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Agency of Administration

February 28, 2014

Memorandum

To: House Committee on Government Operations
Senate Committee on Government Operations
House Committee on Natural Resources and Energy
Senate Committee on Natural Resources and Energy
House Committee on Corrections and Institutions
Senate Committee on Institutions

From: Jeb Spaulding, Secretary of Administration

Re: Report on Econometric Modeling Recommendations
Required by Section 2 of Act 112 of 2012

Act No. 112 of 2012: An act relating to evaluating net costs of government purchasing.
It is hereby enacted by the General Assembly of the State of Vermont:

Sec. 1. ECONOMETRIC ANALYSIS PILOT PROJECT

(a) The secretary of administration and the legislative economist shall design and implement a one-year pilot project to conduct an econometric analysis when evaluating government contracts for goods and services by the department of buildings and general services, the agency of natural resources, and the department of corrections. Each agency and department participating in the pilot project shall have the discretion to determine which contracts are appropriate for econometric analysis.

(b) When considering applicable contract bids for goods or services, each agency and department participating in the pilot project shall consider the interests of the state relating to the proximity of the supplier and the costs of transportation, and relating to the economy of the state and the need to maintain and create jobs in the state. The commissioner or secretary, as applicable, shall utilize an econometric model that shall:

(1) account for the net fiscal impact to the state of all significant elements of bids, including the level of local employment, wages and benefits, source of goods, and domicile of bidder;

(2) be designed to be easily updated from year to year; and

(3) be designed such that state employees administering bid processes can easily utilize the model in an expedient fashion.

Sec. 2. REPORT

On or before January 15, 2014, the secretary of administration shall submit a report to the house and senate committees on government operations and on natural resources and energy, the house committee on corrections and institutions, and the senate committee on institutions on the results of the econometric analysis pilot project and any further legislative or policy recommendations for expansion, adaptation, or elimination of econometric analysis in government contracting.

Sec. 3. EFFECTIVE DATE

This act shall take effect on July 1, 2012.
Approved: May 8, 2012

This report reviews the current status of findings and recommendations toward satisfying Section 2 of Act 112 of 2012. Section 1 of Act 112 of 2012 requires the Secretary of Administration and the legislative economist to design and implement a one-year pilot project to conduct an econometric analysis when evaluating government contracts for goods and services by the Department of Buildings and General Services, the Agency of Natural Resources, and the Department of Corrections. Section 2 requires the Secretary of Administration, working with the legislative economist, to submit a report to the House and Senate Committees on Government Operations and on Natural Resources and Energy, the House Committee on Corrections and Institutions, and the Senate Committee on Institutions on the results of the econometric analysis pilot project and any further legislative or policy recommendations for expansion, adaptation, or elimination of econometric analysis in government contracting. Not all of these provisions have been fully met, but all are in progress. The goal is to fully address the statute.

The econometric analysis of a given set of bids should establish an equivalent net cost for comparing bids with varying in-state and out-of-state composition. A contract awarded to an in-state bidder using Vermont employees, subcontractors, and suppliers will generate more economic activity within Vermont than an outside contractor who uses non-Vermont labor, subcontractors, and supplies for performing otherwise identical work. For this analysis, our key concern becomes the final amount of economic activity generated by each contractor in Vermont and the resulting net cost to the State of Vermont. The net cost of a contract to the State would be the amount paid to the contractor less the amount recovered in additional tax revenue. The amount of economic activity, and the resulting tax revenue, will vary depending on the particular sector of industry and the fraction of the work performed in Vermont (or fraction of goods sourced in Vermont).

If a 100% out-of-state bidder offered to provide insurance services for $100,000, what would be an equivalent bid from a 100% in-state bidder? The econometric model indicates that, for insurance carriers, a $100,000 contract awarded to a 100% in-state bidder would generate $6,400 in additional tax revenue for Vermont. Therefore, a Vermont bidder doing 100% of the work in Vermont could bid up to $106,400 and be the net low bidder. It follows that a bidder doing 50% of the work in Vermont could bid up to $103,200 and be the net low bidder, although the degree of linearity will change depending on the type of work being done in-state; some activities have more local impact than other activities. The amount of revenue generated would be different for industry sectors other than insurance. The percentages affecting in-state vs. out-of-state bids should not be published until a strategy to avoid negative effects and encourage positive ones is developed.

Generally, contract awards are based on multiple factors, such as the extent to which requirements are met, cost, technical merit, quality of service, etc. While econometric analysis affects the cost factor, all other considerations remain unaffected, and the outcome of a specific bid award may be unaffected by a revised in-state cost. All bids should continue to be evaluated for the best interest of the State; net cost is an important, but not necessarily determinative, consideration.

The state economist for the legislature (Kavet, Rockler & Associates, LLC) completed an analysis of the data collected for econometric analysis, covering over 300 contracts for more than $100,000 across state government. Data collection was only partially successful, largely because some data elements considered essential by the economists could not be obtained without going back to each contractor. This prevented an analysis of actual State contract data. The ongoing process of collecting data for RFPs over $100,000 will, over time, provide enough data to allow the economists to analyze a sufficient number of contracts, across enough industry sectors, to recommend areas where running the model on specific bid situations would be most helpful.

Nevertheless, the economists were able to construct a model for economic activity and resulting tax revenues based on hypothetical cases. An econometric model was used to compare pairs of hypothetical contracts, identical except for being entirely in-state or entirely out-of-state. These "hypotheticals" were run for a few different industry sectors. The additional tax revenue generated ranged from 1.5% to 7.6%, depending on sector.

The "hypothetical" insurance carrier contract showed a high percentage of generated tax revenue. In a related actual example, the Department of Human Resources awarded a contract to an out-of-state contractor, Minnesota Life, for $4.7M for state employees' life insurance. Any amount below $5,000,800 would have been the low bid for this contract from a 100% in-state bidder. Unfortunately, no in-state bid was submitted.

The state employees' life insurance contract demonstrates another consideration that could affect using this econometric approach for certain contracts. Many state employees, and their benefits, are paid for with federal funds. The model specifically determines the net cost to the State of Vermont, not to the federal government. Generally, federal regulations (Uniform Guidance) require that we follow the same policies and procedures we use for procurements from our non-Federal funds. (§ 200.317). This would not prevent us from using net cost to the State if it were incorporated into our procedures. However, Maine's governor issued an executive order (2012-004) to include scoring criteria evaluating bidders' economic impact on the Maine economy and State revenues, and the Federal Highway Administration told Maine that it would not be acceptable to them. We will continue to evaluate the federal funds aspect but recommend not applying econometric modeling to any contracts involving federal funds.

Recommendations

1) Do not apply this approach to any bid situations involving federal funds. If further research indicates that contracts funded by certain federal agencies can be included by adding econometric modeling to our documented procedures, that step will be considered.
2) We intend to continue to refine the data requirements in cooperation with the legislative economists and state employees responsible for ensuring an effective bidding process, and continue data collection for RFPs over $100,000. The data collection requirements and process cannot adversely impact the bidding process. There is likely to be an inverse relationship between the quantity and type of information we require and the number of bids we receive. The shorter list of questions we developed for the RFP process is probably close to an optimum [Exhibit 1]; the full dataset we asked for on existing contracts may be too much [Exhibit 2]. In reaction to this concern, the economists have proposed a list of questions [Exhibit 3]. A consensus list of questions that addresses the data concerns and minimizes bid impact will need to be developed.
3) Continue to refine the statewide spreadsheet database of contracts and RFP responses to allow the economists, utilizing the collected data, to make specific recommendations to target contracting areas that would most benefit from analysis. The completeness of responses regarding the location of economic activity linked to State contracts should be improved.
4) Establish a contract to allow BGS Purchasing and individual State departments to access this modeling approach to assist with the goals of Sec. 1 of Act 112 of 2012. The model should be independently reviewed for this application before awarding a contract. The contract will need to include provisions for security of bid information and integrity of the system.
5) Educate stakeholders to facilitate understanding of the model.
6) Provide guidance to departmental contracting staff for optimizing contracting practices in the best interest of the State. This guidance will be developed by BGS Purchasing.

Exhibit 1: RFP Questionnaire – Data elements necessary for detailed analysis

For bid amounts exceeding $100,000.00 bidders are requested to respond to the questions identified below.

Act 112 of the Acts of 2012, "An act relating to evaluating net costs of government purchasing," requires the Secretary of Administration and the legislative economist to design and implement a pilot project to help measure the net fiscal impact to the state of certain identified purchases. In order to accomplish this goal, we are seeking data on contracts for goods and services to support the econometric evaluation.

Questions have been identified that may assist the state in the data collection process which will ultimately be used for Econometric Modeling. Indicate N/A if not applicable.

1. Vermont-based company?

   Yes: __________ No __________

2. Describe your companies presence in Vermont:

   Description: ____

   ____

   ____

   ____

3. Indicate number of employees residing in Vermont: ________
4. Indicate percentage (%) of employees residing in Vermont: ________________(%)
5. Indicate Vermont payroll for most recent fiscal year: $ ____________________
6. Indicate percent (%) of total payroll in Vermont: ___________(%)

When responding to questions 7 and 8, please indicate: Yes, No, or Not known at time of bid.

7. If Out-of-State Vendor (see Question 1), do you expect to use Vermont subcontractors to fulfill any portion of the Contract? Or, will Vermont be the source of any portion of goods sold?

   ____

8. If Vermont Vendor (see Question 1), will out-of-state subcontractors or goods sourced outside of Vermont be used to fulfill any portion of the contract? ____________________

Extract of Results from the State Economist for the Legislature:

The purpose of this analysis is to quantify the differential benefit to the State of Vermont through the utilization of in-state vendors versus out-of-state vendors for expenditures made by State government.

SOURCE DATA COLLECTION AND EVALUATION

The first step in assessing the value of modeling the differential economic impacts between in-state and out-of-state contracting was to attempt to collect relevant data on all State contracts. This database would allow assessment of the value of contracting that could be performed in-state and critical contract characteristics that affect net economic impacts, such as the vendor industry, size of contract and the local content of subcontractors that may be used to perform contracted work. The information requested for each contract is listed on the following page [Exhibit 2].

Among the useable contract records provided, there were 110 out-of-state contracts listed. Of these, 33 responded that no Vermont subcontracts or materials were used in performing the work, while fully 77 had no response. There were no contracts affirming the use any Vermont inputs of any kind on the part of out-of-state contractors.

A review of the 110 out-of-state contracts in the database indicated that in 16 cases there were qualified Vermont firms suitable to bid the job, 3 cases which indicated no Vermont firms were qualified, 2 indicated that it was not clear, and that for the remaining 89 contracts, either no response or "not available" was indicated. With respect to whether an out-of-state contractor had any Vermont payroll, only 2 provided the dollar value for FY13 and 109 were either blank or "not available." The data from RFPs were not included in this analysis. It is not possible, using the data collected, to estimate the percentage of current Vermont contracts that could be performed by in-state firms, the industries and activities associated with such work, or the economic impacts associated with performing such work in-state. A combination of continuing the RFP data collection process and examining bid history documentation should enable such an analysis.

ECONOMETRIC MODELING – 5 HYPOTHETICAL CASES

We constructed 5 hypothetical contracts designed to illustrate potential differences in economic impacts by industry sector, contract size and, in one case, facility location, and analyzed net State economic impacts using the Vermont REMI model[1] and a KRA fiscal model based on REMI outputs.

These hypotheticals provide a demonstration of how an econometric model could be used to quantify an in-state vendor contract price differential (expressed as a percentage of an out-of-state bid) that would yield an equivalent economic impact, as measured by net State tax revenue. In these hypotheticals, we employed model specifications that represent a maximum impact differential by assuming that out-of-state firms have no direct Vermont payroll, and that in-state firms behave according to REMI model defaults (based on historical experience) with respect to in-state expenditures.

[1] This model is provided by Regional Economic Models, Inc. of Amherst, MA, and has been used by KRA, the Joint Fiscal Office and various State Agencies and Departments for more than 15 years. It is a dynamic regional input-output and behavioral econometric model that estimates direct, indirect and induced economic impacts. Fiscal impacts are estimated by KRA using REMI model output and Vermont revenue data maintained by the Joint Fiscal Office, Detailed REMI model background information is available at www.REMI.com.

Exhibit 2: Requested Data Elements for Contract Analysis

Contract #
Vendor#
Vendor Name
Vendor State on Contract
Contract Description
Contract Maximum Amount
Beginning Date
Expiration Date
Origin Code
Buyer
Status (Active or Open)
VISION Account #
Dept ID
Fed Fund (Y/N)
Original Contract Value
Multi-Year Agreement (Y/N)
Project Manage or Buyer Full Name
If Out-of-State Vendor, are Vermont Subcontractors Used to Fulfill Any Portion of the Contract? Or, is Vermont the source of any portion of goods sold?
If Yes, Percent of Total Expenditures to Fulfill Contract Paid to Vermont Subcontractors / for Vermont-sourced goods?
If Yes, Description of Vermont Subcontracting Work / Vermont Sourced Goods
If Vermont Vendor, are Out-of-State Subcontractors / Goods Sourced Outside of Vermont Used to Fulfill Any Portion of the Contract?
If Yes, Percent of Total Expenditures to Fulfill Contract Paid to Out-of-State Subcontractors / for Goods Sourced Outside of Vermont
If Yes, Description of Out-of-State Subcontracting Work / Goods Sourced Outside of Vermont
Could This Contract be Bid On or Fulfilled by a Vermont Entity?
Have Vermont Entities Bid on this Contract in the Past 10 Years?
If Yes, Have Vermont Entities Been Selected to Fulfill This Contract?
If No, What are the Primary Reasons a Vermont Vendor was Not Selected?
NAICS Code
Vermont-based company? (Y/N)
Describe company's presence in Vermont
Number of employees residing in Vermont
% of employees residing in Vermont
Total Vermont Payroll for Most Recent Fiscal Year
Percent of Total Payroll in Vermont
Data reported by: Company or State Project Manager / Buyer?

Exhibit 3: Data elements proposed by the state economist[2]

For bid amounts exceeding $100,000.00 bidders are requested to respond to the questions identified below.

Act 112 of the Acts of 2012, "An act relating to evaluating net costs of government purchasing," requires the Secretary of Administration and the legislative economist to design and implement a pilot project to help measure the net fiscal impact to the state of certain identified purchases. In order to accomplish this goal, we are seeking data on contracts for goods and services to support the econometric evaluation.

Questions have been identified that may assist the state in the data collection process which will ultimately be used for Econometric Modeling. Indicate N/A if not applicable.

1. Vermont-based company?
Yes: No
2. NAICS Code________
3. Describe Goods and services to be produced on this contract.

____

____

____

4. Indicate the total number of employees expected to be working on this contract_________(total employees) and the approximate percentage of these who reside in Vermont. _______(%).
Please indicate total expected payroll for this contract for all personnel ______ ($ for wages, salaries and payroll taxes), and percentage of this that will be earned by Vermont residents_______(%).
5. Indicate the total value of all subcontracts that are included in your bid amount________($) and the percentage of that value that will likely be paid to Vermont subcontractors________(%).
Please indicate the total value of supplies and services (not subtracted) that are include in your bid amount _______________($) and the likely percentage that will be paid to Vermont suppliers_____________(%).

[2] State contracting staff have indicated that these in-state value amounts and percentages are difficult to obtain compared to the questions in Exhibit 1.

While these 5 hypothetical cases are not actual contracts, they are based on information that indicates they are in sectors in which substantial State expenditure occurs and in which in-state vendors may be available. They include a $4M expenditure in the banking sector (banking services could include things like bond issuance activities, pension fund management and related services), a $2.5M contract for nursing services, two variants on a $5.4M expenditure for ambulatory care (one in which the providing facility is located in-state and the other in which the providing facility is located out-of-state) and a $5.1M insurance carrier expenditure. For the two hypothetical estimates (in-state vs. out-of-state vendors) we assumed that the in-state vendor does not subcontract any work performed to out-of-state subcontractors and that the out-of-state vendor does not subcontract any work to in-state subcontractors.

In actual contracts, detailed information on subcontractors, if any, is essential for accurate impact analysis, as is information on the exact types of services and materials that are to be provided within the terms of the contract.

MODEL RESULTS

Per the table below, there are substantial economic benefits to the State when in-state vendors are used. For example, a $5.1M contract for insurance sector services could result in 36 additional Vermont jobs and more than $325,000 in additional State tax revenues when compared to the same contract let with an out-of-state vendor. This tax revenue differential forms the basis for an equivalent contract price comparison and shows that a $5.4M bid from an in-state firm would represent about the same net cost to the State as a $5.1M bid from an out-of-state firm. In this case, the differential is 6.4%. Thus, an in-state bid that is as much as 6.4% above an out-of-state bid for these services would have an equivalent impact in terms of net costs to Vermont taxpayers. In the 5 hypothetical cases run, the equivalent contract price differentials range from 1.5% to 7.6%, depending upon the industry sector and exact contract content and specifications.

Through this type of analysis, differentials for individual contracts and/or contract groupings could be produced, providing guidance on equivalent bids from in-state versus out-of-state vendors.

HYPOTHETICAL IN-STATE VS. OUT-OF-STATE CONTRACT COMPARISONS

MODEL INPUTS			MODEL OUTPUT								COMPARATIVE STATISTICS				
Sector	Contract Value ($000)	Direct Employment Assumed	OUT-OF-STATE VENDOR Assuming No Direct Vermont Employment – Total Vermont Impacts				IN-STATE-VENDOR Assuming All Direct Employment Within Vermont, Using REMI Default Values – Total Vermont Impacts				Total GDP Difference In-State vs. Out-of-State ($000)	Total GDP Difference as Percent of Contract Value	Total Employment Difference In-State vs. Out-of-State	Additional Vermont Tax Revenue In-State vs. Out-of-State ($000)	Additional Vermont Tax Revenue if In-State as a Percentage of Out-of-State Contract Value
			Employment	Output ($000)	Income ($000)	GDP ($000)	Employment	Output ($000)	Income ($000)	GDP ($000)					
Banking	$ 4,000	12	0.1	16	3	10	25	5,104	984	3,151	3,141	79%	25	$ 305	7.6%
Nursing Services	$ 2,448	13	11	812	328	506	18	1,400	568	878	372	15%	8	$ 36	1.5%
Ambulatory Care															
a. Facility Located in VT	$ 5,410	23	20	1,984	850	1,234	36	3,636	1,554	2,258	1,024	19%	16	$ 99	1.8%
b. Facility Located Out of	$ 5,410	2	3	344	134	208	36	3,636	1,554	2,258	2,050	38%	33	$ 199	3.7%
Insurance Carriers	$ 5,100	19	1	96	22	52	36	6,408	1,726	3,440	3,388	66%	36	$ 329	6.4%