

Excerpts from  
**“An Evaluation of the Honolulu Rapid Transit  
Development Project's Alternative Analysis and  
Draft Environmental Impact Statement.”** Hawaii  
Office of State Planning and University of Hawaii.  
May 1990.

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## INTRODUCTION

*An Evaluation of the Honolulu Rapid Transit Development Project's Alternative Analysis and Draft Environmental Impact Statement* was prepared for the Office of State Planning (OSP) and the Hawaii State Dept. of Transportation (HDOT) and administered by the University of Hawaii (UH). It consists of reports from eleven nationally recognized academic experts selected by the State together with a summary by the UH team.

The experts' reports were all delivered by early May 1990 and were originally planned to be available from OSP prior to the key City Council decision on the preferred alternative in July 1990. However, OSP finally released the report in July, 1991 thanks mainly to the efforts of Geneva Chin, a reporter with KGMB-TV.

Table 2 in the report lists the original potential consultants. Among them there were six nationally recognized rail critics but not one was selected. Nevertheless, even the consultants chosen by the state raised the same criticisms that we level at the rail project.

We find that the UH summary put the best face it could on the experts' criticisms. It should have questioned whether the City's analysis of alternatives was thorough enough to warrant the selection of rail as the preferred alternative. Instead the report assumed that rail would be built. They say, for example, "...once rapid transit is operational, we recommend that the City and the State make judicious selection of those TSM programs that will encourage transit ridership. *The reason is that some TSM programs will only facilitate automobile use and could thereby undercut transit ridership.*" UH 18.8 (emphasis added).

Their attitude seems to be that we should build the rail system anyway and then when it fails to live up to expectations impose all kinds of restrictive policies on motorists to force them to use it. Rail transit for them is somehow the end rather than the means.

The UH team totally overlooks many of the consultants' criticisms that go right to the heart of the matter—should rail be built at all?

Because of this bias we recommend that readers bypass the UH summary and go directly to the consultants' reports. Their principal findings are that:

- Rail will have no noticeable impact on traffic congestion.
- The alternatives considered were totally inadequate and should have included busways and high quality transit options.
- The lack of these alternatives is the outcome of political and special interest group pressure.
- The ridership projections are flawed due to faulty modeling and wrongly assuming that transit ridership increases with population and employment.

### **Quotes from “Evaluation.”**

The final document was published as *An Evaluation of the Honolulu Rapid Transit Development Project's Alternative Analysis and Draft Environmental Impact Statement*. Hawaii Office of State Planning and University of Hawaii. May 1990.

The written comments on the 1990 Draft Environmental Impact Statement were submitted by those listed below and University of Hawaii staff prepared the Summary.

Dr. Penelope Canan, Professor of Sociology at the University of Denver and faculty director of the University's International Institute for Environment & Enterprise. She has served as the chair of the Environment and Technology Section of the American Sociological Association.

Dr. Moshe Ben-Akiva, Turner Professor of Civil Engineering at MIT. He works closely with Nobel Prize winner, Professor Daniel L. McFadden on forecasting issues.

Robert Cervero, Professor of Urban and Regional Planning at the University of California, Berkeley, and a member of the Editorial Board, *Journal of the American Planning Association*.

G. Scott Rutherford, is Professor of Civil and Environmental Engineering at the University of Washington and Director of its Transportation Engineering Graduate Studies Program.

Donald Shoup, Professor and Chair of Urban Planning at University of California, Los Angeles and is also Director, of UCLA's Institute of Transportation Studies.

John R. Pucher, Professor of Urban Planning at the Blaustein School of Planning and Public Policy at Rutgers University.

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*[All the quotations are shown with the writer's own emphasis unless otherwise noted. The convention used such as "Shoup 12.3" means that the quote is from Dr. Shoup's report on page 12 at approximately .3 of the page down. Substitutions or additions used to clarify the issues are enclosed in square bracket.]*

### **A. Effects on traffic congestion**

"A rapid transit system will not be likely to improve [traffic congestion], and such improvements should not be a major selling point for the system." Rutherford 1.5

"... it is debatable whether any noticeable impact will occur on highway facilities ..."  
Rutherford 6.5

"... estimates of fuel, pollution, and time savings on highway facilities are generally paper exercises that seldom occur in the real world." Rutherford 3.5

"The Final Environmental Impact Statement should more clearly state that the primary benefit of rapid transit will be to substantially increase mobility for transit-dependent commuters." UH 3.7

"...the primary benefit of rapid transit is not the reduction of automobile congestion. Rapid transit's primary benefit should be to substantially increase mobility for transit-dependent commuters." UH 24.3

"...it appears that relatively few public benefits of any regional significance will result from any of the fixed guideway alternatives." Cervero 14.3

"...it would be highly misleading to measure the success or failure of the proposed transit system solely on the basis of its ability to reduce auto congestion. To the extent that it increases the travel speed of current bus riders, who are slowed down by roadway congestion, this would be a benefit even if congestion levels on roadways did not fall at all. At least bus riders, who are not at all responsible for creating the congestion problem on the roads, would be less likely to suffer from it." Pucher 12.5

"The only really effective way to reduce auto congestion is by raising the price of auto use ... and by giving traffic priority to buses and high occupancy vehicles." Pucher 12.4

"In order to increase transit's mode splits to the 20-30% range, a level that would begin to yield quite noticeable and important social and environmental benefits, some combination of the following initiatives would likely need to be introduced: increased fuel taxes and registration fees; elimination of free or heavily subsidized parking; introduction of an auto-restricted zone in the core area (such as practiced in Singapore); creation of HOV-lanes and contra-flow lanes that give buses operating on surface streets substantial speed advantages..." Cervero 11.6

### **B. Flawed ridership projections**

#### **1. Transit grows with population and employment**

"I question the factoring of the transit trip table on the basis of population and

employment growth, mainly because over the last decade Honolulu has shown rapid growth in everything but transit ridership...This same pattern has been observed in many other U.S. cities." Rutherford 2.5

"...the rates of growth for transit have not been in lock step with population and employment growth." UH 31.9

"The City's...model assumes that growth in transit ridership can be related as a linear function to growth in population and employment. This is a simple assumption that the City made for convenience. Although we have reasons to doubt the validity of this assumption, we have no better substitute." UH 36.7

## 2. Flawed modeling.

"The City's consultants used a "pivot-point" methodology to project ridership for the different alternatives in the year 2005. This method, which was endorsed by UMTA, has only been used elsewhere for rail extension projects, rather than for a complete system." UH 2.2

"The major weakness that reoccurs at several phases of the ridership forecasting methodology is the absence of validation against local data." Ben-Akiva 9.5.

"...no evidence is presented in the report on the validity of the...tables." Ben-Akiva 2.8

"...the level of accuracy of these boarding counts is not specified." Ben-Akiva 2.8

"The report does not present data to support these assumptions." Ben-Akiva 3.4

"My conclusion is that the selected values for the parameters of the mode choice model have not been sufficiently justified." Ben-Akiva 7.7

"I question the validity of the forecasting procedure..." Ben-Akiva 7.9

"I am not convinced that any of the models is "transferable" to other situations and I would recommend not to use them without further testing." Ben-Akiva 8.7

"Any forecasting exercise of this nature would be associated with significant uncertainties." Ben-Akiva 9.8

"...it is possible that parallel bus routes that now provide better service to some will experience a reduction in service level...it should be pointed out that several new guideway projects in the U.S. attempted to force an unnatural number of trips to the guideway, even for short segments of longer bus trips. Some systems actually had lower total transit ridership after a fixed guideway system was built." Rutherford 6.6

"Since the entire justification for the project rests on significant rates of electing public transportation over the private automobile, the failure to discover what would influence this choice may be a serious flaw." Canan 1.8

## **C. Inadequacy of the alternatives considered**

### 1. General.

"Perhaps what is most surprising, and to some extent alarming, about the alternatives presented is that few real choices are offered." Cervero 3.7

"...we think that the TSM alternative has not been adequately defined in the

AA/DEIS."UH 17.4

"The range of alternatives considered in the AA/DEIS was disappointingly narrow and might have included other options." Rutherford 1.6

"I believe that it is vitally important to pay as close attention to the proper design of the TSM alternative as it is to the design of the rail alternatives before an informed decision can be made about whether and how to finance new rail transit." Shoup 12.9

"The proper specification of this [TSM] alternative is crucial, because it affects all the subsequent calculations of how many more riders the rail system will attract, and how much extra revenue will have to be raised to finance the rail system...it does *not* involve any other of the now common transportation *demand* management techniques that are an integral component of transportation system management. I would argue that the TSM alternative is inadequately specified, and thus that the contribution that TSM can make toward improving transportation is *underestimated*. If this is true, the improvements attributable to the rail alternatives are *overestimated*." Shoup 12.3

## 2. Busways.

*OUR COMMENT: Busways as used by the consultants here refers to grade-separated or barrier-separated lanes reserved for buses and high occupancy vans and cars. They are also sometimes referred to as transitways.*

"In particular, what is lacking is a serious investigation of several viable dedicated busway options." Cervero 3.4

"Where the current set of alternatives really fall short is in ignoring various busway configurations as a fundamental option to rail transit." Cervero 5.4

"Quite aside from the neglect of low cost TSM alternatives, there is no exploration of the possibility of investing more in HOV lanes for buses and carpools, as an intermediate level of investment between the No-Build alternative and the rail alternatives." Shoup 12.8

"The additional riders that might be drawn to busways (by virtue of the superior quality of service offered by buses feeding directly into neighborhoods) might more than make up any higher costs (if indeed cost estimates are accurate). If presented in terms of a more traditional benefit-cost framework, it is likely that busways would compare far more favorably with fixed guideway rail options." Cervero 4.9

"The real advantage of busways...is that they reduce...transferring, the Achilles heel of mass transit in many modern, low-density metropolises like Honolulu." Cervero 4.3

"...a TSM II could be considered that...might include contraflow lanes, busways, reversible bus streets ... " Rutherford 7.2

"In summary, I would recommend that an additional study be commissioned that seriously examined a range of busway options as legitimate contenders to the fixed guideway rail options." Cervero 5.3

## 3. Buses and Vanpools.

"...I do not believe a sufficient number of significant high-quality mass transit alternatives have been considered for Oahu." Cervero 3.3

*OUR COMMENT: Mass transit is used here with its normal meaning of vehicles moving people en masse such as in trains, buses, vans or taxis. By brilliant PR, the city has managed to co-opt it to solely mean rail transit.*

"It is particularly important that intensified and significantly upgraded bus transit options be considered for Oahu in light of the fact that the bus system already in place has proven itself to be one of the most heavily utilized and cost-productive operations in the country." Cervero 5.3

"Other TSM strategies, such as those involving regional vanpool services, timed-transfer bus facilities, and auto-restraint measures, are ignored." Cervero 3.9

#### D. Political Considerations.

"This criticism [of the City's TSM alternative], I believe, is less a reflection on the work of the consultants and more an outcome of pressures exerted by various political and special interest groups." Cervero 3.4

*OUR COMMENT: This may be acknowledging that Parsons, Brinckerhoff, the City's consultant for the Alternatives Analysis is also one of the nation's primary authorities on busways. They are the authors of High Occupancy Vehicle Facilities. December 1990.*

"The TSM option appears "born to lose," as most TSM options are in alternatives analyses." Rutherford 7.2

"As presented, the alternatives give the impression that a fixed guideway rail system, be it light or heavy rail, was pre-established at the outset to be the preferred high-capacity transit technology for Oahu." Cervero 3.8

#### E. Underestimation of costs and taxation.

Shoup notes that the City understates the cost per ride because it deducts the imputed value of the train riders' time savings versus taking the bus. Adding that back he shows in his Table 2 that the cost for each round trip for Alternative 3 would be \$25.58. Shoup 1.8 & 2.0

"Fare revenue is expected to cover less than \$1 per round trip. *Therefore, the remaining cost of over \$20 for every round trip added by the rail system will have to be financed by City, State, and Federal subsidies.*" (his italics) Shoup 1.9

"...estimates of subsidies...fail to take into account the possibility that the cost of constructing or operating the rail system will exceed the forecast, or that the ridership will fall short of the forecast." Shoup 3.2

"...the responsibility for financing any capital cost overruns would ultimately fall on the state and/or city governments. *Thus, it seems only prudent for the AA/DEIS to explore, by a sensitivity analysis, the financial implications of possible capital cost overruns, and to include contingency plans showing who will pay for any overruns.*" (his italics) Shoup 9.4

*OUR COMMENT: If Honolulu were to experience the same average capital and operating cost overruns as other recent cities as shown in Pickrell it would result in increased annual taxes of about \$85 million annually. This could be funded by way of a 25% property tax increase.*



"It should also be noted that the AA/DEIS (on p. S-23) describes the proposed rail transit system alternatives being considered for Honolulu as being comparable to the existing systems in Detroit and Miami. Among the ten rail systems studied by Pickrell and Jacob, both Detroit and Miami had overruns on both capital and operating costs that were among the highest found, and the two largest overestimates of future ridership. This observation reinforces the recommendation that the AA/DEIS should be revised to show the financial implications of possible cost overruns of the sort commonly experienced on other rail transit projects, and to include contingency plans indicating possible sources of revenue to finance such overruns." Shoup 10.2

"In the opinion of the reviewer, in the absence of further study, a construction difficulty factor of at least 25 percent should be entered onto the parametric cost figures developed in the cost report. This is in addition to the 25 percent contingency factor." Tanaka 22.3

*OUR COMMENT: Tanaka believes that the cost estimates, based on H-3 experience, do not allow for the expense of construction in the highly trafficked urban core.*

"I believe it would be difficult to justify (the City's rail proposal) on any economic grounds." Cervero 12.3

"In the opinion of the reviewer, rights-of-way costs can easily be double or triple of that reported ... " Tanaka 22.7

"It seems totally inconsistent for the State to countenance increasing Hawaii's most regressive and most heavily used tax, the general excise and use tax, in order to finance the construction of a rail transit system, while at the same time the State and City continue to subsidize downtown parking *for their own employees*." Shoup 12.7

#### E. Environmental concerns

"...decibel levels may be noticeably higher to occupants of tall buildings adjacent to and above the aerial guideways ... Street canyons, such as found in Waikiki, can intensify noise through ricocheting and megaphone effects." UH 71.9

"Because of the preponderance of motorists making short automobile trips to access park and ride lots, the emission rates and energy consumption rates of the portal-to-portal trip can actually increase because of the cold start phenomenon. For these and other reasons, it would be a subterfuge to promote the fixed guideway investment on environmental grounds." Cervero 10.2

#### F. Judging Public Support

"...passively endorsing a project is quite different from accepting it once real locations are announced, once bulldozers begin, once residents feel the costs in their pockets, once the inconvenience of five or six years' construction wears daily, once visual impact drawings become inhibiting in reality, and traffic congestion is yet unabated. The documents I have reviewed do not suggest that there is such an overwhelming positive endorsement of any alternative to indicate that people are electing any option enough to accept such costs." Canaan 7.5

## SUMMARY

The City has told us repeatedly that they have spent nearly \$30 million performing hundreds of studies over the last 27 years. It is perplexing then to have the independent experts conclude that the *Alternatives Analysis* is so seriously, if not fatally, flawed.

We have long said that the *Alternatives Analysis* was a highly flawed process. To justify rail, the City used its TSM Alternative as a *straw man*; as one consultant says, the TSM alternative was "born to lose." The rail alternative promises little or nothing in the way traffic relief. Even to accomplish this little it had to be overly optimistic about ridership and underestimate its costs. We have long proposed the use of busways and expanding the role of buses and vanpools as more cost effective. Obviously, many of the consultants concur.

We do agree with the UH team that "...the public is going to need much more education and community dialog to deal with some of the fundamental questions regarding the need for rapid transit in Honolulu, the rationale for a fixed rail rapid transit system, and the reasons for selecting a particular transit technology and procurement strategy." UH 4.6