

**CITY COUNCIL**  
CITY AND COUNTY OF HONOLULU  
530 SOUTH KING STREET, ROOM 202  
HONOLULU, HAWAII 96813-3065  
TELEPHONE: (808) 768-5010 • FAX: (808) 768-5011

**District 1 Town Hall Meeting  
Ewa Makai Middle School  
Hosted by Councilmember Tom Berg**

Wednesday, June 15, 2011  
7:00 p.m. - 9:00 p.m.

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**Introduction**

Welcome

Councilmember Tom Berg

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**SUBJECT: RAIL ISSUE**

**PREFACE**

The Hawaii State Legislature in 2005 passed HB1309, which became ACT 247. Five years prior, Honolulu's Mayor Harris and his Administration advanced a study to address traffic on the H-1 Corridor resulting in highway technology being better than rail for relieving traffic - favoring a Bus Rapid Transit System over rail.

When the State Legislature and Governor signed off to approve ACT 247, all neighbor island Councils and Mayors could approve of raising their county GET by .5% of which could be used for highway technology-building toll roads, reversible expressways, and implementing a Bus Rapid Transit system. In contrast, applicable to Oahu only, ACT 247 included language that prohibited a GET increase on Oahu for highway technology. Applicable to us on Oahu only, any system on the elevated fixed guideway that does not stay on the elevated fixed guideway cannot be funded with the rail surcharge- meaning, if an ambulance or fire truck or bus uses the elevated fixed guideway and comes down at grade to use our surface streets, that would be a prohibited use of the rail surcharge.

The State Legislature knew that when they crafted HB1309 in 2005, that if all modes of traffic relief were studied on Oahu, rail would be defeated like it was five years earlier and Bus Rapid Transit (highway technology) would prevail. Thus, the intent of the State Legislature was not to advance options for the greatest mode of traffic relief to succeed for Oahu's residents but rather allow for a rail system regardless of the cost, performance, ridership and tax burden it will generate.

Within ACT 247, language permits the State Legislature to profiteer off of the GET rail surcharge levied on Oahu. Thus far, the State has withheld \$71 million of the \$711 million collected. The State only needs between \$600,000 to \$700,000 a year to administer the rail surcharge - yet the State Legislature collects in excess of \$16 million a year on Oahu from the rail surcharge and then uses that money meant for the rail endeavor for projects on neighbor islands where the tax is not levied.

In conclusion, this meeting is meant to gather your opinions after hearing a leading world expert, Dr. Panos Prevedouros, explain there is a better way to resolve our traffic congestion without the State Legislature making a profit off of tax payers on Oahu desperate for traffic relief.

# AGENDA

OPENING: COUNCILMEMBER TOM BERG - 20-MINUTES

PRESENTATION BY DR. PANOS PREVEDOUROS  
PROFESSOR OF CIVIL ENGINEERING, UH MANOA - 45-MINUTES

QUESTION AND ANSWERS (Q&A) - 15-MINUTES

EWA MAKAI MIDDLE SCHOOL: STUDENT INTERACTION - 10-MINUTES

OPEN DISCUSSION AND PUBLIC FORUM

ADJOURNMENT @ 9PM

NOTE: All questions and answers including comments made in open discussion are to be made within a one-minute time limit to allow as many persons possible time to speak.

June 15, 2011

COUNCIL DISTRICT ONE

# CITY COUNCILMAN TOM BERG



## SPECIAL REPORT FOR THE EWA MAKAI MIDDLE SCHOOL TOWN HALL MEETING



### REPORT FROM CITY HALL - THE 2011-12 BUDGET

*Aloha!*

Albeit the City Council raised our property taxes, sewer rates, and initiated new fees for camping, I voted NO to all of them. I introduced an amendment to Bill 17 CD1 that would have put an end to subsidizing the six city golf courses which cost taxpayers some \$9 million a year to keep afloat- next year's subsidy will be \$10 million. The amendment did not pass.

Also at the June 3 council hearing, floating bonds for the rail project passed. Bill 40 permits the city to borrow funds to advance rail construction. I voted NO to this measure to take a stand that funding the rail further is reckless so long as the following is not rectified:

1. The state has taken \$71 million out of the rail surcharge thus far of which is used to fund neighbor island projects and the state continues to profiteer off of the rail tax- this must stop.

2. The award to build the rail cars went to a company that is billing the city more than \$250 million above another bidder that would have saved us money. The procurement process is being challenged; the award of \$1.4 billion to build the 80 rail cars and operate and maintain them up to the year 2019 went to a company with a flawed track record and stands to construct the rail cars in California while the losing bidder with a great track record was to build the rail cars for less money and do so here on Oahu and create 150 local hires. The city needs to start the procurement process over and uphold the protest filed by the losing bidders. By canceling and starting over this award, we could save taxpayers \$250 million and preserve quality jobs for our residents.

3. If federal funding falls short for the rail, it is possible a substantial increase in property taxes will be obligated to pay off the bonds and the interest on the bonds at 4.25%. We should not be embarking upon a borrowing scheme to fund the rail

project. Federal funding in the amount expected should be fully secured first before placing risk with floating bonds and the obligation upon taxpayers to pay them back.

We were able to defeat Bill 30 that proposed \$1 an hour 24/7 parking fees fronting certain park areas and the potential to charge a parking fee at any parking lot that serves our city parks.



I am asking your board to please schedule Resolution 11-54 CD2 on your July agenda to discuss and take a position on the resolution that would allow retrofitted shipping containers to be used as housing units on areas zoned agriculture. If passed at the council, Reso 54 would allow farmers for a period of five-years to house workers on site. Please see the flyer included in this report.

Mahalo,

*Tom Berg*  
Councilman Tom Berg  
CITY COUNCIL  
CITY AND COUNTY OF HONOLULU

# YOUR OPINION COUNTS

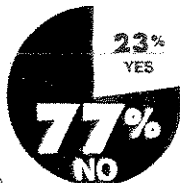


## THE LATEST SURVEY RESULTS FROM CONSTITUENTS IN COUNCIL DISTRICT 1

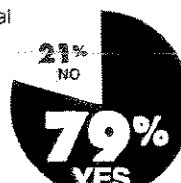
**PRIORITIES**  
Given our limited financial resources as a city, would you favor prioritizing the repair of roads, the upgrading of sewer systems, and mitigation of drainage/flooding issues prior to advancing the rail project?



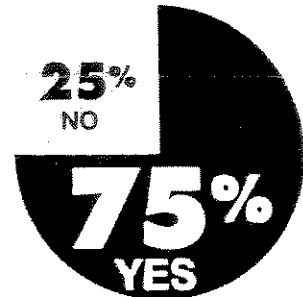
**EXTENSIONS**  
After the East Kapolei to Ala Moana Center rail project is completed, do you favor another tax increase to fund extension of this partial project to reach Waikiki, UH-Manoa and downtown Kapolei?



**IWI ISSUE**  
Should the issue of Native Hawaiian burial grounds along the rail route in town be resolved prior to any construction on the rail project?



### TAKE A NEW VOTE?



PLEASE SIGN UP FOR TOM'S MAILING LIST, AND PARTICIPATE IN COUNCILMAN BERG'S ONLINE SURVEY TODAY. PLEASE VISIT:

[WWW.COUNCILMANBERG.COM](http://WWW.COUNCILMANBERG.COM)

YOUR OPINION IS EXTREMELY VALUABLE.

Are you in favor of the public taking another vote on the rail project?



## JOIN COUNCILMAN BERG'S E-MAIL LIST

by visiting Councilman Berg's official website:

[WWW.COUNCILMANBERG.COM](http://WWW.COUNCILMANBERG.COM)

or just send an e-mail to:

[tberg@honolulu.gov](mailto:tberg@honolulu.gov)

### E-MAIL NOTICES



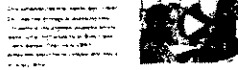
THE CITY COUNCIL HAS PASSED A RESOLUTION TO SUPPORT THE AFTER-HOURS USE OF CITY PARKS BY 11:30 P.M. FOR THE ACCESS OF THE GOLFING COMMUNITY OF OAHU.



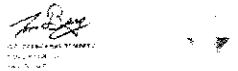
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### HIGHLIGHTS OF HEARINGS



### NEWS STORIES



### IMPORTANT LEGISLATION

**CITY COUNCIL**  
City and County of Honolulu

RESOLUTION

SUPPORTING THE AFTER-HOURS USE OF CITY PARKS BY 11:30 P.M. FOR THE ACCESS OF THE GOLFING COMMUNITY OF OAHU.

WHEREAS, the City and County of Honolulu has a long history of providing recreational facilities to its citizens, including the use of city parks for golfing; and

WHEREAS, the City and County of Honolulu has a long history of providing recreational facilities to its citizens, including the use of city parks for golfing; and

WHEREAS, the City and County of Honolulu has a long history of providing recreational facilities to its citizens, including the use of city parks for golfing; and

IT IS RESOLVED, that the City and County of Honolulu do hereby support the use of city parks for golfing by 11:30 p.m. for the access of the golfing community of Oahu.

APPROVED BY:

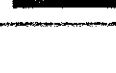
DATE OF INTRODUCTION:

### PROPOSALS FOR DISTRICT

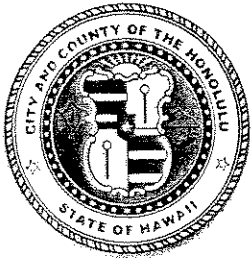
#### ► ONE STEP UP HOUSING

SHIPPING CONTAINERS CONVERTED INTO EXTREMELY LOW-COST TEMPORARY HOUSING FOR THE WORKING HOMELESS ON OAHU

Mayor Mufson's One Step Up Housing program is a new initiative to address the needs of the working homeless on Oahu. The program is designed to provide temporary housing for the working homeless, who often have limited resources and are unable to afford permanent housing. The program is a partnership between the City and County of Honolulu and the private sector. The program is a win-win for everyone involved. The City and County of Honolulu are able to provide temporary housing for the working homeless at a very low cost. The private sector is able to provide the expertise and resources needed to convert shipping containers into temporary housing. The program is a model for how the public and private sectors can work together to address social issues.



[WWW.COUNCILMANBERG.COM](http://WWW.COUNCILMANBERG.COM)



# TOWN HALL MEETING

**TUESDAY, JULY 12TH**

**6:00 p.m. till 9:00 p.m.**

**MAKAHA  
ELEMENTARY SCHOOL**

84-200 Ala Na'auao Pl.

Waianae



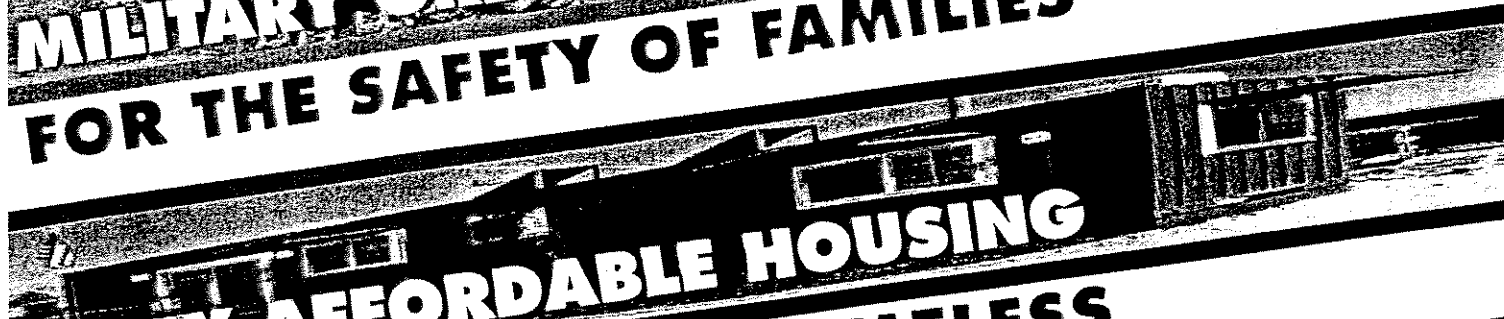
**FINANCING**

**A SECONDARY ACCESS ROUTE**



**MILITARY ORDNANCE REMOVAL**

**FOR THE SAFETY OF FAMILIES**



**TRULY AFFORDABLE HOUSING**

**FOR THE WORKING HOMELESS**



**RESTORING FISHING RIGHTS**



**CITY COUNCILMAN**

**TOM BERG**

768-5001

tberg@honolulu.gov • www.CouncilmanBerg.com

PLEASE JOIN YOUR NEIGHBORS TO  
DISCUSS SOME OF THE BIGGEST ISSUES  
NOW FACING THE WAIANAE COAST...

# ► ONE STEP UP HOUSING

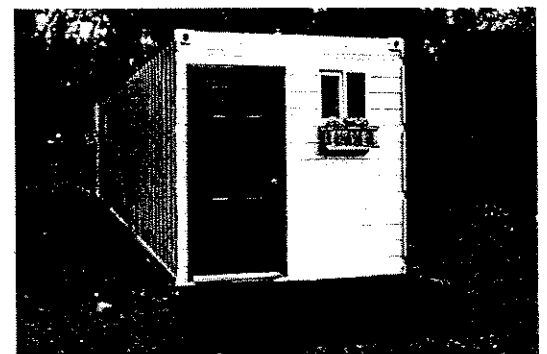
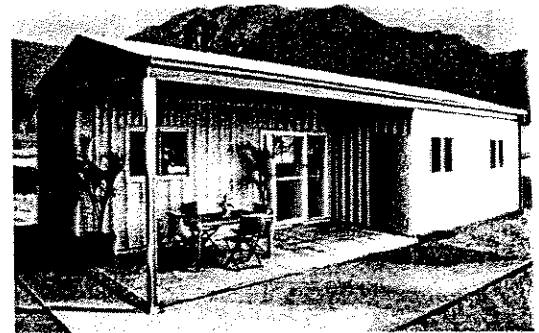
## SHIPPING CONTAINERS CONVERTED INTO EXTREMELY LOW-COST TEMPORARY HOUSING FOR THE WORKING HOMELESS ON OAHU

Honolulu City Councilman Tom Berg's proposed One Step Up Housing system is comprised of shipping containers converted into a variety of homes that can be rapidly and effectively deployed to deal with homelessness and even disaster relief. Working with sponsoring landowners in five year increments, this private sector solution is part of an integrated strategy to address the virtual nonexistence of truly affordable homes to shelter the working homeless. Hawaii's existing reliance on high cost single family homes and apartment buildings has thus far precluded innovation with lower-cost housing approaches which can meet the needs of individuals and families who could afford to pay rents which are closer in cost to car payments than mortgages or typical apartment leases.

Using easily transported and rapidly deployed, standardized shipping containers as a basis for truly affordable housing is sustainable because there are hundreds, if not thousands, of such containers sitting unused at ports across Oahu. Upcycling these containers and giving them a second life as a house for someone may require some changes to City land use ordinances and regulations (building and residential codes, plus the housing code) which currently favor more traditional, expensive building approaches. At a minimum, each home is like a studio apartment, outfitted with a bathroom containing a shower, toilet, and sink. More deluxe homes can accommodate families through provision of additional bedrooms and kitchenettes. These are modular, efficient spaces which can be readied for occupancy for a fraction of the typical cost of labor and materials for a standard dwelling unit.

Villages can be organized into units of several dozen attractive container homes, much like mobile home parks, grouped into subgroups of ten to fifteen dwelling units. Units would be spaced out sufficiently in order to provide space for privacy of occupants and for expansion. Centralized modular utilities to support these groupings of homes will be located in each village. Such modules would include connections to water supply, sewer, and electricity. Garbage collection and launderette are options being considered. The sponsoring landowner would provide the land for the village, the container homes, and the support services. The entire project would be eligible for a substantial tax deduction in line with the sponsor's investment.

The City's Department of Community Services which currently administers Section 8 housing seems ideally suited to administering the One Step Up Housing system, helping to ensure that the working homeless are properly vetted and routinely monitored for the duration of their stay. Though these villages are intended to have a life of five years at a particular location, it is expected that occupants would stay for no longer than two years before being able to pay market rates in the rental housing market.



**CITY COUNCILMAN**  
**TOM BERG**

[www.COUNCILMANBERG.com](http://www.COUNCILMANBERG.com)

DEPARTMENT OF TRANSPORTATION SERVICES  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 3RD FLOOR  
HONOLULU, HAWAII 96813  
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN  
MAYOR



WAYNE Y. YOSHIOKA  
DIRECTOR

SHARON ANN THOM  
DEPUTY DIRECTOR

KENNETH TORU HAMAYASU  
DEPUTY DIRECTOR

June 11, 2010

RT2/09-299088R

Mr. Cliff Slater  
Honolulutraffic.com, Stop Rail Now  
3105 Pacific Heights Road  
Honolulu, Hawaii 96813

Dear Mr. Slater:

Subject: Honolulu High-Capacity Transit Corridor Project  
Comments Received on the Draft Environmental Impact Statement

The U.S. Department of Transportation Federal Transit Administration (FTA) and the City and County of Honolulu Department of Transportation Services (DTS) issued a Draft Environmental Impact Statement (EIS) for the Honolulu High-Capacity Transit Corridor Project. This letter is in response to substantive comments received on the Draft EIS during the comment period, which concluded on February 6, 2009. The Final EIS identifies the Airport Alternative as the Project and is the focus of this document. The selection of the Airport Alternative as the Preferred Alternative was made by the City to comply with the National Environmental Policy Act (NEPA) regulations that state that the Final EIS shall identify the Preferred Alternative (23 CFR § 771.125 (a)(1)). This selection was based on consideration of the benefits of each alternative studied in the Draft EIS, public and agency comments on the Draft EIS, and City Council action under Resolution 08-261 identifying the Airport Alternative as the Project to be the focus of the Final EIS. The selection is described in Chapter 2 of the Final EIS. The Final EIS also includes additional information and analyses, as well as minor revisions to the Project that were made to address comments received from agencies and the public on the Draft EIS. The following paragraphs address your comments regarding the above-referenced submittal:

**Cover Letter**

*As described in Chapter 2 of the Final EIS, the Airport Alternative is defined as the Project, and is one of the alternatives studied in the document. The identification of the Airport Alternative as the Preferred Alternative was made by the City to comply with FTA's NEPA regulations (23 CFR § 771.125 (a)(1)). Further, FTA's NEPA regulations for projects proposed to be funded with major capital investment funds, the level of detail necessarily increases between the Draft EIS and the Final EIS through preliminary engineering work (23 CFR § 771.123(j)). The Final EIS addresses each of the points of concern noted in your letter. Specifically, Tables 3-9 and 3-10 of the Final EIS compares existing congestion levels to future levels both with the Project and without to provide a point of reference to the reader for future conditions. These tables include traffic volumes, level-of-service, and maximum volume thresholds for individual roadways in the project corridor. Table 3-14 of the Final EIS provides a*

comparison of the No Build Alternative and the Project in 2030 and shows that the Project will result in an 18 percent reduction in congestion, as measured by daily vehicle hours of delay (VHD). The environmental benefits and impacts of the Project are detailed in Chapter 4 of the Final EIS. Table 4-1 provides a summary of those impacts and proposed mitigation.

An analysis of the financing of the Project is set forth in Chapter 6 of the Final EIS. Figure 6-3 illustrates forecast transit operating needs from the Highway and General Fund, which includes property tax revenues. As stated in Section 6.4.2 of the Final EIS, overall transit operating and maintenance costs (i.e., the Project, TheBus, and TheHandi-Van) are expected to increase from approximately 11 percent to 14 percent of the City's operating budget. This small increase is typically accounted for in the normal budgeting of available funds and will not by itself result in an increase in property taxes. Financial risks associated with the Project are discussed in Section 6.6 of the Final EIS. The travel forecasting model has been refined since the Draft EIS to add an up-to-date air passenger model (which forecasts travel in the corridor related to passengers arriving or departing at Honolulu International Airport), improved drive access (driving alone or carpooling) module and a better presentation of non-home based direct demand trips (trips that do not originate or end at home). The results are not substantially different than those in the Draft EIS. As stated above, VHD will decrease by 18 percent with the Project versus the No Build Alternative.

The summary section of Chapter 4 in the Final EIS provides a list of technical reports that were prepared for the Project. In addition, various technical reports were used as the basis of the transportation and modeling analysis conducted for Chapter 3 of the Draft and Final EISs. These reports are available from the Department of Transportation Services and on the project website at [www.honolulutransit.org](http://www.honolulutransit.org).

Chapter 2 of the Final EIS also summarizes the screening and Alternatives Analysis processes that were used to identify and develop the alternatives evaluated in the Draft EIS. The detail requested is provided in the supporting reports listed as references to the Draft EIS. To quote from the FTA "Keys to Efficient Development of Useful Environmental Documents" (US DOT, 2007): The NEPA implementing regulations provide that "[e]nvironmental impact statements shall be concise, clear, and to the point, and shall be supported by evidence that agencies have made the necessary environmental analyses" (40 CFR § 1500.2(b)). This means that the impact statement itself should not contain elaborate and extensive analyses of different types of impacts, but rather, relatively brief descriptions in plain language of the results of those analyses; the brief descriptions are meant to discuss impacts associated with alternatives that were analyzed and presented in comparative form. The Final EIS explains the analysis of the various alternatives considered and environmental impacts of the proposed Project in compliance with NEPA.

According to 23 CFR § 771.130, a Supplemental EIS is prepared when the Administration determines that:

- (1) Changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or



*(2) New information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS.*

*Neither of these instances is applicable to the Honolulu High-Capacity Transit Corridor Project or demonstrated in the comment letter.*

### **Part I – Alternatives Studied**

*Project scoping was conducted in two phases, as allowed for in FTA SAFETEA-LU guidance. Early scoping was completed during the Alternatives Analysis phase and NEPA scoping was completed after selection of the Locally Preferred Alternative. The process is detailed as follows. The Alternatives Analysis phase, as documented in Chapter 2 of the Final EIS, evaluated a range of modal and general alignment alternatives, including managed lanes, in terms of their costs, benefits, and impacts. The scoping process for the Alternatives Analysis involved a presentation of the viable alternatives to the public and interested public agencies and officials to receive comments on the Purpose and Need, alternatives, and scope of the analysis for the Alternatives Analysis. Scoping followed the FTA process that provides for a culling of alternatives studied in the EIS through an Alternatives Analysis. The following scoping meetings were held as part of the Alternatives Analysis phase of the Project:*

- December 13, 2005: Neal S. Blaisdell Center Pikake Room at 777 Ward Avenue in Downtown Honolulu from 2:00 to 4:00 p.m. (agency scoping meeting)*
- December 13, 2005: Neal S. Blaisdell Center Pikake Room at 777 Ward Avenue in Downtown Honolulu from 5:00 to 8:00 p.m. (open to the public)*
- December 14, 2005: Kapolei Middle School Cafeteria at 91-5335 Kapolei Parkway in Kapolei from 7:00 to 9:00 p.m. (open to the public)*

*The scoping process initiated for the Alternatives Analysis included a variety of highway, bus and fixed guideway options for consideration. As a result of this scoping effort, the proposed Managed Lane Alternative was expanded. It was revised again during the Alternatives Analysis to improve its performance. Despite the improvements, the managed lane alternative was not able to meet the performance of the fixed guideway.*

*A second scoping opportunity was initiated in support of the Draft EIS in March of 2007. All meetings held were open to the public:*

- March 28, 2007: Kapolei Hale at 1000 Ulukouia Street from 6:00 to 9:00 p.m.*
- March 29, 2007: McKinley High School at 1039 South King Street from 5:00 to 8:00 p.m.*
- April 3, 2007 at Salt Lake Elementary School at 1131 Ala Liliiko'i Street from 5:00 to 8:00 p.m.*

*In this later scoping effort, the public was requested to propose alternatives that would satisfy the purpose and need at less cost or with greater effectiveness, less environmental or community impact and alternatives that were not previously studied and eliminated for good cause. The only alternative that emerged that met these criteria was a fixed-guideway*

*alternative following an alternative alignment. All reasonable alternatives that emerged from these processes were ultimately evaluated in the Draft and Final EISs. Your letter suggests that a second scoping process was held because the first scoping process was "inadequate or unsatisfactory"; that is not the case. In 2006, FTA issued guidance that stated a scoping process could be held before the Alternatives Analysis with a second scoping process held after the Notice of Intent to prepare an EIS:*

*According to SAFETEA-LU Environmental Review Process Final Guidance issued jointly by the Federal Highway Administration and FTA: "Certain New Starts project sponsors have advocated publishing a Federal Register notice of intent to prepare an EIS, more accurately called an "early scoping notice," and then conducting the New Starts planning Alternatives Analysis as a super-extended scoping process (so called "Option 1.5"). This option may provide an opportunity to identify and engage participating agencies...earlier, i.e., during the New Starts planning Alternatives Analysis, through the early scoping notice... Under this option, project initiation [scoping process] would occur after the New Starts planning Alternatives Analysis at the start of the environmental review process."*

*The FTA issued a Notice of Intent to prepare this EIS in the Federal Register on March 15, 2007. All interested individuals and organizations, as well as Federal, State, and Local agencies, were invited to comment on the Purpose and Need to be addressed by a fixed guideway transit system; the alternatives including modes, technologies and alignments to be evaluated; and environmental, social, and economic impacts to be analyzed. The alternatives evaluated in the Draft EIS are the result of the alternatives screening process and reflect comments received during the scoping process, as summarized in the Honolulu High-Capacity Transit Corridor Project National Environmental Policy Act Scoping Report (DTS 2007). Several scoping comments were received requesting reconsideration of the Managed Lane Alternative that was considered and fully evaluated during the Alternatives Analysis phase and found to perform substantially less effectively than the fixed guideway alternative that was selected for further development in the Locally Preferred Alternative. Because no new information was provided that would have changed the findings of the Alternatives Analysis regarding the Managed Lane Alternative, it was not included in the Draft EIS for further consideration. Had information been provided that demonstrated greater effectiveness, the managed lane alternative would have been reconsidered in the Draft EIS.*

*Regarding alternatives studied, the Alternatives Analysis fully evaluated a reversible Managed Lane Alternative and documented that it performed poorly compared to the Fixed Guideway Alternative on a broad range of metrics. Based on public comments received on the Draft EIS, additional information, as summarized from the Alternatives Analysis Report and Honolulu High-Capacity Transit Corridor Project Alternatives Screening Memorandum, has been added to Chapters 2 and 8 of the Final EIS to explain why this alternative was rejected. Both the Alternatives Analysis Report and Screening Memorandum were available to the public. The following is a quote from Chapter 8, Section 8.6.12, of the Final EIS:*

*"A number of commenters stated that the alternatives studied did not properly address other options for the corridor. In particular, there was a concern that the Managed Lane Alternative was not included in the Draft EIS as an alternative."*

The process of alternatives screening and selection is discussed in Chapter 2 and in Section 8.6.1 of the Final EIS. As discussed, alternatives were developed through three general phases: (1) the FTA Alternatives Analysis process; (2) the selection of a Locally Preferred Alternative; and (3) the NEPA scoping and Draft EIS process. The initial screening of alternatives is documented in the Honolulu High-Capacity Transit Corridor Project Alternatives Screening Memorandum (DTS, 2006a) (Screening Memorandum). The subsequent FTA Alternatives Analysis process is provided in the Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Report (DTS 2006b) (Alternatives Analysis).

The initial screening process considered a wide range of alternatives, including "construction of a 'managed' two-lane elevated structure for transit vehicles and potentially carpools, as well as single occupant vehicles willing to pay a congestion-based toll," as described on page S-2 of the Screening Memorandum. The screening results for the Managed Lane Alternative are discussed on pages C-4 through C-5 of this report. The analysis found that the transit mode share under the Managed Lane Alternative would hold constant with the No Build Alternative; the automobile mode share would increase; and the bike and walk mode share would decrease. Vehicle hours traveled would decrease, while vehicle miles traveled would increase slightly.

This initial screening process identified four alternatives that were presented at scoping meetings held to obtain public input. As described on page 5-2 of the Screening Memorandum, one of the alternatives recommended for further evaluation was the Managed Lane Alternative. The Managed Lane Alternative originally was described as follows:

"The Managed Lane Alternative would include construction of a two-lane grade-separated facility between Waiawa Interchange and Iwilei for use by buses, paratransit vehicles and vanpool vehicles (see Figure 5-1). The lanes would be managed to maintain free-flow speeds for buses, while simultaneously allowing High-Occupancy Vehicles (HOVs) and variable pricing for toll-paying single-occupant vehicles. Intermediate bus access points would be provided in the vicinity of Aloha Stadium and Middle Street. Bus operations utilizing the managed lanes would be restructured to use the Managed Lane and enhanced to provide additional service between Kapolei and other points Ewa of Downtown, through to the University of Hawai'i at Manoa."

The scoping process resulted in the revision of this proposed alternative. As discussed on page 6-1 of the Screening Memorandum:

"Based on scoping comments, a second operational option was included under the Managed Lane Alternative. The initial option proposed a two-lane grade-separated facility between Waiawa Interchange and Iwilei which would operate as one lane in each direction at all times of the day. The second option proposes similar infrastructure, but it would operate as a reversible facility with two lanes traveling Koko Head during the morning peak period, and then reversing to travel Ewa in the PM peak period. Both operational options would include restructured and enhanced bus operations by utilizing the managed lanes to provide additional service between Kapolei and other points Ewa of Downtown, and both would be managed to maintain free-flow speeds for buses. Providing that enough capacity existed, High-Occupancy Vehicles (HOVs) and toll-paying single-occupant vehicles would also be allowed to use the facility under either

*scenario; however, it is possible that under the initial option (one lane in each direction), there would not be enough excess capacity to allow toll-paying single occupant vehicles and still maintain reasonable speeds. Intermediate access points would be provided in the vicinity of Aloha Stadium and the Keehi Interchange."*

*This alternative was further developed in the Alternatives Analysis Report, with additional features added to maximize the performance of the alternative, as discussed on page 2-4:*

*"The Two-direction Option would serve express buses operating in both directions during the entire day. The Reversible Option would serve peak-direction bus service, while reverse-direction service would use H-1. Twenty-nine bus routes, with approximately 93 buses per hour, would use the managed lane facility during peak hours for either option. One limited-stop route and one local route would continually operate in the managed lane. A total of 27 peak-period express routes would operate in the peak direction using the managed lane facility. Of these, three would be new express routes serving developing areas and nine would be new routes developed for exclusive use of the managed lane. The nine new managed lane express bus system routes would originate from Kalaheo, Kapolei, or Central Oahu and terminate at the Alapai Transit Center, Waikiki, or UH Manoa. Other peak-period, local and limited-stop routes would follow a route similar to the current structure but would use the managed lane for the line-haul portion of the route.*

*"A toll structure has been developed that ensures that the managed lane facility would operate to maintain free-flow speeds for buses. To maintain free-flow speeds in the Two-direction Option, it may be necessary to charge tolls to manage the number of HOVs using the facility. For the Reversible Option, three-person HOVs would be allowed to use the facility for free, while single-occupant and two-person HOVs would have to pay a toll."*

*As discussed on page 3-8 of the Alternatives Analysis Report, the enhanced bus system would include an increased fleet size, estimated at 321 buses beyond the existing fleet for the two-direction managed lane facility and 381 buses for the reversible managed lane facility, to provide a sufficient fleet to ensure that the alternative would function as planned.*

### **1. Reversible Managed Lane Alternative**

*The Alternatives Analysis Report estimated total capital and operating costs for the Managed Lane Alternative. As discussed on page 2-16, capital costs for the Managed Lane Alternative were estimated to range between \$3.6 and \$4.7 billion, of which \$2.6 to \$3.8 billion would be for construction of the managed lanes. Transit operating costs for the Managed Lane Alternative would range between approximately \$251 and \$261 million as a result of additional buses that would be put in service under that alternative. These costs do not include the cost of maintaining the managed lane facility. Capital costs for the Fixed Guideway Alternative, including bus system costs, would range between \$5.2 and \$6.1 billion for the Full-corridor Alignments, of which \$4.6 to \$5.5 billion would be for the fixed guideway system. The costs would be \$4.2 billion for the 20-mile Alignment, of which \$3.6 billion would be for the fixed guideway system. Operating costs for the Fixed Guideway Alternative in 2030, in 2006 dollars, would be approximately \$192 million. The total operating costs for the Fixed Guideway*

*Alternative, including the bus and fixed guideway, would range between approximately \$248 and \$256 million.*

*The capital cost of the Managed Lane Alternative thus is potentially somewhat lower than the 20-mile Fixed Guideway Alternative and significantly lower than the Full-corridor Alternative. Operating costs would be slightly higher. These cost factors were considered in conjunction with other project goals in evaluating the alternatives.*

*With respect to transit travel time benefit, the Managed Lane Alternative options would improve some trips that were particularly well-served by the managed lanes. In general, the Managed Lane Alternative would increase transit travel times by increasing traffic on the overall roadway system and creating more delay for buses. The H-1 Freeway leading up to the managed lanes would become more congested because cars accessing the managed lanes would increase traffic volumes. Significant congestion would occur where the managed lanes connect to Nimitz Highway at Pacific Street near Downtown. Much of the time saved in the managed lane itself would be negated by the time spent in congestion leading up to the managed lane, as well as exiting the lanes at their downtown terminus. Furthermore, areas that are not directly served by the managed lane would not experience much positive change from the No Build Alternative. As discussed on page 3-14, the Alternatives Analysis Report found that, "although the Managed Lane Alternative would provide some travel-time improvement for certain areas, it has significant limitations with regard to improving travel times or transit service for a broader customer base.*

*As discussed on page 3-17, transit ridership would increase only 5.3 to 6.4 percent over the No Build Alternative, a small increase compared both to the cost of the Managed Lane Alternative and the increase that would result from the Fixed Guideway Alternative, which would increase transit ridership by 21 percent for the 20-mile alignment.*

*The volume of peak-hour vehicles in key areas would actually increase under the Managed Lane Alternative compared to the No Build Alternative. As discussed on page 3-27, the Fixed Guideway Alternative would reduce the number of vehicles by 3 to 12 percent.*

*With respect to the goal of providing equitable transportation solutions that meet the needs of lower-income transit-dependent communities, the Alternatives Analysis Report noted that the Managed Lane Alternative, "would not substantially improve service or access to transit for transit-dependent communities, as buses that use existing HOV facilities would be routed to the managed lane facility but would continue to be affected by congestion in other parts of their routes. Arterial congestion would increase in the study corridor with the Managed Lane Alternative, making bus access to the managed lanes less reliable" (page 6-8).*

*The Alternatives Analysis Report also considered consistency with existing land use planning and regional transportation planning. On page 6-13, the report concluded that the Fixed Guideway Alternative, "best serves the areas of Oahu that are designated for future growth and development. It is also the only alternative that is consistent with regional transportation system planning defined in the 2030 Oahu Regional Transportation Plan (OMPO 2006a)."*

*The evaluation of alternatives inevitably involves trade-offs. As stated on page 6-13 of the Alternatives Analysis Report, the "greatest trade-off among the alternatives is between the transportation benefit provided and the cost to implement alternatives... The Managed Lane Alternative provides slightly more benefit [than the Transportation System Management (TSM) alternative, which had little effect on traffic], but at a substantial cost. While the Fixed Guideway Alternative would have the highest cost, it is also the only alternative that would provide a substantial transportation benefit, measured both by the benefit to transit users and in the reduction in congestion compared to the No Build Alternative."*

*The November 2006 Alternatives Analysis Report provided information about all alternatives considered, including the Managed Lane Alternative. As stated in the Summary of the Alternatives Analysis Report, "the Managed Lane Alternative would provide some travel time improvements between selected origins and destinations that are well served by the facility, but in many cases the travel time savings experienced is offset by the increased congestion experienced before entering and upon exiting the facility." The summary also states that the Managed Lane Alternative would "generate the greatest amount of air pollution, require the greatest amount of energy for transportation use, and would result in the largest number of transportation noise impacts. It would provide little community benefit, as it would not provide substantially improved transit access to the corridor." Additionally, Table 6-3 in Chapter 6 of the Alternatives Analysis compares each of the alternatives studied in the Alternatives Analysis, including the Managed Lane Alternative, in relation to project goals and objectives. This table shows that the Fixed Guideway Alternative performs the best when considering all the objectives related to the goals of improving corridor mobility and improving transportation equity.*

*The Alternatives Analysis findings are also summarized in Table 2-2 in Chapter 2 of the Final EIS. The Managed Lane Alternative is discussed in Section 2.2.2 of this Final EIS. As stated in the Final EIS and supported by the lengthy analysis that preceded the preparation of the Draft EIS, the Managed Lane Alternative was not pursued because the Managed Lane Alternative would not have achieved project goals and objectives, would not result in substantially fewer environmental impacts, and would not be financially feasible. For all of these reasons, it was not advanced to consideration in the EIS. The City Council eliminated the Managed Lane Alternative from consideration when it selected the Locally Preferred Alternative on December 22, 2006. The Council's selection was signed into law as Ordinance 07-001.*

*Comments received about the Managed Lane Alternative referenced in the Draft EIS suggested there were significant differences between the alternative studied in the Alternatives Analysis and an ideal managed lane option. However, there was no substantial difference between the alternatives proposed in comments and those studied in the Alternatives Analysis that would have resulted in a different outcome. The primary concern raised about the Alternatives Analysis alternatives was that they did not allow access other than at the beginning and end of the facility. That is a misunderstanding of the Alternatives Analysis alternatives. Both provided access at Aloha Stadium and Middle Street to allow connections to intermediate points along the corridor. Any additional access points would substantially increase the cost of the facility because of right-of-way and structure costs and would affect the level-of-service provided by the investment.*

*Also questioned in the comments was the provision of a congestion pricing system that would make the facility available to single occupant vehicles or those with two occupants at a*

cost that would rise during periods of high demand. In both cases, the Managed Lane Alternative evaluated a pricing option, and the two-lane reversible alternative description stated that, "A toll structure has been developed that ensures that the managed lane facility would operate to maintain free-flow speeds for buses" (Alternatives Analysis Report, page 2-4). While there may be some minor details of the proposed alternatives that differ from the Alternatives Analysis alternatives, the evaluation assesses the concept fairly in the context of the Project's Purpose and Need.

In addition, the statement in Chapter 2 of the Draft EIS that "the Managed Lane Alternative would provide slightly more benefit [than the TSM] at a substantial cost" is supported by information provided in Table 2-1 of the Draft EIS. As shown in this table, the cost per hour of transit-user benefit compared to No Build is \$13.54 for the TSM Alternative and \$50.34 to \$63.42 for the Managed Lane Alternative whereas the reduction in vehicle hours of delay and daily islandwide transit trips are comparable between the two alternatives. This supports the statement that the Managed Lane Alternative provides benefits at a "substantial cost." As further shown in Table 2-1 of the Draft EIS, the cost per hour of transit-user benefit for the fixed guideway project compared to the No Build Alternative is \$21.32 to \$27.05.

The Transit Task Force was created to assist the City Council in selecting the locally preferred alternative. Page 2 of 7 of the Task Force Report states: "The Task Force finds that the Alternatives Analysis' presentation and assessment of [the Managed Lane] alternative were fair and accurate, however it may well be that operational variations of this alternative could make it more attractive and/or feasible than the specific version considered." The operational variations discussed by the Task Force were focused on improving bus operations on the managed lane. The Alternatives Analysis Report (p. 3-13) indicated that the bus would operate very well while on the managed lane system, but would not be able to maintain performance once it transitioned to the local street network. Since the primary issue with buses was the performance on local streets, the suggestions of the Task Force were not substantive in improving the managed lane alternative performance overall and would not have resulted in a change in the relative merits of the alternatives evaluated. Furthermore, "The Task Force did not identify any additional information that the Council must obtain before proceeding [to select a Locally Preferred Alternative]."

a) Zipper lane: As discussed in the Chapter 5, Alternative 3b of the Detailed Definition of Alternatives Report (2006), the reversible lane Managed Lane Alternative provides three managed/HOV lanes in the peak direction, which is sufficient to satisfy the demand for restricted lanes. Eliminating the zipper lane frees up two off-peak direction lanes – one HOV and one general purpose lane. In other words, it was not needed to accommodate the demand in the eastbound direction. Additionally, Table 3-11 of the Alternatives Analysis Report showed that westbound demand during the a.m. peak hour at the Kalauao Screenline would increase from approximately 7,600 vehicles per hour (vph) in 2003 to approximately 10,600 vph in 2030 with the Managed Lane. While the demand in the reverse direction would increase by approximately 40 percent, the peak-direction demand would increase by only 30 percent. Eliminating the zipper lane while evaluating the reversible managed lane alternative provided the greatest benefit to freeway users by increasing capacity in both directions. Access ramps were provided at several locations. Park-and-ride facilities and bus stops were included to maximize transit use, providing the alternative the greatest opportunity to generate transit user

benefits while reducing traffic congestion. However, as stated in the Alternatives Analysis and Draft and Final EISs, the Managed Lane Alternative was less effective at reducing congestion than the Fixed Guideway Alternative.

b) *Managed Lane Alternative capital costs:* The engineering cost estimate for a two-lane reversible managed lane facility, which was calculated following the same rigorous cost estimating process used for the Fixed Guideway Alternatives, was \$2.6 billion in 2006 dollars. The City Council's Transit Advisory Task Force reviewed the Alternatives Analysis and concluded in their report of December 14, 2006 that the assessment of each alternative was "fair and accurate" and that capital cost estimates were compiled using the same methodology and unit cost and that the construction cost estimates were fairly and consistently prepared. Shortening of the Managed Lane Alternative, whether to 14 miles, or 10 to 12 miles, would not have increased the benefits to the traveling public compared to the alternative evaluated.

Regarding the costs of the H-3 Freeway, according to construction cost indices prepared by the Washington State Department of Transportation, construction costs doubled between 1997 (the year construction ended on the H-3 Freeway) and 2006 (the year of the Alternatives Analysis). If construction of the H-3 Freeway had begun in 2006, that project would have cost approximately \$2.6 billion. In addition, both the H-3 Freeway and the Managed Lane Alternative face unique situations that affect cost estimates. Construction of the Managed Lane Alternative would have occurred in a heavily developed corridor. As a result, there would be substantial disruptions to traffic and utilities, both of which add to the time, and thus cost, of a project. The H-3 Freeway was built in an undeveloped part of the island and while it had its own challenges, expensive traffic and utility disruptions were minimal.

Regarding the Tampa Expressway, the Task Force compared the Managed Lane Alternative to the Tampa Expressway. The designer of the Tampa Bay facility herself admitted that to apply such an estimate without detailed consideration of the many differences between the two locations is not reasonable. For clarification, the Tampa Bay elevated toll lanes extend only 5.8 miles within the 10-mile expressway. The costs quoted are from 2002, long before the costs of materials and construction rose dramatically after 2004. Furthermore, the corridor within which the Tampa Bay lanes are built required no right-of-way, had no significant utility conflicts, no major structures or crossings, and was built in much more favorable geotechnical conditions than exist on Oahu. In addition, real estate costs between the two locations are different, with costs being substantially higher in Honolulu. As stated in the Transit Task Force Report (dated December 14, 2006) Paul Santo, HDOT Highways Division, stated that there are substantial differences in cost for bridge construction between Hawaii and the mainland US. At that time, the State DOT Bridge Section used \$400 to \$500 per square foot for planning purposes whereas "most highway agencies on the mainland use \$100 to \$200 per square foot with some even below \$100. He believes the high cost in Hawaii is due to its location and the lack of competition." The Transit Task Force Report stated that "the committee concluded that the projects are sufficiently different (actual costs versus projected costs with contingencies; available, accessible ROW vs. construction in actively used highways; no utilities relocation vs. extensive relocations) as to make the comparison unreasonable."



*An increase in the number of lanes on the facility would not have substantially changed the findings of the analysis. It would have increased the cost and marginally increased freeway capacity, but the arterial system would still have experienced increased congestion, resulting in total systemwide congestion similar to or worse than the No Build Alternative and substantially worse than the Fixed Guideway Alternative.*

*Any increase in the number of access points to the facility would result in significant additional right-of-way requirements and additional costs beyond the \$2.6 billion cost estimate (2006 dollars). The geometric implications of building additional ramps and the structures that are needed to support them are significant. The elevated structure would need to be widened beyond the two full travel lanes to accommodate a deceleration lane approaching the ramp and an acceleration lane rising to it. These will be carried at a full lane width at the full height of the facility for between 600 and 1000 feet before the ramp descends from the facility or after the ramp rises to join it. These improvements add substantial additional cost to the project, make it more difficult to build and increase its impact on the nearby communities.*

*c) Managed lane Alternative operating costs: The approach used to develop the costs of the managed lane was the same as for all other alternatives.*

*d) Effects on vanpools: According to the data in the 2008 Transportation Energy Data Book, vanpools provided less than 2 percent as many passenger-miles of service as transit vehicles. As such, they do not provide a significant alternative to transit service. The benefits of reduced congestion that will be provided by the Project also will benefit any vanpool operations in the corridor.*

*e) Ingress/egress: As shown in Figures 2-1 and 2-2 of the Alternatives Analysis Report, there were four access locations in the managed lane alternative. The primary issue with access is that too much access may reduce the performance of the facility as a result of weaving and merging traffic and too little access makes the facility unavailable to many potential users. The access locations identified in the alternative were designed to serve the primary population centers in the corridor at the most desirable locations for access. The other side of the access question is that it introduces additional costs to the facility and creates right-of-way, relocation and general disruption of the communities where they are located. To clarify, each access location requires acceleration and deceleration roadways. Each requires an additional lane approaching an exit ramp and a lane following the on-ramp leading to a merge with the mainline lanes. Deceleration and acceleration require about 1,000 feet each, including transitions if high speeds are to be maintained through the diverging and merging maneuvers. That means each access location requires about 2,000 feet of an additional lane on the elevated structure (i.e., a wider structure by about 12 feet than needed for the mainline only) in addition to the property impacts on the ground and the necessary roadway features where the ramping system joins the surface roadways.*

*The Purpose and Need of the Project in Chapter 1 states that the selected alternative must improve transportation mobility, reliability and equity. The necessarily limited number of access points, even if strategically placed as in the Alternatives Analysis, provides convenient access to only a select population. The Managed Lane Alternative*

cannot guarantee high performance once the vehicle leaves the managed lane itself, offering no improvement to reliability under congested conditions. Limiting access through the high tolls (up to \$6.40 during peak periods as noted on page 5-11 of the Alternatives Analysis) required to maintain free-flow speeds is also not consistent with an equitable solution given most people's inability to pay.

f) *Due diligence:* Development of costs for the Managed Lane Alternative followed the same approach used in establishing the costs of the Fixed Guideway Alternative. The City did complete due diligence both in Hawaii and through its consultant Parsons Brinckerhoff (PB) regarding the use of appropriate costs of the managed lane alternative and the comparison of construction costs between Tampa Bay and Honolulu. Costs of bridge construction were verified and corroborated through PB contrary to the comment letter indication of an "understanding that they were not". The findings of the Transit Task Force Report cited above are one example of such corroboration. Further corroboration is available from FTA's Project Management Oversight Contractor (PMOC), Booz Allen Hamilton, which prepared a Cost Validation Analysis and Report, May 2007. In response to concerns regarding the estimate procedures for the Managed Lanes vs. the proposed Fixed Guideway, cost estimates for both alternatives were compared to identify any potential cases of analysis bias in favor of one modal alternative over the other. Two comparison activities were completed, a comparison of detailed unit costs, and a comparison of the cost build-up process for the Managed Lanes and Fixed Guideway alternatives. The PMOC determined both the unit costs and the cost build-up process were exactly the same for the Managed Lanes and Fixed Guideway alternatives. No evidence was found indicating a bias in favor of one modal alternative over the other.

g) *Managed Lane Alternative in the EIS:* The Alternatives Analysis fully evaluated the Managed Lane Alternative and documented that it performed poorly compared to the Fixed Guideway Alternative on a broad range of metrics, for reasons stated previously in this response letter. The analysis is summarized in Chapters 2 and 8 of the Final EIS. As explained previously and shown in Table 6-3 of the Alternatives Analysis Report, the Managed Lane Alternative would perform poorly at addressing the purpose and need for the Project. These findings are further summarized in Chapter 2 of the Final EIS.

As stated previously, the requirements for the preparation of a Supplemental EIS are not applicable to the Honolulu High-Capacity Transit Corridor Project.

## **2. 2003 BRT Project**

Your letter references the 2003 Bus Rapid Transit Project. This proposal was a variation on the Transportation System Management (TSM) Alternative that was evaluated in the Alternatives Analysis. While the alternative was cost effective, its overall system benefit was very low. Dynamic pricing was included in the analysis of the Managed Lane Alternative, which found that a very high toll would have to be paid that would limit access for many users.

## **3. The EZway Plan**

Regarding the EzWay Plan referenced in your letter, which included a 15-mile, 3-lane viaduct was developed as a hybrid of a plan for elevated lanes and some form of rubber-tire-on-

concrete transit system. This concept was similar to the Managed Lane Alternative, as described in Chapter 2 of the Alternatives Analysis, which accommodated both single occupant and transit vehicles, and which was thoroughly evaluated in the Alternatives Analysis. The main difference with the reversible Managed Lane Alternative was that it eliminated the toll element for single occupant vehicles. The EzWay concept was proposed by a mayoral candidate for consideration just prior to the release of the Draft EIS and the mayoral City of Honolulu election. It represented a subtle variation on the Managed Lane Alternative (i.e., no tolls would be allowed) of the Alternatives Analysis, but did not provide a substantive departure from the work completed previously. There may be many other versions of this type of system with minor adaptations to suit one or another special concern. In the end, however, they all face similar challenges as a primary solution to Honolulu's transportation problems. Specifically, they do not address the Purpose and Need of the Project, which aims to reduce congestion, increase the reliability of the transportation system, serve future land use plans, and improve transportation equity in terms of the fairness of and access to the transportation system. The other alternatives also would not offer an alternative to private automobile travel, an element of the purpose of the Project.

## **Part II – Consideration of elevated rail impacts**

The Draft and Final EISs present the potential environmental impacts of the proposed action. These are presented in Chapters 3 and 4 of the Draft and Final EISs and summarized in the Executive Summary of the Final EIS.

The Draft and Final EISs present the environmental impacts of the Project on the built environment. The following resources of the affected built environment were analyzed in the following sections of the Draft EIS: transportation system (Chapter 3); land use (Section 4.1); economic activity (Section 4.2); acquisitions, displacements, and relocations (Section 4.3); community services and facilities (Section 4.4); neighborhoods (Section 4.5); environmental justice (Section 4.6); visual and aesthetic conditions (Section 4.7); noise and vibration (section 4.9); energy and electric and magnetic fields (section 4.10); and hazardous waste and materials (Section 4.11). In fact, the majority of the environmental analysis presented in the Draft EIS pertains to impacts on the built environment versus the natural environment. The potential impacts of the Project on the built environment have been thoroughly analyzed in the environmental process, and those results are presented in the Draft and Final EISs.

The Project is located in Honolulu; therefore, none of the listed locations have direct applicability. The New York system is now an obsolete construction technology. Neither the Miami nor San Juan systems have generated additional significant adverse impacts that were not addressed in the environmental review documents for those systems. The Embarcadero was an elevated highway, more akin to the elevated traffic lanes preferred in the comment. One of the reasons it performs poorly is that it does not serve segments of the corridor where congestion is worst. Furthermore, these examples do not suggest there would be additional significant impacts that have not already been disclosed in the Draft or Final EISs.

### **Visual renderings**

Figure 4-27 in the Draft EIS has been revised for the Final EIS. This figure (now Figure 4-28) shows the column located within a raised median and is a correct rendering of the Project

*based on current design drawings. The Project will not be as large as depicted in the drawing you provided nor will it include barriers between lanes as shown in your letter*

*The Project will not construct any structures in the vicinity of University Avenue. The Project has logical termini at East Kapolei and Ala Moana Center and independent utility from any extensions that may be constructed in the future, including a possible extension to the vicinity of University Avenue. The future extensions will not be constructed as part of this Project, thus they are not required to be evaluated under Chapter 343 of the Hawaii Revised Statutes and NEPA as part of the Project (Please note that the potential future extensions are discussed in the cumulative impacts sections of Chapters 3 and 4 of the Final EIS). Thus, the graphic of Varsity Station included in the letter does not represent the Project.*

*The next graphic included in the letter does not adequately represent the Project. Figure 4-28 of the Draft EIS illustrates the Project on Dillingham Boulevard near Honolulu Community College and Kapalama Station Area. A 3-foot parapet wall is included in project design along the entire alignment. As such, the effects of the parapet wall are shown in each of the simulations provided in Section 4.8 of the Final EIS.*

*Visual and aesthetic conditions are discussed in Section 4.8 of the Final EIS. The Project will be set in a primarily open urban context where visual change, including shade and shadow, is expected and differences in scales of structures are typical (e.g., new high rise buildings). The Final EIS acknowledges that the fixed guideway and stations will be elevated structures, and thus will result in noticeable changes to existing views and in the foreground of these views. This change will also affect the location and extent of shadows.*

*The analysis acknowledges that shadow impacts along the alignment will vary with orientation, height of the stations and guideway, and the height of surrounding trees and local development (see Section 4.8.3 from the Final EIS). Shade and shadow effects are correctly illustrated in the simulated views included in Section 4.7 of the Draft EIS and Section 4.8 of the Final EIS.*

*The intent of the comment about the "ugliness" of straddle bents is unclear as there is no noticeable difference between the two pictures shown in the comment. Recognizing the visual concerns about the Project, however, the following measures will be included with the Project to minimize negative visual effects and enhance the visual and aesthetic opportunities that it creates:*

- Develop and apply design guidelines that will establish a consistent design framework for the Project with consideration of local context.*
- Retain existing trees where practical and provide new vegetation.*
- Replant trees close to their original locations.*
- Shield exterior artificial lighting.*
- Coordinate the Project design with City transit-oriented development planning and Department of Planning and Permitting.*

### Part III – The Locally Preferred Alternative

*The Project is defined in the Final EIS as a 20-mile fixed guideway from East Kapolei to Ala Moana Center. In February 2007, the City Council passed Resolution 07-039, which directed the first construction project to be fiscally constrained by anticipated funding sources and to extend from East Kapolei to Ala Moana Center. The Project has logical termini and independent utility from any extensions that may be constructed in the future. The potential future extensions are discussed in the cumulative impacts sections of Chapters 3 and 4 of the Final EIS. The potential future extensions are not part of the Project, thus they are not required to be evaluated under Chapter 343 of the Hawaii Revised Statutes and NEPA. Under NEPA, environmental analysis is only required when there is a proposed action by a federal agency.*

*Here, because the potential future extensions are not proposed for implementation at this time, they are not part of the Project studied in the Final EIS. While a statement may have been made about a broader project concept, scoping is an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. Among other things, the scoping process determines the scope and the significant issues to be analyzed in depth in the environmental impact statement. The scoping process is part of the environmental review process that led to the identification of the Project. The broader project concept, which includes extensions to Waikiki and the University of Hawaii at Manoa, are not part of the Project; and therefore, must be the subject future environmental study if it is ever built. The extensions are addressed in Sections 3.6.2 and 4.19.3 of the Final EIS under Cumulative Effects, because while they are not part of the Project, they may be considered a reasonably foreseeable future action. It would be premature to undertake an environmental analysis of the extensions (beyond the analysis conducted as part of the Alternatives Analysis and in the cumulative effects sections of Chapters 3 and 4) because they are not part of the proposed action to be taken by the City and FTA. The City has not requested funding from FTA or any New Starts approvals for the future extensions of the elevated rail system. If and when local funding becomes available and future extensions are proposed for implementation, environmental analysis of the extensions and appropriate alternatives analyses will be undertaken at that time.*

*The Final EIS describes the total extent of the proposed Federal action of construction and operation of a fixed guideway transit system between logical termini in East Kapolei and Ala Moana Center, a project included in the Oahu Regional Transportation Plan 2030. There is no segmentation between a Federal and local undertaking. Possible future extensions from East Kapolei to West Kapolei, Salt Lake Boulevard, and from Ala Moana Center to UH Manoa and Waikiki are addressed in the Final EIS as cumulative effects in Chapters 3 and 4. The extensions represent elements of the long-range plan that are not part of the Project or proposed action. The commenter suggests presenting an evaluation of an action that is not proposed for implementation, which would be a violation of both Chapter 343 of the Hawaii Revised Statutes and NEPA.*

*Chapter 4 of the Final EIS includes an evaluation of the cumulative effects of the Project with other past, present, and reasonably foreseeable actions, including the future extensions. When the planned extensions are evaluated in the future, a range of alternatives and complete analysis of potential impacts will be conducted.*

*Future extensions are not precluded by the Project identified in the Draft and Final EISs. The 35-foot-high station at Ala Moana Center is a logical terminus for the Project, which will serve the shopping center and area properties. In the future, when funding is available, the extension would be designed to best accommodate the possibilities available at that time. The high level option over the shopping center is still available and does not obviate the need for the 35-foot option built now. There are operating plans for the system that will continue to rely on the 35-foot station even after an extension is built. If a future extension is constructed beyond the Ala Moana Center, it is preliminarily proposed that the branch lines would have longer headways than the core system, and service that terminates at Ala Moana Center would use the lower platform, while through service would use the upper platform. Riders traveling towards UH or Waikiki would use the upper platform, while those traveling to Ewa could use either platform.*

*The Draft EIS provided estimates of cost-effectiveness for those build alternatives addressed in the document, namely three fixed guideway alternatives from East Kapolei to Ala Moana Center. The cost-effectiveness discussion in the Final EIS has been revised since the Draft EIS to reflect updated modeling and financial information. In addition, cost-effectiveness is only presented for the Airport Alternative. Future extensions from East Kapolei to West Kapolei, Salt Lake Boulevard, and from Ala Moana Center to UH Manoa and to Waikiki are addressed in the Final EIS as cumulative effects in Sections 3 and 4.*

*Table 3-16 of the Draft EIS provides total transit boardings and linked trips in 2030 for each of the "First Project" Build Alternatives (East Kapolei to Ala Moana Center). Table 3-28 of the Draft EIS shows fixed guideway boardings for each of the "First Projects" and the "First Projects plus extensions" (East Kapolei to Ala Moana Center with the West Kapolei, UH Manoa, and Waikiki extensions). These tables have been revised in the Final EIS to show boardings for the Airport Alternative and the Airport Alternative plus future extensions (Tables 3-18 and 3-29 respectively).*

*As documented in the Alternatives Analysis and summarized in Chapter 2 of the Final EIS, the Managed Lane Alternative performed poorly in comparison to both the 20-mile and full-corridor Fixed Guideway Alternative alignments evaluated in the Alternatives Analysis. Chapter 2 in the Final EIS includes a discussion of why the Managed Lane Alternative is no longer being considered. Despite any prior comments, the Project in the EIS was defined to be the 20-mile fixed guideway that is the subject of the EIS by City Council action in adopting a financially constrained alternative. Because of available funding, the Project was, of necessity, limited in scope and, as a consequence, so was the content of the supporting EIS. Please note that the planned extensions are addressed generally in the Cumulative Impacts sections in Chapters 3 and 4 of the Final EIS. This Project has been consistent in its presentation to the public since the beginning of the EIS/Preliminary Engineering project began in mid 2007.*

#### **Part IV – Project Termini**

*The Record of Decision, acceptance of the Hawaii Revised Statutes Chapter 343 EIS, and applicable permits are required prior to construction. Pearl Highlands is not a project terminus, rather, it is a construction phasing point. The questions of logical termini, independent utility, and not restricting other foreseeable transportation improvements apply to project limits of East Kapolei and Ala Moana Center. First, the Project still connects logical termini and is of sufficient length to address environmental matters on a broad scope as required by 23 CFR*

771.111(f). As discussed in Chapter 2 of the Final EIS, the open fields alluded to in the letter are slated for major residential and commercial development including a significant new campus of the University of Hawaii (University of Hawaii West Oahu) as well as the Kroc Center, a major destination community center complex. In addition, Ala Moana Center is a logical Koko Head terminus because it is a major activity center as well as a major transit hub with more than 2,000 weekday bus trips. The Project can operate independent of any future transportation improvements. Lastly, the 20-mile alignment will not preclude any reasonably foreseeable transportation improvements since it is proposed almost entirely within the median of existing roadways where no transportation improvements would occur. The Project enhances the existing transportation system by adding substantial new person-carrying capacity to the corridor by making more efficient use of the roadways. Construction phasing points such as Pearl Highlands are not relevant to the completion of the EIS as long as the entire Project is covered in the document.

Second, the Project has independent utility, because it will be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made. As discussed in Chapter 2 of the Final EIS, the Project will connect multiple activity centers, provide cost-effective transit-user benefits, and meet the Purpose and Need whether or not the planned extensions are built.

Third, the Project will not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. Construction of the Project will not preclude future development of the planned extensions, nor will it preclude development of other projects on the Oahu Regional Transportation Plan (ORTP).

Because of its length, the Project will be constructed in phases to accomplish the following:

- Match the anticipated schedule for right-of-way acquisition and utility relocations.
- Reduce the time that each area will experience traffic and community disruptions.
- Allow for multiple construction contracts with smaller contract size to promote more competitive bidding.
- Match the rate of construction to what can be maintained with local workforce and available financial resources.
- Balance expenditure of funds to minimize borrowing.

The construction phases are not project segments and are considered in total in the Final EIS to meet the requirements of 23 CFR 771.111(f).

## **Part V – Forecasts**

### **1. Ridership forecasts**

National trends show substantial ridership increases. Last year (2008) recorded the highest demand for public transportation in 52 years (APTA 2008 Ridership Report). National transit ridership has grown 18 percent over the past ten years (2007 National Transit Summaries

and Trends, National Transit Database). Honolulu transit ridership has grown over the past several years recovering from three fare increases (July 1, 2001, July 1, 2003, October 1, 2003) and a month-long strike (FY 2004). As identified in the Final EIS (Chapter 3, Section 3.2), transit ridership forecasts, for rail and bus service, are based on a travel demand forecasting model used by the Oahu Metropolitan Transportation Organization (OahuMPO) for the Oahu Regional Transportation Plan. This model is based on guidelines established by FTA and is required to qualify for federal grant funding under the New Starts program. FTA forecasting guidelines have been revised periodically to take advantage of experiences on other projects to ensure projections are realistic and reproducible. The ridership figures presented in the Final EIS have been developed using the latest and best practices put forth by the FTA.

In addition, the Project is one of the first in the country to design and undertake an uncertainty analysis of this type of travel forecast. The uncertainty analysis evaluates the variability of the forecast by establishing probabilistic upper and lower limits of ridership projections. FTA has worked closely with the City during this work effort. A variety of factors were considered in the uncertainty analysis, including the following:

- Variations in assumptions regarding the magnitude and distribution patterns of future growth in the Ewa end of the corridor.
- The impact of various levels of investment in highway infrastructure.
- The expected frequency of service provided by the rapid transit system.
- Park-and-ride behavior with the new system in place.
- The implications on ridership of vehicle and passenger amenities provided by the new guideway vehicles.

Given all the factors considered, the anticipated limits for guideway ridership in 2030 is expected to be between 105,000 to 130,000 trips per day, bracketing the official forecast of 116,000 riders a day used for all calculations.

## **2. Projected energy savings**

According to the U.S. Department of Energy, Transportation Energy Data Book, for the year 2006, passenger cars require 3,512 BTUs per passenger mile while transit trains require 2,784 BTUs per passenger mile and transit buses require 4,235 BTUs per passenger mile. While New York City carries more transit trips than any other city, it represents only 22 percent of the rail passenger-miles traveled, not 57 percent, according to the Bureau of Transportation Statistics (BTS). Furthermore, the commenter applies the most convenient interpretation of the Department of Energy information to make his point about energy utilization. If we use 1600 BTU/mile instead of 8000 BTUs/mile, it can be argued, using the same statistics presented in the comment, that many transit riders use less than half the 3400 BTUs/mile consumed by people who drive. The analysis presented in both the Draft and Final EISs applies more reasonable numbers for energy use. As the Department of Energy advises, great care should be taken when comparing modal energy intensity data among modes. Because of the inherent differences among the transportation modes in the nature of services, routes available, and many additional factors, it is not possible to obtain truly comparable national energy intensities among modes. These values are averages, and there is a great deal of variability even within a



mode, as the commenter has demonstrated. The same Department of Energy report referenced by the commenter shows that between 1970 and 2006, highway transportation energy consumption has been growing at a rate of 1.8 percent per year. The commenter's assertion that highway transportation energy consumption will stop growing on an annual basis is not supported by data collected over the past 36 years.

With regard to construction energy usage, a construction project will obviously require the use of energy. If no construction is done, less energy will be used. Under any alternative evaluated to this point, with the exception of the ineffective No Build and TSM Alternatives in the Alternatives Analysis, avoiding construction is not possible and affords no possible way to meet the Project's Purpose and Need to improve mobility and reliability, access to planned growth areas, and improvement in the equity of the transportation system. Recognizing the demand for energy during construction, measures are being taken to reduce energy use during construction as noted in Chapter 4.18.6 of the Final EIS.

### **3. The Draft EIS financial plan**

The financial plan for the Project is discussed in detail in Chapter 6 of the Final EIS. The commenter's statement that "the additional operating subsidy for rail is not accounted for in the cash flow" is incorrect. The referenced cash flow table anticipates a City subsidy of \$4.726 billion will be spent to support all public transit operations and maintenance during the 2009-2030 period. This is approximately 14 percent of anticipated revenues from the City's General Fund and Highway Fund during this period of which the Project will represent less than 25 percent. Approximately 60 percent of General Fund and Highway Fund revenues come from property taxes with the remainder coming from a variety of other taxes and fees.

The commenter is correct in noting that over \$500 million (\$571 million) in General Obligation Bond proceeds are anticipated to be used for ongoing capital expenditures during the 2009-2030 period. This is a continuation of the City's long-standing practice of using General Obligation Bond proceeds to pay for ongoing capital expenditures for the transit system. As shown in the cash flow table for the Project, about 9 percent of ongoing capital expenditures during the 2009-2030 period are anticipated to be related to the rail line, with the remainder going to the purchase of vehicles and other capital projects for TheBus and TheHandi-Van. It is likely that many of these expenditures, utilizing General Obligation Bond proceeds, would occur even if the Project were not implemented. In reference to General Excise and Use Tax (GET) collections, the Final EIS financial analysis recognizes the reduction in GET surcharge collections, forecasting total revenues of \$3,524 million from the GET surcharge, almost the same as presented in the commenter's letter.

The financial plan is a dynamic document that will be regularly updated to reflect changing conditions. The City will continue to refine revenue forecast and cost estimates as the Project proceeds through FTA's New Starts process. The financial analysis presented in Chapter 6 shows the overall Project financial plan to be balanced using federal and GET surcharge revenues. The primary change has been the amount of federal funding to be requested from New Starts has been increased. This revision has been presented to the FTA.

#### **4. Risk Assessment**

*Chapter 6, Section 6.6 of the Final EIS provides a detailed discussion of the risks associated with Project funding ranging from project construction risks to market uncertainty to inflation. It also presents other possible revenue options should conditions warrant their consideration.*

*The operating cost model was developed using information from Washington Metro, Los Angeles and Miami as noted in Chapter 6 of the Final EIS. The procedure used was in accordance with the guidance of the FTA and has been reviewed by the FTA. All transit projects have a variety of different characteristics and thus do not provide an "apples to apples" comparison. While cost comparisons may be somewhat helpful in evaluating projects, they cannot form the primary basis for such an evaluation because of the unique physical conditions, engineering and other characteristics of each geographic area and system.*

*The "Pickrell Report" is widely accepted as being out of date as it reviewed a small sampling of systems that were built over 20 years ago and which were not exposed to the current more rigorous requirements of the FTA's New Starts process. The 2007 FTA report shows real costs to be much closer to estimates, in general. Sixty percent of the percentage discrepancy presented by the commenter is recognized in the report by the FTA to be attributable to one project, the Tren Urbano in Puerto Rico. Comparing the final estimate before construction of the same list of projects without the Tren Urbano shows the comparison of actual cost and estimate to be within a reasonable range. These kinds of discrepancies are now the subject of careful review by the FTA using third party financial specialists to supplement their own reviews. The New Starts process is designed to refine estimates as the engineering and design elements are advanced. In the end, the analyses in these reports serve to aid FTA in improving the way estimates are done.*

*Cost estimates and ridership projections for the Project have been developed in accordance with the latest guidance issued by FTA. FTA and the Project have the benefit of experience from other systems built in the U.S. FTA continuously adjusts the requirements to improve practices where necessary. As mentioned above, there are many checkpoints within the development of the Project subject to FTA scrutiny, review and, ultimately, approval. The Financial Plan and ridership analysis prepared for the Project and documented in the Final EIS contains the best available data, and their development adheres to FTA requirements. The Final EIS also discloses the potential risks and uncertainty associated with funding for the Project (Section 6.6).*

*The fixed guideway alternative was shown in the Alternatives Analysis Report to provide the best improvement in travel conditions over the No Build Alternative compared to the Managed Lane and the TSM alternatives. This analysis is discussed in Chapter 2 of the Final EIS. The fixed guideway will reduce VHD on the highways by 18 percent compared to the No Build Alternative. Other alternatives studied offer negligible improvement compared to the No Build Alternative.*

*The fixed guideway component of public transit operating costs is projected to be 25 percent of the systemwide total. Increasing operating costs are a consideration for the entire transit program. Operating costs for the transit system as a whole (i.e., TheBus and TheHandi-*

Van and, eventually, the Project) are funded from the City's General and Highway Fund which is made up of a variety of sources, including property taxes, vehicle license fees and other items. The operating budget is set each year by the City Council during the budget process. The additional costs of the transit system will not by themselves cause a need to increase property taxes (and the contribution from the Project is even less likely to do so), but the City Council will review all competing needs and the available resources and make that decision each year as they do now with all City operating programs.

### **5. Operating subsidies**

Chapter 6.4 of the Final EIS describes the basis for the operating costs used in the financial calculations. The primary public transit properties used for comparison were Washington D.C., Los Angeles, and Miami. These systems were selected because they had detailed information available as required by FTA. Other apparently comparable operations did not maintain the appropriate types of data needed for the detailed analysis required by FTA. The methodology to develop operating and maintenance cost estimates for the fixed guideway project was reviewed by the FTA. All properties used for comparison were steel-on-steel grade-separated systems. Your comment that Miami's operating cost per trip of \$4.61 compared to Honolulu's projected \$2.27 cost per trip suggests that Honolulu's operating cost may be understated. However, cost per trip is a poor metric for comparisons of operating costs because the measure also depends on ridership response to the service. Cost per vehicle revenue hour is a much better metric because vehicle-hours are a direct quantification of the amount of service provided. Miami's cost of \$9.65/vehicle-hour is only slightly higher than Honolulu's projected cost of \$9.20/vehicle hour.

Regarding the long term cumulative operations cost, the fixed guideway portion of the overall transit systemwide cost is less than 25 percent. Chapter 6.6 of the Final EIS discloses the risks and uncertainties associated with the financial analysis of the Project.

The cost of security is included in the operating costs estimated for the Project as part of the development of the overall operating costs for the system. Security costs are reflected in "professional services" element of the operating costs for all the systems used in developing Project. The security cost for the Los Angeles system cited in the comment is for all transit services not just fixed guideway service, which is significantly more extensive than Honolulu's proposed Project.

You also reference FTA's Contractor Performance Assessment Report (CPAR), September 2007. The findings of the CPAR with respect to operations and maintenance (O&M) costs are inconsistent with your assertion. Quoting from page 26 of the CPAR Appendix "Figure 8 shows that actual O&M costs tend to be less than the estimate prepared for the AA/DEIS - a finding consistent with the level of service offered." Quoting from page 27 "For the projects reported here the as-operated O&M costs are on average 92 percent of the estimate." Quoting from page 28 "It is rare for New Starts project O&M costs to exceed the planning estimates."

### **6. Replacement and Refurbishing**

Information regarding replacement and refurbishing has been included in the Final EIS and is shown graphically in Figure 6-1. Similar replacement and refurbishing practices will apply

to the fixed guideway as they do to TheBus. Although railcar equipment is more costly, it has a much longer lifespan than buses and associated equipment and facilities. The funding for refurbishing and replacement will come primarily from discretionary and formula federal funding such as FTA Urbanized Area Program and the Fixed Guideway Modernization Program. The City will receive a higher share of formula funding because of the Project.

Replacement and refurbishment costs are minimal for the Project as a new system. Costs are expected to be very small with no full replacement needed until 16 years after the opening of the first segment (2028 at the earliest) and only minor repair costs about five or six years after opening. This places the demands for replacement and refurbishing outside the planning horizon for the Project. However, recognizing the need to provide for this cost over time, the Peskin approach has been used effectively for estimating these needs.

The need for refurbishing and replacement of capital assets is addressed in the Financial Plan and discussed in Chapter 6 of the Final EIS, including funds available for that purpose. There will be ongoing costs to maintain the fixed guideway system as there are with any capital investment over time. A possible method of calculation of such costs is mentioned above.

#### **Forecasting and Cost Effectiveness**

At a \$16.24/hour cost-effectiveness index (CEI) as indicated in Chapter 7 of the Final EIS, the Project is well under the \$23.99/hour level the FTA requires to find a project to be cost-effective. Ridership and costs are based on the best information available and have been developed consistent with FTA guidance and under FTA scrutiny. Even at lower levels of ridership or higher costs, the Project would still qualify under the FTA's CEI criterion.

FTA approved the Project's entry into Preliminary Engineering on October 16, 2009, giving the Project an overall rating of "Medium." This rating is sufficient for the Project to be advanced in the Federal project development process and for the Project to be recommended for Federal funding. The information related to the New Starts evaluation of the Project is discussed in Chapter 7, Section 7.6.

#### **Part VI – Information in the Draft EIS**

Numerous transportation reports were prepared for the Draft and Final EISs, including the Transportation Technical Report; Addendum 01 Addendum 02, and Addendum 03 to the Transportation Technical Report; Model Development, Calibration, and Validation Report; Travel Forecasting Results and Uncertainties Report; Travel Demand Forecasting Results Report; and Addendum 01 to the Travel Demand Forecasting Results Report. These reports are available on the Project website and listed in the References section of the Final EIS.

##### **1. Other material**

###### **a) OMPO surveys:**

The statements quoted from the 2004 Oahu MPO Survey indicate that there is broad public support for an improved transit system and a willingness to fund the improvements with local tax revenue.

The 2006 survey provided little new information about the public's opinion about the fixed-guideway project. The indication that one-third of Oahu residents plan to use the Project on a regular basis would indicate a substantial desire of current drivers to change mode to reliable transit.

b) Future traffic conditions versus today's traffic:

The Draft EIS provided existing traffic conditions in Table 3-7 and 2030 conditions with and without the Project in Table 3-20. The information is provided for the public to compare current conditions to those projected for the future both with and without the Project. Tables 3-9 and 3-10 in the Final EIS present traffic volume information for existing conditions and for 2030, with and without the Project, during the a.m. and p.m. peak hours. These tables have been revised in the Final EIS to show the component roadway facilities of each screenline, level-of-service, and maximum volume thresholds. As shown in these tables, traffic decreases with the introduction of the Project. The Final EIS includes a statement in the Summary of Findings (now appearing as Table 3-1) stating that roadway conditions in 2030 will be better with the Project than the No Build Alternative. Table 3-14 compares the 2030 No Build Alternative with the Project and clearly shows the benefits of building rail to vehicle miles traveled (VMT), vehicle hours traveled (VHT) and VHD. All measures decrease significantly with the implementation of the fixed guideway compared to the No Build Alternative.

c) Highway capacity data

In response to comments and additional analysis, the travel forecasting model has been refined since the Draft EIS to account for non home based direct demand trips during off peak periods. In addition, the air passenger model was updated to reflect current conditions. The Final EIS reflects updated ridership numbers resulting from model refinement. Screenline information for existing conditions, 2030 No Build, and the Project are shown in Tables 3-9 and 3-10. Updated VMT, VHT, and VHD for all time frames are shown in Table 3-14.

Under the No Build and Build alternatives, travel forecasting has assumed several transportation projects, including congestion relief projects in the Oahu Regional Transportation Plan 2030 (as shown in Table 2-4 in the Final EIS). As identified in Chapter 3 of the Final EIS (Table 3-14), the fixed guideway alternatives will result in reduced islandwide vehicle delay of 18 percent as compared to the No Build Alternative.

The screenline volumes in the Alternatives Analysis report were incorrect and have since been corrected. Numbers have been updated for the Final EIS based on the Airport Alternative and refinements to the travel demand forecasting model. The updated results continue to show that traffic will decrease with the addition of the Project. Tables 3-9 and 3-10 in the Final EIS contain updated screenline information including level-of-service, maximum capacity thresholds, and the component roadway facilities of each screenline.

**2. Purpose and Need statement:**

Section 1.7 of the Draft EIS specifically states the Project's purpose: The purpose of the Honolulu High-Capacity Transit Corridor Project is to provide high-capacity rapid transit in the

highly congested east-west transportation corridor between Kapolei and UH Manoa, as specified in the Oahu Regional Transportation Plan 2030 (OahuMPO 2006). This Purpose and Need in the Draft EIS reflects the work completed during the Alternatives Analysis and the findings resulting from that effort that led to a City Council decision to pursue a fixed guideway system for Honolulu. The Project is intended to provide faster, more reliable public transportation service in the study corridor than can be achieved with buses operating in congested mixed-flow traffic, to provide reliable mobility in areas of the study corridor where people of limited income and an aging population live, and to serve rapidly developing areas of the study corridor. The Project also will provide an alternative to private automobile travel and improve transit links within the study corridor. Implementation of the Project, in conjunction with other improvements included in the ORTP, will moderate anticipated traffic congestion in the study corridor. The Honolulu High-Capacity Transit Corridor Project also supports the goals of the Honolulu General Plan and the ORTP by serving areas designated for urban growth.

The need for transit improvements are discussed in Section 1.8 of the Draft EIS, and are addressed by the Project goals as discussed in Section 1.9 of the Draft EIS. They include: improve corridor mobility, improve corridor travel reliability, improve access to planned development to support City policy to develop a second urban center, and to improve transportation equity.

The purpose and need statement complies with the requirements of NEPA and applicable FTA guidance.

### **3. Visual renderings**

Please see our response to this topic above, under Part II.

### **Part VII – Information outside of the Draft EIS**

The Draft and Final EISs include a clear and objective evaluation of project alternatives and impacts.

Project funds have been expended to inform the public and solicit public input about the status and details of the Project.

The comment related to political contributions is not related to the environmental analysis of the Project.

The purpose of the Project, as stated in Section 1.7 of the Final EIS, includes moderation of anticipated traffic congestion ("Implementation of the project, in conjunction with other improvements included in the ORTP, will moderate anticipated traffic congestion in the study corridor."). As shown in Table 3-14 in the Final EIS, in comparison to the No Build Alternative, in 2030 the Project will result in an 18 percent reduction in islandwide congestion, as measured by daily vehicle hours of delay. Thus, the Project meets the purpose of moderating anticipated traffic congestion.

You are correct in pointing out that traffic congestion will be worse in the future with rail than what it is today without rail, and that is supported by the data included in the Final EIS. In

Mr. Cliff Slater  
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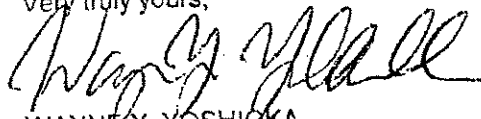
fact, projections suggest that traffic conditions will be worse in 2030 under any circumstances. The Alternative Analysis supports this statement as does the analysis of transportation impacts in the Final EIS. The comparison that is key to the Project is that rail will improve conditions compared to what they would be if the Project is not built. With the fixed guideway system, total islandwide congestion (as measured by VHD) will decrease by 18 percent (as shown in Table 3-14 in the Final EIS), compared to the No Build Alternative. In addition, traffic volumes were studied at various screenlines in the study corridor. The travel demand forecasting model was used to forecast traffic volumes at these screenlines in 2030, both with and without the Project (as shown in Tables 3-9 and 3-10 in the Final EIS). Analysis revealed that traffic volumes at these screenlines will decrease up to 11 percent with the Project. Accordingly, traffic conditions will be significantly better with the fixed guideway compared to the No Build Alternative.

The comment regarding inaccuracy in statements made by politicians is not related to the NEPA environmental analysis of the Project. FTA is the federal lead agency and will continue to ensure compliance with NEPA as part of their responsibilities under NEPA and federal law.

The NEPA process is unrelated to any electoral processes. Further, this comment regarding the electoral process is not related to the environmental analysis of the Project.

The FTA and DTS appreciate your interest in the Project. The Final EIS, a copy of which is included in the enclosed DVD, has been issued in conjunction with the distribution of this letter. Acceptance of the Final EIS by the Governor of the State of Hawaii and issuance of the Record of Decision under NEPA are the next anticipated actions.

Very truly yours,



WAYNE Y. YOSHIOKA  
Director

Enclosure



Creating A Better Hawaii  
Through Private Enterprise

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May 2011

## Federal Lawsuit Filed Against Honolulu Rail Project

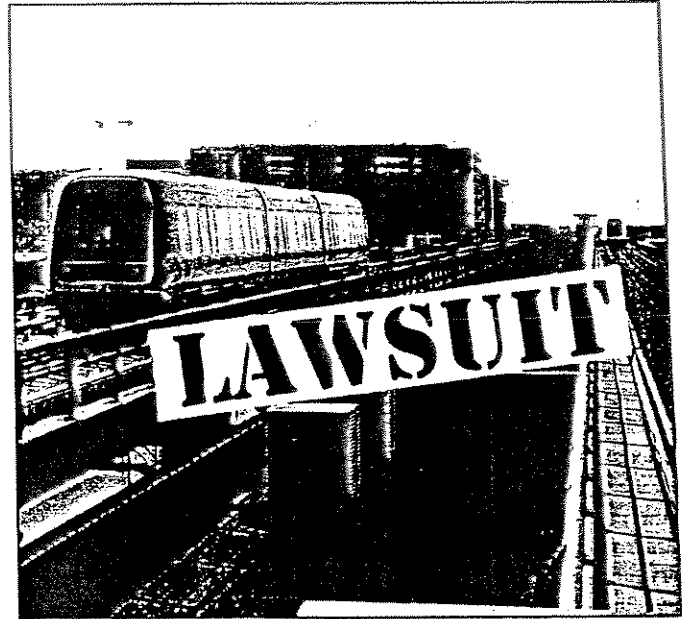
*Compiled from resource material at HonoluluTraffic.com*

HonoluluTraffic.com, Inc., filed a federal lawsuit on May 12 against the City & County of Honolulu's \$5.5 billion fixed rail project.

Plaintiffs are former Hawai'i Governor Benjamin J. Cayetano, the Small Business Hawai'i Entrepreneurial Education Foundation, Judge Walter Heen, former chair of the Hawai'i Democratic Party and former Trustee of the Office of Hawaiian Affairs, Hawai'i non-profit corporation HonoluluTraffic.com Inc., Dr. Michael Uechi MD, Hawai'i non-profit corporation Hawai'i's Thousand Friends, UH Law Professor Randal Roth, and Cliff Slater. HonoluluTraffic.com anticipate amicus briefs will be added subsequent to the filing of the lawsuit.

Defendants are: The Federal Transit Administration (FTA), Leslie Rogers as Regional Administrator, Peter M. Rogoff as Administrator and for the U.S. Department of Transportation, Ray LaHood, Secretary of Transportation, and for the City and County of Honolulu, Wayne Yoshioka, Director of the Department of Transportation.

In the Complaint the plaintiffs have listed the "Violations of Law" on three statutes, the National Environmental Policy Act (NEPA), the National Historic Properties Act (NHPA), and Section 4(f) of the U.S. Transportation Act of 1966:



## Federal Lawsuit Filed Against Honolulu Rail Project Continued from page 1.

**Count 1:** defining the purpose and need so narrowly as to preclude consideration of all reasonable alternatives

**Count 2:** failure to consider all reasonable alternatives (NEPA)

**Count 3:** failure properly to analyze the environmental consequences of alternatives (NEPA)

**Count 4:** improper segmentation (NEPA)

**Count 5:** failure to identify and evaluate use of native Hawaiian burials and traditional cultural properties (section 4(f))

**Count 6:** arbitrary and capricious evaluation of the project's use of section 4(f) resources (section 4(f))

**Count 7:** improper project approval (section 4(f))

**Count 8:** failure to account for effects on historic properties (NHPA)

Prayer for relief

The plaintiffs are asking the court to rescind the Record of Decision (ROD), declare the Final EIS, 4(f) evaluation, and ROD as legally inadequate and find that the Defendants have violated these statutes and also the Administrative Procedure Act ("APA"). The court is also being asked that the City and the Federal Transit Administration revisit the environmental process and this time follow the law, and that the City take no action that would have an adverse environmental impact, or take no action that would limit the choice of alternatives.

You may visit the Complaint and determine for yourself whether you believe these claims are reasonable. Download the PDF at this link: <http://www.honoluluttraffic.com/Complaint.pdf>





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

February 12, 2009

Mr. Ted Matley  
U.S. Department of Transportation  
Federal Transit Administration  
201 Mission Street, Suite 1650  
San Francisco, California 94105

Subject: Draft Environmental Impact Statement for the Proposed Honolulu High-Capacity Transit Corridor Project, Oahu, Hawaii (CEQ #20080469)

Dear Mr. Matley:

The Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. Our detailed comments are enclosed.

While EPA supports the goal of providing transportation choices to the communities of Oahu, we have some concerns related to wetlands, water quality, environmental justice, and noise impacts. EPA has rated this document EC-2, *Environmental Concerns, Insufficient Information*. Please see the attached *Rating Factors* for a description of our rating system.

We are particularly concerned that the Draft Environmental Impact Statement (DEIS) does not contain any quantitative information about the location, acreage, and potential impacts to aquatic resources, hydrology, and waters of the United States in the project area. Impacts to waters of the United States will be subject to Clean Water Act (CWA) Section 404 (b)(1) Guidelines (40 CFR 230). If it is determined that an Individual Permit is required, only the Least Environmentally Damaging Practicable Alternative (LEDPA) can be permitted pursuant to the 404 (b)(1) Guidelines. In addition, without any data regarding potential impacts to hydrologic flows and potential downstream impacts, it is difficult to determine whether significant impacts may occur and what mitigation commitments are needed. EPA recommends that a meeting be scheduled with our wetlands staff and staff of the U.S. Army Corps of Engineers Regulatory Branch to discuss CWA requirements and potential project impacts to hydrology in the area.

We are also concerned that required consultation processes, such as 1) Section 106 consultation for potential impacts to historic and archaeological resources, 2) the water quality assessment associated with the sole source aquifer, and 3) the determination of consistency with the Hawaii Coastal Zone Management Program, have not been completed. These processes should be completed prior to publication of the Final Environmental Impact Statement (FEIS) in order to determine whether or not significant impacts will result. The FEIS should document the specific consultation processes, any additional impacts identified through this coordination, and all resulting mitigation commitments.

Finally, while we believe that most of the alternatives eliminated prior to the DEIS are documented sufficiently, we have remaining questions about why light rail or bus rapid transit in an exclusive right-of-way were not considered as reasonable alternatives in the DEIS. Additional information should be included in the FEIS explaining why these technologies were not considered to be reasonable alternatives and were therefore not reviewed in the DEIS.

We appreciate the opportunity to review this DEIS and look forward to future coordination on the project. When the FEIS is released for public review, please send two copies to the address above (mail code: CED-2). If you have any questions, please contact Connell Dunning, Transportation Team Leader, at 415-947-4161, or Carolyn Mulvihill, the lead reviewer for this project, at 415-947-3554 or [mulvihill.carolyn@epa.gov](mailto:mulvihill.carolyn@epa.gov).

Sincerely,



*FOR*

Kathleen M. Goforth, Manager  
Environmental Review Office (CED-2)

Enclosures:

Summary of EPA Rating Definitions

EPA's Detailed Comments

cc: Wayne Y. Yoshioka, Department of Transportation Services, City and County of Honolulu  
Susan Meyer, U.S. Army Corps of Engineers

### Alternatives Analysis

EPA recognizes that a significant amount of analysis of alternatives has taken place and has been documented prior to the Draft Environmental Impact Statement (DEIS). While we believe that most of the alternatives eliminated prior to the DEIS are documented sufficiently, we have remaining questions about why light rail or bus rapid transit in an exclusive right-of-way were not considered as reasonable alternatives in the DEIS. The Final Environmental Impact Statement (FEIS) should identify the specific rationale behind the elimination of these technologies from consideration.

#### Recommendation:

- Include additional information in the FEIS explaining why light rail or bus rapid transit in an exclusive right-of-way were not considered to be reasonable alternatives and were therefore not reviewed in the DEIS. If these technologies may have resulted in fewer environmental impacts, further justification is warranted to substantiate why those less damaging alternatives were not carried through for consideration.

It is also our understanding that modifications to the alignment described in the DEIS are being considered in order to avoid federal facilities in the current project area. These changes and the impacts associated with them should be described in the FEIS, along with the reasons for considered modifications. If significant variations from the analyzed alternatives are proposed, the Federal Transit Administration (FTA) and the Department of Transportation Services (DTS) should consider preparing a Supplemental DEIS for public review. EPA is available to discuss with FTA and DTS the appropriate level of environmental documentation needed should new information be incorporated into the document.

#### Recommendation:

- Include information in the FEIS about any changes to the proposed alignment and impacts associated with those changes. Consult EPA regarding the appropriate level of documentation.

We understand that the project will eventually include extensions of the proposed project on both ends of the initial segment. However, the extensions to the project were not analyzed in this DEIS. It is critical that selection of the alternative for the initial segment not preclude a reasonable range of alternatives for those future extensions. Given that the proposed project is an elevated structure, there are few remaining alternative sites where the subsequent extension projects can "link" to the project. The extensions should be viewed as reasonably foreseeable future actions and, as such, should be analyzed thoroughly in the cumulative impact analysis. Specifically, what additional

resources of concern will be affected should the proposed action be carried forward and should the proposed extensions be built?

Recommendation:

- Ensure that selection of the alternative for the initial segment will not preclude a reasonable range of alternatives for future extensions. Include an analysis of potential impacts, and mitigation for those impacts, that would occur should the extensions to the project be built. Identify all reasonably foreseeable future actions associated with the placement of the proposed project as well as the impacts to resources from those future actions. Provide any mitigation for these identified cumulative effects.

**Wetlands and Waters**

In our January 6, 2006 and April 13, 2007 scoping comments, EPA stated that the DEIS should disclose the approximate area of waters of the United States that occur within the study area of the proposed project, including permanent and intermittent streams and wetlands. The Clean Water Act (CWA) Section 404(b)(1) Guidelines at 40 CFR Part 230.10(a) state that "... no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." While the DEIS states that "no direct impacts to wetlands are expected" (page 4-134), EPA believes that it is likely that the project will have both direct and indirect impacts to waters of the United States. FTA and DTS will have to demonstrate that potential impacts to waters of the United States have been avoided and minimized to the maximum extent practicable prior to obtaining a CWA Section 404 permit (40 CFR 230.10(a) and 230.10(d)). Our scoping comments further recommended that the following information be included in the DEIS, and we reiterate that this information should be included in the FEIS.

We also recommend that DTS meet with EPA wetlands staff and staff of the U.S. Army Corps of Engineers to discuss Section 404(b)(1) requirements. Please contact Wendy Wiltse of EPA's Honolulu office at 808-541-2752 to arrange a meeting.

Recommendations:

- Work with EPA and the Corps to acquire a jurisdictional delineation of waters of the United States and impacts to those waters in the project area.
- Demonstrate that all potential impacts to waters of the United States have been avoided and minimized. If these resources cannot be avoided, clearly demonstrate how cost, logistical, or technological constraints preclude avoidance and minimization of impacts.
- Quantify the benefits from measures and modifications designed to avoid and minimize impacts to water resources; for example, number of stream crossings avoided, acres of waters of the United States avoided, etc.

- Identify all protected resources with special designations and all special aquatic sites<sup>1</sup> and waters within state, local, and federal protected lands. Additional steps should be taken to avoid and minimize impacts to these areas.
- Identify and commit to mitigation for any unavoidable impacts. Include a timeframe for implementation of mitigation commitments along with the responsible party.

## Water Quality

The DEIS states that a Water Quality Impact Assessment is underway, as required in areas that depend upon a sole source aquifer for drinking water. The results of this assessment should be included in the FEIS.

The DEIS also states that the project's consistency with the objectives and policies of the Hawaii Coastal Zone Management Program will be reviewed by the Department of Business, Economic Development & Tourism (DBEDT) Office of Planning. This review should be completed and documented in the FEIS.

While we support DTS's plan to implement permanent best management practices (BMPs) to manage stormwater runoff, we do not believe that there is sufficient information in the DEIS to document that the project will have no adverse impacts on water quality due to increased pollutants in stormwater. Additional information is needed in the FEIS to support the conclusion that there will be no adverse impacts to water quality. Where the proposed project will widen existing roads, the current stormwater detention basins and structures should be evaluated to determine if they will continue to be effective. We also recommend the use of green infrastructure as part of stormwater management. Detailed information about green infrastructure approaches is available at <http://cfpub.epa.gov/npdes/greeninfrastructure/technology.cfm>.

The FEIS should also include a discussion of other impacts the project may have on local hydrology, such as sediment transport, groundwater recharge, and flood attenuation, and how these impacts would be minimized or mitigated.

### Recommendations:

- Include the results of the sole source aquifer water quality assessment in the FEIS and confirm that no significant impacts will result. Identify specific mitigation measures for any potential impacts.
- Include a discussion of the DBEDT Office of Planning review of the project's consistency with the Coastal Zone Management Program and confirm that the project is consistent with the program.

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<sup>1</sup> Special aquatic sites are defined at 40 CFR 230.40 – 230.45 and include wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes.

- Consider including green infrastructure in the permanent BMPs for stormwater management and document the BMPs in the FEIS.
- Identify the project's impacts on local hydrology, such as sediment transport, groundwater recharge, and flood attenuation in the FEIS rather than waiting to analyze these impacts at a future date. Include specific mitigation commitments in the FEIS and identify how these mitigation actions will reduce impacts to surface hydrology. Include an analysis of potential hydrological impacts due to the reasonably foreseeable future extensions of the proposed project.

### **Noise Impacts**

The DEIS, including the visual impact simulations, indicate that residents in a number of areas may experience significant noise impacts due to the proximity of the project to homes. EPA encourages DTS to consider noise abatement measures not specified in the DEIS, such as noise insulation of receptor sites.

EPA also recommends that particular attention be given to potential noise impacts and mitigation in the vicinity of Pearl Harbor and the USS Arizona Memorial.

#### **Recommendations:**

- Consider additional noise abatement measures, such as noise insulation of receptor sites, for residences and other sensitive receptors that would experience noise impacts. Provide quantitative information in the FEIS on the decrease in noise impacts from additional mitigation strategies.
- Provide additional noise mitigation in the vicinity of Pearl Harbor and the USS Arizona Memorial, if necessary to preserve the contemplative nature of the site.

### **Environmental Justice**

EPA previously provided feedback on the environmental justice (EJ) analysis methodology proposed for this project, which was based on the Oahu Metropolitan Planning Organization's method for determining EJ areas. While we believe that the DEIS appropriately identifies EJ areas, we have concerns about the proposed relocation of residents of the Banana Patch community, which is identified in the DEIS as an EJ area of concern. We encourage DTS to choose an alternative alignment that would avoid relocation of this community. If no reasonable avoidance alternative exists, EPA recommends that extensive efforts be made to communicate and consult with the community in planning and implementing the project, and that all past and future consultation activities with this community be documented in the FEIS.

In addition, EPA recommends that additional assistance be provided to any other residents of environmental justice communities who will be relocated.

Recommendations:

- Identify an alternative alignment that would avoid the Banana Patch community and alter the proposed action to accommodate this modification.
- Document the content and outcomes of the community meeting held with the Banana Patch community, as well as any other past or planned communication with the community, in the FEIS.
- Identify and commit to specific mitigation measures to minimize the impacts of relocation on low-income and minority populations.
- Conduct interviews with all potential displacees who have special needs to ensure that issues are fully identified and a plan for assistance is prepared. Based on the results from these interviews, identify and commit to additional measures to minimize the impacts of relocation, such as providing translation services, transportation to visit potential replacement housing, and/or additional relocation specialists to work with these communities.

**Section 106 Consultation**

The DEIS states that Section 106 consultation is ongoing. The consultation process should be completed prior to release of the FEIS and the process and required mitigation should be documented. This is critical to the determination of whether the project will have significant impacts on historical resources.

Recommendation:

- Complete the Section 106 process and document all related mitigation commitments in the FEIS. Confirm in the FEIS that the Section 106 consultation process included analysis of potential impacts from the reasonably foreseeable future action of the proposed extension of the project. Identify what, if any, additional impacts to historical properties may occur with future extensions of the project.

**Invasive Species**

EPA's January 6, 2006 and April 13, 2007 scoping comments included recommendations for minimizing the spread of invasive species. The islands of Hawaii are particularly vulnerable to invasive species, and construction associated with the project has the potential to aid in the establishment of invasive plants along any newly disturbed corridors. We reiterate our recommendations below and request that they be addressed in the FEIS.

Recommendations:

- In accordance with Executive Order 13112, identify proposed methods to minimize the spread of invasive species and utilize native plant and tree species where revegetation is planned.

- Coordinate invasive species management with local agencies and organizations, such as the Oahu Invasive Species Committee: a voluntary partnership organized to prevent new invasive species infestations on the island of Oahu, to eradicate incipient invasive species, and to stop established invasive species from spreading on Oahu (<http://www.hear.org/oisc/>).
- Coordinate measures to reduce the potential for the spread of invasive species with other ongoing planning efforts. Additional resources related to Federal and State programs to address invasive species can be found at: <http://www.invasivespeciesinfo.gov/>

### Visual Impacts

The DEIS indicates that there may be significant visual impacts resulting from the project. Context sensitive design can be used to mitigate these impacts.

#### Recommendation:

- Utilize context sensitive design, including neighborhood-based design guidelines and community input, as much as possible to mitigate the project's visual impacts.

### Climate Change

Research on global climate change indicates that many coastal areas may be impacted in the future by sea level rise. The IPCC projects that global sea level will rise between 7 and 23 inches by the end of the century (2090–2099) relative to the base period (1980–1999). According to the IPCC, the average rate of sea level rise during the 21st century is very likely to exceed the 1961–2003 average rate. Storm surge levels are also expected to increase due to projected sea level rise. Combined with non-tropical storms, rising sea level extends the zone of impact from storm surge and waves farther inland, and will likely result in increasingly greater coastal erosion and damage.<sup>2</sup>

#### Recommendation:

- Include a discussion in the FEIS of the potential impacts of climate change on the proposed project and identify adaptive management strategies to protect the project area from those impacts.

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<sup>2</sup> IPCC, 2007b: Summary for Policymakers. In: *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Parry, M.L., O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.



June 2, 2009

The Honorable Roy Kientz  
Undersecretary for Policy  
United States Department of Transportation  
West Building, 8<sup>th</sup> Floor  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Subject: Draft Environmental Impact Statement (DEIS) for Honolulu High-Capacity  
Transit Project

Dear Mr. Kientz:

The undersigned are Members of the City Council of the City and County of Honolulu (CCH) of the State of Hawai'i. As elected representatives of our Districts, we have responsibilities that require us to ensure that public funds – regardless of their source – are expended wisely and to safeguard our constituents from tax burdens that otherwise could be avoided through good governance.

At the present time, the Honolulu City Council is being asked by the City Administration to approve an appropriation for the forthcoming 2010 fiscal year (July 1, 2009 – June 30, 2010) of over \$1 billion in local funds to initiate construction of a 6.5 mile-long segment of the proposed Honolulu High-Capacity Transit Corridor (HHCTC) Project. The City Administration has requested this authorization by the City Council in advance of the publishing of a Final Environment Impact Statement (FEIS) for the Project or the issuance of a Record of Decision (ROD) by the Federal Transit Administration.

The HHCTC Project, as proposed by the City Administration as a candidate for Federal financial assistance, involves the construction of an all-elevated electric railway using automated light

metro technology, extending for 20.5 miles along the Leeward side of the island of O'ahu between East Kapolei and Ala Moana Center. The currently anticipated implementation cost of the Project is \$5.4 billion with a forecasted completion date in late 2018.

### **DEIS Process and Content**

The HHCTC Project was the subject of a Notice of Intent to Prepare an Environmental Impact Statement for High-Capacity Transit Improvements in the Leeward Corridor of Honolulu, HI published in the Federal Register on Thursday, March 15, 2007 (Volume 72, No. 50, Pages 12254-12257, copy attached hereto). Subsequently, the City Administration prepared a DEIS for the Project, submitted it to the Federal Transit Administration for review, and published that document for the mandatory period for receipt of comments and written statements that ended on February 6, 2009.

The NOI (Summary, Page 12254) specifically states that:

"The Federal Transit Administration (FTA) and the City and County of Honolulu, Department of Transportation Services (DTS) intend to prepare an EIS on a proposal by the City and County of Honolulu to implement a fixed-guideway transit system in the corridor between Kapolei and the University of Hawai'i at Manoa with a branch to Waikiki. Alternatives proposed to be considered in the draft EIS and two Fixed Guideway Transit alternatives."

The NOI (V. Alternatives, Page 12256) also states that:

"Fixed Guideway Alternatives, which would include the construction and operation of a fixed guideway transit system in the corridor between Kapolei and UH Manoa with a branch to Waikiki. The draft EIS would consider five distinct transit technologies: Light rail [sic] transit, rapid rail transit, rubber-tired guided vehicles, a magnetic levitation system, and a monorail system."

Our concern is that the DEIS does not conform with its intent as stated in the Federal Register, which we understand to be legally-binding on the parties that published the notice. Specifically, the document addressed only the following alternatives:

- No Build Alternative
- Fixed Guideway Transit Alternative via Salt Lake Boulevard (Salt Lake Alternative)

- Fixed Guideway Transit Alternative via the Airport (Airport Alternative)
- Fixed Guideway Alternative via Airport and Salt Lake (Airport & Salt Lake).

Our understanding of the applicable environmental law is that, in order to be compliant with the National Environmental Protection Act (NEPA), the DEIS should have provided the public with an equal evaluation of all five technologies identified in the relevant NOI and contained a ranking of their comparative benefits and impacts to Honolulu, so as to enable the selection of a "best fit" technology after comments and statements concerning its contents were received and evaluated by both CCH and FTA.

Instead, each of the Fixed Guideway Transit Alternatives discussed in the DEIS for the HHCTC Project was based on an elevated railway using automated light metro technology, a form of rail rapid transit that requires full grade-separation. In particular, the DEIS failed to provide the public with information concerning the environmental characteristics of the other four transit technologies – light rail transit, bus rapid transit, magnetic levitation and monorail – as called for by the relevant NOI.

We also wish to point out that while the Locally Preferred Alternative approved by the Honolulu City Council in December 2006 is identified in its entirety in the HHCTC Project DEIS – from Kapolei to UH Manoa with a branch to Waikiki, which would involve approximately 29 miles of railway – the DEIS only addressed 20 miles (by either of two routing alternatives) between East Kapolei and Ala Moana.

Despite being identified in the NOI, we believe that the branch out to Waikiki was intentionally left out of the DEIS by the City Administration to avoid having to address the negative environmental impacts in the document and to avoid having critical comments entered into the record of the DEIS hearings and comment period. The Waikiki community will not allow an elevated railway to overshadow its avenues; this is because its residents and businesses understand that it would severely damage the environment and destroy the visual beauty which attracts visitors to Hawaii.

Action Requested: Inasmuch as none of the alternatives contained in the DEIS addressed the environmental impacts of the five technology options for the HHCTC Project called for by the relevant NOI, we hereby request a formal finding by USDOT as to whether or not the DEIS for the HHCTC Project as prepared by CCH/DTS was compliant with the National Environment Protection Act.

## Environmental Protection Agency Letter to Federal Transit Administration

With regard to NEPA compliance, we also wish to draw your attention to a letter sent by Region IX EPA to Region IX FTA concerning the DEIS for the HHCTC Project. This letter, dated February 12, 2009 (copy attached hereto) states:

"While EPA supports the goal of providing transportation choices to the communities of O'ahu, we have some concerns related to wetlands, water quality, environmental justice, and noise impacts. EPA has rated this document EC-2, *Environmental Concerns, Insufficient Information.*"

In addition, both in its letter to FTA and in its detailed comments on the subject DEIS, EPA stated:

"While we believe that most of the alternatives eliminated prior to the DEIS are documented sufficiently, we have remaining questions about why light rail or bus rapid transit in an exclusive right-of-way were not considered as reasonable alternatives in the DEIS."

Region IX EPA made the following recommendation to FTA:

"Include additional information in the FEIS explaining why light rail or bus rapid transit in an exclusive right-of-way were not considered to be reasonable alternatives and were therefore not reviewed in the DEIS. If these technologies may have resulted in fewer environmental impacts, further justification is warranted to substantiate why those less damaging alternatives were not carried through for consideration."

These statements by Region IX EPA are germane to criticisms to the DEIS for the HHCTC Project made in numerous verbal comments and written statements during the review period that ended on February 6, 2009, six days before the date of EPA's letter.

It is our understanding that, in order to be compliant with NEPA, the DEIS for the HHCTC Project should have provided the public with an equal evaluation of all five technologies identified in the relevant NOI. This evaluation, we believe, should have contained a ranking of their comparative benefits and impacts, so as to enable the selection of a "best fit" technology for Honolulu after all comments and statements concerning the DEIS were evaluated by both CCH and FTA.

Instead, the City Administration chose to have the DEIS compare the "worst" impacts of the "worst case" technologies (for example that magnetic levitation would be the "loudest" technology) and then constructing comparative tables noting these impacts but without also addressing the "least adverse" or "beneficial" impacts of each of the technologies.

The only alignments for the transit corridor discussed in the DEIS were those that fit an elevated railway. All benefits and impacts were assumed to fall within this corridor alone, as opposed to evaluating benefits and impacts in alternative corridors suitable for non-elevated transit system technology options, such as light rail transit and bus rapid transit.

As Region IX EPA suggested in its letter, the approach taken by the City Administration entirely misses the opportunity implicit in the EIS process to discover the "best fit" technology choice for Honolulu, which might mean a compromise between maximum possible station-to-station schedule speed over the full length of the HHCTC Project and the environment, aesthetic, commercial, social and historic impacts to the city, its residents and its business community.

Action Requested: We request USDOT to coordinate FTA's actions concerning the DEIS for the HHCTC Project with the EPA to ensure that they adhere to both NEPA and the relevant NOI. We also request that USDOT, using its responsibility and authority under NEPA, take steps that ensure that the numerous comments and statements critical of aspects of the HHCTC Project, in particular those concerned about the negative impacts of constructing and operating an elevated railway through environmentally sensitive commercial, recreational and residential areas of Honolulu, are addressed in an objective and meaningful manner, as required by the National Environmental Protection Act and implementing regulations issued by EPA and FTA. If in addressing the comments the conclusion is reached that the project should be changed to light rail technology that can accommodate both elevated and at-grade operations, we request that USDOT ensure that the HHCTC Project is changed accordingly.

#### **Other Pertinent Information**

##### Statements Made by Honolulu City Administration to Honolulu City Council

The Honolulu City Administration has told the Honolulu City Council, as well as the local news media and the public, that approval by FTA of the Final Environmental Impact Statement (FEIS) for the HHCTC Project will be forthcoming in the near future, inasmuch as "There are no significant problems with the DEIS or the Project," and that issuance of an Record of Decision (ROD) qualifying the Project for Federal financial assistance will follow in short order. The City

Administration also has advised the City Council that CCH has been assured that it is "in line for up to \$1.4 billion in Federal grants under the New Starts program," although no written evidence of this claim has been provided to us.

#### City Administration Claims that "It's Too Late to Consider Technology Alternatives"

Notwithstanding the fact that Section II. **Scoping** of the relevant NOI (Page 12255) states:

"Comments on the alternatives should propose alternatives that would satisfy the purpose and need at less cost or with greater effectiveness or less environmental or community impact and were not studied or eliminated for good cause. At this time comments should focus on the scope of the NEPA review and should not state a preference for a particular alternative. The best opportunity for that type of input will be after the release of the draft EIS."

The City Administration steadfastly maintains that, because the FTA approved public release of the DEIS for the HHCTC Project, "it is too late to consider technology alternatives" that were commented upon or recommended during the review period.

Many of our constituents, including parties that submitted verbal comments or written statements during the mandatory review period, believe that they are being "stone-walled" by the City Administration in violation of NEPA, implementing EPA and FTA regulations, and the NOI governing the intended content of the DEIS for the HHCTC Project. As elected City officials, we too have experienced similar responses from the City Administration when raising questions about the HHCTC Project, and are obliged by our fiduciary duty to our taxpayers to bring this to your attention.

#### Hostility Expressed by City Administration to Criticisms of HHCTC Project

Only recently did it become public that over 600 comments were received by CCH and FTA concerning the DEIS. When initially asked about releasing the comments and statements, the City Administration resisted and stated that while they could, many of the comments would raise undue concern over issues that would be addressed in the FEIS and that the comments and statements would be released with the FEIS. Only after insistence by members of the City Council and threats by the news media that they were prepared to institute actions under Freedom of Information laws, were the documents released. This is clearly indicative of the attitude of the City Administration towards its legal responsibility to address these comments in an objective and meaningful manner.

Increasingly, the public has become aware of the negative impacts that would be caused by construction and operation of an elevated railway in certain areas of the city (that can only operate in a secured or grade separated right-of-way due to the required third rail along the tracks), notably in the Primary Urban Core extending from the Kalihi and Iwilei neighborhoods through Downtown to Kaka'ako and Ala Moana. Concerns also are being expressed to us about the environmental impacts of planned future extensions of the HHCTC Project – which were not addressed in the DEIS – into the McCully, Mo'ili'iili, University of Hawaii and Waikiki neighborhoods, as well as from East Kapolei, located on former agricultural lands in the Ewa region, into the heart of Kapolei.

These concerns have resulted in a well-spring of public support for the use of more flexible light rail transit technology, which would permit different segments of the HHCTC Project to be constructed at-grade on private rights-of-way, in highway medians, on exclusive transit-only lanes or in mixed traffic along city streets, as well as on elevated structures. We are advised by one of the parties that submitted a written statement during the DEIS comment period that its findings are that as much as forty-five percent (45%) of the Project can be brought to grade through the use of light rail transit technology, resulting in a reduction in implementation costs in the range of \$2 billion. The City Administration not only expresses no interest in exploring this alternative, which we believe would enhance the HHCTC Projects potential for receiving a favorable rating under the New Starts Criteria, but has reacted in a hostile manner to those advancing this viewpoint.

While anonymous, we believe that USDOT will be interested in the attached electronic media report distributed on May 1, 2009 by Ian Lind OnLine. In this report, the head of one of Honolulu's pre-eminent architectural firms (who has been vocal in his criticisms of the HHCTC Project and was active in the preparation of a written statement entered into the DEIS record by the Honolulu Chapter of the American Institute of Architects) was quoted as saying

"More than once I've been threatened that I'll never work in this town again," he said. The mayor is intimidating architects to shut them up."

#### City Administration's Rush to Lock-In the Technology

Within a few weeks following the close of the DEIS comment period on February 6, 2009, the City Administration began to take steps to lock-in the use of automated light metro technology for the HHCTC Project. It attempted to do so has the following manner:

- 1) By issuing the following Requests for Proposals (RFPs) for infrastructure construction and equipping, including acquisition of rolling stock, of an elevated railway between East Kapolei and Pearl Highlands:
  - RFP-DTS-90015 West Oahu/Farrington Highway Guideway Design-Build Contract, released to potential bidders on March 12, 2009;
  - RFP-DTS-98143 Core Systems Design-Build-Operate-Maintain Contract, released to potential bidders on April 17, 2009; and
  - RFP-DTS-213102 Maintenance and Storage Facility Design-Build Contract, released to potential bidders on May 29, 2009.
  
- 2) By misstatements made by the City Administration that the decision to move forward with an all-elevated fixed guideway was already made. In reality, none of the relevant documents – City and County of Honolulu Ordinance 07-001 selecting a Fixed Guideway Transit System for the Locally Preferred Alternative, the Mayor's notification to the City Council of his selection of Steel Wheel-on-Steel Rail guidance technology for the HHCTC Project, and the vote of the electorate in favor of Steel Wheel-on-Steel Rail -- require the HHCTC Project to be a fully grade-separated elevated railway:
  - Part I, Section 2 of City and County of Honolulu Ordinance 07-001, adopted by the Honolulu City Council on December 22, 2006, and approved by the Mayor on January 6, 2007, states "the locally preferred alternative for the Honolulu High-Capacity Transit Corridor Project shall be a fixed guideway system between Kapolei and the University of Hawaii at Manoa, starting at or near the intersection of Kapolei Parkway and Kalaeloa Boulevard..." (Document attached hereto.)
  - Section 6 **Reservation of the right to select technology**, states that "The council reserves the right to select the technology of the fixed guideway system for the locally preferred alternative. If the council exercises the right, the council shall select the technology through subsequent ordinance passed on third reading by the council before the city administration issues a public notice soliciting proposals or inviting bids for work that includes design of the system.  
  
The city administration shall give the council at least 90 days' notice before issuing the first public notice soliciting proposals or inviting bids for work that includes design of the fixed guideway system."



- Letter dated April 17, 2008, from Mayor Mufi Hannemann to Council Chair Barbara Marshall, announcing the Mayor's "...decision to proceed with the technology selection of Steel on Steel for the Honolulu High-Capacity Transit Corridor project."

The letter further states, "therefore, I have instructed the Department of Transportation Services to proceed with the steel technology as selected by the expert panel in the preparation of the draft Environmental Impact Statement, Preliminary Engineering, the final Environmental Impact Statement and other necessary documents as required or requested by the FTA and the State.

Additionally, pursuant to the second proviso included in Ordinance 07-001, PART III, Section 6, I am notifying the Council that I am issuing the first notice soliciting proposals for work that includes design of the steel on steel fixed guideway system after 90 days from the date of this letter." (Document attached hereto.)

- On November 4, 2008, by a vote of 52.57% for and 47.43% against, the voters of the City and County of Honolulu approved an amendment to the Honolulu City Charter which asked, "Shall the powers, duties, and functions of the city, through its director of transportation services, include establishment of a steel wheel on steel rail transit system?"

- 3) Statements by members of the City Administration that at various public hearings and meetings that "The decision has already been made" and "There will be no turning back." For example, at a City Council Budget Committee hearing held on May 18, 2009, as part of his testimony, the City's Director of Transportation Services stated, "We will do anything that it takes to start building the rail project by the end of this year."

## SUMMARY

In his confirmation speech, the Secretary of Transportation said,

"In our surface transportation programs, it implies a commitment to the principles that some refer to as livability; that is, investing in a way that recognizes the unique character of each community. The era of one-size-fits-all transportation projects must give way to one where preserving and enhancing unique community characteristics, be they rural or urban, is a primary mission of our work rather than an afterthought."

As Members of the Honolulu City Council, we share the Secretary's viewpoint. The people of Honolulu want and need improved public transportation, and we respect the November 2008

vote for a steel on steel transit system. At the same time, citizens want a transit system that will serve them and their needs, is sensitive to our natural environment, supports our tourism industry, and will not financially strap our future generations.

We believe that there is no reason to spend more money to build, operate and maintain a transit system that neither serves the people nor creates a more livable city. Honolulu, like the rest of Hawaii, is rooted in deep respect for the *aina* (land) and environment; preserving and enhancing the unique characteristics of our community cannot be ignored in the rush to build a transit system.

We have the opportunity to go a long ways in solving our transportation problems, while still protecting our lifestyles, if and only if, all transit alternatives are given a full and fair consideration. We are only requesting that light rail at-grade and elevated be examined as an alternative to all elevated system as currently pursued by the City Administration, and that money not be spent for preliminary engineering or construction until this evaluation is complete. It is for this reason that we bring this matter to your attention.

Respectfully,

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Duke Bainum  
Honolulu City Councilmember  
District 5

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Charles Djou  
Honolulu City Councilmember  
District 4

Copies to:

The Honorable Ray H. LaHood, Secretary of Transportation  
United States Department of Transportation  
West Building, 9<sup>th</sup> Floor  
1200 New Jersey Avenue, SE  
Washington, DC 20590

The Honorable John D. Pocari  
Deputy Secretary of Transportation  
West Building, 9<sup>th</sup> Floor  
1200 New Jersey Avenue, SE  
Washington, DC 20590

The Honorable Peter M. Rogoff, Administrator  
Federal Transit Administration  
East Building, 5<sup>th</sup> Floor  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Mr. Matt Welbes, Acting Deputy Administrator  
Federal Transit Administration  
East Building, 5<sup>th</sup> Floor  
1200 New Jersey Avenue, SE  
Washington, DC 20590

#### Attachments

- 1) Federal Register, Thursday, March 15, 2007, Volume 72, No. 50, Pages 12254-12257
- 2) Letter from Region IX EPA to Region IX FTA Concerning the DEIS for the HHCTC Project,  
Dated February 12, 2009
- 3) Ian Lind OnLine, May 1, 2009 (<http://www.ilind.net>)
- 4) City and County of Honolulu Ordinance 07-001
- 5) Letter from Mayor Mufi Hannemann to Council Chair Barbara Marshall, Regarding the  
Selection of Technology for the HHCTC Project

# AIA Honolulu

A Chapter of The American Institute of Architects



## AIA HONOLULU TALKING POINTS ADDRESSING THE PROPOSED HONOLULU TRANSIT CORRIDOR PROJECT

Updated, June 10, 2009

- AIA Honolulu supports multi-modal transportation including the concept of a fixed rail system for Oahu. However, we remain concerned over the appropriateness of the proposed all-elevated transit system particularly through the urban core of Honolulu.
- AIA Honolulu strongly encourages the City Administration and City Council to re-consider selection and implementation of a flexible light rail system—one that will be capable of operating at street level (at-grade), above or below-grade depending on the conditions of each community; and that would allow for future adjustments and expansions to be built faster, more economically, and with potentially fewer environmental, visual and economic impacts.

### TECHNOLOGY

- The citizens of Honolulu voted for a steel-on-steel "fixed guideway" rail system for Honolulu. The vote did not specify an all-elevated system as currently planned by the City Administration. Additional consideration should be made to the selection of the newer, flexible light rail technologies capable of operating at-grade, elevated or below grade as the conditions warrant.
- According to the Federal Transportation Administration whose agency guides Federal funding for Honolulu's proposed *New Starts* project: A "fixed guideway" refers to any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail, monorail, trolleybus, aerial tramway, inclined plane, cable car, automated guideway transit, ferryboats, that portion of motor bus service operated on exclusive or controlled rights-of-way, and high-occupancy-vehicle (HOV) lanes.
- AIA research reveals that there are currently 35 light rail systems in the U.S. that operate at-grade, either fully or in part, and only one entirely elevated system, Miami, which was built in the 1970s. We urge the Administration and City Council to re-evaluate their specific selection of transit technology which incorporates high platform cars running on a fully automated, elevated automated, "hot" third rail system.

<u>PROJECT CRITERIA</u>	<u>ELEVATED RAIL</u>	<u>AT-GRADE LRT</u>
Overall Construction Cost (20 mile system)	\$5.3 Billion+	\$2.5 Billion
Construction Cost per Mile	\$265 Million+	\$125 Million
Construction Time	9 years	Approx. 4 years
Construction Energy Consumption per Mile	170,000 MBTUs	20,000 MBTUs
Operation & Maintenance Cost (OMC)	\$63 Million per year	\$39 Million per year
Visual Impact	Moderate/High	Low
Environmental Impact	High	Low
Potential for TOD	Limited to areas near station entrances	Several major advantages for TOD
At-grade Traffic Impact	Low	Acceptable, using signal synchronization
Passenger Capacity (Passengers per Hour per Direction)	6,000	over 9,000
<u>Current systems in North America</u>	<u>1 city</u>	<u>35 cities</u>

+ The lack of recent all-elevated rail projects makes it difficult to verify projected costs.

## SUGGESTED LIGHT RAIL TRANSIT (LRT) FOR THE HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

ALA Honolulu continues to strongly support the concept of a fixed rail transit system for Oahu. However, we also remain concerned over the appropriateness of the proposed elevated transit system particularly through the urban core of Honolulu. ALA Honolulu promotes the implementation of a flexible transit system capable of operating at, above, or below grade to accommodate the particular conditions within each community. To assist the City administration, lawmakers, and community in strengthening community support, enhancing our neighborhoods and environment, investing taxpayer money wisely, and ensuring Federal funding for this historic project, ALA Honolulu's Transit Task Force has prepared the following comparison study of two different types of fixed rail systems:

- The elevated "hot" third rail system currently proposed in the Draft Environmental Impact Statement (DEIS) dated November 2008, and
- At-grade light rail transit (LRT) systems using an overhead "catenary" power wire

The LRT system was chosen for consideration in this study because of its flexibility; LRT guideways can be put at grade, below grade or overhead as required by planning considerations. The two rail systems are compared in terms of:

- Construction Costs
- Operating and Maintenance Costs
- Visual and Environmental Impact
- Transit-Oriented Development, and
- At-grade Traffic Impact

### **1. CONSTRUCTION COST**

#### **Elevated rail**

The latest cost estimate for the 20-mile, 20-station elevated rail system proposed for the City & County of Honolulu is \$5.3 billion, or \$265 million per mile<sup>1</sup>. This figure is for the initial phase from Kapolei to Ala Moana and does not include extensions to Waikiki or UH Manoa. Due to the scarcity of recently built elevated systems, it remains difficult to evaluate these projected construction costs. The only instance in which an all-elevated mass transit line was built in a major city in the United States occurred in Miami in the 1970's, which is too long ago to provide reliable cost data.

Given the large cost overruns of recent transit projects in Hawaii (H-3)<sup>2</sup> and elsewhere in the country (Boston's "Big Dig", Los Angeles subway), and the lack of construction data from elevated transit projects, we are concerned that current cost estimates and contingencies may not be adequate.

#### **At-grade rail**

Currently there are 35 at-grade rail systems operating in urban areas of North America<sup>3</sup> (Appendix 1). These systems all use an overhead power wire and steel rails at grade (ground) level in dedicated street lanes or other existing public right-of-ways. A number of these systems

<sup>3</sup> ALA Honolulu Task Force Report: Suggested Light Rail Transit (LRT) for the Honolulu High-Capacity Transit Corridor Project, February 2, 2009

have been built within the last 5 years and can offer a more accurate idea of projected construction costs if a 20-mile at-grade system was built in Honolulu.

The at-grade LRT systems in Charlotte, Houston, Los Angeles, Minneapolis, Phoenix, Sacramento, San Francisco and San Jose were all completed between 2003 and 2008, with the Phoenix line having just opened in December 2008. Final per-mile costs for these systems ranged from \$43 million (Houston) to \$70 million (Phoenix)<sup>4</sup>. Using the final cost of the Phoenix system (\$1.4 billion) and the current cost multiplier for construction costs in Hawaii (1.79 times Phoenix costs)<sup>5</sup> we conservatively estimate that the total cost of a 20-mile at-grade LRT system in Honolulu would be approximately \$2.5 billion at today's prices.

The lower construction cost of at-grade rail is primarily due to the savings on materials (steel and concrete), energy and labor required to construct the elevated guideway and stations anywhere from 35 to 80 feet above ground level<sup>6</sup>. Secondly, there are savings on the machinery (stairs, escalators, elevators) and lighting needed at each elevated station as well as the mezzanine structures which span the street below the stations. In addition, there are substantial savings on below-grade foundation and utility realignment work needed for support of the structural columns in an elevated system.

#### **Land Acquisition Costs: Elevated Rail**

According to the latest reports from the City administration, a total of 189 properties are in the path of the proposed elevated line and will have to be acquired in part or in full<sup>7</sup>. The city has budgeted \$70 million to purchase the land based on current property assessments for these parcels. Our understanding is that the budget does not include a contingency for rising property assessments if and when economic conditions improve.

Although the bulk of the elevated guideway and stations will be built over public streets and right of ways, land acquisition along these areas will still be required because of the width of the guideway and of the stations. The proposed specification of "hot" third rail technology requires that the train rails be grade-separated (moved above ground level) for safety. Since the most cost-efficient way to grade-separate third rail systems is to pair two lanes of rail together on an elevated guideway, this means that the guideway is double-wide throughout its length, and any stations require additional platform space on both sides of this double-wide dimension. Land acquisition is typically required at the stations, which will be 50 feet wide by 300 feet long<sup>8</sup>.

#### **Land Acquisition Costs: At-grade Rail**

Although LRT systems are installed at grade, land acquisition costs are not necessarily higher than those for an elevated rail system. At-grade guideways (rails) are typically installed in existing roadways and the turning radius of at-grade LRT is normally accommodated in existing street right-of-ways. At-grade stations require only a widened sidewalk area (approximately 6 x 150 feet) on one side of the guideway. At-grade rail routes and station locations can offer planners and designers more flexibility compared with elevated rail systems which must account for large structural columns that can only be placed in the centerlines or outside of streets. At-grade rail lines can be paired on the same street or separated and put on different streets to minimize surface traffic disruption and further minimize the need for land acquisition.

4 AIA Honolulu Task Force Report: Suggested Light Rail Transit (LRT) for the Honolulu High-Capacity Transit Corridor Project, February 2, 2009

### **Construction Time: Elevated Rail**

According to the city, the estimated construction time for the first phase (20 miles) of the Honolulu system is 9 years, with construction to begin in December 2009 and full service to Ala Moana starting at the end of 2018<sup>9</sup>.

### **Construction Time: At-grade Rail**

Construction time for an at-grade LRT system in Honolulu would likely be similar to the system just completed in Phoenix. The 20-mile at-grade system in that city was completed in 4 years (2004-2008)<sup>10</sup>.

### **Construction Energy Consumption**

According to the Draft EIS for the HHCTCP, "construction of at-grade high capacity transit systems generally require 20,000 MBTUs of energy per track mile (Caltrans 1983), including track and power systems". For an all-elevated system such as the one proposed for Honolulu, "an additional 150,000 MBTUs of energy per track mile would be required to construct the elevated structure"<sup>11</sup>. Total energy required to build a mile of elevated rail line is 170,000 MBTUs, or 8.5 times the energy required for the same length of at-grade rail.

## **SUMMARY: CONSTRUCTION COST, TIME AND ENERGY**

Comparing the latest City estimate for elevated rail (\$5.3 billion) with the uppermost estimated cost for at-grade rail (\$2.5 billion), a 20-mile at-grade LRT system would allow the City to build a transit system for one-half the cost, thereby reducing taxpayer funding. Comparing construction time of the Phoenix at-grade system (4 years) with the City's estimated construction time for Honolulu (9 years), at-grade LRT would allow the City to build a transit system in less than one-half the time, thereby reducing necessary traffic disruptions during construction. Finally, as energy costs and consumption have come to the attention of the public in light of global warming concerns, it is important to note that the embodied (construction) energy required for a mile of elevated rail is 8.5 times that of at-grade rail.

## **II. OPERATING AND MAINTENANCE COSTS (OMC)**

### **Elevated Rail**

According to the City's rail transit website, the annual operating and maintenance costs (OMC) for the proposed 20-mile elevated route will be \$63 million<sup>12</sup>, or \$3.15 million per mile. This figure can be broken down into track-and-train OMC (which are the same whether at grade or elevated) and OMC associated with an elevated system. According to the Light Rail Industry (LRI), the typical OMC for an at-grade LRT system is \$1.5 million per mile, or \$30 million for a 20-mile system. Using a 1.3 cost multiplier to account for Honolulu's relatively higher cost of living, we estimate that the projected OMC for tracks and trains alone in Honolulu would be \$39 million. Subtracting that figure from the City's overall OMC figure of \$63 million leaves \$24 million, which is the OMC for elevators, escalators, lighting, painting, restrooms, and security at elevated stations.

### **At-grade Rail**

At-grade rail typically shares existing roadway and right-of-ways resulting in significantly lower OMC than elevated rail. No stairs, escalators or elevators are required. Steel rails are recessed



into existing streets so that track and station cleaning can be done as part of normal city cleaning and maintenance programs. At-grade stations consist of widened sidewalk platforms with roof structures and ticket vending machines. Lighting and security needs at at-grade stations are minimal since they can be monitored by existing police patrols and lit by existing streetlights. The 20-mile, 28-station at-grade LRT system which opened in Phoenix in December 2008 has an annual OMC budget of \$31.6 million (\$24 million for operations + \$7.6 million for maintenance), for a unit cost of \$1.58 million per mile<sup>13</sup>.

#### **SUMMARY: OPERATING AND MAINTENANCE COSTS**

Compared with an elevated rail system, a 20-mile at-grade LRT system could save the City \$24 million in annual operating and maintenance costs, and thereby further maximize use of taxpayer dollars.

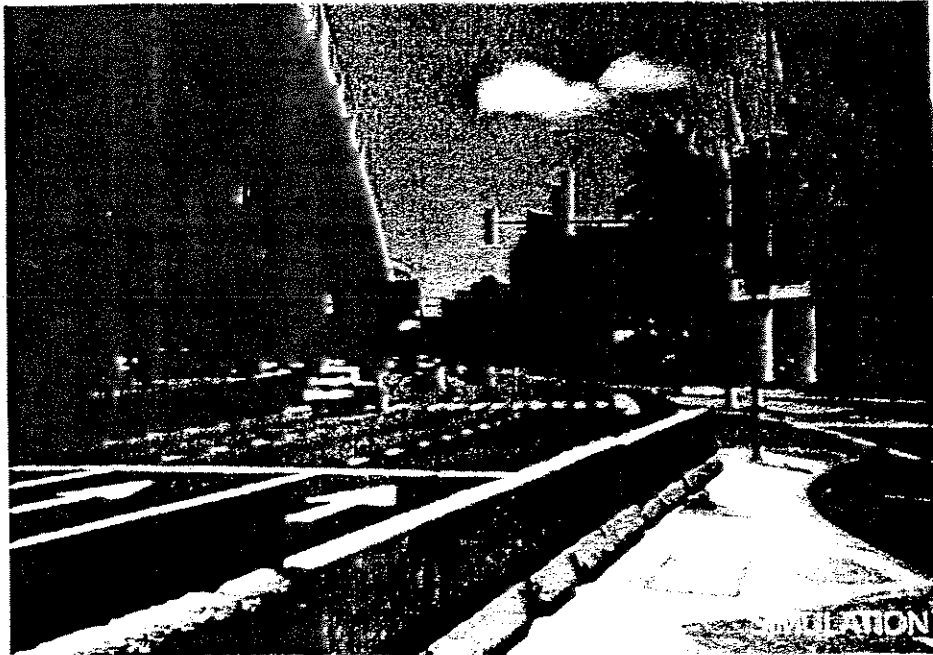
### **III. VISUAL AND ENVIRONMENTAL IMPACTS**

#### **Elevated Rail**

The proposed elevated rail system will have "moderate" to "high" impact, according to the Draft EIS, on several neighborhoods through which it is proposed to run<sup>14</sup>. The guideway and stations will have two types of visual impact: blocking existing views, particularly in mauka-makai directions, and being a visual element out of scale and character with the immediate neighborhood. Mauka-makai view corridors are considered a critical part of the urban landscape of Honolulu and are protected under the City's Primary Urban Center Development Plan of 2004. Existing mauka-makai views in the immediate vicinity along the full length of the system will be significantly impacted. Views from existing apartments near the guideway will also be impacted, particularly in units on the lower four or five floors.

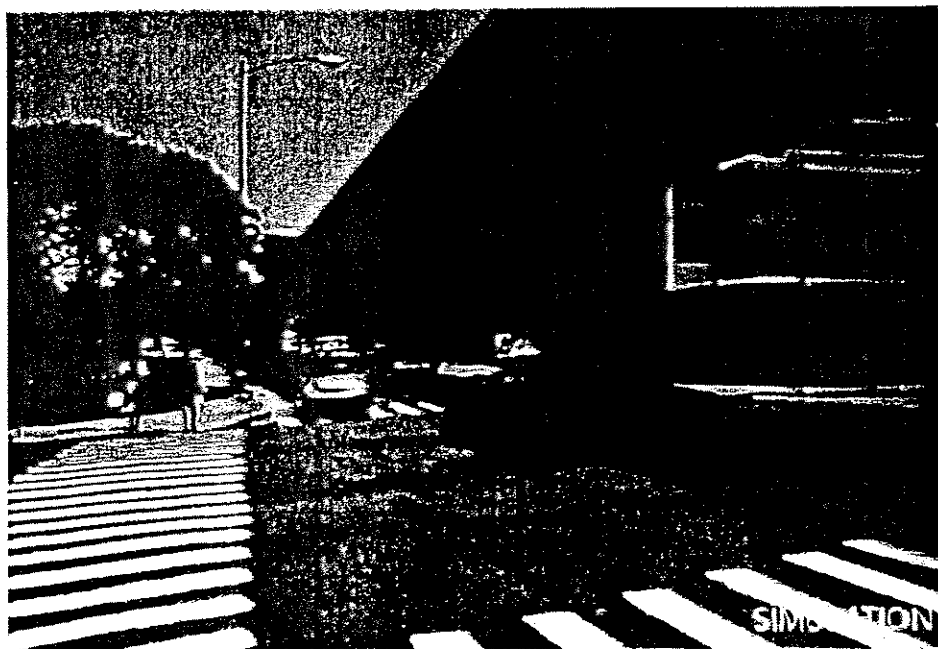
There will be high visual impacts in Downtown Honolulu, where the views down Bishop Street and neighboring streets to Honolulu harbor will be partially blocked by the elevated guideway and its support columns. The Chinatown district, with its historic connection to the waterfront, will be significantly impacted by an elevated concrete structure running the full length of the district.

The proposed elevated rail system is contrary to waterfront planning in leading cities throughout the world. Cities such as San Francisco, Boston, Seattle and Sydney have in recent years removed elevated transit structures separating their neighborhoods from the urban waterfront. An elevated rail line adjacent to the waterfront in Honolulu will create a physical and visual barrier between the waterfront and the Downtown/Chinatown area, as can be seen in the following simulation from the DEIS (Figure 4-32, Page 4-80):



Simulation of guideway at Nimitz Highway/Fort Street Intersection

East of the Downtown area, Mother Waldron Park, a state Historic Site, and adjacent low-rise residential buildings will be substantially contrasted by the bulk and scale of the elevated guideway and required straddle bent structure, as seen in this simulation:



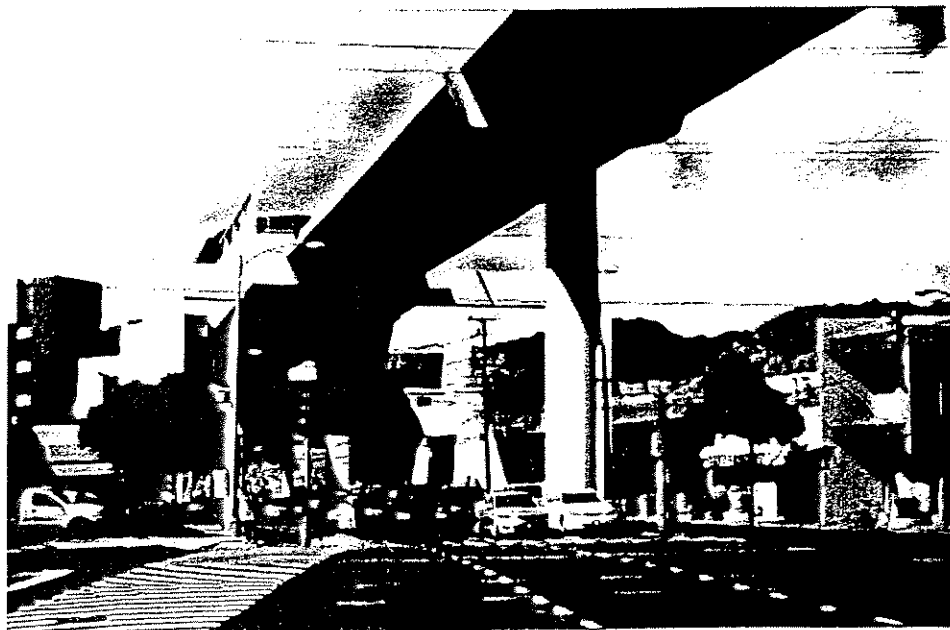
Straddle bent guideway and columns at Halekauwila Street/Cooke Street intersection

The second phase of the project (extending to UH Manoa), calls for a double-decked guideway between Pensacola Street and Ala Moana Center, further blocking mauka-makai views<sup>15</sup>.

Phase 2 of the City's proposed system includes a 2-mile extension to UH Manoa. The following photographs illustrate the high visual impact of an elevated system:



Existing view, intersection of King Street & University Avenue, looking mauka



Simulation of proposed guideway and station, King Street & University Avenue

The sounds from trains passing every few minutes will impact those people working or living in the immediate vicinity of the route. The noise impact will be most severe for apartment dwellers living on the 3<sup>rd</sup> to 5<sup>th</sup> floors due to proximity of the guideway. However, there will also be noise impacts on floors above the guideway because the low buffer walls which are planned to block train noise will divert the noise upward.

Construction of an elevated rail line will significantly alter the immediate environment under the entire length of the system. Construction down the center of existing divided streets will require the removal of many mature street trees. There will be a major loss of greenscape in these areas, as the street is changed from one with a center boulevard of grass and mature trees to one with a center hardscape in permanent shadow.

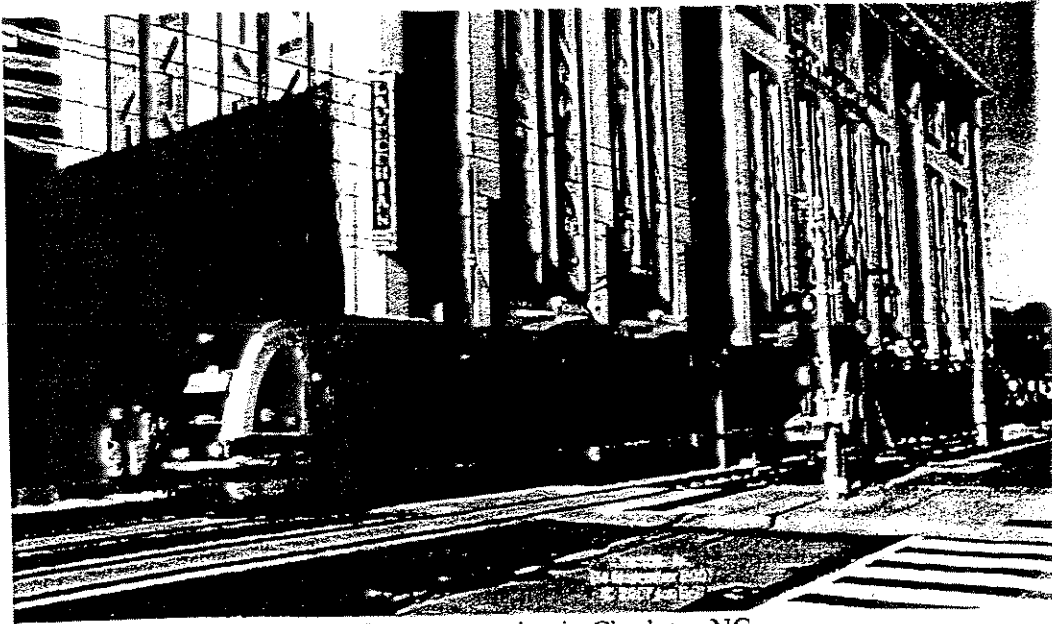
Construction of an elevated rail line in the urban core will create a more seriously degraded environment than in suburban areas. Urban core land underneath elevated transit structures such as highways and off-ramps tend to be paved, noisy, dusty and unpleasant for pedestrians. These environments often become favored locations for criminal activity such as drug-dealing and for the homeless.

Honolulu is a world-class tourist destination attracting millions of visitors every year who enjoy the exotic scenery and unique culture of Hawaii. An elevated rail structure in the urban core would have a detrimental effect on tourism, the primary industry in the state. The Waikiki Improvement Association has stated publicly that it has "serious concerns with a potential Waikiki spur from Kapiolani Boulevard ... to Kuhio Avenue" because of "aesthetic and physical density issues of locating the overhead track in a resort and residential area"<sup>16</sup>. As can be seen in the photographs of the King Street/University Avenue intersection, an elevated system will block existing mauka-makai views and create a visual element out of scale and character with the surrounding community.

Due to the significant visual impacts of an elevated rail system, we are concerned that proposed mitigation measures will only have a marginal effect. Aside from broad statements such as "develop design guidelines" and "coordinate with the DPP", the only mitigation measures discussed in the DEIS are "provide new vegetation" and "shield exterior lighting"<sup>17</sup>.

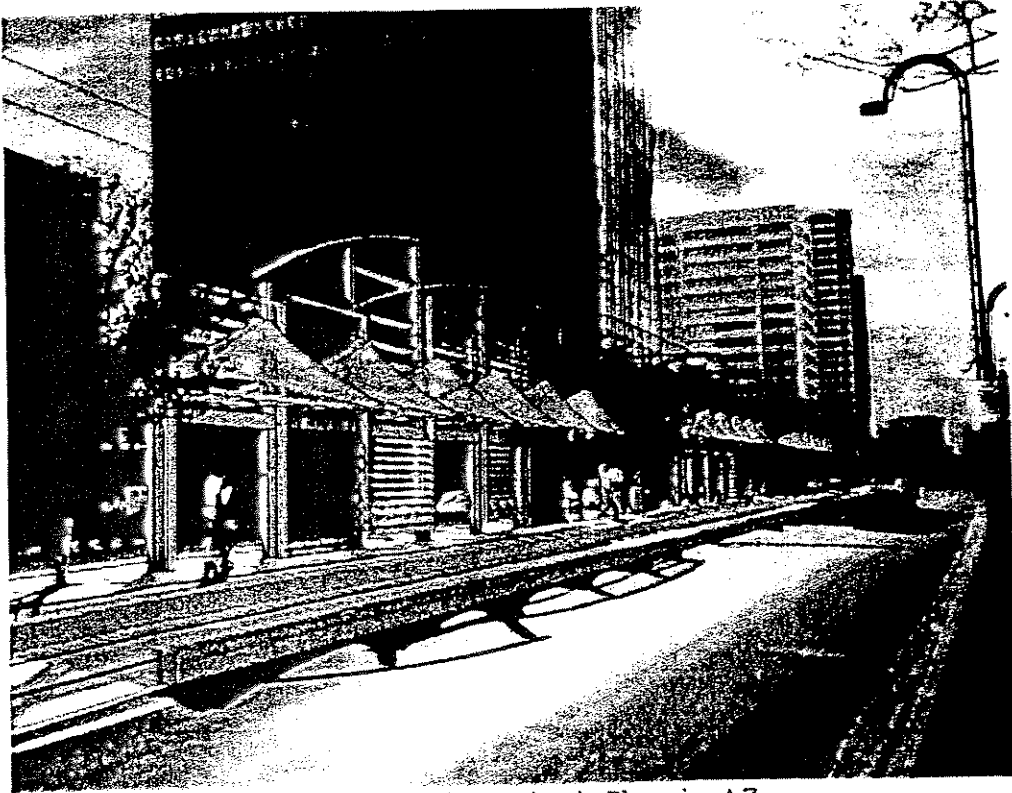
### **At-grade Rail**

In cities where subway systems are not feasible, at-grade rail has consistently been the preferred rail alternative in the last 30 years in the United States. The popularity of at-grade rail is in large part due to the low visual and environmental impact on the existing urban fabric. Grade level guideways are virtually invisible in a street except for the rails recessed into the roadway and the thin power wire overhead, as seen in the following photo of the Charlotte (NC) light rail system:



LRT street crossing in Charlotte, NC

Grade level stations are minimal in visual impact, consisting of an open platform, roof structure and ticket machines, as seen in this view of the Phoenix light rail system:



LRT street median station in Phoenix, AZ

While the Phoenix example is of a median (center-of-street) station, at-grade rail can also be located on the outer lane of existing streets, allowing existing boulevard landscaping and trees (an important feature on streets such as Kapiolani Boulevard) to remain intact. At-grade guideways can also be split into one-way streets to minimize at-grade traffic impacts. An independent transportation consultant has noted that "the requisite through-put (capacity) could be achieved in Honolulu by reserving one curb lane on each one-way street for light rail transit operations with station areas located on the sidewalk"<sup>18</sup>. This idea is consistent with a previous plan by the City to place rail transit lines on King Street.

Sound impact on neighboring apartments is substantially less than elevated rail because an at-grade guideway is 30 to 40 feet farther from (below) apartment units located on upper floors. Steel-on-steel noises are reduced with at-grade construction due to sound conduction into the surrounding soil. Most importantly, existing urban neighborhoods traversed by at-grade rail retain their existing scale, character, daylight patterns, and greenscape.

#### **SUMMARY: VISUAL AND ENVIRONMENTAL IMPACTS**

Flexible technologies such as at-grade LRT offer transit planners the ability to pose far fewer visual and environmental impacts compared with elevated rail systems. By eliminating the bulk of the environmental impacts discussed in the DEIS, community concerns can be greatly reduced and public support further expanded. The scarcity of all-elevated rail systems currently being built in the United States suggests that other municipalities have sought to avoid the frequently severe environmental impacts (and high costs) of such systems. Even with the most sensitive design guidelines and coordination, it is difficult to prevent elevated rail systems from becoming an overpowering element in any urban environment. Flexible, at-grade rail systems, on the other hand, more easily blend into the existing landscape and urban fabric.

### **IV. TRANSIT-ORIENTED DEVELOPMENT (TOD)**

#### **Introduction**

Transit-Oriented Development (TOD) has no universal working definition throughout the country but is typically defined as compact, mixed-use development near transit facilities with a high-quality walking environment.

The potential benefits of TOD are social, environmental, and fiscal. Focusing growth around transit stations leverages public investment in transit to encourage local investment, which leads to increased business and tax revenues. TOD, proponents believe, can be an effective tool in curbing sprawl, reducing traffic congestion, and expanding housing choices. The most direct benefit of TOD is increased ridership and the associated revenue gains. Research shows residents living near stations are five to six times more likely to commute via transit than are other residents in a region. Other primary benefits include the revitalization of declining neighborhoods, financial gains for joint development opportunities, increases in the supply of affordable housing, and profits to those who own land and businesses near transit stops.

TOD's secondary benefits include congestion relief, land conservation, reduced outlays for roads, and improved safety for pedestrians and cyclists. Many of these benefits feed off of each other. TODs help create compact, walkable communities, and provide sustainable, comfortable

transportation while greatly reducing oil use. Walkable communities in turn support rail systems by providing high ridership.

### **Elevated Rail**

Although any rail system is compatible with TOD, an elevated rail system tends to limit the full potential of TOD by separating the most important feature – the pedestrian-friendly walking environment – from the street. An elevated rail system moves all transit-related traffic and activity to 30 feet or more above the street, leaving existing businesses and buildings out of the action and creating a 30 to 50 feet wide shadow zone below that is pedestrian-unfriendly. Although TOD can occur around the stations of an elevated system, development tends to be confined mainly around the entrances to the stations since transit riders will not be inclined to linger in the areas below the guideway and stations.

### **At-grade Rail**

At-grade rail systems can offer transit planners and communities much greater likelihood of realizing successful transit-oriented development by encouraging the following key characteristics:

#### **Accessibility and Safety**

All riders of rail transit start and end their trips as pedestrians. A pedestrian environment in which the trip to a station is safe and easy is important for encouraging transit ridership. With at-grade rail, the route for the pedestrian between station and destination can be short and direct with a minimum of stairs and grade changes. For riders in wheelchairs, on crutches, or pushing baby carriages/strollers, getting on and off a low-floor train from a sidewalk platform is much easier than getting to a train on a platform 40 to 80 feet above the street. At-grade stations can be more frequently located than elevated stations, which means better and easier accessibility for riders, which in turn promotes higher ridership. Higher ridership leads to higher usage of adjacent businesses and increased tax revenues for the city.

Safety and security are important to transit riders. With at-grade rail, riders are able to take a variety of routes as they walk to and from stations. The random pedestrian pattern generated by at-grade rail systems leads to more overall street activity and a safer street environment. Buildings and businesses adjacent to stations and guideways provide “eyes on the street” and informal security. Conversely, the elevators required by an elevated rail system are mostly avoided at night due to security issues and have maintenance problems due to vagrants using them to sleep and urinate.

#### **Efficiency**

Successful TOD must be mixed-use, location-efficient development that balances the need for sufficient density to support convenient transit service with the scale of the adjacent community. Successful TOD projects also cater to a range of income levels of users. With at-grade rail, the potential for an upgraded pedestrian experience extends outward in all directions from the stations because pedestrians walking from at-grade stations will take the most direct route to their destination. This widespread pedestrian traffic pattern associated with at-grade rail stations raises the development potential of the entire neighborhood which encourages not only new

construction but rehabilitation of older buildings as well. The wider diversity of projects attracts a wider range of residents and neighborhood users of all income levels.

#### **Community and Inter-modal Connectivity**

At-grade rail allows planners to better utilize adjacent land uses, since no space has to be blocked out or condemned for escalators, elevators, structural columns, etc. At-grade stations can be located for easy access to the local community and interconnection with existing local businesses and services. Passengers on trains at-grade can easily connect to other modes of public transport such as buses or taxis.

#### **Liveliness and a "Sense of Place"**

At its core, transit-oriented development strives to make places work well for people. TOD aims to restore many of the features of yesteryear's cityscapes—comfortable and enjoyable streetscapes, vibrant and interactive public spaces, and an assemblage of land uses that invite people to stroll, linger, and interact with each other. At-grade rail stations can be designed to complement existing civic spaces such as plazas, waterways, public malls or parks. There is a growing appreciation for the need to create enduring main streets and real places in American cities. Creating stations with a "sense of place" seems particularly important in Honolulu, which prides itself on being a unique destination in the United States.

#### **SUMMARY: TRANSIT-ORIENTED DEVELOPMENT**

In many ways Transit-Oriented Development seeks to reproduce the cityscapes found in American cities some 80 years ago: city streets full of pedestrians from all walks of life, sidewalks comfortable and enjoyable for a stroll and stopping to talk with fellow residents, attractive civic spaces interspersed throughout. Like the streetcar systems common in American cities in the 1920's, at-grade rail has significant advantages for TOD in areas of accessibility, safety, efficiency, inter-modal connectivity and overall neighborhood liveliness. At grade LRT can offer transit planners and the communities they serve greater opportunities to create a successful TOD not available to planners of elevated rail.

#### **V. AT-GRADE TRAFFIC IMPACT**

##### **Elevated Rail**

With most functions raised 30 - 40 feet above street level, at-grade traffic impacts of elevated rail are primarily the result of placement of structural columns at the street level to support the guideway and stations. Where the guideway is centered on an existing street, columns will take up one traffic lane. On boulevard-type streets, guideway columns can fit within existing median strips and have little impact on traffic. Where columns are located at the sides of streets to hold up straddle-bents at stations, there will be a loss of sidewalk space.

The impact on at-grade traffic by elevated rail will be particularly severe during construction of the system. Excavation for column foundations and utility relocation will be more extensive with elevated rail than for at-grade rail, requiring larger portions of existing streets to be closed. Overall construction time for elevated rail will be twice as long as that for at-grade rail, requiring longer closure of existing streets and longer periods of impact on at-grade traffic.



### At-grade Rail

At-grade traffic impacts have been cited by the City administration as a key reason for the selection of an elevated rail system. The City's engineers have set design criteria for the system at 6,000 pphpd (passengers per hour per direction) capacity, with 3 minute intervals (headway) between trains, and they have stated that it is not possible to put such a system on Honolulu streets without a major increase in traffic congestion.

However, we respectfully offer differing information for further consideration. According to independent traffic engineers, "achieving a capacity of 6,000 pphpd with 3-minute headways is easy to do with a light rail transit running on surface streets. 3 minute headways equate to 20 trains per hour, (with each train) having a capacity of 300 passengers (20 trains x 300 passengers = 6,000 pphpd)"<sup>19</sup>. Furthermore, modern light rail vehicles, such as the Siemens S70, have a capacity of 232 passengers per car. Each car is 95 feet long, meaning a 2-car train would be 190 feet long or well within the length of a typical Honolulu city block (250 - 400 feet) and out of the way of cross traffic. A system using 2-car trains of the Siemens S70 type would have a capacity of 9,280 pphpd (464 passengers x 20 trains = 9,280 pphpd), or more than 50% beyond the required 6,000 pphpd criteria.

Working examples of this type of system can be found in cities such as Charlotte, Dallas, Denver, Houston, Phoenix, Portland, Sacramento, and San Diego. Rail car manufacturer selection is not limited to Siemens; several other companies such as Alstom, Bombardier, CAF, and Kinki-Sharyo make comparable equipment such as this low-floor model used in the new Phoenix LRT system:



Phoenix LRT car manufactured by Kinki-Sharyo

According to independent traffic consultants contacted by AIA Honolulu, at-grade traffic impact is a concern with at-grade rail but is not a serious problem when combined with a signal

synchronization system and/or a traffic preempt system. A traffic preempt system alters signals at intersections to give priority to any train approaching the intersection. Successful examples of this include Portland TriMet's MAX light rail where design policy permits trains to only stop at stations to prevent traffic delays<sup>20</sup>.

Pedestrian safety is also a concern when locating at-grade rail lines and stations. At-grade trains can be put in exclusive-use lanes or pedestrian malls to protect passengers from at-grade traffic as they disembark. Pedestrian barriers are also used, particularly in median (center street) stations to force pedestrians to slow down and take notice as they approach traffic lanes or intersections.

#### **SUMMARY: AT-GRADE TRAFFIC IMPACT**

At-grade LRT systems can offer transit planners a viable alternative to elevated rail while still maintaining transit system design criteria for passenger volume and train frequency. Impact on at-grade traffic can be managed through signalization systems commonly used in 35 other cities. Similarly, pedestrian and passenger safety can also be maintained via barriers and protected zones.

- 
6. Honolulu Advertiser, April 20, 2008, Page A1, "Rail line will alter city's landscape", article by Sean Hao. Typically, the proposed guideway will range from 30 to 50 feet above ground level, with high points at Waiawa Stream (90 feet above grade), Ala Moana Center station (86 feet above grade) and King/University station (60 feet above grade).
  7. Honolulu Advertiser, June 1, 2008, Page A1, "189 properties in rail's path", article by Sean Hao.
  8. Honolulu Advertiser, December 25, 2008, Page A1, "Isle voices raised on rail line", article by Sean Hao.
  9. Ibid.
  10. Honolulu Advertiser, December 28, 2008, Page A25, "Phoenix commuters applaud startup of light rail system", article by Jacques Billeaud (Associated Press)
  11. DEIS, Chapter 4, page 4-159.
  12. Information from [www.honolulutransit.org/faqs](http://www.honolulutransit.org/faqs)
  13. Correspondence from John Farry, Director of Community Relations, Phoenix MetroRail, January 20, 2009.
  14. DEIS, Chapter 4, page 4-62.
  15. DEIS, Appendix A, Sheet RP024. In the profile drawing at the bottom of the sheet, a second guideway labeled "Future Extension" is shown above the (Phase 1) guideway ending at Ala Moana Center.
  16. Comments on the DEIS submitted by the Waikiki Improvement Association, December 15, 2008, page 7.
  17. DEIS, Chapter 4, page 4-93.
  18. Correspondence from Philip G. Craig, Railway system designer/ Transportation Consultant since 1955, Upper Montclair, NJ , January 20, 2009.
  19. Correspondence from Philip G. Craig, Transportation Consultant, Upper Montclair, NJ, January 21, 2009.
  20. Information taken from Portland LRT website: [www.trimet.org/about/history.htm](http://www.trimet.org/about/history.htm)

# AIA Honolulu

A Chapter of The American Institute of Architects



## American Institute of Architects/Honolulu Chapter TASK FORCE REPORT: SUGGESTED LIGHT RAIL TRANSIT (LRT) FOR THE HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

### EXECUTIVE SUMMARY

The Honolulu Chapter of the American Institute of Architects (AIA Honolulu) continues to strongly support the concept of a fixed rail transit system for Oahu. However, we also remain concerned over the appropriateness of the proposed elevated transit system particularly through the urban core of Honolulu. We therefore respectfully offer this report to assist the City administration, lawmakers, and stakeholders in strengthening community support, enhancing our neighborhoods and environment, investing taxpayer money wisely, and ensuring Federal funding for this historic project.

AIA Honolulu promotes the implementation of a flexible transit system capable of operating at, above, or below grade to accommodate the particular conditions within each community. Widely used transit technologies such as light rail transit (LRT) with overhead catenary wires allow transit planners this greater flexibility while still satisfying transit design criteria for passenger volume and frequency of service.

In light of the current economic recession, a predominantly at-grade light rail solution would offer Oahu residents a more cost effective transit system built in less time. Such a system would also be cheaper to operate and maintain, annually conserving taxpayer money. The resulting cost savings could be directed toward extending the system to UH Manoa, Waikiki, and perhaps even to Kahala Mall and Mililani/Wahiawa/Haleiwa.

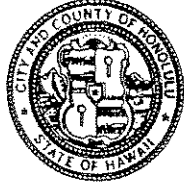
At-grade systems would encourage diverse, mixed-use Transit Oriented Development (TOD) along the entire length of the transit route and help revitalize existing communities and buildings rather than concentrating new development only at station locations. Increased accessibility tends to stimulate ridership and promote inter-modal connectivity. Such systems more easily complement active streetscapes and vibrant public spaces, helping to enhance Honolulu's sense of place. Compared with elevated rail, the minimal visual and environmental impacts of at-grade systems further preserve our unique island scenery for our visitors and residents alike.

The chart on the following page summarizes the findings in the report:

AIA Honolulu  
119 Merchant Street, Suite 402  
Honolulu, Hawaii 96813-4452  
Phone: 808.545.4242  
Fax: 808.545.4243  
Website: [www.aiahonolulu.org](http://www.aiahonolulu.org)

DEPARTMENT OF BUDGET AND FISCAL SERVICES  
**CITY AND COUNTY OF HONOLULU**  
530 SOUTH KING STREET, ROOM 208 • HONOLULU, HAWAII 96813  
PHONE: (808) 768-3900 • FAX: (808) 768-3179 • INTERNET: www.honolulu.gov

PETER B. CARLISLE  
MAYOR



2011 MAR 14 P 3:55  
CITY CLERK  
C & C OF HONOLULU

MICHAEL R. HANSEN  
DIRECTOR

March 14, 2011

The Honorable Ernest Y. Martin, Chair  
and Members of the Budget Committee  
Honolulu City Council  
530 South King Street, Room 202  
Honolulu, Hawaii 96813

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Dear Chair Martin:

Subject: Budget Communication No. 4  
Public Transit Authority Budget Submission

We appreciate the opportunity to explain why we are presenting the proposed Fiscal Year (FY) 2012 transit authority budget in a manner that is not expressly for approval or disapproval by the City Council, and is independent from the executive budgets.

As you know, on November 2, 2010, the voters in the 2010 General Election overwhelmingly approved Charter amendments to create a "semi-autonomous public transit authority responsible for the planning, construction, operation, maintenance and expansion of the City's fixed guideway mass transit system." By operation of those Charter amendments, come July 1, 2011 – the start of FY12 – the Honolulu Authority for Rapid Transportation (HART) will be the semi-autonomous body charged with those responsibilities.

The construction and operation of the rail project will be funded principally from four sources: (1) GET surcharge monies, (2) federal grant monies, (3) City General Fund appropriations, and eventually (4) fare box revenues. In the construction stage, and FY12 is definitely part of that stage, no monies will be used from the latter two categories, and expenses will come solely from the surcharge monies and certain federal grant funds.

By operation of Section 17-114 of the Charter as amended by the voters in the 2010 General Election, a "Transit Fund" will be established into which all monies dedicated for the fixed guideway system, including by definition surcharge monies, will be automatically transferred on July 1. The surcharge monies were initially authorized

in 2005 for use for "operating or capital costs of a locally preferred alternative for a mass transit project" and for expenses in complying with the Americans with Disabilities Act for the transit project (HRS Section 46-16.8(c)(1)), and the City Council passed enabling legislation, also in 2005 (Ordinance 05-027, authorizing use of those surcharge monies for the same purposes). Pursuant to Section 17-108 of the Charter as amended by the voters in the 2010 General Election, HART will have management and control over the monies in the transit fund. At that point, the City Council will no longer hold the purse strings on the Transit Fund; the transit authority will have that responsibility. The FY12 budget for the transit authority, funded fully from the monies in the Transit Fund, will have to be approved by the HART board, since the transit authority maintains management and control over the Transit Fund starting July 1. Because of this, we did not submit the FY12 HART budget to the Council for its approval.

With respect to your specific question about why the HART budget was not made part of the Mayor's FY12 operating and capital budgets, because the Transit Fund will be under the control of the transit authority after July 1, and no General Fund appropriations will be needed by the transit authority for FY12, we believe that it would be improper to include the transit authority's operating or capital budgets as part of the Mayor's FY12 Executive Operating Budget and Capital Budget. Had the HART's budget been included, the Council could have approved of the expenditures, but would not have had control or approval authority over the revenue source, i.e., the Charter-created Transit Fund. And had the executive budgets been approved with a HART component, after July 1 there would be a portion of the Mayor's operating and capital budgets that might have been inconsistent with (and superseded by) the budget approved by the transit authority board. This may have even drawn into question the validity of the FY12 executive operating and capital budgets.

We are aware that some members of the Council may be questioning the meaning of Section 17-106 of the Charter as amended by the voters in the 2010 General Election. That Section provides that the transit authority shall submit to the Council via the Mayor by December 1 of each year the line item appropriation requests for its (1) operating and (2) capital budgets. Under that provision, the Council shall approve the transit authority's line item appropriation requests, with or without amendments. Although not express, we believe that because the Transit Fund monies are under the management and control of the transit authority after July 1, the appropriations mentioned in this provision pertain exclusively to General Fund appropriations over which the Council will have full control to approve or approve with amendments. Again, for FY12, there are no General Fund monies to be requested by the transit authority, and therefore, there are no line item appropriations for the City Council to approve with or without amendments.

The Honorable Ernest Y. Martin, Chair  
and Members of the Budget Committee  
Page 3

It is our belief that in approving the Charter amendments establishing the semi-autonomous transit authority with control over the Transit Fund monies, the public believed that the non-elected transit authority board would be the body making the budget decisions regarding the Transit Fund.

The transit authority will need approval of the Council for all bond sales; for eminent domain (the Council has the right to object); for the sale, exchange or transfer of its real property or any interest therein; to change, extend or add to the fixed guideway system alignment; and for any General Fund appropriations (which there is no question that the rail project will require in future years, unless another funding source materializes). The Administration is committed to honoring not just the checks and balances that have been institutionalized by the Charter amendments setting up the transit authority, but also to making sure that the Council is receiving sufficient information about the progress of the transit project. Therefore, the Administration intends to propose to the HART board when it is established that the transit authority commit to provide the Council with regular briefings so that the Council may be assured that the project is on track.

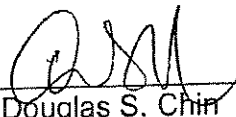
We look forward to discussing with you the details of the transit authority budget on March 17, 2011. As previously agreed, those details will be submitted to you today. If you have any questions in the meantime, please let me know. Thank you.

Sincerely,



Michael R. Hansen, Director  
Budget and Fiscal Services

APPROVED:



Douglas S. Chin  
Managing Director



## CITY COUNCIL

CITY AND COUNTY OF HONOLULU

TOM BERG  
HONOLULU CITY COUNCIL - DISTRICT 1  
PH. (808) 766-5001  
FAX. (808) 766-5011  
EMAIL: tberg@honolulu.gov

May 4, 2011 - FOR IMMEDIATE RELEASE  
Contact Tom Berg - (808) 753-7324

OFFICIAL STATEMENT FROM CITY COUNCILMAN TOM BERG:  
**COUNCILMAN BERG HIGHLY CRITICAL OF  
MAYOR AND COUNCIL LEADERSHIP  
FOR PUTTING CRONYISM AHEAD OF EXPERTISE  
WITH RAIL AUTHORITY (HART) NOMINEES**

*Honolulu, Hawaii* - "Just two weeks ago on April 18th, the mayor and our transportation committee chair announced with great pride at a press conference that "highly qualified individuals" were being appointed to the new rail transit authority known as HART. Unless you believe that hiring a plumber to fix your DVD recorder is a smart idea, then you already know that these people who have been nominated are anything but highly qualified. There is not one single transportation expert, not one single transit expert, not one person who has ever been a recognized leader in the field.

These six rail authority nominations make no sense if you think they should be picking transportation experts . . . that is until you force yourself to comprehend that the rail project is not about traffic relief or about transportation or about transit. It's actually about development. Once you do that, it all makes perfect sense. Look at their backgrounds: a banker, a lawyer, a developer, a building trade activist, a mayor's political appointee, and a union leader from the IBEW.

And speaking of my district, it is an affront to those who care about the problem of traffic congestion that West Oahu is NOT officially represented on this committee. Serving as members are representatives of communities who do NOT make the drive from Waianae to town each day, from Kapolei and Makakilo to town each day, from Ewa Beach to town each day. The precise victims of poor City planning who sit in artificially created traffic jams each and every day, each and every morning and afternoon, have been consciously and purposely left off this committee which decides how billions will be spent on what used to be a traffic relief project, but has been reduced to a jobs for people with friends in high places project.

21 mini cities will be built around each rail station through the loosening of zoning and building codes using a methodology known to some as Transit Oriented Development, but is really Developer Oriented Transit.



That's why rail is a developer's dream. That's why this project has virtually nothing to do with transportation. And that's why there are no transportation experts on this authority to oversee this massive, expensive project. Instead, we have a banker, a lawyer, a developer, a building trade activist, a mayor's political appointee, and a union leader rather than a transportation expert.

To call these people highly qualified defies any and all logic, unless you like the sleazy way that our city and state government operate. We're already paying six figure salaries to rail project publicists and propagandists who work out of a fancy office on Alakea Street. Who is going to oversee these people? Does the story of the fox and the hen house have any meaning anymore?

This is supposed to be a transportation project which provides traffic relief at an affordable price. This is supposed to be about transit and about making the daily rush hour more bearable for motorists and public transportation riders alike . . . and NOT about well-connected political appointees doing the bidding of the establishment.

The willingness of the mayor and council leadership to politicize the transit authority by stuffing it with cronies rather than instilling it with transportation expertise speaks volumes about the twisted priorities at City Hall. While I, the lone representative on this Council from West Oahu, the area affected by the specific traffic congestion which was exploited to justify this project, is prohibited from voting on this committee, you can count on me to vote "no" to every name on this list.

As many of you know, I submitted the name of renowned transportation and transit expert Dr. Panos Prevedouros to serve on HART. Few of you probably know that Dr. Prevedouros is PRO-RAIL. While he opposed the City's rail project as inappropriate and unaffordable and ineffective for our small city, he routinely advocates heavy and light rail projects around the world when and where these are appropriate. Who better for the transit authority than someone who will ask questions, who will keep things honest, who knows what he's talking about, who is a recognized transportation and transit expert?

Panos Prevedouros holds a Ph.D. in transportation engineering, a degree in land surveying engineering, is a professor of civil engineering at the University of Hawaii, served as a member of the technical advisory committee of OMPO, served as a member of the Council's 7-member transit advisory task force, and served on the 5-member expert panel on transit in 2008 which brought us to this point.

Apparently, neither the mayor nor my council leadership want transportation experts overseeing a transportation project. Clearly, they want inexperienced 'yes men' to do the bidding of the rail consortium and developers rather than truly qualified experts who'll keep an eye on how taxpayer funds are expended with Hawaii's largest and most expensive public works project ever.

Perhaps because Mayor Carlisle has now said over and over and over that the rail project is about jobs more than anything else. To that, you can add that it's about development more than anything else. The numbers bear this out. Traffic congestion will be 60% worse on H-1 with rail, and a mere 1% are expected to get out of their cars to become public transportation riders. With transportation benefits of rail so incredibly tiny, the only possible justification for diverting 95% of our transportation spending away from the 95% who drive to and from work each day is jobs for the well-connected and development opportunities for the even more well connected

Finally, let me say this. Brennon Morioka just finished years of service as the State's director of the Dept. of Transportation. He has been instrumental in pushing for both highway solutions and the rail project. Guess who his professor was at UH? Naturally, it was the eminently qualified Dr. Panos Prevedouros. This, my friends, is an outrage which makes the usual cronyism around City Hall pale by comparison."

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## RESOLUTION

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REQUESTING THE CITY AUDITOR TO IMMEDIATELY INVESTIGATE THE PROCUREMENT OF THE "CORE SYSTEMS" FOR THE CITY'S RAIL PROJECT AND URGING THE MAYOR AND THE CHIEF PROCUREMENT OFFICER TO UPHOLD THE PROTEST OF THE AWARD OF THE CORE SYSTEMS CONTRACT TO ANSALDO HONOLULU.

WHEREAS, the City recently awarded a contract to the highest bidder Ansaldo Honolulu ("Ansaldo") to design, build, operate and maintain the City rail project's "core systems," which include 80 train cars and a system control center; and

WHEREAS, Ansaldo, a joint venture between AnsaldoBreda and Ansaldo STS, was awarded the contract over two competitive proposals, one by Sumitomo Corporation of America ("Sumitomo"), and the other by Bombardier Transportation ("Bombardier"), the latter of which would have saved the City hundreds of millions of dollars; and

WHEREAS, Ansaldo's winning proposal would cost the City \$574 million to design and build the core systems, \$167 million to operate and maintain the train on the completed portion of the rail project during an interim period through 2019 ("interim period"), \$339 million for the first five years of full operation and maintenance of the systems, and \$317.6 million for an option to extend the operation and maintenance of the systems ("optional extension") for another five years; and

WHEREAS, Sumitomo's proposal to design and build the core systems was \$688.8 million, the price for the interim period was \$286 million, the operation and maintenance of the systems for the first five full years of operation was \$228.1 million, and the optional extension was bid at \$248.1 million; and

WHEREAS, Bombardier's proposal would cost the City \$697.3 million to design and build the core systems, the costs for the interim period would have been \$86.6 million, the first five-year costs for operation and maintenance of the systems would have been \$176.2 million, and the optional extension was priced at \$203.4 million; and

WHEREAS, the evaluation of the proposals submitted by the three proposers was based on a variety of factors, including price, past experience, performance, and the proposers' management team; and

WHEREAS, Bombardier has more than 100,000 train vehicles in operation in 25 countries; and



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## RESOLUTION

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WHEREAS, Sumitomo has more than 20 years of experience installing commuter rail vehicles in this country; and

WHEREAS, it has been reported that in other places in the world AnsaldoBreda has had problems delivering train vehicles it had contracted to deliver in a timely manner and that met specifications, for example:

- (1) It has been reported that in 2003 AnsaldoBreda won a contract from the Los Angeles County Metropolitan Transportation Authority to deliver 50 light-rail vehicles by June of 2007 but delivered only 19 vehicles by January 2009, and even those vehicles were 5,000 to 6,000 pounds overweight; and
- (2) Danish train company DSB has said that AnsaldoBreda was behind schedule in delivering 14 trains by 2009, delivering only eight trains, only three of which were operational and even those had problems;

and

WHEREAS, while Bombardier's design and build bid was higher than Ansaldo's, its total bid for the design, building, operation and maintenance of the core systems was \$1.16 billion, significantly lower than Ansaldo's \$1.4 billion bid; and

WHEREAS, Bombardier's proposal also includes plans to: (1) assemble 65 train cars on Oahu, creating an estimated 150 full-time local jobs, most of which will become permanent local jobs maintaining the train cars; and (2) create training programs at the University of Hawaii and Leeward Community College to train residents for jobs with the train system; and

WHEREAS, Ansaldo will assemble all of its train cars on the mainland and will not provide local jobs or training programs similar to those that Bombardier proposes to provide; and

WHEREAS, the Council has raised a number of questions and concerns regarding the award of the core systems contract to Ansaldo including the following: (1) Ansaldo has had a spotty performance record with respect to the trains it has contracted to deliver to other train authorities; (2) the design and build portion of the contract was weighted as being seven times more important than the operations and maintenance portion which gave an advantage to Ansaldo, even though its operations and maintenance costs for the interim period and the optional extension far exceeded the same costs for Bombardier and was significantly higher than those costs for Sumitomo;



## RESOLUTION

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(3) Ansaldo's design and build price dropped from \$679.8 million in June 2010 to \$574 million in February 2011, while its operations and maintenance price went up by about \$100 million; (4) Bombardier's second best and final offer ("BAFO") was rejected because it allegedly included an inappropriate condition regarding a change in the indemnification clause, even though, according to Bombardier, it was not a condition but merely a request for clarification and despite the fact that the alleged condition was included in Bombardier's first BAFO without causing Bombardier's proposal to be rejected; and

WHEREAS, because of the problems and concerns with the procurement of the core systems and the award of the contract to Ansaldo, Sumitomo has indicated that it will protest the award of the contract; and

WHEREAS, all of the above-cited concerns and questions require a thorough investigation of the procurement of the City rail project's core systems or alternatively a cancellation of the award of the contract to Ansaldo; now, therefore,

BE IT RESOLVED by the Council of the City and County of Honolulu that it requests the City Auditor to immediately investigate and audit the procurement process used by the City to award Ansaldo the contract for the core systems for the rail project to determine if it was fair and yielded the greatest benefit to the City's taxpayers; and

BE IT FURTHER RESOLVED that the Mayor and his Chief Procurement Officer are urged to uphold the protest applied to the core systems contract as the alleged facts overwhelmingly indicate that the process was not fair and not in the best interests of the people and taxpayers of Honolulu since other bids provide for all the rail cars be assembled out-of-state instead of providing local jobs; and

BE IT FURTHER RESOLVED that the Mayor and his Chief Procurement Officer award the contract to the bidder whose proposal will best serve the interests of City residents and taxpayers giving greatest deference to the lowest bidder and equal weight on all phases of contract including design and construction of the rail cars and the operating and maintenance expenses that yields the creation of the greatest number of guaranteed jobs for the residents of Hawaii; and

BE IT FURTHER RESOLVED that the Council limit the budget for the Honolulu Authority for Rapid Transportation to just one dollar for fiscal year 2012 budget and place a freeze on all spending by HART until the protest is resolved and a new Request for Proposals for the core systems contract has gone out for rebidding; and



RESOLUTION

BE IT FINALLY RESOLVED that copies of this Resolution be transmitted to the Secretary of the United States Department of Transportation, the Administrator of the Federal Transit Administration, the Mayor, Managing Director, Director of Budget and Fiscal Services, Director of Transportation Services and City Auditor.

INTRODUCED BY:

TOM BERG

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DATE OF INTRODUCTION:

APR 11 2011

Honolulu, Hawaii

Councilmembers

# Stop state from using city's rail fund as its own piggy bank

By TOM BERG

POSTED: 01:30 a.m. HST, Apr 13, 2011

Perhaps it was inevitable that the multibillion-dollar rail transit endeavor, Hawaii's largest-ever public works project, would bring out the greedy side of our otherwise dedicated state politicians. But that can't possibly make it acceptable, especially when the No. 1 funding mechanism for the rail project is being exploited through systematic fleecing of rail tax collections before any money even makes it to the city.



*Tom Berg is the city councilman for District 1 (Ewa-Kapolei-Leeward Coast)*

The ploy was set into motion when the Hawaii Legislature in 2005 passed House Bill 1309 (Act 247) to allow the rail project to advance on Oahu. Beginning in 2007, the half-percentage point increase in the general excise tax, known as the "rail surcharge," has been improperly used to balance the state budget. For the last four years, the state has been collecting an administrative services fee to process the surcharge levied on Oahu purchases.

As a Legislature staffer who helped advance the rail tax authorization bill, I remember that when the legislation was adopted, the state had little to no idea what the

cost would be to administer this tax. As a result, the overly generous, arbitrary "guesstimate" of 10 percent was applied against the gross revenues as an administrative assessment. Averaging \$16 million per year above the real cost to collect the rail surcharge, this administrative fee surplus is being deposited into the state's general fund and is expected to shortchange the voter-approved rail project and city taxpayers by \$300 million during the life of the rail tax that expires in 2022.

Star-Advertiser readers can probably surmise that the state doesn't need nearly that big a cut to collect and process taxes for the city. Indeed, highly informed sources tell me that the state needs to retain only 3 percent or less to break even on the favor it's doing the city.

But "greed" is the operative word here, and sadly, "bad faith" is the byproduct. The rail fund is still being used to finance pet projects statewide. But there's still time to fix this arrangement.

The House Finance Committee has a bill currently being considered — Senate Bill 1426 SD2 — which unwarrantedly proposes to take \$200 million from the rail fund in a borrowing scheme. I suggest a "gut and replace" maneuver to the bill: Remove the language that takes \$200 million in another money grab, then insert language that allows for an administrative fee to withhold only that amount which is needed to process the rail surcharge.

A special City Council meeting at 8:30 a.m. today was called to send a message to the Legislature about this issue. It is hoped that my colleagues will unanimously adopt my Resolution 11-91 CD1, which strongly urges

## Star Advertiser

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the state to withhold only the amount of money actually needed to administer the rail surcharge.

Under no circumstances was Act 247 sold to the public to be a profiteering scheme for the state to make money off the rail endeavor. Yet year after year, both the Legislature continues to approve budgets that siphon crucial millions from rail construction.

Now that the \$3.7 billion price tag narrowly approved by voters in 2008 has exploded to \$5.5 billion, the rail project's financial plan is in big trouble. Tax collections are down. Federal funding for rail from a penny-pinching Republican Congress is uncertain, to say the least. And city officials are being told by the feds and by City Council members to keep their hands off the budget for TheBus in order to find rail funds. Worse yet, city officials have notified the Council that we will need to approve issuing of bonds to make up the cash flow shortfall.

That's how bad things are looking. So if we are still going to do rail, we need to do it right. The Legislature needs to stop raiding the city's rail fund and taxpayers need to demand that they get their money's worth from a broken system.





## RESOLUTION

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URGING THE HAWAII STATE LEGISLATURE TO PROVIDE THE CITY AND COUNTY OF HONOLULU ALL PROCEEDS OF THE COUNTY SURCHARGE ON STATE EXCISE TAX NOT NEEDED TO ADMINISTER THE SURCHARGE.

WHEREAS, the Council enacted Ordinance 05-027, establishing a one-half percent surcharge on the state general excise and use tax (hereinafter "county surcharge") to fund a mass transit project pursuant to Act 247, Session Laws of Hawaii (hereinafter "SLH") 2005 (hereinafter "Act 247"), the proceeds of which are collected by the State; and

WHEREAS, Act 247 provides that the State shall deduct ten percent of the gross proceeds of a respective county's surcharge to reimburse the State for the costs of assessment, collection, and disposition of the county surcharge incurred by the State; and

WHEREAS, the City began receiving county surcharge proceeds in Fiscal Year 2007; and

WHEREAS, according to a department of taxation report, the State collected \$187,903,947 of county surcharge proceeds for fiscal year 2008 and retained \$18,790,395 of that amount as its reimbursement for the costs of assessment, collection, and disposition of the county surcharge; and

WHEREAS, according to the department of taxation figures for the fiscal year 2009, the State collected approximately \$178,729,000 of county surcharge proceeds and retained ten percent of those proceeds; and

WHEREAS, the most recent department of taxation annual report required by Act 213, SLH 2007, details the level of staffing and funding necessary to administer county surcharge collections, identified 23 positions costing \$749,876 for fiscal year 2008 and 20 positions costing \$700,508 for fiscal year 2009 that support the collection of the surcharge; and

WHEREAS, based on the above, the amounts being retained by the State each year are grossly in excess of the funding needed to collect the surcharge, amounting to between \$17 million to \$18 million in unwarranted payments in the most recent years for which data on the county surcharge are available; and



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## RESOLUTION

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WHEREAS, the Council finds it unconscionable that the State annually keeps millions of dollars of county surcharge proceeds to reimburse itself for costs related to administering the surcharge which are far less than the ten percent retained by the State; and

WHEREAS, the Council further finds that retention by the State of millions of taxpayer dollars intended to fund a mass transit system but not used for the transit system undermines the justification for establishing the county surcharge and weakens the city's ability to implement a successful mass transit system; now, therefore,

BE IT RESOLVED by the Council of the City and County of Honolulu that it urges the Hawaii State Legislature to immediately amend State law to reduce the amount of the county surcharge retained by the State to more closely approximate the cost of collecting and disbursing the county surcharge; and

BE IT FURTHER RESOLVED that in order to determine the amount needed, the Legislature is requested to provide that the cost of administering the surcharge be subject to verification by independent audit; and

Send to printer Close window

# Editor's Page:

## 92 Percent Neglected

A. KAM NAPIER, EDITOR

Increasingly, car owners are on the wrong side of the tracks.



PHOTO BY LINNY MORRIS

This is how it starts. First, the city proposes a train. Then, the city worries that not enough people will ride the train to justify its \$4.6 billion price. So the city starts looking for ways to take away your car, so you'll have no choice but to ride the train.

Well, OK, not your car (not yet, anyway) but in February, the City Council considered a bill to make sure that fewer people will have places to park when they come home from work.

Of course, in the Orwellian nature of GovSpeak, this was described as "reducing off-street parking requirements." See, when developers build an apartment that is 800 square feet or more, they are required to provide two parking spaces because apartments of that size are typically inhabited (and afforded) by two working adults. The city council wants to reduce that to a single parking space in any new "transit-oriented developments" built around the train stations on the rail line.

Explaining the bill in *The Honolulu Advertiser*, councilman Gary Okino stated that reduced parking requirements "maybe are meant to be an incentive [to encourage mass transit ridership], maybe they're meant to make things a little more affordable around transit stations by not requiring additional cost items like parking." None of this will be a problem, he assures us, because, "In other cities where they have [transit-oriented development] ... parking is less anyway because people just tend to not own cars."

This last assertion is nonsense and easily disproved. In developments such as Steele Park, Ore., planners similarly reduced the parking requirement to one space per unit. That, along with tax subsidies to lure people to live next to noisy train stations, made those dwellings more affordable. So who moved in? Young families with less money to spend on housing—that owned two or more cars anyway. Those "extra" cars now clutter the streets of Oregon's transit-oriented developments, the same way ohana multi-family zoning here turned narrow suburban streets into parking lots.

By the way, Portland never seems short of cash when it's time to lay down some track, but has a road maintenance backlog of \$442 million. Honolulu, this is your future.

I have to admit, city government's power to force this train on us is enviable. Imagine if HONOLULU were published by the city. It would be so easy to dominate the media landscape. First, we'd "reduce the newsstand requirement" for stores that carry magazines. Instead of wasting valuable floor space on big racks filled with other titles, stores would only have to provide one rack for one magazine—this one. Then we'd "reduce the postal requirement" that has mail carriers lugging countless magazines to your mailboxes. Our competitors would quickly fold, or stop distributing in the Islands.

Those other publishers might complain that we had an unfair market advantage, since we'd effectively banned them, but who are they to stand in the way of progress? Citizens might complain that they miss reading *Surfer* or *The Economist*, because HONOLULU doesn't really take them where those other magazines used to take them. However, they are overlooking the communitarian wholesomeness that will follow from all of us, every day, sharing the same stories about

this great city.

For this metaphor to really match the transit/transportation reality, though, we have to assume that every one of you publishes your own magazine, read only by you. To induce you to read only HONOLULU, we'd have to make it as difficult as possible for you to publish and read your own magazine.

That's essentially what the city is up to. Your car is a competitor to its train. Interestingly, the city also knows you aren't about to give it up. By the city's estimate, barely 8 percent of all trips made in the city in 2030 will be by rail. This projection assumed a fully built transit system, but "minimal improvements to the H-1 freeway." Why "minimal?" Why "reduced parking requirements?" In 2008, the people we elected to represent our interests seem bent on making sure that the other 92 percent of our trips—to work, to buy groceries, to drop off the kids at school—will be as miserable as they can possibly make them.

Conveniently, none of them will be in office in 2030 to hear us complain.

-----Original Message-----

From: Dick Quinn [mailto:[rkquinn@me.com](mailto:rkquinn@me.com)]

Sent: Sat 5/21/2011 6:13 PM

Subject: BILL 30 (2011), CD1 - "RELATING TO PARKING FEES AT CITY PARKS"

Dear Mayor Carlisle and Councilmembers,

Past City administrations allowed the construction of apartment buildings along the makai side of Kalakaua Ave., opposite Kapiolani Park, without requiring at least one on-site parking stall per apartment. Because of inadequate on-site parking, many Park-area residents must use public stalls around the Park.

My wife and I are retired and live on a limited and dwindling fixed income. We reside in a studio apartment at Tropic Seas, 2943 Kalakaua Ave. There are 64 dwelling units in two buildings at our complex. Unfortunately, Tropic Seas has only 16 parking stalls. By necessity, most Tropic Seas residents must park around the Park.

Currently, the parking stalls on the mauka side of Kalakaua Ave. are metered at 50 cents per hour from 10 AM to 6 PM. Bill 30 (2011), CD 1, proposes to charge \$1.00 per hour, 24 hours per day.

There are a few unmetered stalls on the makai side of Kalakaua. Currently, there are no parking meters along Paki Ave., on the mauka side of the Park. Because they are free and time-unlimited, the Paki Ave. stalls are frequented by the residents of Tropic Seas and other area apartment buildings.

Kapiolani Park is well used by swimmers, surfers, sunbathers, picnicking families, tennis players, Waikiki Shell attendees, soccer, softball, baseball and lacrosse teams, joggers and walkers. Public parking stalls are in very short supply.

Those who live near the Park struggle to find places to park. Park-area residents circle and circle, looking for spaces. If unmetered stalls are full, we must feed quarter after quarter into meters.

We're all struggling mightily to pay our bills, rents and mortgages in this time of economic woe. Doubling the hourly rate and tripling the hours metered will greatly increase our hardship. Moreover, 24-hour metering will make us all 'sitting ducks' for nighttime parking tickets.

There must be some fair way for the City to raise revenue without discriminating against Park-area residents. At the very least, couldn't you give Park-area residents permitted parking between 6PM and 10AM?

My wife and I respectfully ask that you find alternative revenue sources and protect us from harm.

Mahalo and aloha,

Dick Quinn

Article URL: <http://archives.starbulletin.com/2007/12/09/editorial/commentary4.html>  
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## Star-Bulletin mobile edition



Gathering Place  
Tom Berg

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# Fruitless in Fruitvale: Dangers of developing along transit lines

Transit orientated developments are being proposed by the city to define, redevelop and transform neighborhoods, creating symbiotic relationships with rail operations. The intent is that rail stations and their patrons will be equally served with mutual benefit creating a win-win environment for all.

Rail stations and the land masses that surround them are designated TOD areas that incorporate a common theme: to deter, discourage and restrict automobile use in those areas. Both Portland, Ore., and an Oakland, Calif., community called Fruitvale have adopted TOD principles that have produced outcomes that are the opposite of what is being lauded.

During a Waipahu TOD meeting Nov. 14 to garner public input, Fruitvale was portrayed as a vibrant, economic success story. This puzzled me since just a couple of days before the Waipahu meeting, I had visited the Fruitvale complex.

The eating establishments did not appear to be heavily frequented and one restaurant advertising a plate lunch for less than \$4 couldn't muster up a customer. Of course, this was just a snapshot in time. At 5 p.m., though, I thought patrons would be enjoying a drink after work, but the place resembled a ghost town. When the planners in Waipahu described Fruitvale as bustling, I chimed in and described numerous "for lease" signs posted throughout the complex, as well as my observation that the majority of the second-story offices appeared empty. Very few lights were on as it got dark and some lacked window dressings, suggesting they were not occupied.

Could it be that the train coming every few minutes at a noise level of some 85 decibels was not conducive to business? Who wants to shout at their customers just to be heard?

**Magnets for crime**

Another concern is security. Honolulu has numerous unfilled police officer positions. Yet TOD rail stations have transit police; statistics reflect that more crimes are committed at rail centers and on rail routes than occur at bus operations or to car users. Rail operations are a magnet for crime and graffiti even with the presence of transit police. If Honolulu cannot fill vacant positions for police officers, what will our TODs resemble? Have security costs been factored into Honolulu's TODs?

One of Portland's TODs was incorporated with an elderly residential complex. Because TODs are regulated differently from other areas and possess unique zoning requirements, their retail and other residential facilities need not supply parking ratios that normally would be required outside of a TOD scheme. Because there is so little parking available at the Portland TOD housing complex, the dedicated emergency lanes often are taken up by cars illegally parked. This is an ongoing syndrome of regulated planning associated with TODs. People wind up parking in everyone else's neighborhood.

Who is going to pay for all of the landscaping, pedestrian paths and building facades? I heard over and over that the private sector most likely will build the parking structures and sugarcoat the town. In Fruitvale, one can park all day for less than \$2. To believe that scenario is doable in Hawaii defies logic. Unless, of course, tax breaks and incentives at taxpayers' expense make it happen. Does condemnation ring a bell? In this case, TOD should stand for Transfer Our Dollars.

Planners and supporters of tax breaks for developers associated with TODs say, "Be patient, the vision will work. Just think in terms of what we will have before us 20 years from now. TODs are the future." When I close my eyes, I see automobiles that are not dependent on fossil fuels and emit no carbon waste -- and more commuters in need of more roads.

It appears Honolulu is attempting to enact ordinances that will slowly exterminate the automobile user. I believe Americans should be able to park our cars near our destinations of choice, and not be herded into centralized parking structures wondering if our cars and their contents will be there when we return.

### **Include rubber wheels**

In order for the City Council to choose rubber-tire technology (buses) over steel wheels (rail) on the fixed guideway, the Legislature should consider amending Act 247 (general excise tax authorization bill) to include language expanding the usage of the fixed guideway right of way so that it can include buses. The clarity is needed because during the city's scoping meetings, high occupancy toll lanes/managed lanes were presented as doable when they now say the concept for buses is not applicable.

Buses do not meet the capacity and speed defined by the Council as an acceptable means of mass transit. So why did we spend \$10 million on an alternative analysis that let the public look at managed lanes using buses when the tax cannot be used for that type of transit to begin with?

We are being told that a bus does not have the capability to go faster than the rail speed to be contrived at 20 mph and that buses do not have the space to carry as many people as a rail car can. Yet, in contrast, when PB America Inc., which did Honolulu's alternative analysis, revealed its findings for other cities across America, it chose managed lanes/toll lanes as reducing traffic congestion more than rail. Why is it different for Honolulu?

### **Money wisely spent**

Furthermore, we have been duped by the entire process, told that the Council's hands are tied because it



cannot go with letting buses and cars use the dedicated fixed guideway. This is because HB 1309 HD2 SD2 CD1, which became Act 247, does not permit the general excise tax increase to be used by highway technology in existence by a county with a population of more than 500,000. If a bill can be passed this upcoming legislative session to let the tax collection be used to build elevated reversible express lanes, then the Council can still get new start federal grants and there would be no delays in going with rubber tire technology. This would assume that we have followed through with our congressional delegation to ensure we don't lose our federal funding opportunity. Just because we expanded the type of mass transit options would be a lame excuse to deny us our choice of transit using our own tax money, whether federal, state, or county taxes. It's all our money to begin with, no matter who dishes it out.

Imagine, we could actually turn the level of service on the H-1 corridor from an "F" grade to an "A" by letting the City Council have the authority to adopt the tax expenditure for highway technology. The whole island would be served by rubber technology. Twenty-two other states are doing it -- getting billions from the feds for highway technology used specifically for reversible express lanes as a form of mass transit that caters to buses. The only holdup here is the restrictive language in Act 247. Let's support our legislators to change that and give our Council some more room to maneuver. It might be that these TOD schemes are not even necessary if rubber tire technology is chosen.

The savings and traffic reduction capabilities could be astronomical with a mere amendment to the law. Now that's the type of symbiotic relationship I can handle, the one between the taxpayer and a dose of reason.

Tom Berg is an Ewa Beach resident and a member of the Ewa Neighborhood Board, serving as its legislative chairman and also the Ewa representative for the Oahu Resource and Conservation Development Council.

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# Policy Analysis

No. 663

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## *Defining Success The Case against Rail Transit*

by Randal O'Toole

### Executive Summary

Over the past four decades, American cities have spent close to \$100 billion constructing rail transit systems, and many billions more operating those systems. The agencies that spend taxpayer dollars building these lines almost invariably call them successful even when they go an average of 40 percent over budget and, in many cases, carry an insignificant number of riders. The people who rarely or never ride these lines but still have to pay for them should ask, "How do you define success?"

This Policy Analysis uses the latest government data on scores of rail transit systems to evaluate the systems' value and usefulness to the public using six different tests:

- Profitability: Do rail fares cover operating costs?

- Ridership: Do new rail lines significantly increase transit ridership?
- Cost-Effectiveness: Are new rail lines less expensive to operate than buses providing service at similar frequencies and speeds?
- The "Cable Car" Test: Do rail lines perform as well as or better than cable cars, the oldest and most expensive form of mechanized land-based transportation?
- The Economic Development Test: Do new rail lines truly stimulate economic development?
- The Transportation Network Test: Do rail lines add to or place stresses upon existing transportation networks?

No system passes all of these tests, and in fact few of them pass any of the tests at all.

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*Randal O'Toole is a senior fellow with the Cato Institute and author of Gridlock: Why We're Stuck in Traffic and What to Do about It.*

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Transit agencies  
that receive  
federal funds  
invariably claim  
success no matter  
how much the rail  
line costs and  
how few people  
ride it.

## Introduction

In 2002, the Vermont legislature funded a commuter train from Burlington to Charlotte, 13 miles away (see Appendix A for definitions of terms such as *commuter rail*, *light rail*, and *streetcars*). To ensure funds were effectively spent, the legislature set targets for the service and asked for an audit after one year.<sup>1</sup>

The audit found the rail line's capital costs were more than twice the projected amounts; the operating costs were nearly three times projections; the trains carried less than half of the projected riders; and fare revenues were less than a third of projections.<sup>2</sup> The audit also found that the environmental benefits of the project were nil: the diesel locomotives powering the trains used more energy and emitted more pollution than the cars the transit service took off the road.<sup>3</sup> The legislature cancelled the train.

Vermont taxpayers were fortunate that the state had not accepted any federal funds to support this project, as those funds come with a string attached: if a federally funded transit project is cancelled before the end of its expected lifespan, the local transit agency must repay the prorated value of all grants to the federal government. While there is a limited market for buses and railcars, it would be very difficult for an agency to recover any investments it makes in stations, tracks, and other fixed infrastructure. This means it can be less expensive to keep running the trains than to admit they are a failure.

The vast majority of rail transit projects in the nation today receive federal funds. Transit officials are unlikely to tell taxpayers, "Our rail transit project is a failure, but we need your tax dollars to keep it running because we can't afford to repay the federal grants." Instead, transit agencies that receive federal funds invariably claim success no matter how much the rail line costs and how few people ride it.

For example, in 2006 Tennessee spent \$41 million to start the *Music City Star*, a commuter train from Lebanon to Nashville.<sup>4</sup> In 2008, the second full year of operation, the train carried

a weekday average of just 264 rush-hour commuters to and from work, and fares of \$616,000 barely covered 15 percent of the line's \$4.1 million operating costs.<sup>5</sup> This represents an annualized cost of more than \$25,000 per commuter, enough to buy each commuter using the train a new Toyota Prius every year for the next 30 years.<sup>6</sup> Yet Nashville's Regional Transportation Authority hopes to parlay the "success" of this line into getting funding for six more commuter-rail routes, while transit officials in Louisville, Indianapolis, and other cities cite the *Star* as an example of a "successful" train they wish to emulate.<sup>7</sup>

Before funding a project, voters and appropriators should ask rail supporters, "How do you define success?" It is not enough that people ride the trains, as many and often most of those riders were formerly on buses whose costs are far lower than rail transit. Nor is it enough if the trains attract some people out of their automobiles. Transit agencies typically operate trains at far greater frequencies and with fewer stops (resulting in higher average speeds) than buses. Since buses can easily operate at higher frequencies and with fewer stops—a type of service called *bus rapid transit*—taxpayers can legitimately question whether rail riders are attracted by the glitzy, expensive trains or simply appreciate the frequencies and speeds that could have been provided by much less expensive buses.

Advocates often claim rail transit will reduce traffic congestion, save energy, and reduce emissions of pollution and greenhouse gases. But the truth is that, outside of New York City, rail transit carries far too few people for it to have any significant effect on congestion or environmental quality. While rail transit carries about 10 percent of motorized travel in the New York urban area, it carries less than 3.5 percent in the San Francisco and Washington urban areas, less than 3.0 percent in the Boston and Chicago urban areas, less than 2.0 percent in the Philadelphia urban area, and less than 1 percent in Atlanta; Portland, Oregon; and all other urban areas with rail transit in the United States.<sup>8</sup>

Realizing this, rail advocates often carefully word their proposals so as not to claim that rail transit actually relieves congestion, but

simply that it will give frustrated motorists a choice. But there are lots of potential travel choices, including pedicabs, limousines, helicopters, and aerial tramways. Simply because an alternative is available does not mean taxpayers should subsidize it.

A more recent argument is that rail transit stimulates economic development. Developers are more likely to invest near rail lines than bus routes, the argument goes, because rail transit represents a large investment in immobile infrastructure while bus services can more easily be cancelled or eliminated. In fact, a close look reveals that almost all so-called transit-oriented developments along subsidized rail transit lines are themselves heavily subsidized and would not have been built without those subsidies.

To determine when and if rail transit is worthwhile, this paper will assess America's rail transit lines against several objective criteria:

- *The Profitability Test:* How close do rail transit lines come to covering their capital and operating costs?
- *The Ridership Test:* What effect does construction of new rail transit lines have on overall transit ridership?
- *The Cost-Efficiency Test:* How do rail transit investments compare with investments in improved bus service?
- *The Cable Car Test:* Are rail transit systems more productive than the most costly land transit system in the nation, the San Francisco cable car?
- *The Economic Development Test:* Does rail transit contribute to economic development or does it merely provide an excuse for more subsidies to such development?
- *The Transportation Network Test:* What effects do new rail transit lines have on a region's overall transportation network?

## The Profitability Test

The most obvious candidate for testing the success of rail transit is profitability: does rail transit cover its costs? There are many valid reasons why profitability should be used

as a test of the value of rail transit. Profits are a proxy for net social benefits, and while the proxy is imperfect, it provides an important discipline to public spending. Once the idea of earning a profit disappears, transit agencies might just as well invest \$1 billion as \$1 million in transit improvements, because there is no particular reason to consider the former any worse than the latter. In fact, politically it is likely to be much better.

As it turns out, no rail transit line in the country comes close to covering its operating costs, much less its total cost (see Appendix B for information on data sources). In 2008 New York City subways had the best financial performance of any rail transit system in the nation, yet subway fares covered just two-thirds of operating costs (Table 1). Average light-rail fares cover less than 30 percent of operating costs.<sup>9</sup> Transit fares have not contributed a single penny to rail capital costs for at least 60 years (see Appendix C for calculations of capital costs).

One reason for transit's lack of profits is that most transit systems in the United States are publicly owned and tax subsidized, and thus have no profit motive. While privatization of transit could improve the efficiency of transit service, it is unlikely that even private operators would ever choose to build rail transit lines in the United States. Once existing lines were worn out, they would probably replace most of them with buses.

Transit advocates argue that rail transit loses money everywhere in the world, and the United States should not expect to do any better. In fact, rail transit earns a profit in Hong Kong and Tokyo, two cities that are far denser than anywhere in the United States outside of Manhattan. Beyond that, the idea that taxpayers in France, Germany, and other countries are foolish enough to subsidize what may be an obsolete form of travel does not justify America doing the same.

## The Ridership Test

A second criterion that could be used is the effect of rail transit on overall transit ridership.

**No rail transit line in the country comes close to covering its operating costs, much less its total cost.**

**Table 1**  
**Profitability and Ridership of Rail Transit Lines**

Urban Area (Agency)	Mode	Fare/ Operating Cost	Fare/ Total Cost	Loss per Trip	Occupancy per Car	Total Weekday Riders
Albuquerque	CR	10.00%	3.80%	34.78	Unknown	4,700
Atlanta	HR	31.10%	10.00%	5.34	25.6	266,869
Baltimore	HR	22.20%	4.50%	18.63	12.9	46,362
Baltimore	LR	18.70%	7.10%	11.52	19.3	25,560
Boston	HR	57.60%	39.30%	1.63	25.1	515,175
<b>Boston</b>	<b>LR</b>	<b>58.80%</b>	<b>36.50%</b>	<b>1.75</b>	<b>32.6</b>	<b>256,128</b>
Boston (Downeaster)	CR	47.20%	45.70%	16.36	19.1	1,281
<b>Boston (MBTA)</b>	<b>CR</b>	<b>53.90%</b>	<b>29.60%</b>	<b>8.26</b>	<b>33.9</b>	<b>143,498</b>
Buffalo	LR	18.10%	3.50%	20.81	18.1	19,743
Charlotte	LR	17.10%	3.40%	20.14	27.3	11,678
Chicago (CTA)	HR	46.30%	26.40%	2.86	17.6	641,783
Chicago (Metra)	CR	44.20%	28.50%	7.74	41.1	278,855
Chicago (N. Indiana)	CR	49.50%	29.50%	10.88	33.5	13,897
Cleveland	HR	24.60%	15.40%	4.53	26.5	25,360
Cleveland	LR	19.60%	10.50%	7.05	24.1	10,703
Dallas	LR	15.50%	3.70%	18.5	28.9	65,757
Dallas-Ft. Worth	CR	9.20%	2.20%	46.14	24	9,730
Denver	LR	52.70%	13.40%	6.85	14.3	67,196
Detroit	AG	8.40%	2.60%	\$17.50	6.1	5,898
Houston	LR	33.20%	15.80%	3.67	33.7	40,567
Jacksonville	AG	5.60%	1.40%	49.4	0.9	1,736
Kenosha	SC	5.90%	3.40%	7.05	3.7	162
Little Rock	SC	8.10%	1.80%	26.47	3.9	317
<b>Los Angeles</b>	<b>CR</b>	<b>50.40%</b>	<b>26.40%</b>	<b>15.33</b>	<b>41.9</b>	<b>47,210</b>
Los Angeles	HR	33.20%	4.40%	15.76	36.3	134,665
Los Angeles	LR	19.40%	5.80%	11.14	34.8	134,327
Memphis	SC	21.80%	6.00%	13.17	1.8	2,829
Miami	AG	0.00%	0.00%	8.07	7.7	27,333
Miami	CR	16.50%	7.20%	29.16	42.8	13,228
Miami	HR	16.10%	5.50%	12.38	19.9	62,307
Minneapolis	LR	37.90%	11.30%	6.92	31	30,518
Nashville	CR	15.20%	8.30%	41.03	15.1	667
New Orleans	SC	31.40%	18.40%	4.28	10.9	12,298
New York (CT)	CR	12.10%	4.80%	63.03	14.9	1,986
New York (Hudson-Bergen)	LR	16.80%	8.20%	12.62	24.2	48,291
<b>New York (LIRR)</b>	<b>CR</b>	<b>48.00%</b>	<b>33.80%</b>	<b>9.96</b>	<b>29.1</b>	<b>342,754</b>
<b>New York (Metro North)</b>	<b>CR</b>	<b>58.60%</b>	<b>42.50%</b>	<b>8.19</b>	<b>36.9</b>	<b>285,613</b>
<b>New York (MTA)</b>	<b>HR</b>	<b>67.00%</b>	<b>42.50%</b>	<b>1.21</b>	<b>28.8</b>	<b>7,822,158</b>
<b>New York (NJ Transit)</b>	<b>CR</b>	<b>55.50%</b>	<b>35.90%</b>	<b>8.97</b>	<b>38.1</b>	<b>300,900</b>
New York (PATH)	HR	45.20%	24.60%	3.88	29.4	279,937
New York (Staten Island)	HR	19.80%	17.90%	3.47	19	27,739
NY/Philadelphia (NJ Transit)	LR	25.90%	25.90%	31.11	21	20,440
Philadelphia (PATCO)	HR	49.80%	40.00%	3.07	22.1	36,184

Urban Area (Agency)	Mode	Fare/ Operating Cost	Fare/ Total Cost	Loss per Trip	Occupancy per Car	Total Weekday Riders
Philadelphia (PennDOT)	CR	49.60%	40.00%	22.98	16.7	1,509
Philadelphia (SEPTA)	CR	<b>57.00%</b>	<b>39.20%</b>	<b>5.56</b>	<b>29.5</b>	<b>117,056</b>
Philadelphia (SEPTA)	HR	<b>52.80%</b>	<b>24.40%</b>	<b>2.7</b>	<b>25.6</b>	<b>305,353</b>
Philadelphia (SEPTA)	LR	43.60%	33.00%	1.79	18.9	95,946
Pittsburgh	LR	15.90%	7.00%	13.07	18	6,784
Portland	LR	37.40%	9.80%	7.44	28.2	118,970
Sacramento	LR	27.10%	10.10%	8.03	20.1	52,686
Salt Lake City	CR	14.80%	3.20%	52.19	23.5	7,228
Salt Lake City	LR	35.80%	8.40%	7.21	24.5	48,664
<b>San Diego</b>	LR	<b>55.60%</b>	<b>15.30%</b>	<b>4.58</b>	<b>25.9</b>	<b>113,635</b>
San Diego (North County)	CR	39.30%	13.30%	26.94	37.6	6,180
San Diego (North County)	LR	9.30%	2.10%	44.36	48.9	31,252
San Francisco	CC	47.20%	45.80%	3.87	19.1	20,530
San Francisco	CR	45.80%	22.00%	12.47	40.6	36,421
San Francisco	LR	18.50%	10.30%	4.53	22.8	159,405
<b>San Francisco (BART)</b>	HR	<b>64.50%</b>	<b>20.10%</b>	<b>10.68</b>	<b>21.6</b>	<b>384,231</b>
San Jose	LR	15.50%	4.50%	17.46	16.2	33,043
San Jose (Altamont)	CR	37.80%	22.50%	18.57	48.4	3,191
San Juan	HR	18.20%	4.80%	23.65	13.6	29,974
Seattle	CR	26.40%	6.30%	45.37	61.2	9,914
Seattle	SC	11.20%	4.50%	14.24	6.7	1,295
Seattle (Tacoma)	SC	0.00%	0.00%	11.6	9.8	3,018
St. Louis	LR	30.30%	8.10%	9.85	21.4	57,384
Tampa	SC	30.20%	21.80%	4.64	8.9	1,025
<b>Washington</b>	HR	<b>60.60%</b>	<b>20.70%</b>	<b>6.09</b>	<b>23.5</b>	<b>971,490</b>
Washington (MARC)	CR	34.90%	21.70%	14.86	47.4	31,216
Washington (VRT)	CR	45.50%	28.60%	15.14	59.1	14,508
National average/total	AG	3.40%	1.00%	11.73	6.4	34,967
National average/total	CR	50.10%	31.80%	9.8	35.7	1,670,542
National average/total	HR	59.40%	28.30%	2.6	25.7	11,549,587
National average/total	LR	29.40%	10.60%	6.91	24.4	1,448,677
National average/total	SC	23.10%	9.80%	7.48	7.5	20,944
National average/total	All	52.50%	26.50%	3.82	28.5	14,746,247

Source: 2008 *National Transit Database* (Washington: Federal Transit Administration, 2009), "operating expense," "capital expense," "fare," and "service" spreadsheets; 1992 through 2007 capital expenses from *National Transit Database Historical Data Files*, TS3.1—Capital Expenditures Time Series. Albuquerque data are not in the National Transit Database, but are based on Jim Scarantino, "Rail Runner 2008–2009 Losses Top \$19 Million," *New Mexico Watchdog*, December 13, 2009, [tinyurl.com/yb9ctb9](http://tinyurl.com/yb9ctb9).

Note: Automated guideways (AG), cable car (CC), commuter rail (CR), heavy rail (HR), light rail (LR), and streetcar (SC) lines operating in the United States in 2008. "Fare/Operating Cost" shows the share of 2008 operating costs covered by 2008 fare collections. "Fare/Total Cost" shows the share of 2008 operating costs plus either the annualized capital costs shown in Table 1 or, for older systems, the annual average of 1992–2008 capital costs covered by 2008 fare collections. "Loss per Trip" shows the operating and capital subsidy required for every passenger (and passengers who change trains midway count as two trips). "Occupancy per Car" is the average number of people on board the railcars while they were in revenue service (calculated by dividing 2008 passenger miles by 2008 vehicle revenue miles). "Total Weekday Riders" is the typical number of people carried each weekday in 2008. Systems that appear in bold typeface pass the "cable car test" (see text).

**Table 2**  
**Transit Trips per Capita**

	1985	2008	Change
Albuquerque	10	15	46.9%
Atlanta	83	39	-53.2%
Baltimore	59	51	-13.0%
Boston	106	90	-14.5%
Buffalo	36	28	-22.8%
Charlotte	22	23	3.8%
Chicago	110	72	-34.6%
Cleveland	53	34	-36.0%
Dallas	18	16	-12.5%
Denver	40	47	17.3%
Houston	25	22	-11.8%
Los Angeles	56	51	-8.3%
Miami	22	30	41.5%
Minneapolis	38	38	-1.0%
Nashville	17	12	-29.8%
New Orleans	70	18	-74.2%
New York	201	215	6.7%
Philadelphia	92	67	-26.4%
Phoenix	11	21	93.6%
Pittsburgh	50	39	-21.3%
Portland	53	61	15.8%
Sacramento	17	24	37.5%
Salt Lake City	23	41	75.7%
San Diego	22	37	70.4%
San Francisco	121	107	-11.7%
San Jose	26	28	8.3%
Seattle	56	52	-6.9%
St. Louis	27	25	-6.4%
Washington	102	116	14.0%

Source: 1985 and 2008 National Transit Databases, Federal Transit Administration, Washington; Census Bureau population estimates for urbanized areas.

Note: 17 out of 28 rail regions have seen a decline in per capita transit usage despite—or because of—the existence or construction of rail transit lines.

**Per capita transit ridership has declined in most regions that have rail transit.**

Rail advocates claim that many people won't ride buses, but they will ride trains. If true, construction of a new rail transit line could increase ridership in the transit corridor. But, as Department of Transportation researcher Don Pickrell pointed out in 1989, the real question is: what is the effect of rail transit on regional transit ridership?<sup>10</sup> If the high cost of rails leads a transit agency to raise fares or reduce other transit services, transit ridership outside the rail corridors may suffer, offsetting any gains in the rail corridor.

Table 2 shows that, for one reason or another, per capita transit ridership has declined in a majority of urban regions that have rail transit. Moreover, increases in some of the cities, such as Albuquerque, Charlotte, and Phoenix, took place before the opening of rail transit lines. In Miami's case, the increase took place only after the transit agency began to emphasize buses when its rail lines failed to perform.

Fewer than one out of four rail regions can honestly argue that new rail transit lines gen-

**Table 3**  
**Transit's Share of Commuting**

	Year Rail System Opened*	Commute Share of Population Prior to Rail†	2008 Commute Share
Albuquerque	2006	1.4	2.2
Atlanta	1979	9.1	4.6
Baltimore	1984	12.3	8.4
Boston	1900	13.5	13.3
Buffalo	1986	16.4	4.2
Charlotte	2007	5.5	3.6
Chicago	1900	18.7	14
Cleveland	1900	11.5	4.8
Dallas-Ft. Worth	1996	2.7	2.2
Denver	1994	4.7	5.8
Houston	2004	3.8	3.2
Los Angeles	1988	5.9	6.7
Miami	1984	4.3	3.9
Minneapolis	2004	5.5	6.2
Nashville	2006	1.3	1.8
New Orleans	1900	11.5	3.7
New York	1900	30.7	32.5
Philadelphia	1900	15.1	10.6
Phoenix	2008	2.2	3.3
Pittsburgh	1900	13.8	8
Portland	1986	9.8	8
Sacramento	1987	4.1	3.3
Salt Lake City	1999	3.5	3.6
San Diego	1981	3.5	3.8
San Francisco	1972**	16.8	15.5
San Jose	1988	3.1	4
San Juan	2004	5.8	4.1
Seattle	1999	7.1	9.1
St. Louis	1994	3.5	3.6
Washington	1976	16.7	16.8

Source: Census Bureau, 1980, 1990, 2000 censuses, 2008 American Community Survey.

Notes: Transit's share of commuting has fallen in most rail regions since 1980 or the decennial census prior to the opening of new rail transit, whichever is later. Urban areas with only streetcars or automated guideways are excluded as these modes are not intended for commuting.

\* 1900 if pre-1970

\*\* BART system

† No earlier than 1980

erated significant new riders. These include Denver; Portland; Sacramento; Salt Lake City; San Diego; Washington; and possibly (though not apparent from Table 1) Minneapolis. Of

course, even increases in transit ridership do not necessarily translate into net social benefits. They may merely signal people switching from a relatively unsubsidized form of trans-

**Increased ridership may simply indicate a switch from relatively unsubsidized to heavily subsidized transportation.**



In January 2010, Transportation Secretary Ray LaHood abolished cost-effectiveness rules for federal transit grants, saying, in effect, that he was willing to fund rail projects no matter how much money they waste.

portation to another that is heavily subsidized.

Table 3 shows that, when compared with passenger travel by auto, transit's share of travel has declined in most rail regions since 1980 (or the year of the decennial census before post-1990 rail lines opened). Increases in Albuquerque, Nashville, Phoenix, and Seattle took place before rail lines opened; Los Angeles's increase took place after the transit agency was ordered by a federal judge to restore bus service that had been cut to help pay for the rail system. Only Denver, Minneapolis, Salt Lake City, San Diego, San Jose, and Washington can honestly say that new rail transit lines contributed to increases in transit's market share, and these increases tend to be very small.

### The Cost-Efficiency Test

A major reason offered for giving subsidies to rail transit is that rail transit produces non-market benefits, such as mobility for low-income people who lack access to an automobile, congestion relief, and reduced air pollution, that might not be captured in transit fares. Taxpayers, the reasoning goes, should be willing to subsidize transit to obtain these benefits. Of course, in cities where transit ridership declined following rail construction, it is difficult for rail advocates to argue that rail lines produce any social benefits at all.

Even if a rail line has increased overall transit ridership, that does not necessarily mean it is good for the environment. Rail advocates point out that steel wheels have less friction than rubber tires. This makes a big difference for freight, but less for passengers.

A freight car that weighs 50 tons can carry 100 tons of freight. But a 50-ton passenger car can only hold a few hundred passengers, and, as Table 1 shows, the average for light- and heavy-rail cars (which weigh about 50 tons) is 25 passengers. That means the average weight per passenger is about 4,000 pounds. That is at least twice the weight per passenger of a typical passenger auto carrying the national average of 1.6 people. This high weight-to-passen-

ger ratio partly or wholly offsets the savings from steel wheels.

Commuter rail can be even worse considering the added weight of the locomotive. For example, Dallas-Ft. Worth commuter trains typically use a locomotive weighing 260,000 pounds, pulling an average of 3.7 passenger cars weighing 110,000 pounds each for a total of 667,000 pounds. The cars have nearly 150 seats, but in 2008 they carried an average of just 24 people each, for a weight-per-person of more than 7,500 pounds. As a result, they consumed 50 percent more energy and emitted 40 percent more carbon dioxide per passenger mile than the average passenger auto.<sup>11</sup>

Where rail transit does increase ridership, the criterion to use is *cost-efficiency*: Is rail transit the least costly way of obtaining a fixed amount of nonmarket benefits? Or, alternatively, does rail transit provide the greatest amount of these benefits for a fixed amount of money?

Rail advocates object to using true cost-efficiency analyses. In January 2010, rail supporters cheered when Transportation Secretary Ray LaHood announced he was abolishing cost-effectiveness rules and would instead judge projects based on whether they promote "livability," a concept that is impossible to quantify.<sup>12</sup> The rules LaHood was eliminating had been written under the previous transportation secretary, Mary Peters.

In 2005, Peters required that, to be eligible for federal funding, new rail transit projects must cost less than \$24 per hour of savings to transportation users.<sup>13</sup> This test failed to discriminate between projects that cost only \$1 per hour and projects that cost \$23 per hour, but at least projects that cost more than \$24 were eliminated, including many rail proposals. Under Peters, the Federal Transit Administration also required that cities applying for funds for streetcar projects demonstrate that streetcars were more cost-efficient than buses. As a result, almost all of the cities that had been preparing to apply for federal grants for streetcars gave up those plans.<sup>14</sup>

In deciding to repeal these rules, LaHood was saying, in effect, that the FTA would be willing to fund rail transit projects no matter

how much money they waste relative to alternatives. This makes many more rail projects eligible for federal funding. Still, taxpayers have an interest in knowing whether rail transit is cost-effective compared with buses or other alternative forms of transportation.

Though rail's capital cost is much greater than for buses, rail advocates argue that rail's operational savings will more than make up for the added capital cost. Rail cars cost as

much or more to operate per mile as buses, rail advocates concede, but rail cars have higher capacity and thus the cost per passenger mile may be much lower. Table 4 tests this idea for all post-1970 rail lines in operation in 2008. The table estimates the number of buses needed to provide equivalent service to the rail lines and compares the estimated capital and operating costs of those buses with actual rail costs.

**Table 4**  
Rail vs. Bus Capital and Operating Costs (costs in \$millions)

	Mode	Maximum Cars in Service	AM Peak Rider per Car	Replacement Buses Needed	Change in Annualized Capital Costs	Change in Operating Costs	Total Net Cost/Savings
Albuquerque	CR	22	25	22	-30.2	-9.9	-40.1
Atlanta	HR	33	42	56	-331.4	203.9	-127.6
Baltimore	HR	54	19	54	-213.3	-7	-220.3
Baltimore	LR	36	23	36	-58.9	-11.7	-70.6
Boston-Portland	CR	10	20	10	0.2	4	4.2
Buffalo	LR	23	29	26	-97.7	-14.9	-112.6
Charlotte	LR	14	40	22	-36.6	-2.4	-39
Dallas	LR	85	50	171	-275.8	8.1	-267.6
Dallas-Ft. Worth	CR	34	37	50	-40.4	-12.2	-52.6
Denver	LR	101	26	107	-116.3	50.3	-66
Detroit	AG	10	7	10	(\$28.60)	(\$7.60)	(\$36.20)
Houston	LR	17	50	34	-60.9	0.6	-60.3
Jacksonville	AG	7	1	7	-18.7	-4.2	-22.9
Kenosha	SC	1	4	1	-0.2	-0.1	-0.3
Little Rock	SC	21	10	21	-2.5	-0.3	-2.9
Los Angeles	CR	141	80	451	-97.9	169.3	71.5
Los Angeles	HR	70	47	132	-616.3	8.8	-607.5
Los Angeles	LR	102	51	209	-24.4	13.4	-11
Memphis	SC	12	2	12	-10.2	0.2	-9.9
Miami	AG	19	8	19	-48.3	-12.5	-60.8
Miami	CR	27	92	100	-62.3	44.5	-17.7
Miami	HR	84	28	95	-155.6	-7.4	-163
Minneapolis	LR	24	53	51	-53.5	15.1	-38.4
Nashville	CR	4	15	4	-3.2	-2.3	-5.5
NY (Hudson-Bergen)	LR	59	43	102	-173.9	-40.8	-214.6
Phil. (River Line)	LR	17	51	35	-109.6	-6.1	-115.7
Portland	LR	85	35	118	-231.3	4.2	-227.1

*Continued next page*

Table 4 Continued

	Mode	Maximum Cars in Service	AM Peak Rider per Car	Replacement Buses Needed	Change in Annualized Capital Costs	Change in Operating Costs	Total Net Cost/Savings
Sacramento	LR	56	33	73	-82.9	-0.4	-83.3
Salt Lake City	CR	18	115	83	-55.4	47.5	-7.9
Salt Lake City	LR	46	35	64	-85.7	9.8	-75.9
San Diego	LR	93	42	155	-139.8	66.9	-72.8
San Diego (North)	CR	20	56	45	-31.8	9	-22.8
San Diego (North)	LR	4	50	8	-24.9	-4.4	-29.3
San Francisco	HR	540	39	836	-1,018.90	479	-540
San Jose	LR	53	16	53	-132.9	-24.5	-157.4
San Jose (Altamont)	CR	15	79	48	-4.9	11.4	6.5
San Juan	HR	40	20	40	-156.7	-27.1	-183.9
Seattle	CR	38	61	93	-92.5	-7.6	-100
Seattle	SC	2	7	2	-7.7	-1.9	-9.6
Seattle	SC	2	12	2	-3.7	-2.2	-5.9
St. Louis	LR	56	32	72	-151.4	23.4	-127.9
Tampa	SC	4	11	4	-0.8	-1.3	-2.1
Washington	HR	810	43	1,385	-1,387.30	346.7	-1,040.60
Washington (MARC)	CR	109	94	410	-3	84.5	81.5
Washington (VRE)	CR	67	101	272	-39.6	20.2	-19.5

Source: Maximum cars in service and peak-hour riders per car from 2008 National Transit Database (Washington, Federal Transit Administration, 2009), "service" spreadsheet. Other columns calculated; see text for a detailed explanation. Data for Albuquerque estimated on the basis of information in Jim Scarantino, "Rail Runner 2008-2009 Losses Top \$19 Million," New Mexico Watchdog, December 13, 2009. [tinyurl.com/yb9ctb9](http://tinyurl.com/yb9ctb9).

Notes: Abbreviations stand for automated guideways (AG), cable car (CC), commuter rail (CR), heavy rail (HR), light rail (LR), and streetcar (SC). When compared with buses, few rail lines save enough money on operations to compensate for their high capital costs; some don't have any operational savings at all.

To offer equal frequencies, the table assumes that transit agencies would need at least as many buses as rail cars. Because buses are smaller than most rail cars, the table assumes agencies would need enough additional buses to ensure that average peak-hour loads are no more than 25 riders per bus. For example, Dallas light-rail cars carry an average of 50 riders during the morning peak period (which, in Dallas, is 6:00-9:00 a.m.). Although most transit buses can easily accommodate 50 riders, some trains will be even more crowded than the average peak-hour trains. So Table 4 assumes that Dallas would need twice as many buses as rail cars to provide equivalent service.

Table 4 assumes that transit agencies using automated guideways or streetcars could have instead used trolley-style buses that cost about \$100,000 each. Agencies using light or heavy rail could have used transit buses costing about \$400,000. Because commuter-rail trips tend to be longer than other transit trips, commuter-rail agencies would otherwise use long-distance coaches costing about \$500,000. To convert to an annualized cost, these capital costs are amortized over 12 years at 7 percent interest as specified by FTA guidelines.

Table 4 also assumes that each bus would operate as many miles per year as each rail car and that the buses would cost the 2008 national average of \$9.34 per vehicle mile to

operate. The last three columns in the table show the differences in annualized capital costs, operating costs, and the total of the two. Negative numbers indicate that buses save money over rail; positive numbers indicate that rail is less costly. For example, the table indicates that Portland's light-rail lines costs \$4.2 million per year less to operate than buses, but this savings hardly makes up for light rail's greater annualized capital costs of \$231 million.

Table 4 finds that no automated guideway, heavy-rail, light-rail, or streetcar line is more efficient than buses offering equivalent service. Many of these lines do not even offer any operational savings to offset rail's greater capital costs.

The only systems that might be cost-efficient relative to buses are commuter-rail lines. Yet the savings are marginal. Many commuter-rail agencies save money by contracting out operations to private operators such as First Transit or Veolia. On the other hand, transit agencies that contract out their bus operations spend only about two-thirds as much per vehicle mile as agencies that operate their own buses. A sensitivity test reveals that, if commuter agencies contracted out their bus operations at the national average of \$6.24 per vehicle revenue mile, those buses would cost less than rail in every case.

In a few cases, there may be logistical reasons why buses could not work as well as rail. Adding nearly 1,400 buses to the Washington Metro system would more than double the number of buses used on a typical weekday, and downtown streets might not be able to accommodate those buses at the speeds offered by Metro rail. The same might be true for the San Francisco Bay Area Rapid Transit (BART) system. In nearly all other cases, however, buses could easily provide equal service, especially if they can operate on high-occupancy vehicle or high-occupancy/toll lanes.

Rail advocates may respond that the number of buses indicated in Table 4 might provide the same frequency of service as the trains, but not at the same speeds, because buses, unlike trains, are subject to being caught in

traffic. In fact, rail lines are no speed demons: the average speed of a streetcar is less than 10 mph; the average speed of light rail is a little more than 20 mph; the average speed of heavy rail is about 30 mph; and the average speed of commuter trains is 30 to 40 mph.<sup>15</sup> Buses traveling on high-occupancy vehicle lanes can easily exceed those speeds.

Another argument made by rail advocates is that some people will ride trains but not buses. In fact, at least some researchers have concluded that transit ridership is more sensitive to frequencies and speed than to whether the vehicles run on rubber tires or steel wheels. "When quantifiable service characteristics such as travel time and cost are equal," says a paper in *Transport Policy Journal*, "there is no evident preference for rail travel over bus."<sup>16</sup>

This has been verified by transit agencies that have increased the frequencies and speeds of their bus services using bus-rapid transit, or buses running at the same frequencies and speeds as (or faster than) light rail. Kansas City bus-rapid transit achieved a 29 percent increase in weekday ridership over the slower, less-frequent bus service that preceded it, which is comparable to gains reported for new rail lines.<sup>17</sup> If it is true that a few people refuse to ride buses, it remains difficult to justify taxpayer subsidies to snobs.

## The Cable Car Test

Cable cars have several disadvantages compared with more modern technologies. Table 5 makes it clear why cable cars were so quickly replaced by electric streetcars (and, in turn, why streetcars were later replaced by buses): cable cars have by far the highest operating cost, per vehicle mile, of any land-based transit system in the United States.

In addition to high operating costs, San Francisco cable cars suffer from other significant disadvantages. For one, the top speed is just 9 mph, compared with top speeds (not average speeds) of 50 to 80 miles per hour for commuter-, heavy-, and light-rail lines. In addition, the cars have just 30 to 34 seats and room

While some people may prefer to ride trains instead of buses, it remains difficult to justify taxpayer subsidies to snobs.

**Table 5**  
**2008 Average Operating Costs Per Vehicle-Revenue Mile**

Automated Guideway	\$21.86
Bus (diesel or gas)	9.24
Bus (trolley)	19.07
Cable Car	107.31
Commuter Rail	13.91
Heavy Rail	9.35
Light Rail	14.53
Streetcar	16.94

Source: 2008 *National Transit Database* (Washington: Federal Transit Administration, 2009), "service" and "operating expense" spreadsheets.

for about another 20 standees compared with around 70 seats for light- and heavy-rail cars and more than 100 for many commuter-rail cars. Finally, all three cable car routes total just 4.4 miles long, far shorter than most other rail lines.

Given these inherent disadvantages, it seems reasonable that other rail transit lines should outperform cable cars. In particular, any rail transit line should be considered an outright failure unless

- fare revenues cover at least as high a share of operating costs as cable car fares;
- the average railcar carries at least as many patrons as the average cable car; and
- the rail line attracts at least as many weekday trips as cable cars.

In 2008, cable car fares covered 47.2 percent of operating costs. The average cable car carried 19.1 riders and on a typical weekday cable cars carried 20,530 trips. Given the cable cars' high operating costs, small capacities, and other disadvantages, any rail lines that cannot meet this three-part cable car test should be considered a clear waste of money, as it is likely that transit demand could easily have been satisfied with low-cost improvements in bus services.

Table 1 shows that only 14 out of 70 rail transit systems in the United States pass the

cable car test. Ten of these are older systems in Boston, New York, and Philadelphia. The remaining four are post-1970 rail systems: Los Angeles commuter trains, San Diego light rail, San Francisco BART, and Washington Metro-rail. All but three of the remaining 56 failed the fare ratio test. Of the remainder, Denver light rail failed the occupancy test; commuter trains between Indiana and Chicago failed the weekday ridership test; and Philadelphia commuter trains failed both.

For the 14 systems that passed the cable car test, this finding does not mean that those systems should be considered successful, but only that the other 56 lines are clearly not successful. The value of the 14 lines that pass the cable car test would depend on their capital costs and on whether the social benefits justify the capital and operating subsidies. A 2006 analysis by economists Clifford Winston and Vikram Maheshri found that the costs of all rail systems in the country except BART outweighed the social benefits.<sup>18</sup>

Some might say that the cable car test is unfair because San Francisco cable cars are mainly a tourist attraction. But many cities have built vintage streetcar lines as tourist attractions, and none of them pass the cable car test, suggesting that merely being a tourist attraction is not enough to succeed. Rail advocates might also argue that cable cars do well because they serve one of the most densely populated areas in the United

**Despite the high cost of operating cable cars, 80 percent of the nation's other rail transit lines do not perform as well as cable cars.**

States. But that is exactly the point: transportation systems work when they go where people want to go, not where planners would like people to go.

## The Economic Development Test

"New rail lines spur urban revival," proclaimed a recent headline in the *New York Times*.<sup>19</sup> Yet the three examples in the article belied the headline. One, in Columbus, Ohio, is in an area where no one expects a rail line will ever be built. The second, in Denver, is in an area where a rail line might be built more than a decade after the development took place. Only the third example (though the first listed in the article), in the Dallas suburb of Carrollton, involves an actual rail line, and it is doubtful that the rail line has contributed much to the town's development.

What all three examples have in common is not a rail line but subsidies, mostly in the form of tax-increment financing. The Columbus development, the *Times* disclosed, received \$800 million in subsidies.<sup>20</sup> The Denver development, the *Times* did not disclose, received nearly \$300 million in subsidies.<sup>21</sup> Meanwhile, the \$38 million Carrollton project, the *Times* similarly did not disclose, received \$13 million in subsidies. Ironically, much of this subsidy went to the construction of a six-story parking garage so that people can shop and work in the new development without having to take the light rail to get there.<sup>22</sup>

To support claims that rail lines spur economic development, rail advocates often cite every new building built anywhere near a rail line, even though most would have been built without the rail line.<sup>23</sup> Oregon, California, and other states have required that all state offices locate near rail lines; such relocations are then credited by rail planners as having been stimulated by development.

To support transit ridership, planners particularly favor *transit-oriented developments*, meaning relatively high-density projects that mix housing, retail shops, and office space.

While there is no central clearinghouse for transit-oriented development data, anecdotal evidence indicates that such developments are almost always subsidized using tax-increment financing or other support. For example, a Texas developer rejected the idea of building high-density, mixed-use developments in Houston after "we discovered the ones that were economically successful were the ones that had government help."<sup>24</sup> Developers in Portland, Oregon, built no new transit-oriented developments along the city's light-rail line until the city began subsidizing such developments 10 years after that line opened.<sup>25</sup> This suggests it is the subsidies, not the rail lines, that stimulate the development.

Even to the extent that rail transit increases property values along its route, for an urban region as a whole, this is a zero-sum game: increases along the route are offset by lower property values elsewhere. It may even be a negative-sum game if higher taxes and land-use regulation needed to support the rail lines discourage economic growth. A literature review commissioned by the FTA found that "urban rail transit investments rarely 'create' new growth." At most, they "redistribute growth that would have taken place without the investment." The main beneficiaries of this redistribution were downtown property owners, which explains why they tend to strongly support rail transit projects.<sup>26</sup>

## The Transportation Network Test

Rather than benefit the regions that build rail lines, rail transit places significant stress on those regions' transportation systems. There are four prominent forms of this stress:

**Transit Apartheid:** The massive investments required for rail transit usually serve a small share of the people in an urban area. Given limits on total transportation funding, spending a huge amount of money on a narrow segment of travel often leads to significant declines in the region's transportation network.

Subsidies to developers, not rail construction, have stimulated many of the developments along rail transit lines.

The general managers of six transit agencies all recently resigned in the face of controversies over their handling of rail systems.

Financial stresses created by the high cost of rail transit often lead transit agencies to raise fares and cut bus services, thus harming low-income families and other transit-dependent people. Rail transit is primarily aimed at getting middle- and high-income people out of their cars, not at providing better transport for people who cannot drive. As a result, many transit systems suffer from what Clark Atlanta University professor Robert Bullard—who is sometimes called the “father of environmental justice”—calls “transportation apartheid”: heavy subsidies to a few suburban transit users combined with deteriorating service to the inner-city neighborhoods where transit needs are greater.<sup>27</sup>

**The Peter Principle:** Planning, building, and managing rail transit requires a completely different set of skills than those needed for a bus system. As a result, many transit agencies that build new rail lines quickly display a level of incompetence they did not exhibit when running only buses, exhibited by large cost overruns, overestimated ridership projections, and other unforeseen problems related to building and managing rail lines.

Transit agencies can purchase buses more-or-less off the shelf and instantly reroute them in response to changing travel demands. Train cars are generally custom-made and rail lines require years to plan and build. While buses operate on a pay-as-you-go basis, most rail projects require agencies to go heavily into debt. While bus planners need do little more than look out the window to see where people want to go, rail planners must accurately project costs, ridership, fares, and tax revenues for decades in advance.

Brookings Institution scholar Clifford Winston tells the story of the Capital Centre, an entertainment and sports venue outside of Washington, D.C., that was so popular that Metro decided to build a rail line to serve it. “After decades of planning and delay,” says Winston, “Metro did open a rail station in 2005 at the site of the Capital Centre—which unfortunately had been demolished three years earlier.”<sup>28</sup>

The inability of rail planners to successfully predict the future is illustrated by the fact that studies from 1989 through 2007 have consistently found that rail construction costs average 40 percent over the original projections.<sup>29</sup> Although accuracy in cost projections would seem to be a requirement for projects that cost hundreds of millions or even billions of dollars, the accuracy of rail cost projections has not improved in at least two decades. Such inaccuracies have proven disastrous for transit systems all across the country.

The general managers of transit agencies that operate rail tend to be paid far more than those of bus-only agencies. Yet higher pay does not guarantee the skills needed to manage rail. The general managers of transit agencies in Austin, Denver, Norfolk, San Jose, St. Louis, and Washington all recently resigned in the face of controversies over their handling of the rail systems.<sup>30</sup>

**Land-Use Czars:** Given that planners cannot predict where people will want to travel 10 or more years from now, rail transit agencies try to become land-use czars, demanding that cities use prescriptive zoning and various subsidies to force and/or entice people to live and work near rail stations. Such transit-oriented land-use plans intrude into private property rights and impose high costs on taxpayers and homebuyers. Yet some researchers have found that this policy is “not very effective in increasing primary reliance on mass transit for commuting.”<sup>31</sup>

The fundamental problem with rail transit, other than its high cost, is that it makes no sense in today’s decentralized world. With the possible exception of Manhattan, Americans do not live or work in environments dense enough to need any higher capacity transit than buses. Not only are most people spread out in single-family homes, jobs are so spread out that less than 10 percent are in central city downtowns and only another 20 to 30 percent are in suburban downtowns or other major job centers.<sup>32</sup>

To make rail transit work, many transit agencies work with metropolitan planning

organizations to fundamentally transform how Americans live and work. They want people to live in higher-density, mixed-use developments, often called transit-oriented developments (TODs). Yet most Americans don't want to live that way: surveys consistently show (and people's behavior confirms) that the vast majority of people aspire to live in a single-family homes with large yards.<sup>33</sup>

Transit planners use a combination of coercion and incentives to alter people's behavior. The coercion includes urban-growth boundaries that drive up the cost of land to persuade more people to live in multi-family housing or, at least, single-family homes on small lots. This is combined with minimum-density zoning that prevents people from building single-family homes or other low-density structures near rail stations.

Incentives include tax breaks, below-market land sales, and direct subsidies to developers who build high-density housing near transit stops. One recent study found that at least two-thirds of rail transit-oriented developments have received subsidies of some sort and well over half the developers benefited from capital funding or below-market land sales by local governments.<sup>34</sup>

Comparing Tables 2 and 3 with Table 6 reveals that nearly all of the regions where rail transit has contributed to increased transit ridership have supplemented that transit with strict land-use rules. This suggests that so-called smart growth—transit improvements combined with land-use rules aimed at promoting transit—actually works—but only to a limited degree and at high costs, including forcing people to live in homes they do not prefer, reduced housing affordability, increased congestion; lost property rights, and higher taxes and/or reductions in other essential urban services such as fire, police, and schools to support rail lines and transit-oriented developments.

**Crumbling Rail Infrastructure:** Since the onset of the recession in late 2008, most transit agencies have been facing serious financial problems due to declining tax revenues. But many agencies with older rail transit systems

were suffering continuing financial crises throughout the booming 1990s and early 2000s. The high cost of maintaining rail transit is the major reason for these perpetual crises.

A recent FTA assessment of transit systems in Boston, Chicago, New York, Philadelphia, San Francisco, and Washington found that more than a third of the rail lines "are in either marginal or poor condition, implying that these assets are near or have already exceeded their expected useful life." By comparison, less than 20 percent of the assets owned by other transit agencies were in such poor condition.<sup>35</sup>

The FTA estimated that bringing these lines to a "state of good repair" would cost nearly \$50 billion. Yet the regions studied were not even spending enough to maintain the existing state of repair, much less address the backlog.<sup>36</sup> Unfortunately, the report did not break down its findings by transit agency or urban area. But it did indicate that nearly 75 percent of the backlog was for heavy rail (subways and elevateds), 18 percent for commuter rail, and just over 1 percent for light rail. Although the agencies reviewed collectively operate about a fifth of all transit buses in the nation, less than 6 percent of the backlog was for buses.<sup>37</sup>

How much should transit agencies expect to spend maintaining existing transit lines once the patina of newness rubs off? An approximate answer to this question can be gained by examining how much the agencies are actually spending and keeping in mind that the FTA estimates that they need to spend about 10 percent more just to maintain their existing condition.<sup>38</sup> The FTA's National Transit Database counts maintenance and rehabilitation as capital costs. The capital costs of agencies that have built little or no new track are presumably all for rehabilitation.

- Between 1992 and 2008, Chicago annually spent around \$250,000 per mile (adjusted for inflation to 2008 dollars); Boston spent more than \$300,000 per mile; and New York spent \$500,000 per mile on their commuter-rail lines.

**Despite historic subsidies, more than a third of the rail lines in six major cities are in marginal or poor condition due to inadequate maintenance.**



**Table 6**  
**Stresses Placed on Transportation Systems by Rail Transit**

	Modes	Transit Apartheid	Peter Principle	Land-Use Czars	Crumbling Infrastructure
Albuquerque	CR				
Atlanta	HR	X	X		
Austin	CR		X		
Baltimore	HR, LR		X		
Boston	CR, HR, LR			X	X
Buffalo	LR		X		
Charlotte	LR		X		
Chicago	CR, HR	X			X
Cleveland	HR, LR				
Dallas-Ft. Worth	CR, LR		X		
Denver	LR		X	X	
Detroit	AG		X		
Houston	LR	X	X		
Jacksonville	AG		X		
Kenosha	SC				
Little Rock	SC				
Los Angeles	CR, HR, LR	X	X		
Memphis	SC				
Miami	AG, HR		X		
Minneapolis	LR		X	X	
Nashville	CR		X		
New Orleans	SC	X			
New York	CR, HR, LR		X		X
Norfolk	LR		X		
Philadelphia	CR, HR, LR				X
Phoenix	LR		X		
Pittsburgh	LR		X		
Portland	CR, LR		X	X	
Sacramento	LR		X	X	
Salt Lake City	CR, LR				
San Diego	CR, LR			X	
San Francisco	CR, HR, LR	X	X	X	
San Jose	CR, LR		X	X	
San Juan	HR		X		
Seattle	CR, LR		X	X	
St. Louis	LR		X		
Tampa	SC				
Washington	CR, HR	X			X

Notes: Abbreviations stand for automated guideways (AG), cable car (CC), commuter rail (CR), heavy rail (HR), light rail (LR), and streetcar (SC). "Transit apartheid" refers to regions where investments in rail transit led to reduced transit service to low-income neighborhoods; "Peter Principle" refers to transit systems that have suffered large cost overruns or ridership shortfalls; "Land-Use Czars" refers to regions that have tried to boost rail ridership by imposing draconian land-use rules; and "Crumbling Infrastructure" refers to rail systems that have fallen into a state of poor repair due to deferred maintenance.

- Philadelphia spent close to \$250,000 per mile, Boston spent nearly \$1 million per mile, and Pittsburgh more than \$1 million per mile on light-rail lines.
- Boston and Chicago spent \$1.2 million per mile, Philadelphia \$1.7 million, and New York \$2.2 million per mile on their subway and elevated rail lines.

This suggests that spending anything less than an average of \$0.5 million per mile per year on commuter rail, \$1 million per mile each year on light rail, and \$2 million per mile per year on subways and elevateds will be inadequate to maintain systems after they reach 30 years old.

Table 6 shows the regions where each of these stresses is most serious. See Appendix D for a region-by-region discussion of rail systems and the stresses they have placed on regional transportation networks.

## Federal Incentives for Rail Transit

If rail transit is so unsuccessful, then why do so many cities want to build it? One reason is standard public-choice theory: a few powerful groups, notably rail contractors and downtown property owners, get enormous profits while everyone else pays a relatively small amount in their taxes. But this can be true for just about any public works project. What has made rail transit special is a number of incentives in federal transportation programs that reward transit agencies for selecting high-cost transit systems rather than more affordable buses.

When the federal government began funding urban transit in 1964, only about 10 American urban areas still had some form of rail transit. That number has nearly quadrupled today, and one major reason for this is incentives for rail construction built into federal funding formulas.

- First, a majority of federal transit funds are dedicated to regions with rail transit,

while the remainder is divided among cities with bus transit, whether or not they have rail transit. To be eligible for the larger pot of money, transit agencies need to build their own rail lines.

- Second, in 1973 Congress allowed cities to cancel planned urban interstate freeways and apply the federal funds to transit capital improvements. Since few cities had enough money to operate all of the buses that they could purchase with the funds released by not building an interstate freeway, Portland, Oregon; Sacramento, California; and other cities chose rail transit as a high-cost solution that could absorb lots of federal capital dollars without imposing high operating costs. While this law was repealed in 1982, it kick-started the light-rail construction boom that has now reached at least two dozen urban areas.
- Third, other federal transit funds are also mostly dedicated to capital improvements, with only about 20 percent going for operating costs. Since the ratio of capital costs to operating costs for buses is about 1 to 4, while for rail it is closer to 4 to 1, the 4-to-1 division of federal capital and operating funds fits rail better than buses.<sup>39</sup>
- Fourth, since 1991 federal funds for new rail construction have been in an "open bucket," which means the cities that propose the most expensive transit projects get the most money. Most other transportation funds are distributed using formulas based on population or similar state and local attributes. The open bucket promotes wasteful rail projects where buses would work as well or better at a far lower cost.
- Fifth, as previously noted, federal law requires regions to return any federal grants spent on cancelled transit projects. This makes it less expensive to claim a project is a success than to admit it is a failure.
- Finally, federal law requires transit agencies to obtain the approval of transit

**Federal funds for rail construction are an "open bucket," which means the cities that ask for the most wasteful projects are likely to get the biggest grants.**

Congress should stop funding rail rehabilitation, giving transit agencies a choice between locally funding rail maintenance or shutting down rail lines as they wear out.

unions for any grant applications submitted to the federal government. While the unions are not necessarily biased in favor of rail, they tend to prefer high-cost solutions over transit options that could move more people at a lower cost.

Until these incentives are changed, American cities and urban areas will continue to promote rail transit despite its high costs and negligible benefits.

## Conclusions

Since around 1970, the modern rail transit boom has led American cities to spend close to \$100 billion building, and billions more operating, new rail transit lines. This analysis indicates that these new lines almost always waste taxpayer dollars. Instead of providing cost-effective transportation, rail transit mainly transfers wealth from taxpayers to rail contractors, downtown property owners, and a few transit riders who prefer trains to buses.

Most of the few rail regions that enjoyed increases in per-capita ridership or transit's share of commuting supplemented rail construction with strict land-use rules that reduce housing affordability; transportation plans that deliberately increase congestion to discourage driving; and subsidies to high-density transit-oriented developments along the rail lines. The costs of these policies are high and benefits negligible.

By almost any objective criteria—profitability, ridership, cost-efficiency, the Cable-Car Test, economic development, and the effect of rail transit on a region's transportation system as a whole—few American rail transit systems make sense. Congress should correct the perverse incentives that encourage transit agencies to choose high-cost solutions to transit problems. Transit agencies should stop building rail transit. With the possible exception of a few subway and commuter-rail lines in New York and one or two other major cities, agencies should make plans to shut down existing

systems when they are worn out and would otherwise require expensive rehabilitation. Those exceptions should be maintained only if they can be locally funded, preferably out of user fees and not general taxes.

## Appendix A: Nomenclature and History

Federal Transit Administration data distinguish six kinds of rail transit:

- *Automated guideways*, sometimes called "people movers," run, as the name implies, without a human operator. They are popular in large airports where they often provide the only public conveyance between terminals. Several cities, including Detroit; Irving, Texas; Jacksonville, Florida; and Miami, have elevated automated guideways in their downtowns. The FTA also classifies the privately financed Las Vegas monorail as an automated guideway.
- *Cable cars* are mechanically powered by a cable in the ground. Though once found in 30 American cities, the only remaining cable cars are in San Francisco.
- *Commuter rail* usually operates on tracks shared with freight trains and consists of unpowered passenger cars hauled by a diesel or electric locomotive.
- *Heavy rail* includes subways and elevators and is distinguished from light rail and commuter rail in having its own exclusive right-of-way, never intersecting with auto or pedestrian traffic.
- *Light rail* sometimes operates in streets and sometimes on its own right of way.
- *Monorail* is a form of elevated transportation. As the FTA defines it, the only monorail in the United States is the Seattle monorail built as a tourist attraction for the 1962 World's Fair.

The terms "heavy" and "light" refer to capacities, not weight: Heavy-capacity rail operates exclusively in its own right of way, so

train length is limited only by station platform size—usually eight or ten cars long—and trains can carry up to 2,000 people. Since light-capacity rail sometimes runs in city streets, trains cannot be longer than a city block, which in most cases means a typical light-rail train cannot carry much more than about 500 people.

The FTA counts all electric streetcars as a form of light rail, but this paper distinguishes between the two. As used in this paper, "light rail" refers to vehicles that are around 100 feet long and can be operated in trains of two to four cars, while "streetcar" means shorter routes using smaller vehicles operated one at a time. *Vintage streetcars* are older or "old-fashioned style" cars designed mainly for tourists, while *modern streetcars* have been built mainly for residents of trendy districts (or districts that planners hope will become trendy).

In 1910, close to 800 American cities had streetcars. Many of these lines were built as real estate promotions: developers paid for the cost of construction in order to attract homebuyers who would have otherwise considered the developments to be too far from job centers. While transit fares covered the costs of operating the lines, the fares were often not enough to pay the capital costs—which meant the lines failed to build reserves to cover the cost of reconstructing the lines when rails and equipment wore out.

Subways and elevateds were found in only the largest cities, including New York, Boston, Philadelphia, and Chicago. What is now called light-rail technology—cars around 100 feet long that could be operated in trains of several cars—were first used in 1937 to connect Berkeley and Oakland with San Francisco across the then-new Bay Bridge.

In the 1920s, competition from the automobile reduced transit profitability and nearly halted the growth of rail systems. When faced with the cost of building new rail lines or replacing aging rail infrastructure, most transit managers realized that buses that shared the costs of roads with autos were far more economical, and they steadily replaced streetcar lines with buses from the

1920s through the 1960s. After 1930, the only new rail transit construction was undertaken by government agencies.

By 1966, only eight American cities still had some form of rail transit. Yet San Francisco had begun building the Bay Area Rapid Transit system. Opened in 1972, BART has been a failure by any objective measure. It cost 50 percent more than anticipated and attracted only half the projected riders. Planners initially projected that fares would cover all of BART's operating costs and some of its capital costs. Instead, fares covered well under half of operating costs. Yet, "as a public relations enterprise," observes University of California transportation analyst Melvin Webber, it was an "unquestionable success." As a result, Webber warned, BART could "become the first of a series of multi-billion-dollar mistakes scattered from one end of the continent to the other."<sup>40</sup>

Webber's fears proved correct. In the 1970s, the federal government subsidized BART-like heavy-rail lines in Atlanta and Washington. In the 1980s, Baltimore and Miami also built heavy-rail lines; San Diego, Portland, San Jose, Buffalo, and Sacramento built light-rail lines; and Detroit, Jacksonville, Miami, and Tampa built automated guideways.

Downtown automated guideways were so unsuccessful that Tampa dismantled its people mover in 2000, and the one in Irving operates only during lunch hours.<sup>41</sup> Heavy rail also proved to be far too expensive for cities that did not have extremely dense job centers. So most new rail construction in the 1990s and 2000s was light rail, which costs about half as much per mile as elevateds and as little as one-tenth as much as subways. The 1990s also saw new commuter-rail lines open in Dallas-Ft. Worth, Los Angeles, the San Francisco Bay Area, Seattle, and the Maryland and Virginia suburbs of Washington, followed by lines in Nashville; Portland, Maine; Portland, Oregon; and Salt Lake City in the 2000s. At the end of 2009, rail transit lines were operating or under construction in about three dozen American urban areas, and dozens more were considering rail transit proposals.

**BART was a disaster for Bay Area transit, but it was a public-relations success, leading other cities to want their own "multi-billion-dollar mistakes."**

About every  
30 years,  
rail cars, track,  
and other rail  
infrastructure  
must be  
completely  
replaced.

## Appendix B: Data Sources

Most of the data in this report come from the Department of Transportation and the Census Bureau. Since 1960, the Census Bureau has gathered information about how commuters get to work in each decennial census and, since 2000, in the annual American Community Survey. Data for 1990, 2000, and the years since 2000 are downloadable from the Census Bureau's website.<sup>42</sup> Unless otherwise noted, census data in this report are for urbanized areas, not cities or metropolitan statistical areas. These census data are used to estimate the share of a region's commuters who use transit to get to work.

The Federal Transit Administration publishes the National Transit Database each year. This database includes information on ridership, passenger miles, operating and capital costs, fares, vehicle miles, vehicle rosters, energy consumption, and other pertinent transit data for every transit agency and mode of transit. Downloadable data are available back to 1991 (1992 for capital cost data) at the National Transit Database website.<sup>43</sup> Except for capital cost data, most of the data are available in published form dating back to 1982.

To compare transit's share of total travel, as opposed to just commuter travel, passenger miles in the National Transit Database can be compared with vehicle miles traveled in each urban area published in *Highway Statistics* by the Federal Highway Administration. Table HM-72 lists daily vehicle miles traveled in each urban area.<sup>44</sup> This is multiplied by 365 to convert to annual vehicle miles and—based on Department of Transportation surveys—by 1.6 to convert to passenger miles.<sup>45</sup>

## Appendix C: Calculating Capital and Maintenance Costs

Comparing a system's revenue from transit fares to operating costs for a given year is rela-

tively straightforward. However, comparing revenue to total system cost—both operating and capital—is much more difficult. Rail transit projects have huge up-front capital costs, but after new rail lines begin operating, annual capital costs are low. About every 30 years, rail cars, track, and other rail infrastructure must be completely replaced. From a strict accounting point of view, this is a maintenance cost, but the Federal Transit Administration includes such costs with capital costs.

For transit systems that are largely more than 40 years old, such capital and maintenance costs can fluctuate tremendously from year to year. The FTA has published capital cost data by transit agency and mode for each year from 1992 through 2008. The average of these costs, after adjusting for inflation using gross domestic product price deflators, is used here as an estimate of annual capital/maintenance costs that can be counted against 2008 transit fares and other benefits in Table 1.<sup>46</sup> (In many cases, this is an underestimate as many lines suffer from deferred maintenance.)

For rail transit lines that opened since 1970, actual capital costs are available from a variety of published sources (Table C-1). These numbers are adjusted for inflation to 2009 dollars using GDP deflators.

To compare with annual data, FTA guidelines specify that capital expenses be amortized at a 7 percent discount rate over the useful life of the improvements. The FTA further specifies that rail structures, track, and signals have a useful life of 30 years, parking lots and grade crossings have a useful life of 20 years, rail cars and locomotives have a useful life of 25 years, and right of way has a useful life of 100 years.<sup>47</sup> Because none of the available sources have broken down costs into these categories, this paper amortizes all capital costs over 30 years.

As Table C-1 shows, construction of new rail transit lines—those opened for service after 1970—collectively cost American cities more than \$90 billion (in 2009 dollars). All of those lines combined carried less than 40 percent as many passenger trips in 2008 as the

New York City subway, yet their operating losses were 75 percent greater: \$1.68 billion for new lines vs. \$944 million for the New York subway.<sup>48</sup>

**Table C-1**  
New Rail Transit Capital Costs in Millions of 2009 Dollars

Urban Area	Mode	Capital Cost (\$millions)	Annualized	Miles	Cost per Mile (\$millions)	Source
Albuquerque	CR	400	31.6	97.0	4	MRCOG [v]
Atlanta	HR	4,187	334.2	51.9	81	Baum-Snow [ix], <i>New Starts</i>
Baltimore	HR	2,706	216.0	17.0	159	Baum-Snow, Kozel [x]
Baltimore	LR	760	60.7	28.8	26	Baum-Snow
Boston-Portland ME	CR	5	0.4	57.0	0	NTD [vi]
Buffalo	LR	1,240	99.0	7.1	176	Baum-Snow
Charlotte	LR	472	37.7	4.7	100	NTD
Dallas	LR	3,560	284.2	49.2	72	NTD
Dallas-Ft. Worth (Irving)	AG	74	5.9	5.5	13	Panayotova [i]
Dallas-Ft. Worth	CR	544	43.4	23.8	23	NTD
Denver	LR	1,523	121.6	36.2	42	Baum-Snow, RTD
Detroit	AG	360	28.7	2.9	124	<i>Washington Post</i> [ii]
Houston	LR	434	34.7	9.1	48	NTD
Jacksonville	AG	236	18.8	5.4	44	<i>Florida Times-Union</i> [iii]
Kenosha	SC	2	0.2	1.9	1	NTD
Little Rock	SC	35	2.8	3.5	10	NTD
Los Angeles	CR	1,574	125.7	327.9	5	NTD
Los Angeles	HR	7,801	622.8	17.1	458	Baum-Snow
Los Angeles	LR	4,472	357.0	58.2	77	Baum-Snow, <i>New Starts</i> [xiv]
Memphis	SC	129	10.3	10.5	12	NTD
Miami	AG	608	48.5	9.4	65	Miami-Dade Transit [iv]
Miami	CR	857	68.4	76.1	11	NTD
Miami	HR	2,008	160.3	28.0	72	Miami-Dade Transit
Minneapolis	LR	701	56.0	13.3	53	NTD
Nashville	CR	43	3.4	16.5	3	Metro Jacksonville [vii]
New York (Hudson-Bergen)	LR	1,394	111.3	7.0	201	Dantata [xv]
Philadelphia (River Line)	LR	1,288	102.8	34.0	38	<i>New York Times</i> [xvi]
Phoenix	LR	1,476	117.8	19.6	75	NTD
Portland	CR	172	13.8	14.7	12	<i>Tigard Times</i> [viii]
Portland	LR	2,970	237.1	48.0	62	Pickrell [xvii], NTD
Portland	SC	122	9.7	3.9	31	City of Portland [xx]
Sacramento	LR	1,084	86.5	36.6	30	Pickrell, NTD
Salt Lake City	CR	758	60.5	26.1	29	NTD
Salt Lake City	LR	1,112	88.8	20.1	55	NTD

*Continued next page*

Table C-1 Continued

Urban Area	Mode	Capital Cost (\$millions)	Annualized	Miles	Cost per Mile (\$millions)	Source
San Diego	CR	433	34.6	48.9	9	NTD
San Diego	LR	1,846	147.4	51.3	36	Baum-Snow, <i>New Starts</i> [xviii]
San Diego (North County)	LR	315	25.1	16.3	19	NTD
San Francisco	HR	13,279	1,060.2	133.8	99	Webber [xi], NTD
San Jose	CR	98	7.8	45.0	2	NTD
San Jose	LR	1,698	135.5	39.8	43	Baum-Snow
San Juan	HR	1,988	158.7	12.8	156	New Starts [xii]
Seattle	CR	1,230	98.2	70.4	17	NTD
Seattle	LR	2,866	228.8	13.9	206	NTD
Seattle	SC	46	3.7	2.6	18	NTD
St. Louis	LR	1,940	154.9	48.2	40	Baum-Snow, <i>Post-Dispatch</i> [xix]
Tacoma	SC	97	7.7	2.7	36	<i>Tacoma News-Tribune</i> [xxi]
Tampa	SC	10	0.8	3.2	3	NTD
Washington	HR	18,232	1,455.6	106.3	172	NTD, FTA [xiii]
Washington MARC	CR	707	56.4	235.5	3	NTD
Washington VRE	CR	354	28.3	80.8	4	NTD
National total/average	AG	1,278	102.0	23.2	55	
National total/average	CR	7,174	572.5	1119.5	7	
National total/average	HR	50,201	4,007.8	366.7	137	
National total/average	LR	31,151	2,487.0	541.0	58	
National total/average	SC	441	35.2	28.3	16	
National total/average	All	90,246	7,205.5	2078.7	45	

Sources: [i] Tzvetia Panayotova, "People Movers: Systems and Case Studies," University of Florida, 2003, p. 9, [tinyurl.com/yaudd5e](http://tinyurl.com/yaudd5e); [ii] "Detroit Transit System Finally Moving People," *Washington Post*, August 1, 1987, [tinyurl.com/ycczqyx](http://tinyurl.com/ycczqyx); [iii] David Bauerlein, "Final Part of Skyway to Open Wednesday," *Florida Times-Union*, October 27, 2000, [tinyurl.com/ydunj3t](http://tinyurl.com/ydunj3t); [iv] "Facts at a Glance," Miami-Dade Transit, 2009, [tinyurl.com/y9jb554](http://tinyurl.com/y9jb554); [v] "Project Plans—Funding," Mid-Region Council of Governments, Albuquerque, 2009, [tinyurl.com/ywmap8](http://tinyurl.com/ywmap8); [vi] *National Transit Database Historical Datafiles* (Washington: Federal Transit Administration, 2009), "Capital Expenditures Time-Series" spreadsheet, [tinyurl.com/yhubppv](http://tinyurl.com/yhubppv); *2008 National Transit Database* (Washington: Federal Transit Administration, 2009), "capital expense" spreadsheet, [tinyurl.com/yeuucn8](http://tinyurl.com/yeuucn8); [vii] "Rail on a Budget: Nashville's Music City Star," Metro Jacksonville, September 18, 2007, [tinyurl.com/nwk296](http://tinyurl.com/nwk296); [viii] "TriMet Adds 'New' Rail Cars to Backup WES," *Tigard Times*, October 29, 2009, [tinyurl.com/yklsrbo](http://tinyurl.com/yklsrbo); [ix] Nathaniel Baum-Snow and Matthew E. Kahn, "Effects of Urban Rail Transit Expansions: Evidence from Sixteen Cities, 1970-2000," *Brookings-Wharton Papers on Urban Affairs*, 2005, no. 6, pp. 147–206, [tinyurl.com/ykxbw3j](http://tinyurl.com/ykxbw3j); [x] Scott Koziel, "Baltimore Metro Subway," *Roads to the Future*, 1997, [tinyurl.com/yaw2m4f](http://tinyurl.com/yaw2m4f); [xi] Melvin M. Webber, "The BART Experience—What Have We Learned?" Institute of Transportation Studies Monograph No. 26, 1976, Berkeley, CA, p. 35, [tinyurl.com/ydrtwvjp](http://tinyurl.com/ydrtwvjp); [xii] *Annual Report on New Starts 2005* (Washington: Federal Transit Administration, 2003), Appendix A, "Tren Urbano," p. 2, [tinyurl.com/yb2xjrj](http://tinyurl.com/yb2xjrj); [xiii] "FY 2000 Statistical Summary," Federal Transit Administration, 2001, [tinyurl.com/ya5y55b](http://tinyurl.com/ya5y55b); [xiv] *Annual Report on New Starts 2008* (Washington: Federal Transit Administration, 2006), Appendix A, "Metro Gold Line Eastside Extension," p. 2; [xv] Nasiru A. Dantata, Ali Touran, and Donald C. Schneck, "Trends in U.S. Rail Transit Project Cost Overrun," paper presented to the Transportation Research Board, 2006, table 2, [tinyurl.com/34g9rd](http://tinyurl.com/34g9rd); [xvi] Robert Strauss, "The Twenty-First Century Unlimited," *New York Times*, November 21, 2004, [tinyurl.com/ya364xe](http://tinyurl.com/ya364xe); [xvii] Don Pickrell, "Urban Rail Transit Projects: Forecast Versus Actual Ridership and Costs," Department of Transportation, Cambridge, MA, 1989, p. xv; [xviii] *Annual Report on New Starts 2005* (Washington: Federal Transit Administration, 2003), Appendix A, "Mission Valley East Extension," p. 2, [tinyurl.com/y8rhkgt](http://tinyurl.com/y8rhkgt); [xix] Elisa Crouch, "MetroLink Expansion: Can We Afford the Ride?" *St. Louis Post-Dispatch*, August 24, 2006, [tinyurl.com/y9miqpm](http://tinyurl.com/y9miqpm); [xx] "Portland Streetcar Development Oriented Transit," City of Portland, 2008, p. 7, [tinyurl.com/ye38dkr](http://tinyurl.com/ye38dkr); [xxi] Aaron Corvin, "Streetcar Debut Stirrs Memories of Early Rail Transit in Tacoma," *Tacoma News-Tribune*, August 22, 2003.

Note: Since 1960, American cities have spent \$90 billion building 2,000 miles of new rail transit lines.

## Appendix D: Rail Systems by Region

The following is a brief description of the rail systems in the 31 urban areas that have or are about to open commuter-, heavy-, and light-rail lines. Most people movers and streetcars are not discussed as they contribute little to personal mobility.

**Albuquerque:** The state of New Mexico and Albuquerque's metropolitan planning organization started a commuter-rail line in 2006 and extended it to Santa Fe in 2008. Start-up costs were \$400 million and annual operating deficits are close to \$20 million per year. This line received no Federal Transit Administration capital grants, so it does not appear in the National Transit Database. The trains carry less than 2,500 round trips per day, meaning a fleet of no more than two dozen buses costing less than \$12 million could carry all those riders.

**Atlanta:** Built at around the same time and using similar technology to the Washington Metro rail system, Atlanta's rail network has been a miserable failure. First opened in 1979, ridership peaked in 1985 and then stagnated despite a rapidly growing population. From 1985 to 2008 per capita ridership fell by more than 50 percent.

Transit apartheid is a major reason for this decline. The high cost of building rail to Atlanta's middle-class suburbs led the Metropolitan Atlanta Transit Authority to triple inflation-adjusted fares since 1980, while it cut bus service to low-income, inner-city neighborhoods that provide the core of transit patronage. Budget shortfalls in 2005 forced MARTA to reduce bus service by 15 percent—but it increased rail service by 4 percent. From 1985 through 2008, the population of the Atlanta urbanized area grew by 121 percent and MARTA increased rail service by 138 percent despite its low ridership. But it increased bus service by only 8 percent.<sup>49</sup>

**Austin:** Austin's Capital Metro promised to open a commuter-rail line in the spring of 2008. In a clear case of the Peter Principle, that

opening has been delayed nearly two years due to poor planning, construction delays, safety problems, and disputes with its contractors. "We moved one station three times and we relocated another station twice," admitted the transit agency's CEO, Fred Gilliam.<sup>50</sup> Gilliam later resigned in disgrace and the rail line is still not operating.<sup>51</sup>

"By its own admission," writes reporter Ben Wear of the *American Statesman*, Capital Metro "didn't know when it asked voters in 2004 for permission to build the 32-mile line how complex an undertaking it faced, or the full scope of the project, or the work and time required to fix glitches and malfunctions that would arise along the way."<sup>52</sup> As of the end of 2008, the line was already more than 15 percent over budget, and the cost is likely to go much higher before it is completed.<sup>53</sup>

In 2002, Capital Metro had \$200 million in the bank, as the sales taxes it collected were more than it needed to operate its bus system. To "protect" itself from politicians who might raid its cash horde or reduce its tax rate, the agency decided to build a rail line. Now, having gone over budget and not yet collected a single rail fare, it is "nearly tapped out financially and struggling to get a commuter-rail line out of the station."<sup>54</sup>

**Baltimore:** Baltimore's efforts to build rail are a clear case of the Peter Principle. In 1984, the city opened a subway/elevated line that went 60 percent over budget.<sup>55</sup> In 1992, it opened the first stage of a light-rail line, parts of which went at least 40 percent over budget.<sup>56</sup> These lines greatly added to the costs of operating Baltimore transit. In 1982, Baltimore spent \$180 million (in 2008 dollars) operating its bus system.<sup>57</sup> By 2008, it spent nearly \$290 million operating its buses plus another \$92 million operating its rail lines.<sup>58</sup>

Yet rail transit did nothing for transit ridership. In 1982, as subway construction began, Baltimore buses carried more than 122 million passenger trips. By 1985, the first full year of subway operation, bus and rail ridership together had fallen below 108 million trips. In 1993, the first full year of light-rail operation, ridership was less than 101 million trips. Since

**Austin's transit agency spent hundreds of millions of dollars on a rail line mainly to protect its now-exhausted reserve fund from being raided by other government entities.**



Though it continues to expand its rail system, Boston's transit agency can't even afford to pay for repairs of existing lines that are vital to public safety.

then, despite construction of 46 more miles of light-rail and subway lines, ridership has hovered around 100 million trips per year.<sup>59</sup>

**Boston:** Of cities with older rail systems, Boston has had the largest growth in transit usage over the past 25 years, reporting a 40 percent increase in ridership. However, it also is one of the biggest examples of crumbling infrastructure. "The Massachusetts Bay Transportation Authority (MBTA) is in danger of collapsing under its own operating expenses and debt obligations, to the point that it can't even pay for repairs that are vital to basic safety," reported the *Boston Globe* in November, 2009.<sup>60</sup>

Until 2000, the state funded the MBTA's deficits each year. To give transit officials an incentive to control costs, the 1999 legislature dedicated a 1 percent sales tax to the MBTA. But, instead of controlling costs, a 2009 assessment found that costs grew by 5 percent per year, while sales taxes fell \$20 to \$40 million short of expectations each year after 2004.<sup>61</sup>

As a result, the MBTA allowed the system to fall into greater disrepair. Between 2004 and 2009, the backlog of projects needed to restore the system to a "state of good repair" grew from \$2.7 to \$3.2 billion and many projects critical to safety were left unfunded. Just to keep the system in its existing state of repair, D'Alessandro found, the agency would have to spend \$224 million more per year on maintenance than it actually spends.<sup>62</sup>

MBTA also dealt with rising costs by restructuring its debt. However, its total debt grew from \$5.6 billion in 2001 to \$8.5 billion in 2009.<sup>63</sup> In 2009, the agency spent \$245 million, or 17 percent of its total revenues, on interest alone.<sup>64</sup> The 2009 state review concluded that MBTA should "slow expansion until the safety and maintenance priorities can be addressed." As the report said, "It makes little sense to continue expanding the system when the MBTA cannot maintain the existing one."<sup>65</sup>

**Buffalo:** In another illustration of the Peter Principle, Buffalo's light rail cost 50 percent more than projected.<sup>66</sup> After it opened, transit ridership immediately dropped by

about 15 percent, and continued to fall thereafter.<sup>67</sup> Far from revitalizing downtown, as planners hoped, light rail on Main Street has corresponded with a further decline in downtown businesses: vacancy rates increased 27 percent and property values declined 48 percent.<sup>68</sup>

**Charlotte:** The Charlotte Area Transit System opened a light-rail line in late 2007 that cost more than \$470 million, about 60 percent more than initial projections.<sup>69</sup> The system's 2008 transit ridership grew by about 10 percent, but that may have been as much due to high gas prices as to the light-rail line. It is too soon to tell how well the line will work in the long run.

**Chicago:** The Windy City's transit infrastructure is in worse condition than Boston's. Rail lines operated by the Chicago Transit Authority are in such poor condition that the agency is forced to run some trains at just 6 miles per hour to maintain safety. The agency says it needs \$8.7 billion to bring its tracks and trains into a state of good repair, but it doesn't even have the money to maintain the tracks in their existing poor condition.<sup>70</sup> According to the agency's most recent review, 42 percent of CTA's bridges and 70 percent of Chicago's commuter-rail bridges are "past their useful life," meaning repairs are no longer cost effective.<sup>71</sup> One factor making maintenance difficult is the agency's \$2.6 billion worth of debt; interest payments alone cost \$176 million a year.<sup>72</sup>

Despite the region's population growth, Chicago transit ridership has fallen since the 1980s. The entire decline has been in bus ridership as Chicago cannibalized its bus service to maintain rail. In 2008, the Chicago Transit Authority ran its buses 9 percent fewer miles than in 1983, contributing to a 35 percent decline in bus ridership. While rail ridership grew by 33 percent in that period, since there were more than twice as many bus as rail riders in 1983, the net result has been a 15 percent loss in overall transit ridership.

In an example of transit apartheid, as CTA's infrastructure crumbles, its sister agency Metra has doubled the region's com-

muter-rail service since 1983. But in attempting to serve suburban commuters, Chicago sacrificed its core market of inner-city bus riders, gaining 20 million commuter-rail trips but losing 180 million bus trips.

The effort to attract suburban commuters out of their cars was only minimally successful. The 2000 census revealed that the Chicago urban area gained more than 500,000 new commuters since 1990, but it had lost 31,000 transit commuters. This is because virtually all of the new jobs were in the suburbs, where transit is ineffective, while the number of inner-city jobs and inner-city commuters taking transit to work both declined.<sup>73</sup>

**Cleveland:** Cleveland still had a few street-car lines when the city-owned Cleveland Transit System opened the nation's first post-war rail transit line in 1955. In the last two decades, the Greater Cleveland Regional Transit Authority has invested close to \$500 million refurbishing and maintaining those lines. Yet transit ridership fell by almost 50 percent in the 1980s and has been stagnant since the early 1990s.

**Dallas-Ft. Worth:** Despite spending hundreds of millions on light rail and commuter rail, rail transit has had virtually no impact on the transportation habits of the region's residents. In 1990, before any rail was operating, 2.7 percent of the region's commuters took transit to work. By 2008, when the region had nearly 75 miles of rail transit, just 2.2 percent of commuters took transit to work.

Like other regions, Dallas-Ft. Worth has attempted to promote transit-oriented developments along its rail lines. Unlike regions in Oregon, California, and a few other states, Texas municipal governments can wield only carrots, not sticks, in promoting such developments, as Texas law does not allow counties to zone unincorporated areas. As a result, transit planners must rely solely on subsidies rather than urban-growth boundaries and their effects on land prices.

**Denver:** In 2004, Denver had one light-rail line and was building a second when it persuaded voters to approve a sales tax increase to build six new rail lines. During the campaign,

Denver's Regional Transit District claimed that it built the previous lines within the planned budgets. In fact, the first light-rail line cost 28 percent more than the original projection.<sup>74</sup> The second line went 59 percent over its original projection.<sup>75</sup> They were "on budget" only because the agency increased the budget when cost overruns became apparent.

Prior to the election, rail critic Wendell Cox predicted that Denver's rail plans would go over budget. "RTD cannot deliver the whole system for anything like \$4.7 billion," predicted Cox. RTD General Manager Cal Marsella immediately responded that it "absolutely can."<sup>76</sup>

Soon after the election, RTD's projected cost of the planned rail lines grew by 68 percent (later modified to 40 percent when the recession reduced construction costs). Moreover, the sales tax revenues that were supposed to pay for construction fell well short of projections. Marsella claimed that the events that caused his agency's predictions to be wrong "could not have been foreseen."<sup>77</sup> But that's exactly why transit agencies should avoid projects that require impossibly accurate predictions of the distant future.

Amid growing controversies, Marsella resigned in 2009.<sup>78</sup> RTD now says it only has the funds to complete two or three of the six lines and, even if it could build all six lines, it won't have enough money to operate them all.<sup>79</sup> The agency may ask voters for another tax increase to complete all six lines.<sup>80</sup>

**Houston:** Between 1995 and 2001, Houston bus ridership had experienced steady growth from 79.6 million to 99.2 million trips per year. That growth stopped when Houston began construction of its first modern light-rail line in March 2001. By 2004, when the \$380 million light rail opened for business, bus ridership was down to 87.9 million trips.

Light-rail trips made up for part of the fall in bus ridership. But bus trips continued to decline, reaching 84.6 million in 2008. Total 2008 bus and rail trips were 96.4 million, less than 2001 bus trips. This actually underestimates the decline in trips, because Metro rerouted many bus routes that formerly had

Soon after persuading voters to approve a tax increase to build 119 miles of new rail lines, Denver admitted that rail costs were 68 percent higher than projected and, even if it could build the lines, it couldn't afford to operate them.

In 2002, when Miami-Dade Transit asked voters for funds to “complete the rail system,” it failed to admit that it was desperately short of funds just to maintain the existing system.

downtown destinations so that they terminated at light-rail stations, forcing many riders to transfer. Transit agencies count every time someone boards a transit vehicle as a separate trip, but total personal trips (called “linked trips” in transit agency jargon) were far fewer.

A major reason for the decline in transit ridership is a reduction in bus service necessitated by the high cost of rail construction. Service had grown from 37.5 million vehicle revenue miles in 1995 to 45.0 million in 2003, but declined thereafter, falling to 39.6 million in 2008.

The opening of light-rail lines does not reduce the need for bus service as much as it changes the character of that service. Light rail replaces trunk line buses headed for major destinations such as downtowns, but most transit agencies convert those bus routes into feeder buses for the light rail. The result is that transit agencies in many cities increase bus mileage when they open light rail. When they do not, as in Houston’s case, the result is a drop in ridership.

**Los Angeles:** Los Angeles opened its first modern light-rail line in 1990 and a subway in 1993, both of which had cost overruns of about 50 percent. To cover rail costs, the Rapid Transit District (later renamed the Metropolitan Transportation Authority) began increasing fares while it cut bus service from 92 million vehicle revenue miles in 1985 to 76 million in 1995. The result was a 21 percent drop in bus ridership. Rail ridership made up for only a fifth of this decline.

The NAACP sued MTA, arguing in effect that Los Angeles is another example of transit apartheid, with the city building rail lines to white neighborhoods but cutting bus service to black and Latino neighborhoods. An out-of-court settlement in 1996 forced MTA to improve bus service, freeze fares for a decade, and scale back its rail plans.

Total transit ridership returned to 1985 levels in 2000, and bus ridership alone returned to 1985 levels by 2006. However, fare increases at the end of the decade-long freeze contributed to a 15 percent drop in bus ridership

and a 13 percent drop in total ridership in 2008. Ironically, MTA’s CEO argued that the fare increase was needed so that the agency could use more of its sales tax revenues as matching funds to get federal grants to build more rail lines, suggesting a return to transit apartheid.<sup>81</sup>

**Miami:** In the mid-1980s, Miami built a two-mile downtown “people mover” that went more than 100 percent over budget and a 10-mile elevated rail line that went 33 percent over budget. Miami’s transit ridership has doubled since it first opened the rail lines in the mid-1980s—but almost all of that growth has been among bus riders. In 2008, buses carried more than three-fourths of Miami-Dade’s transit riders.

In 2002, voters agreed to increase the sales tax to “complete the rail system” by building 89 more miles of elevated rail lines.<sup>82</sup> What voters didn’t know was that, by 2002, Miami-Dade Transit was desperately short of the cash it needed just to maintain the existing rail lines. The agency was scheduled to overhaul the rail cars on both the people mover and the elevated lines by 1999, but it lacked the money to do so. As a result, the cars were rapidly declining and the FTA was threatening to shut down the system. Soon after the election, the transit agency contracted to repair or replace the cars, which ended up costing far more than anticipated.<sup>83</sup>

As a result, instead of the 89 miles of new rail routes, it now appears likely that less than 10 miles of rail lines will be built. Moreover, the existing routes are now served by fewer daily trains than before the measure passed. Miami-Dade Transit had also promised to greatly expand bus service with the new tax revenues; initial expansions have since been cut back and are now only about a third of the promised levels.<sup>84</sup>

Meanwhile, the South Florida Regional Transportation Authority (Tri-Rail) began offering commuter-rail service between Miami, Ft. Lauderdale, and West Palm Beach in 1989. In 2008, the agency spent nearly \$53 million operating this service and collected less than \$9 million in fares.<sup>85</sup> Over the life of the service,

Tri-Rail has spent nearly \$1 billion on capital improvements, most of it going to double-track the 71-mile rail line.<sup>86</sup> This was supposed to allow service improvements that would attract more than 30,000 new riders each week-day.<sup>87</sup> Although double-tracking was completed in 2007, Tri-Rail carried just over 13,000 weekday riders in 2008, less than a third more than in 1994 before the expensive project began.<sup>88</sup>

**Minneapolis:** The Hiawatha light-rail line opened in 2004 at a cost of more than \$700 million, about 50 percent more than the initial projections.<sup>89</sup> The line increased the region's transit ridership. But, far from relieving congestion, it significantly added to it. Because transportation officials adjusted traffic signals to give preference to trains over highway vehicles, motorists on the highway parallel to the rail line found their journeys took 20 to 40 minutes longer than before the line opened.<sup>90</sup>

**Nashville:** As previously noted, the *Music City Star* cost less than most rail lines, but the tiny number of passengers it carries each day cannot justify even this low cost.

**New Orleans:** The St. Charles streetcar line is the oldest continuously operated streetcar route in the world and still uses vehicles built in the 1920s. In order to boost tourism, the city added two new lines in the early 2000s—one of them just in time to be destroyed by Hurricane Katrina. The lines did nothing for local transit ridership, which steadily declined in the years before Katrina.

**New York:** New York transit systems carry more trips each year than the transit systems of the next 15 largest urban areas, and almost twice as many rail trips as all other rail transit systems in the nation combined. Even some of the severest critics of rail transit call New York transit a success.<sup>91</sup> Yet a look at the transit system's finances once again raises the question, "How do you define success?"

New York City's Metropolitan Transportation Authority rail infrastructure was in dire straights in the early 1980s, when "a third of the fleet was typically out of service during the morning rush hours, cars broke down or caught fire, trains derailed on hazardous track,

and graffiti covered virtually every car."<sup>92</sup> Despite improvements from those dark days, only about two-thirds of the system's multi-billion-dollar annual maintenance needs are funded.<sup>93</sup> Even if fully funded, some parts of the system would not reach a state of good repair until 2028.<sup>94</sup>

The agency gets much of its funds from toll bridges that cross into Manhattan and a real estate transfer tax. To provide more, the legislature approved five new taxes in 2009, including a payroll tax (which it called a "mobility tax" even though it was imposed on people who work at home).<sup>95</sup> Yet these taxes are only expected to raise \$1.9 billion in 2010, which is barely enough to cover MTA's operating deficit, much less fill its maintenance gap.

As one MTA official recently admitted, "there will never be enough money."<sup>96</sup> Even as MTA struggles to bring its system into a state of good repair, it is spending billions of dollars expanding the system. This includes two of the world's most expensive transportation projects: first, the Second Avenue Subway, which is projected to cost more than \$17 billion for 8.5 miles of subway located just two blocks from an existing parallel subway line.<sup>97</sup> Second is the Long Island Railroad East Side Access, which extends Long Island commuter trains two miles to Grand Central Station at a cost of \$7.6 billion.<sup>98</sup>

The New York urban area is also served by many other transit agencies, the largest of which is New Jersey Transit, which is spending billions of dollars on new light-rail lines. While New Jersey Transit bus fares covered more than 100 percent of their operating costs in 2008, the agency's Hudson-Bergen light rail covers only 17 percent of its operating costs out of fares.

**Norfolk:** Hampton Roads Transit is the latest agency to discover the Peter Principle of rail transit. In 2003, the agency said it could build a 7.4-mile light-rail line for \$232 million (2009 dollars) and open it for business by mid-2008.<sup>99</sup> It is currently not expected to open until 2011 at a cost as high as \$340 million.<sup>100</sup> In January 2010, the agency's CEO agreed to retire after being told to "resign or

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To date,  
Portland has  
spent nearly \$3  
billion building  
light-rail lines  
and nearly  
\$2 billion  
subsidizing  
developments  
along the  
light rail and  
streetcar lines.

be fired” due to the delays and cost overruns.<sup>101</sup>

**Philadelphia:** The Southeastern Pennsylvania Transportation Authority (SEPTA) operates the nation’s fourth-largest rail transit system. Perennially short of funds, these rail lines—like those in Boston and Chicago—are suffering from deferred maintenance. As recently as 2007, SEPTA was forced to transfer \$27 million of funds from its capital budget to cover its operating deficit, and also spent all of the \$79 million of state “flexible” (available for either capital or operating expenses) funds on operating costs.<sup>102</sup>

Like Boston’s transit system before 2000, SEPTA—which depends on the state for nearly half its funding—was funded by the legislature on a year-to-year basis. But in 2007, the state dedicated a share of sales taxes to SEPTA in the hope that this would help SEPTA bring its system into a state of good repair.

Like Boston, SEPTA soon learned that having a dedicated tax base does not assure financial prosperity, as sales taxes are particularly likely to decline during a recession.<sup>103</sup> Not only were revenues down, but the Transport Workers Union went on a six-day strike, demanding that its members get “their share” of the dedicated sales tax.<sup>104</sup> As a result, SEPTA is likely to continue deferring maintenance at least through the end of the recession.<sup>105</sup>

**Phoenix:** In 1998, Valley Metro projected that it could build a 13-mile light-rail line for \$509 million (in 2009 dollars). By the time the line opened the last days of 2008, the cost had ballooned to \$1.5 billion for 20 miles—an 88 percent increase in per-mile costs. Considering that transit carries only 0.6 percent of travel in this auto-oriented region, this line is not likely to do much for the region’s transportation system.

**Pittsburgh:** One of the few cities that did not dismantle all of its streetcar lines, Pittsburgh upgraded its surviving lines to light-rail standards in the 1980s and 1990s. Pittsburgh also built some exclusive bus lanes that were nearly as expensive as new light-rail lines. These improvements did little to stop the decline in transit ridership, which has fall-

en by nearly 30 percent since 1982. Now the city, which seems to think it can promote economic recovery by building rail infrastructure, is spending \$550 million on a 1.2-mile extension of its light-rail system called the North Shore Connector.<sup>106</sup>

**Portland, Oregon:** Heavy investments in rail transit and draconian land-use policies have made Portland one of the few cities that can honestly say rail transit increased per capita transit ridership. To promote compact development and reduce per capita driving, most of Oregon is zoned so strictly that people are not allowed to build homes on their own land unless they own at least 80 acres and earn at least \$40,000 to \$80,000 (depending on soil productivity) per year farming it.<sup>107</sup> Inside the growth boundaries, Portland and other cities have rezoned dozens of neighborhoods for high-density development. In many cases, zoning was so strict that, if someone’s single-family home burned down, they would be required to replace it with multifamily housing.<sup>108</sup>

Although this resulted in rapidly rising land prices, developers failed to build transit-oriented developments along Portland’s rail lines. So Portland began offering a variety of subsidies, most of them paid for through tax-increment financing. To date, Portland has spent nearly \$3 billion building light-rail lines and nearly \$2 billion subsidizing developments along the light rail and Portland’s streetcar.

The results have been mixed. While transit ridership has increased since 1990, rail transit still carries less than 1 percent of the region’s passenger travel. Moreover, transit’s share of commuting declined between 2000 and 2007. In fact, Census Bureau data indicate that the absolute number of transit commuters shrank from about 58,000 in 2000 to 57,000 in 2007 while the number of auto commuters grew by about 66,000.<sup>109</sup>

Surveys of one of the Portland area’s largest transit-oriented developments reveal that residents use transit a little more than people in other neighborhoods—but not for commuting.<sup>110</sup> Many transit-oriented devel-

opments have struggled, and research by the Cascade Policy Institute's John Charles has shown that the key to success is plenty of parking; those with inadequate parking tend to have high vacancy rates.<sup>111</sup> In a very real sense, then, successful developments are not even transit oriented.

**Sacramento:** In the mid-1970s, Sacramento decided to build light rail instead of freeways. At the time, "traffic congestion was essentially non-existent," but transportation planners hoped that "lack of road building and the resulting congestion" would encourage many people to substitute transit for driving.<sup>112</sup>

One part of their plan succeeded: Since 1982, traffic congestion has octupled.<sup>113</sup> But in other respects, planners admit, the plan has "not worked out." "Despite a focus on luring drivers out of their autos," surveys show that most transit riders lack access to an auto, while drivers avoided congestion by finding alternative routes. Efforts to use light rail to shape the region's growth patterns also failed: both housing and jobs have continued to sprawl into areas not served by the rail lines.<sup>114</sup>

Yet the region's latest transportation plan still emphasizes transit and manipulating land-use patterns to make the region more transit oriented. Transit carries less than 0.8 percent of the region's motorized travel, yet the 2006 transportation plan "gives first priority to expanding the transit system, more than doubling light rail mileage."<sup>115</sup> The plan also dedicates \$500 million to promote "mixed use and compact development" along the rail lines, attempting to enlarge the market for transit ridership.<sup>116</sup> Much of this is urban renewal funds originally dedicated to curing "urban blight" but now being used to socially engineer new development to promote transit and discourage auto driving.<sup>117</sup> To further support this goal, the California legislature passed a law requiring all new state offices to locate within a half mile of a rail stop.<sup>118</sup>

Some claim that Sacramento's transit-oriented development program is "a model for the nation."<sup>119</sup> But planners admit the land-use components of the region's transporta-

tion plan "cannot be evaluated for effectiveness yet."<sup>120</sup> Their models project that the addition of transit-oriented developments to their transportation plan could reduce driving by up to 9 percent.<sup>121</sup> But this has yet to be verified, and many transportation experts believe that transit-oriented development works mainly through "self-selection." That is, people who want to take transit will tend to locate in such developments, but the developments themselves have little effect on overall regional transportation habits.<sup>122</sup>

**Salt Lake City:** The Utah Transit Authority opened its first modern light-rail line in 1999 and began commuter-rail service in 2008. Ridership data suggest that light rail pirated many passengers away from buses; rail carried 6.1 million riders in its first full year of operation, while buses carried 6.3 million fewer riders that year than in the year before light rail opened. The Utah Transit Authority recently admitted that it has been overestimating light-rail ridership by 20 percent or more.<sup>123</sup> A Utah state auditor found that regional transportation planners "cooked the books" to bias cost-effectiveness analyses in favor of more rail operations.<sup>124</sup>

**San Diego:** If any new rail transit system in the nation deserves to be called a success, it is San Diego's. Per capita transit ridership and the share of the region's commuters using transit have both grown since the region opened its first light-rail line in 1981. And the transit system has achieved these gains at a remarkably low cost: San Diego's subsidies per passenger mile are second lowest among the nation's major transit systems.

Like Portland, San Diego paired its rail lines with strict land-use policies that encouraged denser development in the region's core and discouraged development at the periphery.<sup>125</sup> San Diego has also used tax-increment financing and other subsidies to promote dense, mixed-use transit-oriented developments along the region's growing rail network.

It is likely that these land-use policies have contributed to the growth of transit ridership, but at enormous hidden costs. One of the largest costs is housing. Median housing

**A state auditor found that Salt Lake City transportation planners "cooked the books" to bias the analyses in favor of more rail construction.**

**BART, says one transit advocate, is a “vampire” that “sucks the lifeblood out of every [other] transit agency” in the Bay Area.**

prices were a little more than twice median family incomes in 1969.<sup>126</sup> By 2006 they were more than eight times median family incomes, making single-family homes unaffordable to all but the very wealthy.<sup>127</sup>

A second hidden cost is the reduced urban services due to the inability of the city and region to serve increased densities. After the 1979 plan promoted rapid infill development in the region's core, “sewer breakdowns became commonplace” and by 1990 the city estimated “it would cost over \$1 billion to make up the infrastructure shortfall.”<sup>128</sup> A third hidden cost is traffic congestion, which increased by nine times as the region pursued the policy of emphasizing transit over highways.<sup>129</sup>

Three decades of imposing these costs on the region have contributed to transit growth, yet transit remains an insignificant form of travel in the San Diego urban area. Transit carried just 3.8 percent of commuters to work in 2008 (up from 3.5 percent in 1980), and just 1.5 percent of overall motorized travel in 2007 (up from 1.4 percent in 1982).

**San Francisco-Oakland:** The San Francisco Bay Area Rapid Transit (BART) system has become a giant money sink for the region. Unlike regions whose rail and bus systems are run by the same agencies, BART is separate from Bay Area bus agencies and effectively competes with those agencies for funds. A member of the Alameda Contra Costa (AC) Transit Board has called BART a “vampire” because it “sucks the lifeblood out of every transit agency with which it comes in contact.”<sup>130</sup>

Decisions about the distribution of federal and state transit funds to the various agencies are made by the Metropolitan Transportation Commission. The MTC has been sued by low-income advocates for transit apartheid, for funding BART to wealthy suburbs while denying funds to low-cost bus improvements in low-income neighborhoods.<sup>131</sup> Between 1982 and the present, the region's bus service, measured in vehicle revenue miles, declined by 20 percent, which contributed to a 37 percent decline in bus ridership. This decline is greater than the increase in BART ridership, so overall transit ridership fell by 14 percent.

In 2003, BART opened a new line in San Mateo County, with the agreement that San Mateo Transit (SamTrans) would cover the operating losses of the new line. Those losses proved to be much higher than expected, forcing SamTrans to reduce bus service by more than 10 percent, leading to an 8 percent loss in ridership.

**San Jose:** Silicon Valley's first light-rail line opened in 1988, and a second in 2000.<sup>132</sup> Since then, the Santa Clara Valley Transportation Authority (VTA) has been planning more light rail and an extension of the San Francisco BART system to San Jose.

These plans were put on hold when the dot-com crash resulted in reduced sales tax revenues in 2001. VTA was unable to keep its existing system running while meeting its \$400 million debt obligations, much less build any new lines. Even after diverting some of the sales tax that was supposed to be dedicated to capital improvements to fund its operations, VTA was forced to reduce both bus and rail service by 20 percent. This contributed to a 34 percent loss in transit ridership between 2001 and 2005, less than a third of which has been recovered since then.

Despite these financial problems, VTA still plans to fund the BART extension even though the environmental impact report for the line projected that it would not take enough cars off of any highway segment to increase rush-hour travel speeds by even 1 mile per hour.<sup>133</sup> In its 2001 regional transportation plan, the San Francisco Bay Area Metropolitan Transportation Commission found that the BART San Jose extension would be so expensive that it would cost more than \$100 for every new transit ride it would produce. By comparison, the average cost per new transit ride of bus improvements was less than \$7, and some were less than \$1.<sup>134</sup>

VTA's insistence on building this rail line combined with its financial ineptitude in managing its bus and light-rail system has led transit expert Tom Rubin to call it “the worst transit operator in the U.S.” “I have never found any agency that is so consistently either one of the worst or, commonly, the absolute worst, on every single metric as VTA,” says Rubin.<sup>135</sup>

**Seattle:** In an example of the Peter Principle, transit officials admitted they had grossly underestimated costs soon after Seattle voters approved the region's first light-rail line in 1996. The Central Puget Sound Transit Authority (Sound Transit) decided to build an exclusive right of way for most of the length of the rail line, thus combining the low capacities of light rail with the high costs of heavy rail. The 14-mile line finally opened in 2009 at a cost of \$2.1 billion, making it the highest cost-per-mile light-rail line ever built—a dubious achievement the agency expects to beat with its next rail line.

Sound Transit also spent an incredible \$1.1 billion on a commuter-rail service that started in 2000. The commuter line attracted far fewer riders than projected, and Sound Transit ended up selling 47 out of the 75 cars it purchased for the trains.

**St. Louis:** Opening in 1993 after a mere 22 percent cost overrun, the region's first light-rail line initially attracted many new riders.<sup>136</sup> Between 2001 and 2008, however, St. Louis added several extensions to its light-rail system that were less successful: the new lines generated no new rail riders but were accompanied by a decline in bus ridership. Total transit ridership in 2008 was less than in 1998, before any of the extensions opened.

Construction of the new lines led to an unusual degree of rancor between St. Louis' transit agency, Metro, and its contractors. The two filed lawsuits and countersuits over cost overruns that—after the longest jury trial in St. Louis history—the agency ultimately lost, costing Metro millions of dollars in legal fees and claims by the contractors.<sup>137</sup> This left the agency unable to meet its debt and pension obligations and resulted in the forced resignation of Metro's general manager, Larry Salci.<sup>138</sup>

Bus ridership declined for a simple reason: bus service declined. Between 1995 and 2008, vehicle revenue miles of bus service declined by 15 percent, contributing to a 25 percent drop in bus ridership.

Partly to recover from the lawsuit and partly to get its rail construction program

going again, Metro asked voters for a half-cent sales-tax increase in November 2008. Supporters outspent opponents by 500 to 1, yet the measure received only 48 percent of the vote.<sup>139</sup> For the moment, St. Louis Metro has no firm plans to expand its rail system.

**Washington:** In 1962, the initial planners of the Washington Metrorail system projected that a 103-mile system would cost \$793 million (about \$4.6 billion in 2009 dollars) and that fares would cover all of the operating costs and more than 75 percent of the capital costs.<sup>140</sup> In an early example of transit apartheid, planners deliberately routed the initial lines away from low-income neighborhoods that, they believed, would not be able to pay enough fares to recover capital costs. As it turned out, the actual construction costs of the 103-mile system were nearly four times greater than anticipated, and fares cover only about 60 percent of operating costs and no capital costs.

Federal taxpayers paid most of the construction cost. Local governments subsidize the operations. But today, more than 30 years after the first rail lines opened, no one has allocated funds to rebuild the Metrorail system, which is why it suffers frequent breakdowns and why maintenance failures led to the deaths of nine people in an accident in June 2009.<sup>141</sup> Aside from the crash, the Metrorail system suffers from a variety of routine problems, including broken rails, smoke in the tunnels requiring train evacuations, and malfunctioning elevators and escalators at train stations, all of which can be traced to Metro's lack of funding for maintenance. In January 2010, Washington Metropolitan Area Transit Authority general manager John Catoe announced he would "take the fall" for the agency's problems by resigning.<sup>142</sup>

Despite WMATA's inability to maintain its rail system, the federal government granted \$900 million toward the first stage of a \$5.2 billion, 23-mile Metrorail extension to Dulles Airport. This project is being built by the Metropolitan Washington Airports Authority, but WMATA will be saddled with the costs of operations and maintenance.

Though Washington Metrorail's initial planners predicted fares would cover all operating costs and 75 percent of capital costs, in fact they barely cover 60 percent of operating costs and no capital costs.





**CITY COUNCIL**  
CITY AND COUNTY OF HONOLULU  
530 SOUTH KING STREET, ROOM 202  
HONOLULU, HAWAII 96813-3065  
TELEPHONE: (808) 768-5010 • FAX: (808) 768-5011

**TOM BERG**  
COUNCILMEMBER  
HONOLULU CITY COUNCIL • DISTRICT I  
PH: (808) 768-5001  
FAX: (808) 768-5011  
EMAIL: [tberg@honolulu.gov](mailto:tberg@honolulu.gov)

May 2, 2011

The Honorable Peter Carlisle  
Mayor  
City and County of Honolulu  
530 S. King Street, 3<sup>rd</sup> Floor  
Honolulu, HI 96813

Dear Mayor Carlisle,

As you may know, I will be hosting a town hall meeting at Ewa Makai Middle School on Wednesday, June 15<sup>th</sup> from 7:00 p.m. until 9:00 p.m. The single topic will be the rail transit project and the substantial changes in costs, route, traffic congestion mitigation, and much more since voters cast their ballots on this issue back in November 2008.

For the benefit of our constituents, I would really like you and other area elected officials to participate in this up-to-the-minutes discussion of this joint City-State-Federal project and the big changes that the public is only now becoming aware of. To this end, please accept this letter as my formal invitation to you.

Finally, please find enclosed the current flyer for this town hall meeting. Your attendance to discuss the rail project and the many changes is critical to help our citizens gain a full understanding about how these changes will impact their lives and the lives of their children. I hope we can count on your participation and that you too recognize the importance in helping the public to know where we stand.

Please R.S.V.P. by May 15<sup>th</sup> so that we may include you in our promotion of the event. You can reach me by e-mail at [tberg@honolulu.gov](mailto:tberg@honolulu.gov) and by phone at 768-5001. I look forward to continue to working with you as we endeavor to improve the lives of the residents of West Oahu.

Aloha,

TOM BERG  
Councilmember – District 1  
Ewa Beach, Kapolei, Waianae Coast

Enclosure

cc: Audrey Wallower, Ewa Makai Middle School



**CITY COUNCIL**  
CITY AND COUNTY OF HONOLULU  
530 SOUTH KING STREET, ROOM 202  
HONOLULU, HAWAII 96813-3065  
TELEPHONE: (808) 768-5010 • FAX: (808) 768-5011

**TOM BERG**  
COUNCILMEMBER  
HONOLULU CITY COUNCIL • DISTRICT I  
PH: (808) 768-5001  
FAX: (808) 768-5011  
EMAIL: [tberg@honolulu.gov](mailto:tberg@honolulu.gov)

May 2, 2011

The Honorable Rida T. R. Cabanilla  
State Representative, District 42  
Hawaii State Capitol, Room 442  
415 S. Beretania Street  
Honolulu, HI 96813

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Aloha,

TOM BERG  
Councilmember – District 1  
Ewa Beach, Kapolei, Waianae Coast

Enclosure

cc: Audrey Wallower, Ewa Makai Middle School



**CITY COUNCIL**  
CITY AND COUNTY OF HONOLULU  
530 SOUTH KING STREET, ROOM 202  
HONOLULU, HAWAII 96813-3065  
TELEPHONE: (808) 768-5010 • FAX: (808) 768-5011

**TOM BERG**  
COUNCILMEMBER  
HONOLULU CITY COUNCIL • DISTRICT I  
PH: (808) 768-5001  
FAX: (808) 768-5011  
EMAIL: [tberg@honolulu.gov](mailto:tberg@honolulu.gov)

May 2, 2011

The Honorable Kymberly M. Pine  
State Representative, District 43  
Hawaii State Capitol, Room 333  
415 S. Beretania Street  
Honolulu, HI 96813

Dear Representative Pine,

As you may know, I will be hosting a town hall meeting at Ewa Makai Middle School on Wednesday, June 15<sup>th</sup> from 7:00 p.m. until 9:00 p.m. The single topic will be the rail transit project and the substantial changes in costs, route, traffic congestion mitigation, and much more since voters cast their ballots on this issue back in November 2008.

For the benefit of our constituents, I would really like you and other area elected officials to participate in this up-to-the-minutes discussion of this joint City-State-Federal project and the big changes that the public is only now becoming aware of. To this end, please accept this letter as my formal invitation to you.

Finally, please find enclosed the current flyer for this town hall meeting. Your attendance to discuss the rail project and the many changes is critical to help our citizens gain a full understanding about how these changes will impact their lives and the lives of their children. I hope we can count on your participation and that you too recognize the importance in helping the public to know where we stand.

Please R.S.V.P. by May 15<sup>th</sup> so that we may include you in our promotion of the event. You can reach me by e-mail at [tberg@honolulu.gov](mailto:tberg@honolulu.gov) and by phone at 768-5001. I look forward to continue to working with you as we endeavor to improve the lives of the residents of West Oahu.

Aloha,

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May 2, 2011

The Honorable Will Espero  
State Senator, District 20  
Hawaii State Capitol, Room 231  
415 S. Beretania Street  
Honolulu, HI 96813

Dear Senator Espero,

As you may know, I will be hosting a town hall meeting at Ewa Makai Middle School on Wednesday, June 15<sup>th</sup> from 7:00 p.m. until 9:00 p.m. The single topic will be the rail transit project and the substantial changes in costs, route, traffic congestion mitigation, and much more since voters cast their ballots on this issue back in November 2008.

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Aloha

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May 2, 2011

Wayne Yoshioka, Director  
Department of Transportation Services  
City and County of Honolulu  
650 S. King Street, 3<sup>rd</sup> Floor  
Honolulu, HI 96813

Dear Director Yoshioka,

As you may know, I will be hosting a town hall meeting at Ewa Makai Middle School on Wednesday, June 15<sup>th</sup> from 7:00 p.m. until 9:00 p.m. The single topic will be the rail transit project and the substantial changes in costs, route, traffic congestion mitigation, and much more since voters cast their ballots on this issue back in November 2008.

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May 2, 2011

Toru Hamayasu, P. E.  
Deputy Director  
Department of Transportation Services  
City and County of Honolulu  
650 S. King Street, 3<sup>rd</sup> Floor  
Honolulu, HI 96813

Dear Deputy Director Hamayasu,

As you may know, I will be hosting a town hall meeting at Ewa Makai Middle School on Wednesday, June 15<sup>th</sup> from 7:00 p.m. until 9:00 p.m. The single topic will be the rail transit project and the substantial changes in costs, route, traffic congestion mitigation, and much more since voters cast their ballots on this issue back in November 2008.

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