

MUNICIPALITY *of the*
COUNTY *of* **KINGS**

Economic Impact Modelling
Regional Recreation Complex

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Economic Impact Modelling – Regional Recreation Complex

Executive Summary

The estimated economic impact has been calculated using income and employment multipliers for the Kings County economy. An income multiplier of 1.51 (calculations below) means that every dollar injected into the Kings County economy, whether through external funding obtained for construction or through the wages paid for ongoing operation, creates an additional 51 cents in direct and indirect impacts. An employment multiplier of 1.45 (calculations below) shows that each full time equivalent job created for the recreation complex would support an additional .45 full time equivalent jobs in the local economy.

The annual operations of the facility are estimated to have an economic impact of \$1.0 million dollars in the first year, based on an annual wage investment of \$679,000; over an estimated 40-year lifespan of the facility, the total impact of operations is estimated to be \$77.5 million, or \$23.7 million in today's dollars.

Only the funding for construction that comes from outside of Kings County can be included as additional economic impact. Assuming \$30 million in external funding for construction is utilized, the economic impact from construction is estimated to be \$39.5 million.

The economic impact from events held at the facility will vary depending on the type and size of the event. It is expected that there will be private investment connected with the facility, but the exact types and impacts of private investment cannot be reasonably predicted at this time.

The estimated economic impact of investment in a regional recreation complex on the economy of Kings County can be summarised as follows:

| | Investment | Impact |
|---|----------------------|-----------------------|
| Annual Operations (Year 1) | \$ 679,138 | \$ 1,027,440 |
| Lifetime Operations (40 Years) | \$ 51,207,861 | \$ 77,470,289 |
| <i>Present Value of Lifetime Operations</i> | <i>\$ 15,698,120</i> | <i>\$ 23,749,047</i> |
| Construction (External Funding Only, Less HST) | \$ 26,086,957 | \$ 39,465,895 |
| Combined Lifetime Economic Impact | \$ 77,294,817 | \$ 116,936,183 |
| <i>Present Value of Combined Lifetime Economic Impact</i> | <i>\$ 41,785,077</i> | <i>\$ 63,214,942</i> |
| Impact from Events | No Additional | Varies |
| Impact from Private Investment | TBD | TBD |

Discussion

Drawing from the *Kings County Regional Recreation Centre Feasibility Study – Phase 1* report, there are several ways in which a major investment in public infrastructure creates lasting economic impacts. These include the direct impacts of construction spending and facility operations and the indirect impacts that spending has on the local economy, the money injected into the local economy by non-resident users of the facility and the money retained in the local economy from residents who no longer have to travel outside of the region to access similar facilities, and the opportunities created for additional economic activity in the area stemming from the demand generated by visitors to the facility.

Additionally, access to new state of the art facilities maintains and enhances quality of life, offers reputational benefits and becomes part of the economic development appeal of the area. The below figure illustrates the many ways that investment in a regional recreation complex, or any other major public infrastructure, can impact the local economy.

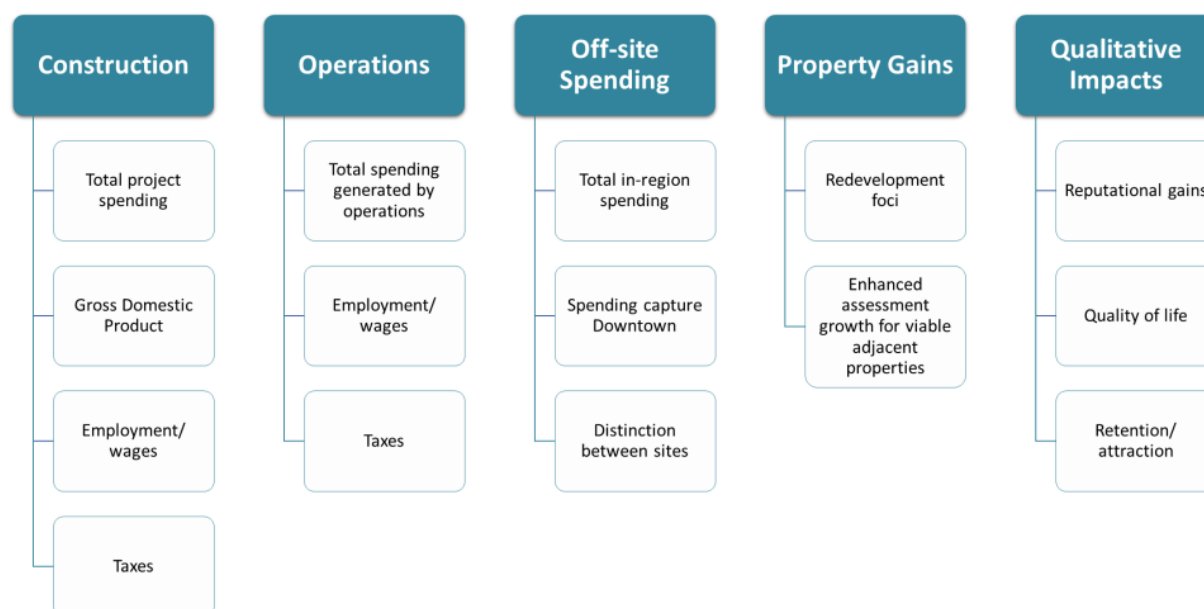


Figure 1: How Facility Operations Create Impact
Kings County Regional Recreation Centre Feasibility Study – Phase 1

Appendix D of the *Kings County Regional Recreation Centre Feasibility Study – Phase 1* report touches on the Economic Impact Potential of a regional recreation facility and specifically focuses on the qualitative impacts such as stimulating private investment, elevating the capacity for year-round tourism, and attracting younger people and families with children to move to the region. The report also models the potential economic impact of three events that could be held at a new recreation facility, including a regional youth basketball event, a regional swim meet and a provincial basketball tournament. Therefore, this analysis has focused on the potential economic impacts of the construction and ongoing operation of a regional recreation facility.

The gold standard for economic impact modelling is evaluating economic impact through input-output models. Input-output models are built using detailed statistics on activities in the economy under consideration to estimate the total effect of an initial change in spending in a particular area of the economy, known as a multiplier. Statistics Canada generates these tables at the national and provincial levels only; it is possible to generate these tables for sub-national economies, but to do so accurately requires a comprehensive survey of the local economy, which can be both costly and time-consuming.

In the absence of input-output tables at the sub-national level, the most accurate alternative approach for estimating local multipliers is to use the economic base multiplier, estimated as the ratio of total regional income or employment to income or employment in exporting sectors. Ideally, a survey of local businesses would be done to identify their industry sector, the geographic sources of their revenue and the residential patterns of their employees, out of which a multiplier could be estimated with a high degree of confidence. Such a survey would also be costly and time-consuming, so export sector income and employment in Kings County has been estimated using location quotient techniques (see below).

Income Multiplier

The income multiplier (K) can be stated as:

$$K = Y/X = (1 - m_2 + m_1) / (1 - m_2)$$

Where:

Y = the income impact on the local economy

X = the initial spending injection that accrues as income in the local economy

m_1 = the marginal propensity to consume locally – that is, the proportion of X that materializes at the first round of spending as local value added

m_2 = the average propensity to consume locally – that is, the value corresponding to m_1 at subsequent rounds of spending in the local economy as a whole

If we assume that $m_1 = m_2$, that the average and marginal propensities to consume locally are equal, then the income multiplier can be simplified to:

$$K = 1 / (1 - m_2)$$

The value of m_2 is estimated using the economic base method. If it is assumed that employment is proportional to income, then the proportion of income spent locally is equal to the ratio of non-basic (or non-exporting) employment (NBE) to total employment (TE). The income multiplier can then be stated as:

$$K = 1 / (1 - NBE/TE)$$

Using the location quotient method, the location quotient compares the proportion of employment in an industry in the local economy with the proportion of employment in that same industry in a larger benchmark economy. In this case, the proportion of employment by industry in Kings County has been compared to the proportion of employment by industry in Nova Scotia. If the location quotient in an economy is exactly 1.0, then that industry is viewed as perfectly meeting the needs of the local economy. If the location quotient is less than 1, then the local industry isn't meeting the needs of the local economy and goods or services are being imported to satisfy local demand. If the location quotient is greater than 1, then the industry is exceeding the needs of the local economy, and the excess goods or services that are being produced are being exported. Thus, any industry with a location quotient greater than 1 is an exporting (or basic) industry.

When comparing the percentage of the workforce employed by industry in Kings County with the percentage employed at the provincial level using data from the 2021 Census, seven industries have a location quotient greater than 1 (see Table 1). Together, these seven industries employ 66.1% of the workforce of Kings County, meaning 33.9% of the workforce are employed in industries that have location quotients less than or equal to 1; that is, 33.9% of the workforce in Kings County work in non-basic (or non-exporting) industries.

| Sector | Kings% | NS% | LQ |
|---|-------------|-------------|------|
| Agriculture, Forestry, Fishing & Hunting | 5.5 | 3.7 | 1.49 |
| Mining, Quarrying, Oil & Gas | 0.3 | 0.6 | 0.50 |
| Utilities | 0.2 | 0.8 | 0.25 |
| Construction | 6.6 | 7.3 | 0.90 |
| Manufacturing | 9.4 | 6.4 | 1.47 |
| Wholesale Trade | 2.1 | 2.3 | 0.91 |
| Retail Trade | 12.2 | 12.1 | 1.01 |
| Transportation and Warehousing | 3.4 | 4.1 | 0.83 |
| Information and Cultural Industries | 1.2 | 1.7 | 0.71 |
| Finance and Insurance | 1.9 | 3.4 | 0.56 |
| Real Estate & Rental and Leasing | 1.2 | 1.3 | 0.92 |
| Professional, Scientific and Technical Services | 4 | 6.4 | 0.63 |
| Management of Companies and Enterprises | 0.1 | 0.1 | 1.00 |
| Administrative and Support Services | 3.5 | 4.4 | 0.80 |
| Educational Services | 8.4 | 7.9 | 1.06 |
| Health Care & Social Assistance | 16.4 | 14.5 | 1.13 |
| Arts, Entertainment & Recreation | 1.4 | 1.9 | 0.74 |
| Accommodation & Food Services | 6 | 6.2 | 0.97 |
| Other Services | 4.2 | 4 | 1.05 |
| Public Administration | 10 | 8.6 | 1.16 |
| | 98.0 | 97.7 | |
| Industry - Not Applicable | 2.0 | 2.3 | |

Table 1: Location Quotients by Industry for Kings County Compared to Nova Scotia, 2021 Census

Therefore, to solve for K:

$$K = 1 / (1 - NBE/TE)$$

$$K = 1 / (1 - 33.9/100)$$

$$K = 1 / (1 - .339)$$

$$K = 1 / 0.661$$

$$K = 1.5129...$$

An income multiplier of 1.5129... means that every dollar injected into the Kings County economy creates 51 cents in direct and indirect impact, in addition to the original dollar. Note that the income multiplier is independent of any individual project and would only change to reflect changes in the composition of either the Nova Scotian or Kings County economies.

Employment Multiplier

The employment multiplier (K_e) can be stated as:

$$K_e = K_{nb} (W_b / W_{nb}) + 1$$

Where:

K_{nb} = The non-basic (non-exporting) sector multiplier, defined as the income multiplier (K)-1

W_b = The mean labour income per period in the unit under analysis

W_{nb} = The mean labour income per period in the local economy

The *Kings County Regional Recreation Centre Feasibility Study – Phase 1* report includes a pro forma Statement of Profit and Loss on page 93, which includes an estimation of the annual wage expense for a regional recreation complex. The yearly wage expense of the facility is estimated to be \$679,138 in Year 1, increasing by 3% per year. Page 91 of the same report gives the expense assumptions for the pro forma P&L, including assumptions about staffing. From the report:

In summary, the staffing model includes the following:

- General Manager
- Aquatics Coordinator
- Administrative Assistant
- Maintenance and Operations Staff
- Front Desk/Registration Staff
- Lifeguards and Lesson providers
- Lifeguard Supervisor
- Fitness Instructors (contract)
- Recreation Coordinator

The cost of front desk and maintenance staff is based on an operating schedule of 112 hours per week. Lifeguard expenses assume a minimum of two lifeguards present during all operating hours in addition to the supervisor.

An operating schedule of 112 hours per week would require 3 staff, each working 37.5 hours per week, to fully cover. Therefore, throughout this analysis, the term full time equivalent (FTE) will be used to refer to 1 position working 37.5 hours per week. It is possible, and quite common, for one FTE position to be filled by multiple people working part-time; for example, one person working 20 hours per week and one working 17.5 hours. These two employees would be considered to be working one FTE position.

Using the positions and hours of operation described above, it can be assumed that a minimum of 3 Maintenance and Operations Staff, Front Desk/Registration Staff and Lifeguard Supervisors would be required, as well as at least 6 Lifeguards and Lesson providers. Assuming there is 1 each of the General Manager, Aquatics Coordinator, Administrative Assistant, Fitness Instructors and Recreation Coordinator gives a minimum staffing complement of 20 full time equivalent (FTE) positions for the recreation complex. The exact staffing composition of a recreation complex will depend on the operational needs of the facility, which in turn will depend on the types of amenities and programming offered.

Dividing the Year 1 wage estimate from the *Feasibility Study* (\$679,138) by 20 gives a mean earnings estimate for the recreation complex of \$33,957. It should be noted that this gives an estimated hourly rate of pay of \$17.41, which is below the lower limit of Level 1 of the Municipal Pay Band (\$18.84/hour).

The average total income in Kings County in 2020, as reported in the 2021 Census, was \$38,920. Therefore, to get the employment multiplier:

$$K_e = K_{nb} (W_b / W_{nb}) + 1$$

$$K_e = [(1.5129... - 1) * (\$33,957 / \$38,920)] + 1$$

$$K_e = 1.4475...$$

An employment multiplier of 1.4475... implies that each FTE job created for the recreation complex would support an additional .4475 FTE jobs in the local economy. Therefore, creating 20 FTE positions for the recreation complex would be expected to support an additional 9 FTE positions across the County. Note that the employment multiplier is sensitive to the average income of the direct FTE positions; a higher average income would increase the multiplier, indicating that more indirect positions would be supported.

Economic Impact of Operations

The estimated annual wage expense can be multiplied by the income multiplier to get the estimated annual impact in the local economy. For Year 1, this is estimated to be \$1,027,440 (\$679,138 * 1.5129...), increasing by the 3% wage escalation each year. The impact from creating 20 FTE positions would support 9 additional FTE positions in the Kings County economy.

| Operational Impact | Y1 | Y2 | Y3 | Y4 | Y5 |
|---------------------|--------------|--------------|--------------|--------------|--------------|
| Wages | \$ 679,138 | \$ 699,512 | \$ 720,497 | \$ 742,112 | \$ 764,375 |
| Est. Employment | 20 | 20 | 20 | 20 | 20 |
| Indirect Employment | 9 | 9 | 9 | 9 | 9 |
| Est. Annual Impact | \$ 1,027,440 | \$ 1,058,263 | \$ 1,090,011 | \$ 1,122,711 | \$ 1,156,392 |

Economic Impact of Construction

The *Kings County Regional Recreation Centre Feasibility Study – Phase 1* report gives several capital cost estimates, depending on the ultimate design of the facility. The lowest of these estimates, Option 1 for CORE Program only, was \$58 million.

In general, economic impact assessments only consider the impacts of money brought in from outside the study area. In the case of public infrastructure, it is assumed that if the money was not spent on constructing a recreation complex, it would be spent on other infrastructure instead (such as sidewalks, water or sewer infrastructure). While these would be different projects requiring different skillsets and materials, the overall impact at the industry level for the construction industry is assumed to be equivalent regardless of the type of public infrastructure constructed. Therefore, it would be inappropriate to consider any economic impact if the entire \$58 million capital cost was borne by municipal governments in the region.

Where it would be appropriate to estimate an economic impact attributable to construction would be the impact of any external sources of funding on the Kings County economy. External sources of funding in this case would most likely come from either the federal or provincial governments, or both. A similar project in Yarmouth, the Mariners Centre expansion, has received \$15.9 million in funding from the federal government and a combined \$7 million from the provincial government, for total external funding of \$22.9 million. It would therefore not be inappropriate to use a figure of \$30 million of external funding for the purposes of estimating the economic impact of construction of a completely new facility. Backing out the 15% HST applicable in Nova Scotia gives an estimated initial injection into the economy of \$26,086,957.

Assuming that construction will be done by local companies and expenditures for components, fixtures etc., are made through local suppliers, construction expenditures, less federal and provincial sales taxes, circulate through the local economy creating increased demand for goods and services, income and more re-spending. Therefore, the estimated initial injection is multiplied by the income multiplier (1.5129...) to estimate the total impact in the local economy, \$39,465,895.

To get an estimate of the number of jobs supported by the total economic impact, it must be determined what percentage of that total income can be attributed to wages. Two recent economic impact studies of local recreational facilities were reviewed; the first looking at the incremental economic impacts of the Kentville indoor soccer facility, and the second looking at the potential economic impacts of a renovated Pisiquid Canoe Club in Windsor (completed in 2014). Both studies give an estimate of the total impact of construction on the Kings County or Kings & West Hants economies, as well as an estimate of the portion of that that can be attributed to household income. The studies give a wage percentage estimate of 38.63% and 38.68% respectively. Taking the average of these and applying it to the \$39.5 million total impact gives an estimate of the total wages that would be generated in Kings County of \$15,255,781. Dividing this figure by the average total income in Kings County, \$38,920, gives an estimate of 392 FTE positions supported by the construction phase of the recreation facility.

| | |
|--------------------------------|----------------------|
| Construction Impact | |
| Est. External Funding | \$ 30,000,000 |
| Less: HST | \$ 26,086,957 |
| Total Economic Impact | \$ 39,465,895 |
| Est. %to Wages | 38.66% |
| Total Wages | \$ 15,255,781 |
| Avg. total income, 2020, Kings | \$ 38,920 |
| Est. FTE jobs created | 392 |

Cumulative Economic Impacts

Like most major infrastructure projects, a regional recreation complex would be expected to have an economic life measuring in decades. The economic life of an asset ends when it becomes more cost-effective to replace it than to continue repairing it. Many of the facilities that currently exist in Kings County were constructed in the 1960s and are approaching the ends of their economic lives at approximately 60 years of age. With proper maintenance and investment, it is not unreasonable to expect a new recreation facility to operate just as long; however, for the purposes of this analysis, a more conservative anticipated economic life of 40 years would be appropriate. Therefore, the cumulative impacts of the operation of the facility over its economic life can be estimated.

The annual impact of the facility would be estimated just as before, by applying the income multiplier to the annual wages paid by the facility to estimate the direct economic impact in Kings County and by applying the employment multiplier to the number of FTE positions created for the facility to estimate the number of indirect jobs that would be supported in the local economy. To get the annual impact in future years, an annual escalation of costs would be applied to the Year 1 estimates and compounded annually for the lifetime of the facility. The *Feasibility Study* uses a 3% escalator for costs, which is likely appropriate. Using an hourly rate of pay of \$17.41 and estimating that 20 FTE positions will be created for the facility, the estimated lifetime operational impact of a regional recreation complex over 40 years is estimated to be \$77.5 million. In today's dollars, the lifetime operational impact of the facility is estimated to be \$23.7 million. Adding the estimated impact of construction, \$39.5 million, to the estimated lifetime operational impact gives an estimated total economic impact for the construction and operation of the facility of \$116.9 million. In today's dollars, the total economic impact is estimated to be \$63.2 million.

| | |
|--|-----------------------|
| Annual Escalator | 3.0% |
| Average Hourly Wage | \$17.41 |
| Est. FTE Jobs at facility | 20 |
| Number of years of operation | 40 |
| Est. Lifetime Operational Impact | \$ 77,470,289 |
| <i>Present Value of Lifetime Operations</i> | <i>\$ 23,749,047</i> |
| Est. Construction Impact | \$ 39,465,895 |
| Est. Total Economic Impact (Future Value) | \$ 116,936,183 |
| <i>Present Value of Total Economic Impact</i> | <i>\$ 63,214,942</i> |

The *Kings County Regional Recreation Centre Feasibility Study – Phase 1* report estimates the economic impact of three types of events that could be held at a regional recreation complex: a regional youth basketball event, a provincial youth basketball tournament, and a regional swim meet. A summary of the estimated impacts on the economy of Kings County for the three events is below:

| | Regional Basketball | Provincial Basketball | Regional Swim Meet |
|--|----------------------------|------------------------------|---------------------------|
| Total Attendance | 300 | 900 | 240 |
| Initial Expenditure | \$ 41,326 | \$ 136,375 | \$ 37,598 |
| GDP (Direct & Indirect) | \$ 22,741 | \$ 75,044 | \$ 20,455 |
| Employment (full-year jobs) | 0.5 | 1.5 | 0.5 |
| Wages and Salaries | \$ 14,883 | \$ 41,084 | \$ 13,354 |
| Taxes (Direct & Indirect) | \$ 11,585 | \$ 38,231 | \$ 10,518 |
| <i>Federal</i> | <i>\$ 4,708</i> | <i>\$ 15,535</i> | <i>\$ 4,284</i> |
| <i>Provincial</i> | <i>\$ 5,930</i> | <i>\$ 19,569</i> | <i>\$ 5,374</i> |
| <i>Municipal</i> | <i>\$ 948</i> | <i>\$ 3,128</i> | <i>\$ 860</i> |
| Industry Output (Direct & Indirect) | \$ 50,200 | \$ 165,724 | \$ 45,510 |

The impacts of these events would be above and beyond the impacts attributable to the construction and regular operation of the recreation facility. The kinds and sizes of events that could be held at a regional recreation complex are highly dependent on the amenities that are included in the facility; further analysis of the impacts of specific events would be more appropriate to be done in conjunction with or after more detailed design decisions are made.

Major infrastructure investments are known to stimulate private investment in a local economy. Infrastructure investments can signal that there is confidence in the local economy, both at present and into the future, create or highlight competitive advantages of a region, and be used as a tool for attracting and retaining residents and businesses. Recreation facilities can be viewed as generators of economic demand that can then be filled by the private sector; commercial retail and restaurants, hotel(s) and conference spaces are examples of the kind of development that can and does occur around recreation facilities. Indoor recreation facilities, in particular, can help drive demand for the tourism industry during their off seasons.

An example of this kind of development pattern is the Pictou County Wellness Centre, constructed in 2012 in Pictou County adjacent to Highway 104 at Exit 23 (Westville/New Glasgow/Stellarton). The Holiday Inn Express Stellarton-New Glasgow, a 125-room hotel, was built less than a kilometre from the Pictou County Wellness Centre. Additional traditional fixed-roof accommodations in the New Glasgow/Stellarton area underwent significant renovations after the Wellness Centre was built. Several other commercial buildings were constructed in the vicinity after the Wellness Centre was built, including a family diner, a Subway and a strip plaza housing a pizza place and the Victorian Order of Nurses.

Due to the breadth of possibilities for investment that could come from the private sector, it is difficult to provide an estimate of the economic impacts of private investment at this

time. In general, the feasibility of private developments, whether they be commercial or residential, often hinge on the cost of acquiring and servicing the underlying land. Major infrastructure projects can provide or increase access to land that was previously inaccessible for development, as well as provide the infrastructure required for development. Private development will also be influenced by site-specific factors, including: the amount of land that is available for development; any restrictions on what can be built on that land, such as topography, soil composition or environmental factors; and the demand for land in that area. It is expected that there will be private investment in connection with a regional recreation complex.

Conclusion

The economic impacts of a regional recreation facility can be both qualitative and quantitative. Qualitatively, a regional recreation facility can stimulate private investment, elevate the capacity for year-round tourism, and attract younger people and families with children to move to the region. Quantitatively, the economic impacts can be divided into three distinct categories; construction impacts, operational impacts, and the impacts of events held at the facility.

Investing in major infrastructure projects can stimulate private investment in an economy. While it is anticipated that private investment would follow the construction of a regional recreation complex, it is difficult to accurately predict the types of investment that might be made. This makes it difficult to provide an estimate of the economic impact of private investment beyond speculation.

Construction impacts only consider the impacts of funding that originates outside the local economy. If \$30 million in external funding were acquired for the construction of a regional recreation complex in Kings County, it is estimated that would have a total economic impact of \$39.5 million and support 392 full time equivalent jobs during the construction period.

Operationally, it is estimated that the annual economic impact of the recreation facility would start at \$1.0 million per year, increasing by 3% per year, through the direct creation of 20 FTE positions and the indirect creation of 9 additional FTE positions. The annual economic impact is sensitive to the number of FTE positions required and their average rate of pay; an increase in either will increase the annual economic impact.

Over the course of the economic life of a regional recreation complex, estimated to be 40 years, the combined economic impact of construction and operation of the facility is estimated to be \$116.9 million, or \$63.2 million in today's dollars. The economic impacts generated by events held at the facility would be above and beyond the impacts of construction and regular operations.