

TECHNICAL MEMORANDUM

TO: John Riendeau
Director of Business Development
Rhode Island Economic Development Corporation

FROM: RKG Associates, Inc.

DATE: June 5, 2013

SUBJECT: Rhode Island Economic Development Corporation Economic Impact Analysis of RIAC 11-04 : T.F. Green Airport – Design and Bid for Services to Implement a New De-icer Management System, Phase II

Project

The project consists of upgrades to the deicer runoff management system at T.F. Green State Airport. The proposed improvements include online monitoring and diversion of deicing storm water to comply with the Rhode Island Pollutant Discharge Elimination System (RIPDES) permit issued by the Rhode Island Department of Environmental Management (RIDEM). The improvements prevent the discharge of deicing runoff to surface waters when the concentration exceeds the RIPDES permit limits.

Purpose

Pursuant to the requirements of Rhode Island General Law §42-64-10(a)(2), the Rhode Island Economic Development Corporation is obligated to issue an economic impact analysis prior to the issuance of its bonds. This technical memorandum presents the analysis and findings in estimating these impacts in relation to the RIAC Deicer Management System Project.

Findings

The findings of this analysis are summarized in Table 1 and are presented in greater detail in the following section.

Table 1 – Estimate of Direct and Indirect/Induced Impacts

Construction Costs	Direct Impacts	Indirect/Induced Impacts	Total Impacts
\$30,255,612			
Wages	\$10,589,464	\$7,039,876	\$17,629,340
Employment	211	175	387
Mean Wage	\$50,073	\$40,184	\$45,592
Income Taxes	\$397,105	\$263,995	\$661,100

Source : RKG Associates, Inc.

Methodology

The assumptions, inputs and sources utilized in this analysis are presented as follows:

- **Construction and Wages** – as provided by the Rhode Island Airport Corporation (RIAC) the estimated construction costs associated with the project total \$30,255,612. Typically the labor component (i.e., wages) constitutes 35% of construction costs. Applying this percentage to the reported construction costs results in an estimated direct labor cost of \$10,589,464.
- **Construction Employment** – according to the *Bureau of Labor Statistics, May 2012, State Occupation Employment and Wage Estimates for Rhode Island*, the estimated annual mean wage for all construction and extraction occupations is reported to be \$49,430. Applying an inflation factor of 1.3% (commensurate with the estimated consumer price index), results in an estimated mean annual wage of \$50,073 for 2013, which is used in this analysis. Dividing the estimated labor cost of \$10,589,464, by the mean wage of \$50,073, results in an estimated direct construction employment of 211 full time equivalents (FTEs).
- **Estimated Income Taxes** – according to the Rhode Island Division of Taxation, Department of Revenue, the average income tax rate is 3.75%, which when applied to the total construction wages of \$10,589,464 yields an estimated direct income tax of \$397,105.

Indirect and induced impacts account for the multiplier effect of the direct economic activity, or what is commonly referenced to as the spinoff impacts, whereby a dollar spent re-circulates throughout the economy across a multitude of industry sectors. The multipliers used in this analysis were developed by the U.S. Department of Commerce RIMS II econometric modeling¹ program for Rhode Island, by industry sector for 2010.

- **Indirect/Induced Employment** – the direct construction employment is increased via a construction multiplier (0.8284) to arrive at an estimated *indirect/induced employment* of 175.
- **Indirect/Induced Wages** – the direct wages for construction form the basis for estimating indirect wages, which are increased by a construction multiplier (0.6648) to arrive at the estimated total *indirect/induced wages* \$7,039,876, which results in an average annual wage of \$40,184 from the estimated indirect/induced employment.
- **Indirect/Induced Income Taxes** – applying the estimated average income tax rate of 3.75% to the indirect/induced wages equates to an estimated *induced/indirect income tax* of \$263,995.

¹ A discussion of the RIMS II modeling, by Boston University, is at www.bu.edu/esi/research-methodology/rims/.