activity along the water. Indeed, filling of the waterfront continued well into the 1950s, and was permitted through the state-mandated Public Trust Doctrine because the employment it supported was seen as a major benefit to the public. In addition to lumber processing, Burlington’s waterfront lands supported an array of industrial uses, such as the Moran Generating Plant, built in 1954 to supplement the city’s electric power capacity, and a bulk petroleum facility that until the early 1990s stored millions of gallons of fuel to be shipped in barges through the Hudson River/Champlain Canal system.

By the late 1980s, the filled lands along Burlington’s waterfront had fallen into decay, and the remarkable shore of Lake Champlain became largely inaccessible to the general public. The 2.8-acre Moran Generating Plant site, built on land that had previously housed railroad, lumber, and petroleum businesses, was decommissioned in 1986 and sat idle except for a small sailing center that uses part of it for storage.

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1 Methodological note: Information for this case study was obtained from available project reports and from an interview with the project coordinator. The project is ongoing and the information here is current through June 2011. For any questions, please contact Christopher De Sousa, School of Urban and Regional Planning, Ryerson University, chris.desousa@ryerson.ca. Research assistance provided by Jason Tilidetzke and Kevin Duffy, University of Wisconsin-Milwaukee.

PROJECT VISION

In the late 1980s, the City of Burlington used the Public Trust Doctrine in court as an argument for reclaiming the filled lands along the waterfront for public use. In a noteworthy Vermont Supreme Court ruling, the petroleum storage and rail siding properties were found not to be beneficial to the general public, and the Vermont legislature defined Public Trust Lands as those reserved for: "indoor or outdoor parks and recreation uses and facilities including parks and open space, marinas open to the public on a non-discriminatory basis, water dependent uses, boating and related services." Subsequent to the Supreme Court ruling, the City acquired over 60 acres of waterfront land, including the Moran property, which became the focal point of waterfront revitalization planning efforts. The overall goal of this effort was to make the waterfront "a vital, year-round part of the community, providing safe and environmentally sustainable cultural, recreational, social, and economic opportunities that are accessible to all regardless of income, ability or lifestyle."  

Attention to the site emerged as part of a public process that unfolded over a decade in which the community identified the Moran power plant as a vital piece of a much larger vision for the waterfront. Indeed, the city acquired the Moran plant in 1986 because it was the only place where locals could physically access the water, given that everything else was fenced off. When the Moran plant was about to be decommissioned, it inspired numerous, passionate ideas about the future of the waterfront. It became a symbol of the waterfront and a focal point for community action.

Burlington voters approved the city’s Waterfront Revitalization Plan in 1990, but despite community desires to revitalize the Moran site, the city encountered extreme difficulty identifying a suitable end use. Many ideas were proposed but failed to materialize, including a center for science and arts, an aquarium, a recreation center, a baseball stadium, and a brewery and concert hall. A Request for Letters of Interest in 1993 yielded several proposals, all with inadequate funding or programming plans. The City issued a second request for proposals in 1995, and a proposal by the University of Vermont’s Fleming Museum was selected. After several years of planning, the Fleming chose to not move forward, turning its energy to further development on the main campus. Reasons for failure of past proposals are varied, but seem typical for highly visible brownfield projects aiming to reclaim hulking industrial buildings: i.e., high costs and unrealistic terms related to addressing site conditions, design and engineering, development and parking, and project operation over the long term. After a lively and well-publicized public debate around the creation of a new YMCA and expanded Lake Champlain Sailing Center that failed to materialize, a more robust public consultation process was put into place in order to move the project forward.

The more comprehensive public participation process initiated in 2005 by Burlington’s Community and Economic Development Office (CEDO) involved several steps, commencing with a survey of community desires and redevelopment options. Every household in the City was mailed an “Idea Card,” and from these an Idea Review Committee identified over 30 “Idea Categories” for further exploration. Over 140 citizens attended three public forums in the fall of 2005 to provide feedback on the Idea categories. A survey was also mailed to every household in the city asking residents to rank the Ideas and important factors for redevelopment. The following table is a portion of the survey results highlighting citizen preferences.

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From the information collected, the city generated a Waterfront Advisory Survey: Moran Plant Ballot (dated March 7, 2006) that asked for more specific reuse ideas and about approaches for managing the Moran building. Nearly 10,000 people turned in their ballots. Upon review of the results, the City Council offered seven concepts for further discussion by the community: (1) waterfront park (demolish building and extend Waterfront Park); (2) community and recreation center; (3) community sailing center; (4) outdoor concert band shell; (5) maritime museum; (6) combination of uses with part of the Moran; and (7) combination of uses in the Moran. In September of 2006, the City held a Moran Open House to review the results of the ballot and allow for feedback on the seven concepts.

After synthesizing the results from the intensive two-year public process, the city proposed that a multi-use redevelopment be undertaken. The Mayor set up three groups to develop and assess the Moran redevelopment concept. The Moran Advisory Group, made up of business, citizen, and park committee members, were charged with assessing project feasibility and the public process. The Moran Users Group, made up of organizations that could occupy the building, assisted the Advisory Group with issues involved with tenancy. In addition, the Moran Technical Advisory Committee, made up of city departments, was required to sort through the technical details associated with the project. On March 4, 2008, after over two years of consultation, the process culminated in a town meeting day vote in which Burlington voters approved by a two to one margin an advisory referendum endorsing the proposal for renovating the plant.

Community members and the local government were determined from the outset to incorporate sustainability elements into the project. The Mayor and the City Council Parks, Arts & Culture Committee put forward key principles to guide the redevelopment of the Moran Plant:

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The city has been undertaking environmentally sustainable green building for over 20 years, even before the introduction of the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) green building standards. The community was demanding that things be done better environmentally, and virtually all city projects currently involve green building concepts.

**PROJECT CHARACTERISTICS AND DEVELOPMENT**

The Moran Plant building is about seven stories high and has a gross floor area of 44,142 square feet. The structure is built on a solid reinforced concrete pad located below lake level that allowed water to enter the building for the coal-fired boilers and for cooling of generator components. Most of the interior space consists of rough and neglected industrial infrastructure. The main floor features ceiling heights of approximately 20 feet and few columns impede its use, while the land surrounding the facility is largely undeveloped.

As the project coordinator noted, Burlington Electric, the former owner of the site, did a very good job of decommissioning the property, dealing with waste oils, asbestos, transformers, and most other equipment. That said, the first phase of the project was to assess whether the building could physically support any use. Preliminary building evaluation was initiated in 2006 and the corrective action plan for the building exterior was completed soon after. Interior cleaning and dewatering planning commenced in 2007.
Early on, the Vermont Downtown Program provided CEDO with a grant to conduct geotechnical, structural, environmental, and wetland analyses at the Moran Plant site. A historic building assessment and structural analyses were also completed. The building was found to be historically significant because it is older than 50 years and one of the few remaining buildings typical of coal-fired power plants from that era. The structural assessment found the building to be generally sound and capable of being renovated. A wetlands analysis performed on the property revealed a wetland that had resulted from the removal of a large above ground storage tank in the late 1980s. The investigation found two connected wetland complexes, classified as Class III wetlands, storing 2.7 acre-feet of water.

Much of the brownfields work - contaminant identification, delineation, and initial remediation- is complete, and site-specific standards for remediation of remaining soil contamination have been agreed upon. Remediation work for the remaining asbestos and lead paint in the building’s interior will be finished once final designs have been completed. The Phase I and II Environmental Site Assessments found the presence of lead paint and asbestos in the building. Most asbestos was removed during decommissioning, but traces were still found covering the interior floor and walkways. Vermont Department of Environmental Conservation (VT DEC) agreed to wait for a redevelopment plan before requiring a mitigation plan for the interior.

From the outset, the city and the state worked closely to identify and address short-term risks at the site while the revitalization plan was under development. Shallow soil on site was contaminated with arsenic levels above state standards and polycyclic aromatic hydrocarbons (PAHs) above U.S. EPA’s risk-based guidance level for residential use. Both contaminants are especially high in areas where coal storage and coal conveyor belts were located. Waite Environmental Management in 2006 recommended developing site specific risk-based cleanup levels for shallow soils, taking future use into account. VT DEC agreed to a site-specific arsenic guideline of 35 parts per million (ppm), which limits the area of concern to a portion of the grassy area north of the plant where coal was formerly stored. The city capped the area with clean fill to prevent contact by the public and remove any risk to the lake. The only impact to deeper soil was trichloroethylene (TCE) contamination found at a 16 foot depth at only one location north of the building, where groundwater contamination was also found. Remediation for deeper soil was recommended only if excavation will be proposed on that site as part of future redevelopment activity.

In March of 2008, voters approved the city’s proposed redevelopment plan for the site, and by October of that year members of the Moran Users Group signed Memoranda of Understanding to participate in the project. The project will retain the building shell and create a multi-use facility with public access and accessible activities. Construction and operations will be supported by private and non-profit ventures integrated into the tenant mix.

The site will be designated as an extension of the Waterfront Park, to which pedestrian and other amenities will be linked. An ice rink, water play area and a skate park were proposed for the outside, while the building will continue to house

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12 CEDO 2008, p. 12
the Community Sailing Center, as well as a children’s museum, an indoor rock/ice climbing center, a restaurant, café, fitness center, meeting rooms, a community space, public restrooms, and an observation deck. The project was initially expected to be completed by the summer of 2010, but more comprehensive financial examination (outlined in greater detail below), likely necessitated by the onset of the recession, has delayed the project.

The desire for green elements was extremely important for project proponents and the community. In August 2008, the U.S. EPA selected the Moran Center for a Brownfields Sustainability Pilot program award and provided technical assistance to assess the feasibility of implementing various green building elements into the project, including on-site renewable energy production, energy and water conservation, innovative stormwater treatment techniques, and ecological enhancements. The extremely comprehensive report provides detailed design options for the building and infrastructure design, as well as for the project’s integration with the surrounding uses.13

The project is aiming to obtain LEED Gold certification. According to the CEDO website, in October 2008 Freeman French Freeman, an acclaimed local architecture firm, was hired in a competitive process to provide architectural and engineering services for the Moran project. The award-winning design was approved by the City of Burlington Development Review Board (DRB) on August 2010.

The project is anticipated to contain numerous green building features, including a lake water-cooled water source heat pump system with a high-efficiency condensing boiler heating system, high-efficiency lighting, stormwater management via wetlands restoration and a green roof, public transit connections, and bicycle parking and pedestrian access.

The Waterfront Revitalization Plan addresses the local economy by positioning the plan as a catalyst for economic growth for the city. Burlington’s stated Sustainable Economic Development Strategies include financial and technical assistance to small and large businesses and targeted assistance to employers with livable wage jobs and to businesses playing a key role to downtown vitality. The goal of the project is to create 500 construction and 80 permanent jobs.

Among the most important elements of the project are its community-oriented features. In addition to rehabilitating a derelict property, the project adds numerous community amenities related to public education, community gathering, access, as well recreation and relaxation.

Despite the momentum surrounding the project, the city has acted in a fiscally conservative manner in order to ensure that the project is feasible during this troubled economic climate and for the long term. On April 26, 2010, Burlington’s City Council passed a resolution to appoint a Moran Blue Ribbon Committee that was charged with reviewing the financial structure of the project in terms of how it protects taxpayers during a downturn, the financing model being applied, and the financing plans of the tenants. It was not the task of the committee to evaluate the overall concept for the Moran plant’s redevelopment, but to focus on its financial structure.

Given that the project is community- based, the committee concluded that the $16 million Moran redevelopment project would not be viable under a traditional financing model, but must employ an array of “non-traditional” vehicles in order to be completed successfully. The committee focused on various risks within the project’s scope. The committee felt that environmental risks had been dealt with by the government and its consultants, but worried about the financial risks.

associated with the redevelopment, such as potential cost overruns due to inadequate budgeting, scope, and/or quality changes and hidden conditions, and the failure of the contractor(s) to complete the project. The committee recommended that additional cost estimates be made before construction plans move forward.\textsuperscript{14}

According to the committee’s final report, most of its attention was devoted to the complex financial structure of the proposed redevelopment. In outlined four major financial components of the proposed plan.\textsuperscript{15} These are as follows:

- **Tax revenues from the Waterfront Tax Increment Financing district, which will be used to pay the debt service on a $2.1 million loan from the U.S. Department of Housing and Urban Development under its Section 108 program.** (Repayment of this debt will not come from the project, but from excess revenue within the Waterfront TIF.)

- **The project will require additional debt to be paid from TIF revenues of up to $6.6 million to complete the redevelopment as proposed.** It was noted that the amount of additional borrowing by the TIF district could be reduced to $4.9 million if the tenants fully participate in two other major sources of funding: Historic Tax Credits (HTC) and New Market Tax Credits (NMTC).

- **A third source of funds is the sale of Historic Tax Credits (HTC).** The project will be applying for Federal Rehabilitation Investment Tax Credits valued at $1.3 million based on qualified rehabilitation expenses of $6.6 million. These credits will be sold to private investors and the proceeds used to fund a portion of the development cost.

- **The final major component of the funding is the issuance of federal New Market Tax Credits (NMTC).** Similar to HTC, investors in eligible tax credit projects receive a federal tax credit equal to 39 percent of a project’s total eligible cost. If the tenants agree to include their fit-up cost in the total eligible project cost, it could generate $5.8 million in NMTC net of transaction cost.


The report emphasizes the need for the city to move forward on the transaction only when all of these major financing components are secured and that replacing this part of the financial package with debt is not advised. It should be noted that the city has already secured over $1.5 million from a myriad of other smaller funding sources - third party grants and project subsidies.

While there was some concern expressed about the ability of the tenants to secure funds, it was noted that the city has structured the project so that the tenants’ success is not critical to the project’s success. This is because the TIF and not the tenants will pay the project’s debt. Tax credits from the project will continue to flow to the investors should one or more of the tenants fail. Interestingly, the committee also pointed out that certain funding opportunities may be lost if the Moran project does not proceed, and the city will then be stuck with a multi-million dollar demolition cost as well.

**BENEFITS, BARRIERS, AND LESSONS LEARNED**

The Moran project has faced numerous hurdles from its inception. Achieving public buy-in for a site that has become an icon of the city’s waterfront required a very robust public participation initiative to break the logjam. Nevertheless, concerns about project funding and risk continue to delay the process. Other barriers identified in the review of relevant documents and in conversations with the project coordinator include the additional financial resources required to build green (anticipating costs and generating resources), physical design challenges associated with both remediating and preserving a power plant building and incorporating public access and green elements, rationalizing the high energy demand of tenants versus the goal of energy efficiency, and regulatory permitting.

Public officials at all levels have worked diligently to overcome many of these obstacles in response to strong public awareness and desire to see the project succeed. The ongoing role of the mayor and government agencies, such as CEDO, has also kept the process moving forward for almost two decades. While short- and long-term contamination-oriented barriers have been worked out via collaboration between the city and state agencies, only time will tell whether the myriad of financial tools will materialize at the same time in order to make the project a reality.

**Key Financial Tools**

- **U.S. Department of Housing and Urban Development**
  - A competitive grant program that HUD administers to stimulate and promote economic and community development on brownfields. BEDI grant funds are primarily targeted for use with a particular emphasis on the redevelopment of brownfields sites in economic development projects and the increase of economic opportunities for low-and moderate-income persons as part of the creation or retention of businesses, jobs and increases in the local tax base.

- **U.S. Department of Housing and Urban Development**
A loan guarantee provision of the Community Development Block Grant (CDBG) program that provides communities with a source of financing for economic development, housing rehabilitation, public facilities, and large-scale physical development projects. Through the program, communities can transform a small portion of their CDBG funds into federally guaranteed loans large enough to pursue physical and economic revitalization projects that can renew entire neighborhoods.

• **Federal Rehabilitation Investment Tax Credits: Historic Tax Credits (HTC)**
  - The federal rehabilitation tax credit encourages the preservation and reuse of historic properties by offering federal tax credits to property owners. As a disincentive to demolition, it allows the owner of a historic building to earn a dollar-for-dollar reduction in income taxes owed. The amount of the reduction is equal to 20 percent of the amount spent to rehabilitate a certified historic structure; there is also a 10 percent credit for older, non-historic buildings built before 1936. Funds are administered via state historic preservation office or the National Park Service.

• **New Markets Tax Credit Program**
  - Established by U.S. Congress in 2000 to encourage new or increased investment into operating businesses and real estate projects located in low-income communities. The NMTC Program attracts investment capital by permitting individual and corporate investors to receive a tax credit against their Federal income tax return in exchange for making equity investments in specialized financial institutions called Community Development Entities (CDEs). The credit totals 39 percent of the original investment amount and is claimed over a period of seven years. Credits are allocated annually by the Treasury Department's Community Development Financial Institutions Fund to CDEs under a competitive application process.

Incorporating sustainability into the redevelopment of the Moran plant has provided some obvious benefits, such as avoiding high demolition costs, preserving the city’s history, and meeting the expectations of Burlington’s “green-minded” residents. Through the consultation process, the city has also highlighted a myriad of benefits that the proposed project will provide the community:\(^\text{16}\):

- Expand amenities offered at Waterfront park
- Create new lawn: open green area in summer, skating in the winter
- Improve public access to the building and Lake Champlain shoreline
- Provide the public spectacular year-round views of the

\(^{16}\) CEDO 2008, p.10
In all, the Moran project provides a model for addressing a challenging industrial property in a location that sits in the public spotlight. The comprehensive public participation program allowed for a better sense of what the community wanted for the site, and the use of a public ballot made it possible for a decision to be made and for that decision to move forward after many false starts. The project’s website also provides a best-practice example of how planning and redevelopment information can be shared with the general public in order to keep them continuously updated and engaged.17

If all goes well, the Moran project will also provide a prime example of how local governments can weave together funding from an array of public and private sources to support a community-centered project.

From a sustainability perspective, the Moran project covers all of the environmental, social, and economic bases. Most impressive is the attempt to preserve a hulking building that many would rather demolish because it is not perceived as attractive history. In addition to preserving the building’s heritage, the project will maximize the use of existing materials and infrastructure, reduce waste, conserve the energy embedded in the structure, and help preserve the historic character of Burlington’s waterfront. Overall, one could say that for the Moran plant there is a direct correlation between the energy embedded in the structure and the energy the community has employed to preserve it.

17 http://www.cedoburlington.org/waterfront/moran_plant/moran_plant_redevelopment.htm
<table>
<thead>
<tr>
<th>YEAR</th>
<th>DESCRIPTION</th>
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<tr>
<td>1954-1986</td>
<td>Coal-fired power plant was built and operated</td>
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<tr>
<td>1990</td>
<td>City of Burlington voters approved the urban renewal plan for the Waterfront Revitalization District</td>
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<tr>
<td>2005</td>
<td>After several failed proposals, the city acted to ensure strong public engagement</td>
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<td>- Mails “Idea Card” to every household</td>
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<td>- Idea Review Committee organizes results</td>
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<td>- Survey and public forums used to rate ideas</td>
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<td>2006</td>
<td>Waterfront Advisory Survey: Moran Plant ballot distributed to voters to rate top ideas</td>
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<tr>
<td>May 2007</td>
<td>• Finance Board and City Council actions directing CEDO to conduct feasibility study</td>
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<td></td>
<td>• Presentations to Neighborhood Planning Assemblies</td>
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<td>• Update to Parks Commission</td>
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<td>• Moran Users Group (MUG) develops needs of tenancy</td>
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<td>Summer</td>
<td>Conceptual development – refinement: Moran Advisory Group (MAG) meetings</td>
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<td>Feasibility: MAG and MUG meeting to evaluate and refine information</td>
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<tr>
<td>Fall</td>
<td>Presentations and community feedback on the MAG and MUG work on the draft feasibility report to Neighborhood Planning Assemblies and other community groups</td>
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<td>January 2008</td>
<td>City Council decides whether to place the Moran on a March ballot</td>
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<td>March 4, 2008</td>
<td>• Advisory Ballot vote on Town Meeting Day</td>
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<td>• Continued public process, including open studio</td>
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<td>October 1, 2009</td>
<td>City secures $3 Million federal financing package</td>
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<tr>
<td>December 21, 2009</td>
<td>Moran Plant financing plan presented to City Council</td>
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<tr>
<td>May to July 2010</td>
<td>Moran Blue Ribbon Committee established to evaluate the financial implications of the project on the city and its taxpayers completes final report in July</td>
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REFERENCES


ACKNOWLEDGEMENTS

This work was performed under a subcontract with the University of Illinois at Chicago and made possible by grant number TR-83418401 from U.S. Environmental Protection Agency and its contents are solely the responsibility of the author and do not necessarily represent the official views of the U.S. Environmental Protection Agency. The author would like to sincerely thank Nick Warner from the City of Burlington for providing information about the project and a tour of the facility. The author would also like to thank his student assistants- Kevin Duffy, Jason Tildetzke, Laura Lynn Roedl, and Elizabeth Durkin- for their research support.

The Sustainable Brownfields Consortium is an interdisciplinary group of researchers and technical advisors who are analyzing best practices for sustainable redevelopment of brownfields and the environmental, economic and public health benefits that can result. Funded by a grant from U.S. EPA, the project is a collaboration of the University of Illinois at Chicago (where it is based), University of Illinois at Urbana-Champaign, University of Wisconsin-Milwaukee, Ryerson University, Resources for the Future, Kandiyo, and Hellmuth + Bicknese Architects. The project website is at www.brownfields.uic.edu.