



# Memorandum

**TO:** TRANSPORTATION AND ENVIRONMENT COMMITTEE

**FROM:** Katy Allen

**SUBJECT:** COST ESTIMATING FOR CAPITAL IMPROVEMENT PROJECTS

**DATE:** 03-26-08

Approved

*Christine J. Shippy*

Date

*3-28-08*

**COUNCIL DISTRICT:** City-Wide

## RECOMMENDATION

Accept this report as an update on estimating the 5-Year Capital Improvement Program (CIP) Budgets.

## BACKGROUND

In accordance with Council Policy 8-12: Estimating Construction Costs and Development of Project Budget, approved in August 2000, staff developed and put into practice sound cost estimating techniques which include the following:

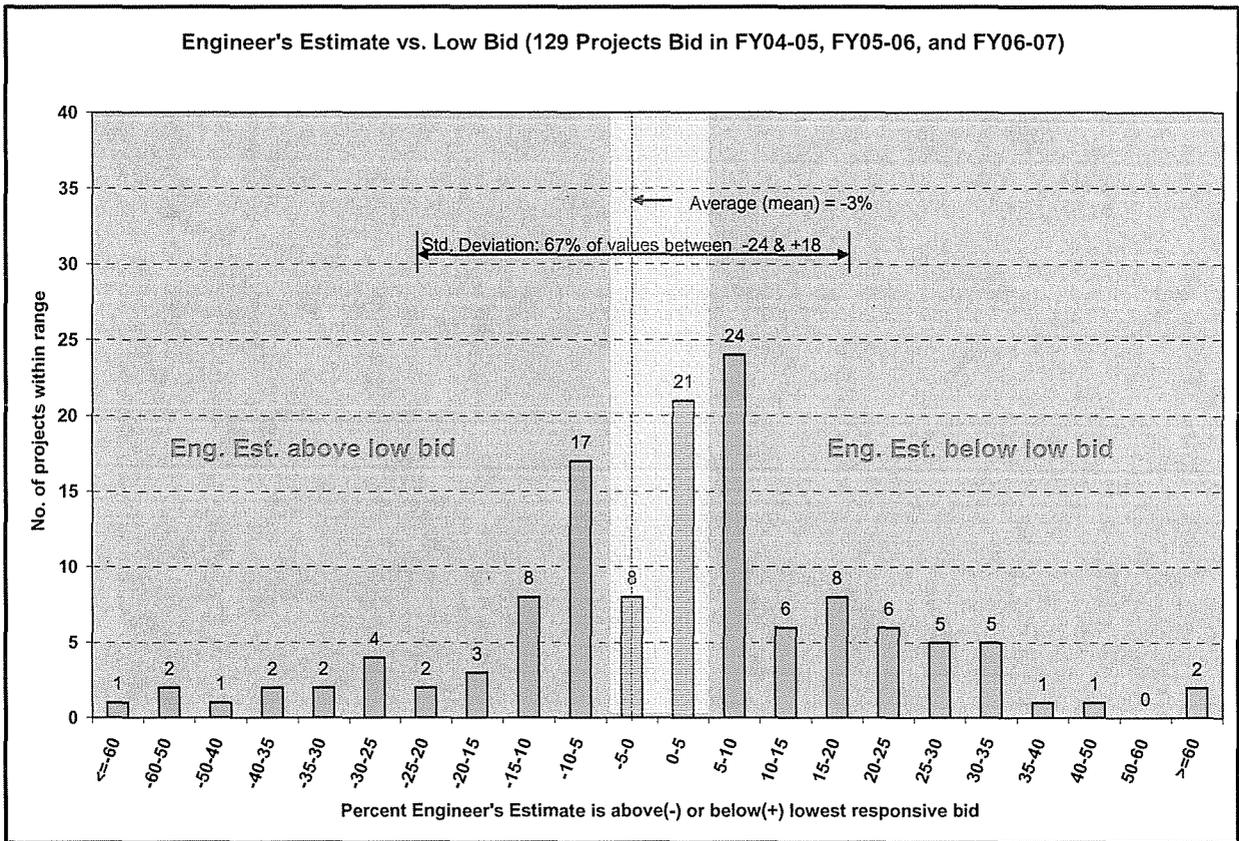
- Examination of historical bid data for commonly-used materials and labor,
- Market research for current pricing of specialized materials and labor, and
- Employment of cost-estimating consultants for complex projects.

While these estimating techniques are in-line with industry standard practices, difficulties in accurately estimating construction costs have been encountered as the market becomes increasingly more uncertain. This uncertainty, attributed to rapidly rising prices for materials and a volatile bidding climate as regional shortages in labor and materials occur, has had a significant impact on staff's ability to accurately estimate and budget project costs.

In response to these difficulties, staff met regularly from September 2007 through February 2008 to discuss ways to improve current processes. To support this effort, data from 129 projects bid over three fiscal years (FY04-05, FY05-06 and FY06-07) was compiled and a comparison between the Engineer's Estimate and the lowest responsive bid price was analyzed for trends (see chart below).

Overall, the Engineer's Estimate averaged about 3% above the low bid – showing that, on average, staff has done a good job of estimating costs. However, in close to half of the projects,

the estimate deviated from the low bid by more than 10%, and in two-thirds of the projects the estimate fell within a range of 24% above to 18% below the low bid. This deviation demonstrates the wide range of uncertainty in the realm of capital improvement project bids.



After a concerted effort to explore available options, staff believes that modifications to the current policy will improve the accuracy and effectiveness of cost estimating and budgeting. The proposed policy revisions would improve cost estimating by making sure that costs are based on thorough and up-to-date knowledge of project scope and schedule, market conditions, and apply a systematic and consistent approach to estimating. In addition, project budgets will feature contingencies to absorb the impact of unforeseen and uncontrollable circumstances. These elements are essential to maintain the necessary balance of revenue and expenditure in the Capital Improvement Program and the corresponding preparation of sound and reliable Capital Budget documents.

## ANALYSIS

Inaccuracies in cost estimating can impact a project in multiple ways. First, an overly conservative estimate that places the cost of construction on the high end as a “safety net” can unnecessarily cause a reduction in scope to the point where the project fails to meet design objectives. Secondly, and often more critical, a low estimate can lead to a project that cannot be realistically built. Removing items after bids come in high can be very costly and unpractical. Lastly, the project schedule suffers when staff takes time to resolve the impacts of over- or under-estimating. To address these issues, staff is considering incorporation of the following measures into the revised policy:

- Increased review and quality assurance of cost estimates.
- Structured contingencies at various project stages to contend with uncertainties, including the use of a bid contingency to absorb the cost of unexpected bid results.
- More formal use of add-alternates to ensure that project scope is not unnecessarily removed.

Staff has prepared a draft revision to Council Policy 8-12 titled, “Estimating Capital Improvement Project Costs and Development of Project Budgets.” This draft is being circulated first to project management staff within the Department of Public Works and to the Budget Office and CIP Action Team in the City Manager’s Office.

## PUBLIC OUTREACH

- Criterion 1:** Requires Council action on the use of public funds equal to \$1 million or greater. **(Required: Website Posting)**
- Criterion 2:** Adoption of a new or revised policy that may have implications for public health, safety, quality of life, or financial/economic vitality of the City. **(Required: E-mail and Website Posting)**
- Criterion 3:** Consideration of proposed changes to service delivery, programs, staffing that may have impacts to community services and have been identified by staff, Council or a Community group that requires special outreach. **(Required: E-mail, Website Posting, Community Meetings, Notice in appropriate newspapers)**

A revised draft will then be circulated for review to Project “Owner” Departments (clients of the Department of Public Works) and other City Departments responsible for Capital Project Delivery. This extensive review process will allow all stakeholders to provide input. The final version of the revised policy will then be presented to Council.

## CEQA

Not a project.

**COORDINATION**

Proposed revisions to Council Policy 8-12 will be coordinated with the City Manager's Office, and the Airport, Environmental Services, General Services, Library, Police, Fire, Transportation, Parks, Recreation and Neighborhood Services Departments.

For questions, please contact David Sykes, Assistant Director, at 535-8440



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Director of Public Works

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