

The Potential Economic Impacts of Redeveloping Salem Harbor Power Plant Site

Prepared for



Prepared By

Catherine Taylor, Judy Chang, and Phil Hanser

The Brattle Group

September 24, 2008

TABLE OF CONTENTS

| | |
|--|----|
| Table of Contents..... | i |
| Background and Executive Summary..... | 1 |
| Increase In Revenues to City of Salem..... | 2 |
| Property Taxes..... | 2 |
| Single Family Homes..... | 2 |
| Retail Development..... | 3 |
| Apartment Building..... | 3 |
| Office Park..... | 3 |
| Increase in Property Values Due to Removal of Power Plant..... | 4 |
| Hotel Occupancy Tax..... | 5 |
| Marina Revenues..... | 5 |
| Income and Jobs For Salem..... | 6 |
| Demolition Work..... | 7 |
| Construction Work..... | 7 |
| Income From Newly Located Jobs..... | 8 |
| Income from Tourists..... | 10 |
| Summary of Economic Impacts..... | 11 |
| Acknowledgements..... | 15 |
| Appendix: Other Potential Uses of the Salem Harbor Site..... | 16 |

BACKGROUND AND EXECUTIVE SUMMARY

This report estimates the potential economic impacts of redeveloping the site where the Salem Harbor Power Plant currently sits. The economic impacts explored here include revenues to the City of Salem in terms of taxes and revenues generated by city-operated facilities and income to Salem residents from jobs created as part of the redevelopment. While this report does not estimate the magnitude of potential costs to Salem from the “change of use” for the property, we acknowledge that there will be some non-trivial amount of cost associated with enabling such redevelopment. This paper is not intended make any implication that the Salem Harbor Power Plant is no longer needed for New England’s power supply. Such an analysis and determination would need to be performed by the Independent System Operator of New England and thus is outside of the scope of this paper.¹

In the past, the Salem Harbor Power Plant has been a significant revenue source for the City of Salem. However, its tax payments have diminished in recent years. During FY1998-2001, the power plant’s remittances to Salem were \$8.7 million per year. In FY 2002, the amount was reduced to \$7.7 million, in FY 2003, it was reduced further to \$6.7 million. For FY2004-FY2007 the amount was \$5.025 million per year.² Going forward, the plant is expected to contribute \$3.5 million in taxes in FY 2009.³

The Salem Harbor Power plant sits on a 65 acre site.⁴ Approximately twenty percent of the site is used for a transmission station which is expected to remain in place even if the power plant were shutdown and demolished.⁵ The transmission facility would still provide some tax payments to the City of Salem. Of the remaining 52 acres, we assume that 80 percent is usable for redevelopment; the rest would be needed for roads and other public facilities. Thus, there are approximately 42 acres available for redevelopment.

We assume that a private developer would develop the site. In general, the cleanup of a “brownfield” development would be the responsibility of the owner of the property and the cost of a cleanup would be incorporated into the sales prices negotiated between the current owner of the site and the potential developer. It is our understanding that the City of Salem would not be responsible for cleaning up the site.⁶

¹ According to a July 23, 2008 report from the Independent System Operator of New England, “Given the current system conditions, the completion of Stage 2 of the NSTAR 345 kV [transmission] project will not obviate the need for some portion of the Salem Harbor units or replacement generation.” Further, the report also states, “Today the total Salem Harbor plant is not necessary to support the North Shore area.” See “Status Update on Projects and Factors that Impact the Need for Continued Operation of the Salem Harbor Units”, ISO New England Inc. July 23, 2008 Update, pages 2-3.

² *Property Tax “101” – FY 2008* at http://www.salem.com/Pages/SalemMA_Assessor/101E.pdf.

³ “Salem Power Plant Issues Come To A Crossroads,” *The Patriot Ledger*, July 18, 2008.

⁴ “Salem Harbor Station Options Evaluated” *The Boston Globe*, May 20, 2004.

⁵ Ten to twenty percent of the land is used for the current transmission facilities. We have used 20% to be conservative in estimating the economic impacts of the potential redevelopment.

⁶ Note that there are grants available from state and federal sources to subsidize brownfield development efforts. See <http://www.epa.gov/brownfields/> and <http://www.mass.gov/dep/cleanup/bfhout2.htm>.

For the purpose of this report, we assume that the 42 acres will be transformed into a mixed-use development consisting of single family homes, an apartment complex, a hotel, a retail development, an office park and a city-owned and operated marina.⁷ This mixed-use assumption is based on our discussions with people who live in the area but this assumption has not been independently evaluated by any specific developer. However, we believe our assumptions represent a plausible scenario. The appendix to this report includes a cursory look at other potential development ideas.

Our analysis suggests that in the fifth year after the start of the project (after a 1 year demolition phase, a 2 year construction phase, and a 2 year ramp-up phase), the property could produce approximately \$5.6 million in taxes and revenues to the City of Salem. The development could also support approximately 300 construction jobs per year during the 2 year construction phase and roughly 600 new long-term jobs. We further assume that the results of the redevelopment could double the current number of tourists visiting Salem. The income provided by the new jobs combined with the expenditures of an assumed additional 850,000 tourists could produce an additional \$14.5 million in new income to the local economy by 2013. Note, however, that these figures do not account for additional expenditures that may be required to support the new development.

INCREASE IN REVENUES TO CITY OF SALEM

In this section, we describe the increase in revenues the city would likely see from the redeveloped property. The revenues come from property taxes, hotel occupancy taxes, and profits from operating a marina. We do not attempt to quantify the increase in city expenditures needed to serve such a development. However, we acknowledge that additional expenditures may be associated with additional city services such as water, sewer, trash removal, education, and public safety. Equally important, the city might need to invest in new transportation services to improve public access to certain areas. For example, a good transportation link would be vital in ensuring the viability of the planned office park and hotel.

For each type of structure that will be presented in the planned mixed-use development, we identified an example of that structure in the City of Salem Tax Assessment database to develop our estimates of the related property taxes that could be collected.⁸ We describe the relevant assumptions for each type of development below:

PROPERTY TAXES

Single Family Homes

We allocate 17 acres to this type of development to support 180 single family homes sitting on roughly 0.09 acres each. The average tax bill for a single family home in Salem is \$4,054.⁹ We

⁷ The city-owned marina would yield use fees but not new property taxes.

⁸ Some of the properties drawn upon for comparison were built as far back as the 1910s. The value of a newly constructed building of similar size and location may have significantly higher value. Thus, from this standpoint, our analysis is conservative.

⁹ "At A Glance Report for Salem" *Massachusetts Department of Revenue, Division of Local Services*

conservatively assume that the newly developed houses would be similar in value to the existing homes in Salem even though they are likely to be of higher value given that they would be waterfront properties.¹⁰ Thus, the newly developed residential units would yield approximately \$729,720 in property taxes. At 0.09 acres per housing unit, there would be 25 acres remaining for other uses.

Retail Development

Our illustrative example of a retail development is based on a 4 acre retail center located at 400 Highland Avenue. It is currently assessed at \$5.3 million according to the Salem Assessing Department.¹¹

Apartment Building

Our illustrative example of an apartment building is based on the Jefferson at Salem Station apartment complex. It sits on 15 acres of land and is currently assessed at \$39.8 million.¹² We assume that the newly developed apartment building would be of the same assessed value even though it is more likely to be of greater value given that it would be a waterfront property.

Office Park

Our illustrative example of an office park is the collection of office buildings at 47 Congress St. The buildings are on approximately 30 acres and the parcel is assessed at \$28.8 million.¹³ The mixed-use development imagined here calls for a 4 acre office park. Thus, prorating the illustrative example by 13% (4/30) suggests that a 4 acre office park would yield approximately \$83,000 per year in property taxes.

Hotel

Our illustrative example of a hotel is the Hawthorne Hotel. It is currently assessed at \$5.0 million.¹⁴ The mixed-use development would include a hotel roughly twice as large as the Hawthorne Hotel. Thus, the new hotel is expected to yield approximately \$221,000 in new property taxes.

Table 1 shows that the total new property taxes for these new developments would be approximately \$1.6 million per year in 2008 dollars.

¹⁰ Note that single family homes on cleaned up brown fields may require additional structural changes for them to be comparable in value to other single family homes in the area. For example, these new homes would not usually have basements built into their foundations because of the capping down to contain possible contamination.

¹¹ <http://salem.patriotproperties.com/>

¹² Id.

¹³ Id.

¹⁴ Id.

Table 1. New Property Taxes from Mixed-Use Development

| Use of Land | Units [A] | Acres [B] | Applicable Mil Rate [C] | Assessed Value [D] | Taxes Per Unit [E] | Property Taxes for Development [F] |
|-------------------------|--------------|--------------|-------------------------------|-----------------------|--------------------------|--|
| Property Taxes | | | | | | |
| [1] Single Family Homes | 180 | 17 | N/A | N/A | \$ 4,054 | \$ 729,720 |
| [2] Retail Development | 1 | 4 | \$ 22.11 | \$ 5,343,600 | \$ 118,147 | \$ 118,147 |
| [3] Apartment Building | 1 | 15 | \$ 11.67 | \$ 39,836,800 | \$ 464,895 | \$ 464,895 |
| [4] Office Park | 0.13 | 4 | \$ 22.11 | \$ 28,763,500 | \$ 635,961 | \$ 82,675 |
| [5] Hotel | 2 | 2 | \$ 22.11 | \$ 4,993,500 | \$ 110,406 | \$ 220,812 |
| [6] Total | | 42 | | | | \$ 1,616,249 |

Sources and Notes:

[A] [1] [2] [3] [5] Assumptions Regarding Mixed-Use Development.

[4] The illustrative office building complex is 30 acres. The mixed-use development calls for a 4 acre office park. The appropriate factor is $4/30 = 0.13$.

[B] Assumptions Regarding Mixed-Use Development.

[C] The Mil rate for residential use is \$11.67 and \$22.11 for commercial use. "At A Glance Report for Salem" Massachusetts Department of Revenue, Division of Local Services.

[D] Assessed Values of Illustrative Properties:

[2] 4 acre retail development at 400 Highland Ave.

[3] 170-220 Bridge Street, Jefferson at Salem Station.

[4] 47 Congress St.

[5] Hawthorne Hotel, 18 Washington Square West.

[E] [1] Average tax paid per single family home from "At A Glance Report for Salem" Massachusetts Department of Revenue, Division of Local Services.

[2] thru [5] = [C] x [D]/1,000.

[F] =[A] x [E].

INCREASE IN PROPERTY VALUES DUE TO REMOVAL OF POWER PLANT

We expect that the removal of the power plant will bring benefits to the quality of life in Salem and reduce house maintenance costs (such as cleaning costs associated with coal soot). The increase in quality of life and reduced maintenance costs would increase property values in the city. Davis (2008) finds that the addition of a fossil fuel burning power plant reduces property values by 3 percent in the US.¹⁵ The Davis study focused on cases where new power plants were built between the 1990 Census and the 2000 Census and analyzed the change in property values for homes within 2 miles of the plant relative to homes further away. Plants built in the 1990s are presumably much cleaner than older power plants such as the Salem Harbor Plant which was built in 1951.¹⁶ Thus, we have assumed a slightly larger impact on local housing values. Houses that directly face the plant would be expected to enjoy much more dramatic increases (some local realtors and developers estimated increases in value for those houses to be as high as 20 to

¹⁵ Davis, Lucas W. (2008) "The Effect of Power Plants on Local Housing Values and Rents: Evidence from Restricted Census Microdata" *University of Michigan Working Paper*.

¹⁶ "Salem Harbor Station Options Evaluated" *The Boston Globe*, May 20, 2004.

25 percent). Nonetheless, averaged over all houses in Salem the increase would be more modest. We assume a 5 percent increase in housing values the year after the plant is demolished. Currently, Salem receives \$46.8 million in residential property taxes. Thus, a 5 percent increase would add approximately \$2.3 million per year in property taxes in 2008 dollars. See Table 2 for details.

Table 2. Increased Property Taxes from Removal of Plant

| | | |
|--|----|------------|
| [1] Property Taxes from Residential Properties | \$ | 46,780,076 |
| [2] Percent Increase in Value | | 5% |
| [3] Total Increase in Property Value in Salem | \$ | 2,339,004 |

Sources and Notes:

[1] “At A Glance Report for Salem” Massachusetts Department of Revenue, Division of Local Services.

[2] Assumption 2 percentage points higher than the Davis (2008) study.

[3] =[1] x [2].

HOTEL OCCUPANCY TAX

We assume that the new hotel on the parcel will yield additional revenues to the city by means of Salem’s 4.7% hotel occupancy tax. Table 3 shows that the planned 200 room hotel with an assumed 75% occupancy rate charging \$200 per night would yield \$515,000 of occupancy tax payment per year in 2008 dollars.¹⁷

MARINA REVENUES

We assume that a city-owned and operated marina on the waterfront would have 110 slips and charge \$142 per ft for those slips per season. These assumptions are based on the size and current rates charged by the Hawthorne Cove Marina in Salem. Assuming that the marina enjoys a 75 percent occupancy rate and the average length of a boat is 25 feet, the marina would see revenues of \$293,000 per year. We further assume that operating costs would be approximately 35 percent of revenues. Finally, we assume that the city would finance the construction costs of the marina (assumed to be \$419,800, see the next section) and pay a 6 percent interest rate on those costs. The costs of servicing that borrowing would be approximately \$25,000 per year. After those costs are deducted from its revenues, the city would gain a net revenue of \$165,000 per year in 2008 dollars.¹⁸ Details are shown in Table 3.

¹⁷ The Massachusetts Office of Travel and Tourism reports that for all of Massachusetts in May 2008, hotel occupancy rates were 66 percent and the average rate per room was \$145. See <http://www.massvacation.com/research/newsletter/june08.pdf>. We expect both those metrics to be higher for the north shore than for Massachusetts as a whole.

¹⁸ Note that these calculations do not account for capital costs of building the marina.

Table 3. Hotel Occupancy Tax and Marina Revenues

| | Hotel [A] | Marina [B] |
|---|-----------------|---------------|
| [1] Days Operating per Year | 365 | |
| [2] Occupancy Rate | 75% | 75% |
| [3] Number of Units (Rooms/Slips) | 200 | 110 |
| [4] Total Person Nights | 54,750 | |
| [5] Average Ft. Per Boat | | 25 |
| [6] Rate per Ft. | | \$ 142 |
| [7] Rate per Unit | \$ 200 | \$ 3,550 |
| [8] Operating Revenue | \$ 10,950,000 | \$ 292,875 |
| [9] Operating Expenses | | \$ 102,506 |
| [10] Interest Payment on Construction Costs | | \$ 25,188 |
| [11] Profit | | \$ 165,181 |
| [12] Hotel Occupancy Taxes | 4.7% \$ 514,650 | |

Sources and Notes:

- [1] Assumed Hotel will be open 365 days per year.
- [2] Assumed Occupancy Rate of 75%.
- [3] Assumptions of Mixed-use Development.
- [4] [A] = [1] x [2] x [3].
- [5] Assumption.
- [6] Seasonal Rate from Hawthorne Cove Marina.
- [7] [A] Assumption.
[B] = [5] x [6].
- [8] [A] = [4] x [7].
[B] = [2] x [3] x [7].
- [9] [B] Assumption that operating costs are 35% of revenue. Calculated as [8][B] x 35%.
- [10] Payment to service debt of \$419,800 at 6% interest rate. See Table 4.
- [11] [B] = [8]-[9]-[10].
- [12] [A] Calculated as [8] x Hotel Occupancy Tax Rate of 4.7%.

INCOME AND JOBS FOR SALEM

The new development would also bring new jobs and income to the City of Salem. The jobs and income would be derived from:

1. Demolition work to tear down the plant and cleanup the site
2. Construction work building the new development
3. Jobs associated with the marina, the retail development, the hotel and the office park,
4. Income associated with providing goods and services to the additional tourists that will be drawn to Salem because of the redevelopment
5. Income associated with additional residents attracted by the new houses and apartments¹⁹

We describe our assumptions and analyses regarding these sources of income below.

¹⁹ We do not attempt to quantify the additional income provided by new residents.

DEMOLITION WORK

We were unable to find an estimate of the costs of demolishing a power plant or cleaning up an equivalent site, so we conservatively omit this component from our analysis. However, there would certainly be jobs and related income to workers in Salem from this phase of the project.

CONSTRUCTION WORK

We assume that the single family houses have construction costs of \$125 per square foot and that each house is 1,750 square feet. We assume that the office park and retail development have construction costs of \$100 per square foot and that the hotel and apartment building have construction costs of \$150 per square foot.²⁰ We further assume that the marina could be built at a cost of approximately \$420,000.²¹

We identified an illustrative single family home in a neighborhood near the plant site that sits on roughly 0.09 acres, has approximate square footage of 1,750.²² The illustrative retail development has roughly 44,000 square feet.²³ The illustrative apartment building has approximately 344,000 square feet.²⁴ The illustrative office park has approximately 1,217,000 square feet of office space and sits on 30 acres.²⁵ Since the planned office park would only use 4 acres, we prorate this amount by a factor of 0.13 (4/30). Finally, the illustrative hotel has square footage of roughly 82,000, but as the planned hotel would be twice as big, that square footage is doubled in this analysis. Table 4 shows that total construction costs for the development are estimated to be \$136 million. We assume that 25 percent of those costs would be associated with labor and that 25 percent of labor used in the development would come from Salem.²⁶ Thus, we estimate that construction of the development would bring an additional \$8.5 million in income to Salem.

The average salary of a construction worker in Salem is \$57,000.²⁷ Therefore, assuming that 25 percent of costs are associated with labor, the \$136.1 million in total construction costs translates to roughly 300 new construction jobs per year over the 2 year construction period.

²⁰ The website Wiki.Answers.com provides an estimate of house construction costs for Western Massachusetts of \$100-\$300. We use a slightly higher level to reflect the higher costs of Eastern Massachusetts relative to Western Massachusetts. See http://wiki.answers.com/Q/What_is_the_average_cost_per_square_foot_for_building_a_house_in_western_Massachusetts.

²¹ \$419,800 is the assessed value of the “Extra Features” of the Hawthorne Cove Marina. We are implicitly assuming that the assessed value is similar to the replacement cost or construction cost of the marina.

²² 2 Columbus Ave.

²³ 400 Highland Ave.

²⁴ Jefferson at Salem Station, 170-220 Bridge St.

²⁵ The office buildings at 47 Congress St.

²⁶ “Economic Impact Analysis of Long Dock Beacon Project: Phase I” by Peter Winne of Duchess County Economic Development Corp, April 25, 2005 also uses assumption that 25 percent of construction costs are related to labor.

²⁷ www.cbsalary.com

Table 4. Local Labor Income from New Construction

| Use of Land | Units [A] | Sq. Ft [B] | Construction Costs per Sq. Ft. [C] | Construction Costs for Illustrative Examples [D] | Construction Costs for Development [E] |
|--|--------------|---------------|---|--|---|
| Property Taxes | | | | | |
| [1] Single Family Homes | 180 | 1,750 | \$ 125 | \$ 218,750 | \$ 39,375,000 |
| [2] Retail Development | 1 | 43,838 | \$ 100 | \$ 4,383,800 | \$ 4,383,800 |
| [3] Apartment Building | 1 | 343,845 | \$ 150 | \$ 51,576,750 | \$ 51,576,750 |
| [4] Office Park | 0.13 | 1,217,226 | \$ 100 | \$ 121,722,600 | \$ 15,823,938 |
| [5] Hotel | 2 | 81,804 | \$ 150 | \$ 12,270,600 | \$ 24,541,200 |
| [6] Marina | 1 | | | \$ 419,800 | \$ 419,800 |
| [7] Total | | | | | \$ 136,120,488 |
| [8] Percent of Construction Cost that is Labor | | | | | 25% |
| [9] Percent of Construction Labor that is Local to Salem | | | | | 25% |
| [10] Income to Local Labor | | | | | \$ 8,507,531 |
| [11] Average Salary for Construction Workers in Salem | | | | | \$ 57,205 |
| [12] Number of Construction Jobs Residents per Year | | | | | 297 |

Sources and Notes:

- [A] [4] The illustrative office building complex is 30 acres. The mixed-use development calls for a 4 acre office park. The appropriate factor is $4/30 = 0.13$.
- [5] The hotel in the mixed-use development will be twice as big as the illustrative hotel.
- [B] Square Footage of Illustrative Properties:
 - [1] 2 Columbus Ave.
 - [2] 4 acre retail development at 400 Highland Ave.
 - [3] 170-220 Bridge Street, Jefferson at Salem Station.
 - [4] 47 Congress St.
 - [5] Hawthorne Hotel, 18 Washington Square West.
- [C] Assumptions.
- [D] [1] thru [5] = [B] x [C].
[6] value of "Extra Features" of Illustrative Property, Hawthorne Cove Marina, 10 White St.
- [E] =[A] x [D].
- [8] Same assumption used in Economic Impact Analysis of Long Dock Beacon Project: Phase I, by Peter Winne of Dutchess County Economic Development Corporation, April 25, 2005.
- [9] Assumption.
- [10] =[7] x [8] x [9].
- [11] www.cbsalary.com
- [12] =[7] x [8] / [11] / 2

INCOME FROM NEWLY LOCATED JOBS

We assume that the businesses built in the new development will generate new jobs and income for Salem. We assume that the retail development and apartment building would generate at least 20 and 12 new jobs respectively that would pay an average annual salary of at least \$25,000.

We assume that the office building would offer roughly 250 sq ft per worker.²⁸ The office park would have approximately 158,000 square feet of finished office space. Hence, it could support approximately 630 employees. However, there appears to be a great deal of vacant office space at the office parks on Congress St.²⁹ In addition, some of the jobs locating to the new office park might just be relocated from other office buildings in Salem. We therefore conservatively assume that only 150 (or one-quarter) of the positions that could be housed in a new office building would be “new” jobs.

We assume that the marina would employ 4 workers who would earn approximately \$12,500 for the six months that the marina would be open.³⁰ The Hawthorne Hotel currently employs 210 people. The hotel envisioned for this development would be twice as large, hence we would expect to employ twice as many people.³¹ Further assuming that one-quarter of the jobs would be staffed by local Salem residents, Table 5 shows that the 606 jobs that could be supported by the new development could provide roughly \$2.1 million in income to residents of Salem.³²

²⁸ See <http://money.howstuffworks.com/office-space3.htm>

²⁹ See listings for Shetland Park at <http://listing.loopnet.com/15484144> and <http://listing.loopnet.com/15484869>.

³⁰ This assumption fits with the assumption regarding the operating costs of \$103,000 for operating the marina if we assume that half of the operating costs are associated with labor.

³¹ See http://www.salem.com/Pages/SalemMA_EcDev/topemp.

³² The income to the hotel employees is accounted for in the section relating to income from tourists.

Table 5. Impact on Local Jobs and Wages Generated from Mixed-Use Development

| Use of Land | Total Number of Jobs [A] | Percentage of Workers Based in Salem [B] | Number of Local Jobs [C] | Annual Salary per Job [D] | Total Local Wages [E] |
|-------------------------|-----------------------------|---|-----------------------------|------------------------------|--------------------------|
| [1] Single Family Homes | 0 | 25.0% | 0 | N/A | N/A |
| [2] Retail Development | 20 | 25.0% | 5 | \$ 25,000 | \$ 125,000 |
| [3] Apartment Building | 12 | 25.0% | 3 | \$ 25,000 | \$ 75,000 |
| [4] Office Park | 150 | 25.0% | 38 | \$ 50,000 | \$ 1,900,000 |
| [5] Marina | 4 | 25.0% | 1 | \$ 12,500 | \$ 12,500 |
| [6] Hotel | 420 | 25.0% | 105 | | |
| [7] Total | 606 | | 152 | | \$ 2,112,500 |

Sources and Notes:

[1]-[5]:

[A] Assumptions.

[B] Assumptions.

[C] =[A] x [B].

[D] Assumptions.

[E] =[B] x [D].

[6]:

[A] The Hawthorne Hotel currently employs 210 people. The hotel envisioned for this development would be twice as large. See http://www.salem.com/Pages/SalemMA_EcDev/topemp.

[B] Assumptions.

[C] =[A] x [B].

[D]-[E] Income from Hotel Jobs is accounted for in the section related to income from tourists.

INCOME FROM TOURISTS

We assume that tourism to Salem will increase as a result of the new development and removal of the power plant. An optimistic view of the potential increase in tourism to Salem would be that eventually, the annual number of tourists could double, meaning an additional 850,000 tourists per year.³³ To achieve that number, again, the transportation links connecting Salem to Boston and connecting the plant site to the rest of Salem would need to improve. In addition, the aesthetic quality of the development would need to be very impressive. The estimates based on an additional 850,000 tourists is an *assumption* and should not be interpreted as a definitive forecast.

On average, Massachusetts tourists spend roughly \$100 per day.³⁴ Assuming that 50 percent of those expenditures go to paying for labor costs and 25 percent of the labor would be local to

³³ Salem Office of Tourism & Cultural Affairs reports that there are currently approximately 850,000 tourists to Salem, not counting visitors for Halloween festivities.

³⁴ Memo from M. V. Lee Badgett and R. Bradley Sears of the Williams Institute to Daniel O’Connell, Secretary of Housing and Economic Development, dated June 30, 2008 regarding “The Impact of Extending Marriage to Non-Resident Same-Sex Couples on the Massachusetts Budget” at <http://www.law.ucla.edu/Williamsinstitute/publications/MAEconMarriageMemo2008.pdf>

Salem,³⁵ 850,000 additional tourists who spend 1 day each in Salem, would be expected to bring approximately \$10,625,000 per year in income to the residents of Salem in 2008 dollars.

SUMMARY OF ECONOMIC IMPACTS

The impacts described in the above sections are reported in 2008 dollars. These impacts are calculated based on assumptions and would only materialize after the development is fully built, operational and matured. Table 6 summarizes these impacts. With the stated assumptions, Salem could expect to receive approximately \$4.6 million in additional property taxes and revenues and the local economy would see an economic benefit of approximately \$12.7 million annually. In addition, the development could support approximately 300 construction jobs per year over the 2 year construction period and 606 new long-term jobs.

However, these impacts would not appear immediately. The demolition of the plant, the new construction, and the ramping up of operations at the new facilities will all take some time. We assume that it will take 1 year to demolish the plant, 2 years to build the new development and that the marina, hotel, apartment building, and retail development will all need 2 years to ramp up to their mature operating levels. In the meantime, prices and wages would rise at the national average rate of inflation of 2.6 percent (derived from the CPI from the last 10 years).³⁶ In addition, housing values would appreciate at 4 percent per year. Note that the Massachusetts 10 year average housing value increase from 1995 to 2005 was 10 percent per year. Thus, we believe 4 percent is reasonable.³⁷ Table 7 shows how the impacts of redevelopment could materialize over time.³⁸

Chart 1 shows the same information in graphical form. We do not assume economic impacts would materialize immediately during the demolition phase (the first year). The impacts from construction jobs and increased property values, due to removal of the power plant, and property taxes from the development begin to accrue in year 2010 and 2011.³⁹ Finally, the impacts from tourism and new jobs ramp up over the period 2012 through 2013.⁴⁰

³⁵ Half of operating costs for hotels are associated with labor. See “Hotel Owners & Operators Take Action to Control Labor Costs During Turbulent Economic Times” at http://www.hotel-online.com/News/PR2008_2nd/Apr08_ControlLabor.html

³⁶ Bureau of Labor Statistics, CPI Series - All Items, Not Seasonally Adjusted at www.bls.gov.

³⁷ <http://www.housingbubblebust.com/OFHEO/NYear/10Year.html#NorthEast>

³⁸ Note that the development is not completely ramped-up until 2013 when prices have increased by 13.67 percent and housing values have appreciated by 21.67 percent (see rows 1 and 2 of Table 7). Since the values reported in Table 6 are the benefits expected upon full maturity of the development and are reported in 2008 dollars, those exact figures do not appear in Table 7. Rather their inflation adjusted values appear in Table 7 in year 2013.

³⁹ See row 4 of Table 7 for assumed construction completion rates.

⁴⁰ See row 10 of Table 7 for assumed ramp-up rates.

**Table 6. Summary of Economic Impact of Redeveloping Salem Harbor Power Plant
(in Real 2008 Dollars)**

| | Per Year | Total |
|--|----------------------|--------------|
| Taxes and Revenues to City | | |
| [1] Property Taxes from Developments | \$ 1,616,249 | |
| [2] Increase in Property Value from Removal of Plant | \$ 2,339,004 | |
| [3] Hotel Occupancy Tax | \$ 514,650 | |
| [4] Marina Net Revenues | \$ 165,181 | |
| [5] Total Taxes and Revenues to City | \$ 4,635,084 | |
| Additional Income to Salem Residents | | |
| Demolition Phase | | |
| [6] Local Labor | | ? |
| Construction Phase | | |
| [7] Local Labor | | \$ 8,507,531 |
| Operating Phase | | |
| [8] Retail Development Local Labor | \$ 125,000 | |
| [9] Apartment Building Local Labor | \$ 75,000 | |
| [10] Office Park Local Labor | \$ 1,900,000 | |
| [11] Marina Local Labor | \$ 12,500 | |
| [12] Local Labor Income Generated from Tourism | \$ 10,625,000 | |
| [13] Total Revenues to Local Economy During Operating Phase | \$ 12,737,500 | |
| [14] Construction Jobs per Year | 297 | |
| [15] New Long-Term Jobs | | 606 |

Sources and Notes:

- [1] Table 1.
- [2] Table 2.
- [3] Table 3.
- [4] Table 3.
- [5] Sum [1] thru [4].
- [7] Table 4.
- [8] Table 5.
- [9] Table 5.
- [10] Table 5.
- [11] Table 5.
- [12] = \$100 x 1 million x 0.50 x 0.25.
- [13] Sum [8] thru [12].
- [14] Table 4.
- [15] Table 5.

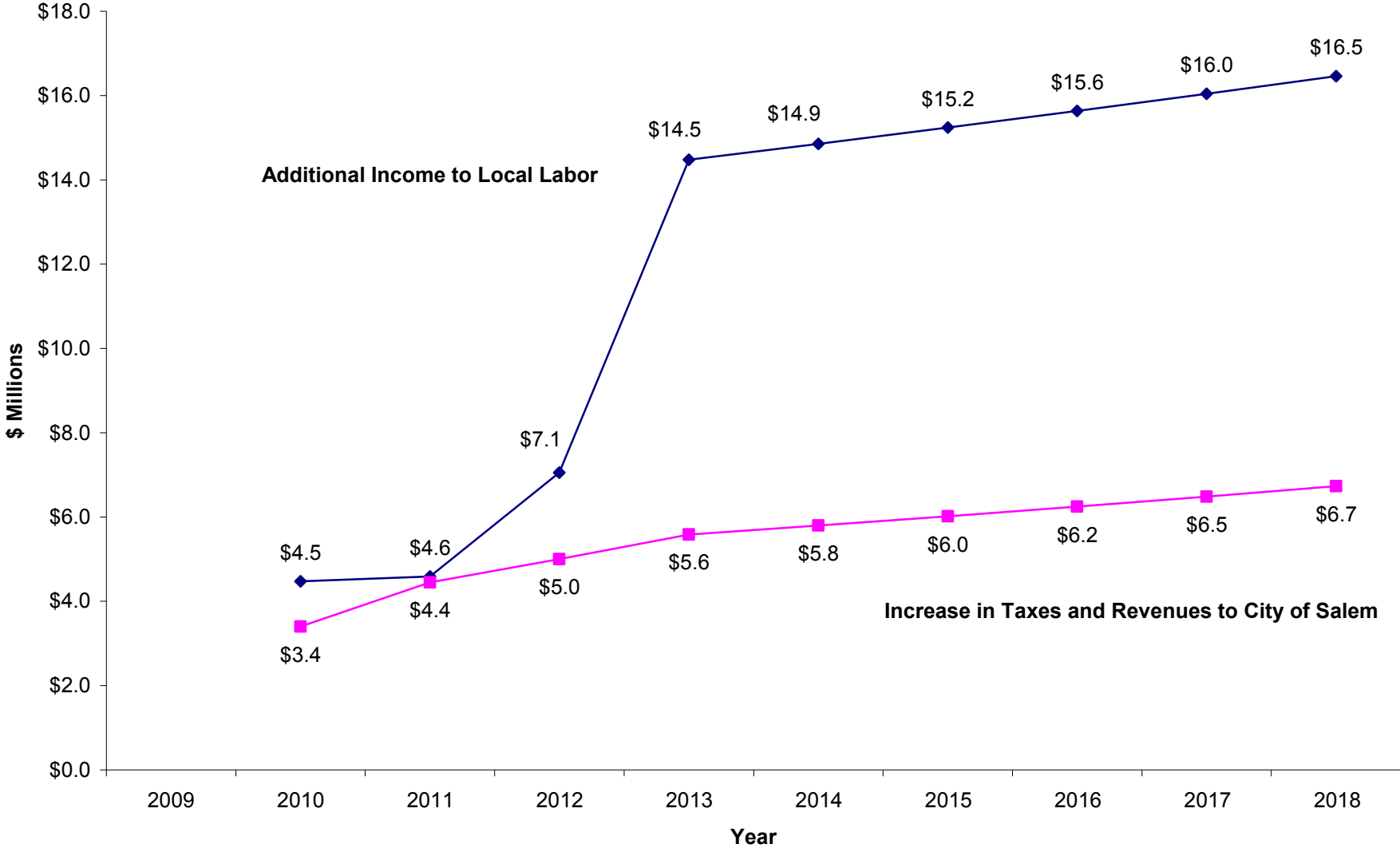
Table 7. Economic Impacts of Removing Salem Harbor Power Plant, by Year

| | Year | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | |
|---------------------------------------|--|------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| [1] | Inflation Rate (CPI) | 2.6% | 1.0260 | 1.0526 | 1.0799 | 1.1079 | 1.1367 | 1.1662 | 1.1965 | 1.2275 | 1.2594 | 1.2921 |
| [2] | Mass. Housing Appreciation Rate (1995 to 2005 average) | 4.0% | 1.0400 | 1.0816 | 1.1249 | 1.1699 | 1.2167 | 1.2653 | 1.3159 | 1.3686 | 1.4233 | 1.4802 |
| Taxes and Revenues for City of Salem: | | | | | | | | | | | | |
| [3] | Cumulative Penetration Rate (for Property Taxes) | | 0% | 50% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| [4] | Property Taxes from Developments | \$ - | \$ 874,067 | \$ 1,818,119 | \$ 1,890,850 | \$ 1,966,490 | \$ 2,045,040 | \$ 2,126,822 | \$ 2,211,998 | \$ 2,300,407 | \$ 2,392,372 | |
| [5] | Increase in Property Value | \$ - | \$ 2,529,867 | \$ 2,631,146 | \$ 2,736,401 | \$ 2,845,866 | \$ 2,959,542 | \$ 3,077,895 | \$ 3,201,161 | \$ 3,329,104 | \$ 3,462,194 | |
| [6] | Hotel Occupancy Tax | \$ - | \$ - | \$ - | \$ 285,090 | \$ 585,003 | \$ 600,185 | \$ 615,779 | \$ 631,733 | \$ 648,150 | \$ 664,979 | |
| [7] | Marina Net Revenues | \$ - | \$ - | \$ - | \$ 91,502 | \$ 187,761 | \$ 192,634 | \$ 197,639 | \$ 202,760 | \$ 208,029 | \$ 213,430 | |
| Additional Income to Local Labor | | | | | | | | | | | | |
| Demolition Phase | | | | | | | | | | | | |
| [8] | Demolition Phase Local Labor | 1 | | | | | | | | | | |
| Construction Phase | | | | | | | | | | | | |
| [9] | Construction Phase Local Labor | 2 | \$ - | \$ 4,477,514 | \$ 4,593,641 | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Operating Phase | | | | | | | | | | | | |
| [10] | Cumulative Penetration Rate (for Operations) | 2 | 0% | 0% | 0% | 50% | 100% | 100% | 100% | 100% | 100% | 100% |
| [11] | Retail Development Local Labor | \$ - | \$ - | \$ - | \$ 69,244 | \$ 142,088 | \$ 145,775 | \$ 149,563 | \$ 153,438 | \$ 157,425 | \$ 161,513 | |
| [12] | Apartment Building Local Labor | \$ - | \$ - | \$ - | \$ 41,546 | \$ 85,253 | \$ 87,465 | \$ 89,738 | \$ 92,063 | \$ 94,455 | \$ 96,908 | |
| [13] | Office Park Local Labor | \$ - | \$ - | \$ - | \$ 1,052,505 | \$ 2,159,730 | \$ 2,215,780 | \$ 2,273,350 | \$ 2,332,250 | \$ 2,392,860 | \$ 2,454,990 | |
| [14] | Marina Local Labor | \$ - | \$ - | \$ - | \$ 6,924 | \$ 14,209 | \$ 14,578 | \$ 14,956 | \$ 15,344 | \$ 15,743 | \$ 16,151 | |
| [15] | Local Labor Income Generated from Tourism | \$ - | \$ - | \$ - | \$ 5,885,719 | \$ 12,077,438 | \$ 12,390,875 | \$ 12,712,813 | \$ 13,042,188 | \$ 13,381,125 | \$ 13,728,563 | |
| [16] | Total Taxes and Revenues for City of Salem: | \$ - | \$ 3,403,934 | \$ 4,449,264 | \$ 5,003,843 | \$ 5,585,120 | \$ 5,797,401 | \$ 6,018,135 | \$ 6,247,652 | \$ 6,485,691 | \$ 6,732,975 | |
| [17] | Total Additional Income to Local Labor: | \$ - | \$ 4,477,514 | \$ 4,593,641 | \$ 7,055,938 | \$ 14,478,716 | \$ 14,854,473 | \$ 15,240,419 | \$ 15,635,281 | \$ 16,041,608 | \$ 16,458,124 | |

Sources and Notes:

- [1] 10 year average inflation rate CPI - All Items, BLS.
- [2] Assumption.
- [3] Assumption that construction takes 2 years.
- [4] Table 6 row 1 x [2] x [3].
- [5] Table 6 row 2 x [2] (increase in property values is immediate upon removal of power plant).
- [6] Table 6 row 3 x [1] x [10].
- [7] Table 6 row 4 x [1] x [10].
- [9] Table 6 row 7 x [1] x 0.5.
- [10] Assumption that ramp up takes 3 years.
- [11] Table 6 row 8 x [1] x [10].
- [12] Table 6 row 9 x [1] x [10].
- [13] Table 6 row 10 x [1] x [10].
- [14] Table 6 row 11 x [1] x [10].
- [15] Table 6 row 12 x [1] x [10].
- [16] Sum [3] thru [7].
- [17] Sum [8] thru [15].

Chart 1. Economic Impacts of Removal of Salem Harbor Power Plant, By Year



ACKNOWLEDGEMENTS

This report is commissioned by Vision for Salem.
(<http://www.visionforsalem.org>)

The analysis and views contained in this report are solely those of the authors and do not necessarily reflect the views of The Brattle Group, Inc. or its clients.

APPENDIX: OTHER POTENTIAL USES OF THE SALEM HARBOR SITE

The concept of a mixed-use development is just one of several possible uses for the site. Other ideas include:

- A **commercial-only development** along the lines of the office park area at 47 Congress St. Replacing the single family homes and apartment building with an office park of same relative value as 47 Congress St. would reduce the tax and revenues to Salem by 11 percent, from about \$5.6 million to about \$5.0 million in 2013.
- Allow **cruise ships** to dock at the site, for using Salem as either a embarking/disembarking point or port of call. This plan is already underway. The City of Salem has plans to build a \$20 million wharf and multi-use terminal facility in hopes of attracting cruise ships, whale watching tours and fishing vessels to the city. The terminal would be at the Blaney St. lot which the city is currently leasing from Dominion for \$1. In the summer of 2008, two cruise ships docked there for 24 hours as part of a New England tour.⁴¹

For comparison purposes, the Black Falcon Cruise Terminal at the Port of Boston received 116 vessels calls and 62,000 passengers in the 2008 season.⁴² The port charges a minimum of \$1,365 per day for a vessel and \$10.50 for each embarking or disembarking passenger.⁴³ Assuming that each vessel was charged for 2 days use of the terminal and each passenger was charged for an embarkation and a disembarkation, it appears that the Black Falcon Cruise Terminal generated roughly \$1.6 million in fees for the cruise season.

- A **Maritime Museum** that would feature historic sailing vessels docked at the site. The National Park Service runs the Salem Maritime National Historic Site which features the a replica of the 1797 tall ship, *Friendship*.

⁴¹ “City Gets \$2.3 Million for Wharf Project,” Salem News, September 12, 2008 at http://www.salemnews.com/archivesearch/local_story_256212425.html

⁴² <http://www.massport.com/ports/cruis.htm>.

⁴³ Port of Boston tariff at http://www.massport.com/ports/about_tarif.html.

- A **casino**, following Governor Deval Patrick's plan to introduce regulated gambling in the state.