Analysis: Rail costs are understated and underfunded.

The City now admits that the rail transit line from Kapolei to UH Manoa would cost $4 billion. The Mayor says that we cannot afford this amount at this time and that he intends to begin with a 'bare bones' $3 billion line most probably starting at Kapolei and ending downtown.

However, no one is pretending that the full extent of the line to UH Manoa will not get built at all. Accordingly, for our financial analysis we will start with the $4 estimate.

Cost overrun

Cost overruns for rail lines average 25 percent. For this reason, we are adding a $1 billion contingency to the $4 billion cost projection for a total of $5 billion.

Bond interest

The city has no cash on hand. Therefore, the funds needed to build the rail line would have to funded by selling City General Obligation Bonds.

There is no provision for bond interest in the city's $4 billion cost estimate. The 1992 Environmental Impact Statement (pp. 6-8) for rail transit showed accumulated bond interest of $1 billion through just the first six years of its financial plan.

Our calculation of interest for the latest plan shows that $2.6 billion is the interest the City would have to pay up to the time the ½ percent GE tax increase expires in 2021. When the tax expires, the outstanding debt for the rail line would be $6.0 billion; the City would therefore will still need to pay more interest in later years.

Refurbishing

The city has not warned taxpayers that virtually all of the rail cars, rail lines and other equipment will have to replaced, or rehabilitated, within 25 years from start of operations as you can see from the provisions made in other metro areas with rail as follows:

> Chicago Transit Authority capital expenditure plan: "All rail cars rehabilitated at mid-life (12-13 years), overhauled at their quarter-life points (6 and 18 years), and either rehabilitated or replaced at the end of their useful life (25 years)."[i]
>
> Atlanta Transit Authority: "MARTA started work last year to rebuild and upgrade all 48 miles of track. It is an extensive project that will not be complete until mid-2007. Our trains have run every day for over 25 years – this work is necessary to keep the system strong for the next 25 years and beyond. The Track Renovation is part of a major capital program that also includes the overhaul of over 200 of MARTA's rail cars."[ii]

Table from Transportation and Land Use Coalition[iii]

Fig. 3: BART's $6.8 billion in Capital Maintenance and Renovations Needs[iv] (all costs are in **MILLIONS**) Source: BART Planning Department report to Board of Directors, November 9, 2000.				
Category	2001 – 2010	2011 -2020	2021 - 2030	Category Totals
Continuous Recurring Needs	$370	$430	$470	$1,270
Cyclical Fixed Facilities Renovation and Replacement Needs	$790	$770	$1,190	$2,750
Cyclical Transit Vehicle Renovation and Replacement Needs	$600	$852	$1,364	$2,816
Totals Over Time	$1,760	$2,052	$3,024	$6,836

BART began its first repair and rehabilitation plan in 1994 at a cost of $1.2 billion within only 20 years of opening.

System reinvestment

There is no provision, or even mention of the future costs for what the Bay Area Rapid Transit District euphemistically refers to as “system reinvestment.” For example, if after ten years the ticket vending machines are replaced with newer models, the agency capitalizes these costs and does not count them maintenance. These capitalized items require significant funding and should be provided for.

Summary

The University of Aalborg, Denmark, conducted the most extensive international study ever of actual versus estimated costs in transportation infrastructure development.[v] They concluded:

> "Based on a sample of 258 transportation infrastructure projects worth US$90 billion and representing different project types, geographical regions, and historical periods, it is found with overwhelming statistical significance that the cost estimates used to decide whether such projects should be built are highly and systematically misleading. Underestimation cannot be explained by error and is best explained by strategic misrepresentation, that is, lying. The policy implications are clear: legislators, administrators, investors, media representatives, and members of the public who value honest numbers should not trust cost estimates and cost-benefit analyses produced by project promoters and their analysts."

Other distinguished and authoritative people have warned about cost misrepresentations. Dr. John Kain, Chair Emeritus of Harvard's Economics Department, wrote "*Deception in Dallas*," Dr. Don Pickrell, Chief Economist of the U.S Department of Transportation's Volpe Center, wrote what is known as the *Pickrell Report*, Dr. Martin Wachs, Chair Emeritus, Department of Urban Planning, UC-Berkeley, wrote "*When planners lie with numbers*," and there have been many, many others.[vi] We have listed twenty of these studies in the footnotes to this article.

We cannot say that no one has warned us about misrepresented costs.

Our spreadsheet contains no provision for capital costs of any kind beyond the initial costs. Nevertheless, it shows that when the additional ½ percent GE tax expires at the end of 2021, we will have spent $2.6 billion on interest and suffered operating losses of just over $1 billion and yet we will still owe over $6 billion in outstanding City rail bonds. That is because the tax revenues from the ½ GE tax are far less than the combination of bond interest and operating losses and so we will have had to issue additional bonds to cover this shortfall.

The question is, as Mayor Hanneman is fond of saying, "Can we afford it?" and "Can we maintain it?"

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[i] http://www.transitchicago.com/business/capitalprogram.html

[ii] http://www.itsmarta.com/newsroom/latest_news/singletrack.htm

[iii] http://www.transcoalition.org/reports/overext/overextended.html

[iv] BART: "If funding from Sec. 5307 and 5309 funds are held constant over the next ten years, then the average annual gap for BART is $112 million. Seismic retrofit costs of $610 million over the next ten years do not appear to be included in the BART Planning Department's figures above (figure 3)."

[v] *Underestimating Costs in Public Works Projects Error or Lie?* By Bent Flyvbjerg, Mette Skamris Holm, and Søren Buhl. American Planning Association Journal, Summer 2002.

[vi] Hall, P. (1980). Great planning disasters. Harmondsworth, UK: Penguin Books. Penguin Books.

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[vi][8] Edwards, Chris. Government Just Can't Contain Itself. Cato Institute. September 23, 2003

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Financing shortfall: the 0.5% General Excise tax increase from 2007 through 2021 is totally inadequate

The City's Bill 40 provides for a 0.5 percent G.E. tax increase for 15 years only until 2021 to pay for rail transit. Light rail cost overruns of 25 percent are the norm and so we added that to the city's $4 billion estimate of rail's construction cost for a total of $5 billion. Other assumptions are shown below. Summary: Our calculations show that as the tax ends in 2021, we will have paid a total of $2.64 billion in interest, incurred $1 billion in operating losses and will still owe slightly over $6 billion in outstanding bonds. This is because the tax revenues are totally inadequate to reduce the bond debt.

(in millions of current $'s)

	Tax revenue growth rate = 4.2%						*Interest costs = 5.5%*			*Inflation = 2.96%*	
	Year	Tax Revenues	Interest earnings (expense)	Annual tax Revenues Net of Interest	Operating Losses	Federal funds revenues	Revenues, net of interest & operating losses.	Capital Outlays	Revenues, less interest, losses & capital outlays	Bond Balance	Increase by inflation: Operating Losses
Columns >	B	C	D		F	G					M
	2005	$143.0									($75.0)
	2006	$149.0									($77.2)
Tax start	2007	$155.3		$155.3			$155.3		$155.3	$155.3	($79.5)
	2008	$161.8	$8.5	$170.3			$170.3		$170.3	$325.6	($81.9)
	2009	$168.6	$17.9	$186.5			$186.5		$186.5	$512.1	($84.3)
Construction	2010	$175.7	$28.2	$203.8			$203.8	($1,500.0)	($1,296.2)	($784.1)	($86.8)
	2011	$183.0	($43.1)	$139.9			$139.9	($1,500.0)	($1,360.1)	($2,144.2)	($89.3)
	2012	$190.7	($117.9)	$72.8			$72.8	($1,500.0)	($1,427.2)	($3,571.4)	($92.0)
Service start	2013	$198.7	($196.4)	$2.3	($94.7)	$456.0	$363.6	($1,500.0)	($1,136.4)	($4,707.8)	($94.7)
	2014	$207.1	($258.9)	($51.8)	($97.5)		($149.4)	($43.8)	($149.4)	($4,857.2)	($97.5)
	2015	$215.8	($267.1)	($51.4)	($100.4)		($151.8)		($151.8)	($5,008.9)	($100.4)
	2016	$224.8	($275.5)	($50.6)	($103.4)		($154.0)		($154.0)	($5,162.9)	($103.4)
	2017	$234.3	($284.0)	($49.7)	($106.4)		($156.1)		($156.1)	($5,319.0)	($106.4)
	2018	$244.1	($292.5)	($48.4)	($109.6)		($158.0)		($158.0)	($5,477.1)	($109.6)
	2019	$254.4	($301.2)	($46.9)	($112.8)		($159.7)		($159.7)	($5,636.7)	($112.8)
	2020	$265.1	($310.0)	($45.0)	($116.2)		($161.1)		($161.1)	($5,797.9)	($116.2)
Tax ends	2021	$276.2	($318.9)	($42.7)	($119.6)		($162.3)		($162.3)	($5,960.2)	($119.6)

	Balance
	$5,000.0
	$5,148.0
	$5,300.4
	$5,457.3
	$5,618.8
	$4,285.1
	$2,912.0
	$1,498.2
	$42.5
	($0.0)
	($0.0)

Notes: The grayed-out data are used only for reference.

Col. B: The 2005 tax revenue amount is the $148 million used by the Council during Bill 40 discussions as the tax revenues in 2005 dollars, less $5 million as the administrative costs for collecting the tax.

Cols. F & L: Operating losses of FY2005 $75 million is calculated from the difference between losses for TheBus and as shown in the 1992 FEIS. those calculated for the LPA.

Col. M: The total cost of the system of $5 billion is the city's estimate of $4 billion plus a 25 percent allowance for cost overruns.

The tax revenue growth rate of 4.2 percent is the average experienced by the state for the last fifteen years, 1989-2004.

The bond interest cost of 5.5 percent is what experts consider the likely average over the 15-year the life of the GE tax increase.

The rate of inflation shown of 2.96 percent is that forecast by DBEDT for the next five years.

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