

## Further Recommendations for SFPUC's WSIP Program

**Dr. William Ibbs<sup>1</sup>**  
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In response to issues that arose at the October 11<sup>th</sup> PUC hearing, I have prepared some additional recommendations for the SFPUC to consider in revising its February 2005 WSIP.

Presently the SFPUC and Parsons have not sufficiently analyzed the likelihood and consequences of environmental lawsuits, both to WSIP budget and schedule. There are analysis techniques, such as decision analysis and simulation that can be utilized to model such risks. Such analysis is admittedly difficult but it is unrealistic to assume that there will be no lawsuits or environmental protests during the next 10+ years. I strongly recommend that such a rigorous analysis be conducted and incorporated into any WSIP revision.

Hiring additional, qualified environmental consultants and resolving the split between the PUC and MEA in environmental planning responsibility is paramount, as the Parsons report identifies. The SFPUC should develop and report specific action plans to resolve these concerns. Those action plans should identify who will be directly accountable for mitigating these problems and a time line for such mitigation.

Another concern is the difference between the SFPUC engineer estimates and contractor low bids. SFPUC and Parsons both assume that the engineer's estimates will precisely equal the low bidder's price. I have just finished a review of sixteen smaller SFPUC projects and found that the SFPUC engineer's estimate averaged 10% below the lowest contractor's bid. I therefore recommend that the SFPUC (or Parsons) conduct a more thorough review of such factors – perhaps even reviewing SFPUC project histories – so SFPUC-specific cost additive factors or other mitigation measures can be developed.

Also, it is unclear how thoroughly Parsons reviewed the project costs. One conversation with a Parsons cost engineer indicated that a bottoms-up cost estimate was not in the Parsons project scope and hence not performed. Parsons has substantiated this qualification in other statements: "It was beyond the scope of this assessment to perform detailed quantity verification or unit price checks of all items in the estimates."<sup>2</sup> When asked by a SFPUC Commissioner at the October 11<sup>th</sup> public hearing, the senior Parsons representative indicated that "No, check estimates were not conducted [for the projects]."

In my professional opinion the SFPUC engineer estimates should be reviewed in more detail. Not all – maybe only 4 or 5 of the larger, key projects – should be assessed in more detail than has currently been the case.

Another concern is with Parsons' analysis of the San Joaquin Pipeline system and Bay Division Pipeline #4 sliplining projects. In its October 7<sup>th</sup> report Parsons offered a "minimum

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<sup>1</sup> Professor of Civil Engineering, University of California at Berkeley.

<sup>2</sup> Parsons October 10, 2005 draft, p. 8-3.

cost” option for each of these two projects. However the details of those scope options and their costs estimates are not thoroughly or clearly discussed in the Parsons report. The SFPUC should more clearly articulate which option it recommends and the rationale for its recommendation. A clear statement about impacts to Level of Service goals should also be presented.

The SFPUC charged Parsons to evaluate the Program schedule from a life safety perspective. (“Propose or affirm the existing Schedule Basis that addresses the issue of imminent public safety hazards.”) In order to do this, either the SFPUC or Parsons should conduct some preliminary analysis of the advantages and disadvantages of shifting project starts to achieve earlier realization of Level of Service goals, particularly the seismic goal.

The schedules for the SJPL and BDPL sliplining “minimum cost options” were not evaluated by Parsons. Those schedules should be evaluated and incorporated into the overall Program schedule, particularly since the SFPUC seems inclined to accept these options.

The financing costs are a substantial portion of this Program’s cost, 21%. In its October 3<sup>rd</sup> report, Parsons said that reviewing the financing was outside its scope of work. So it reused the \$753 million estimate that was in the SFPUC’s February WSIP report, despite the Program costs being \$837 million (\$4.4 vs. \$3.6 billion) higher. Then in its October 7<sup>th</sup> revision, Parsons inexplicably used different financing numbers: \$747 million (16.9%) for the higher cost Program and \$596 million (16.6%) for the “minimum” option. If the original 21% financing cost factor were to be used, Parsons cost estimate would be about \$182 million higher than reported. The SFPUC should explain how these new numbers were developed.

To reiterate, I wrote in my October 10<sup>th</sup> report that I have serious concerns about the February 2005 WSIP plan and the Parsons Independent Assessment. I have no found reason to change that opinion. The recommendations presented above are, in my judgment, reasonable, sound steps that any professional engineering organization should take before proceeding further with a multi-billion, decade-long construction program.

One final note: The actual budget estimate for the “minimum option” in Parsons’ October 7<sup>th</sup> report is \$4.1 billion, not \$4.3 billion as listed in my October 10<sup>th</sup> statement.