

**REBUTTAL OF THE AMERICAN COUNCIL OF ENGINEERING CONSULTANTS OF NY STUDY  
NYS ENGINEERING COSTS: IN HOUSE VS. OUTSOURCED ENGINEERING (JAN. 2011)**

The *Engineering Costs: In House vs. Outsourced Engineering* report by the Polytechnic Institute of NYU released in January 2011, claims to be an objective study on the costs of in-house versus consultant design work. It is not an objective study but one **done at the request of and paid for by the American Council of Engineering Consultants-New York (ACECNY)**. This association represents consultant engineering companies that bill New York State hundreds of millions of dollars annually for outsourced engineering work.

Since ACECNY paid for the study it is not surprising that its findings contradict all other objective research that has been done on this issue. The study is only able to reach the inaccurate conclusion that NY state employee engineers cost more than consultant engineers hired by the State by using a flawed methodology. Their methodology significantly over-estimates the cost of state employee engineers by using unsubstantiated overhead factors and other inaccurate assumptions and under-estimating consultant engineers cost by using the estimated salaries, including the salaries of support staff, rather than the actual costs consultant engineers charge the State for their services.

This analysis documents the major methodological flaws in the ACECNY study

**The ACECNY Study's Salary Data Is Not Based On The Actual Salaries Of DOT's Engineering Consultants And State Employees Engineers**

The main problem with the ACECNY study is that its salary data is completely based on estimates, assumptions, and survey data. The study did not look at actual salaries paid to consultant engineers under contract to the Department of Transportation (DOT) nor did they use the actual salaries paid to DOT employees in engineering titles. This data is readily available from the Office of the State Comptroller. Instead, the study relies on a self-report survey of 16 engineering firms for consultant engineer salaries and "a weighted average of 3,300 engineer salaried positions...using corresponding salary grades with their respective titles".

**The ACECNY Study Contradicts Objective Studies And Audits Conducted By The Office Of State Comptroller, the Fiscal Policy Institute and KPMG**

PEF and the Fiscal Policy Institute's analysis of state employee engineer and consultant engineer costs use data from **actual contracts, actual costs, and actual state employee payrolls** and is supported by audits and analysis conducted by Office of the State Comptroller and KPMG (under contract to DOT). In fact, the KPMG study was performed by an independent auditing firm which utilized the state-of-the-art cost comparison methodology known as "Activity Based Costing" (ABC) in order to get true cost comparisons. The KPMG study took into account all costs associated with state employee and consultant engineers. The conclusions of the KPMG report were very similar to the reports done by the Office of the State Comptroller. In fact, the

KPMG study found that consultants are approximately 75% more costly than in-house resources for comparable design projects and are more expensive to use for 85% of such comparable projects.

**The ACECNY Study Inflates State Employee Actual Salaries By 168% Using Unsubstantiated and Erroneous Overhead Assumptions**

The ACECNY study asserts that state employee engineers cost “at least 15% more” than consultant engineers (P2). However, their analysis is extremely deceptive and based on unsubstantiated assumptions regarding DOT’s overhead rate and the cost of leave accruals.

The foundation of the updated ACECNY study is based on over counting and double counting the costs associated with state employee engineers and undercounting the costs of consultants. Specifically, the ACECNY study artificially increases the rate of state engineers salaries by 19.36% to account for leave accruals, increases that salary rate by 44.09% to account for state employee fringe benefits, and then applies an overhead rate of 104.91% (a rate that is largely hypothetical and would **also include** the cost of leave accruals), to in house salaries and benefits (see P 11-13).

The first problem with this methodology is that the State’s fringe benefit rate is only applied to a state employee’s salary; it is not applied to the hypothetical cost of their leave accruals. The next problem is that the methodology double counts the “cost” of state employee leave accruals which are already included in the overhead rate. In addition the ACENY study assumes that state employee engineers use all their accruals every year when that is clearly untrue.

More importantly, the study’s overhead rate **has no relationship to actual costs of state employee engineers**. In fact, the basis of this rate is found buried in the report footnotes and is described as a “personal communication.” An audit by the Office of State Comptroller (*Department of Transportation Use of Consultant Engineers Audit 97-S-12*) found that DOT has very small overhead rates and additional employees would add almost nothing to the overhead costs due to economies of scale. Their actual finding states,

Our analysis further indicated that a majority of the Department’s indirect costs are essentially fixed. In other words, **most indirect costs would remain if contracting out for engineering services were eliminated, or would not increase if additional in house engineering staff were hired** (P9-10).

Therefore, the overhead rate used by the ACECNY study is a **hypothetical** cost not an actual cost. The **inverse is true** with respect to the consulting engineers as their overhead charges-- rates in excess of 100% of actual labor charges-- are **in fact billed** to the taxpayer.

## The ACECNY Study Improperly Inflates State Employee Engineer Salaries by Incorrectly Assuming All State Employee Engineers Work a 37.5 hour Week

The ACECNY study states the following:

“The NYSDOT workweek is 37½ hours per week. Time worked beyond this is either compensated time or overtime. A consultant employee’s straight-time workweek is typically 40 hours per week” (page 12).

The study then proceeds to inflate the actual cost of a state employee engineers by increasing their actual salary by “a correction factor” to reflect a 40 hour week.

It is inaccurate that all DOT state employee engineers work a 37.5 hour week. Those engineers that work in DOT’s main office or their regional offices do work a 37.5 hour week. Those who work on a construction project work a 40 hour week. Many engineers work a 40 hour week during the Summer and Fall when they are inspecting a DOT capital project and work a 37.5 hour week during the Winter when they are doing design work. Unfortunately there is no easy way to determine the average work day for a DOT state employee engineer over a full year.

## The ACECNY Study Underestimates the Costs of Engineering Consultants Hired By DOT

When determining the average cost of a consultant engineer hired by DOT, the ACECNY report *relies on a “survey”* of 16 private consulting firms that provide a generic “Average Direct Salary For All Projects.” With survey responses that have average hourly rates as low as \$18.68 and \$26.41 per hour, it is clear that the survey responses are based on all manner of titles such as technician, technical typist, and clerical titles and not limited to civil engineering titles (see P 14). However, the ACECNY report uses a weighted average to determine an average DOT state employee engineering salary. While this would appear to be an appropriate methodology, only 5% of this weighted average is used for titles below a salary grade 20 and none of this 5% goes below a salary grade 15. Thus, a full 95% of this weighted average salary for state employee engineers is for civil engineering titles. The ACECNY estimated average salary of a consultant engineer uses clerical and non-engineering titles to drive the consultant average salary down. Thus, the ACECNY study does not use an apples-to-apples comparison for state employee engineer and consultant engineer direct salaries. Moreover, the report makes no assertion that the survey rates are engineering titles, yet makes a direct cost comparison to NYSDOT civil engineers.

An accurate apples-to-apples comparison can be made by reviewing the Form Bs submitted by the consultants to the Office of the State Comptroller for DOT contracts during SFY 2009-10. A review of the Form Bs *actually submitted by consultants* for engineering work performed in 2010, shows that the civil engineer title *was billed* to the State at average hourly rate of **\$99.69 per hour, or an estimated \$194,397 annually**. This is the actual reported amount, not a generic survey, nor hypothetical amount. Of course the 10% profit would add another \$19,000 to the

cost of the consultant engineer. In contrast, NYSDOT employees in the civil engineer 1-4 title had a weighted average hourly rate of \$53.78 or \$104,871 annually (based on the April 2010 payroll including the cost of their benefits, which in April 2010 was 46% of their salary).

Additionally, the ACECNY study does **not account** for the fact that consultants bill the State separately for “consumables.” A review of **actual contracts** indicates that these are items ranging from spray paint, paper, copying, mileage, motel fees, cell phone use, and rental of snoopers trucks. The costs of these consumables can be tens of thousands of dollars billed to the taxpayer, but not included in the ACECNY study. Conversely, all of these items would be included in the estimated overhead rate used by ACECNY for in-house employees. Thus, the ACECNY report counts consumables as part of the state employee costs, but does not count them toward the consultant costs.

The ACECNY study is deficient in a number of other areas. For example, it does not take into consideration the additional costs of contract administration and oversight that are incurred by DOT and the Office of the State Comptroller when managing consultant contracts. The ACECNY report also erroneously assumes that when a DOT engineer is not working on a specific project, then they are not working. The reality is that DOT employees work on multiple projects and responsibilities on a given day.

Interestingly, the data provided by the ACECNY report indicates that from 2007 to 2010 the hourly rates for state employee engineers have increased by 14.91% **while the hourly rates for consultants have increased by 19.79%**. Thus, even with the erroneous ACECNY methodology, their findings document that the public sector pay increases over the last 3 years are lagging the private sector pay increases (see P15).

## **Conclusion**

The ACECNY study is not a valid comparison of the true costs incurred by the NYS Department of Transportation (NYSDOT) for consultant and state employee “in-house” engineers. Its conclusions have been contradicted by every objective study done on this issue. The only way the ACECNY study was able to incorrectly conclude that state employee engineers were more costly than state employee engineers was their use of a deeply flawed methodology that did not compare the actual costs of consultant engineers and state employee engineers employed by NYSDOT. Our analysis clearly documents the major flaws in the ACECNY study and provides a true comparison based on NYSDOT’s actual costs in SFY 2009-10. **During that time period consultant engineers cost \$99.69 an hour (not counting the profit margin billed to the State) and state employee engineers cost \$53.78 an hour (including the cost of all state employee benefits).**