January 14, 2008

Mary E. Peters
Secretary
U.S. Dept. of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Peters:

We are requesting the reinstatement of the Managed Lane Alternative in Honolulu's Transit Corridor Draft Environmental Impact Statement

On March 18, 2007, we protested to the Federal Transit Administration (FTA) that the process used by the City & County of Honolulu (City) for assessing the Managed Lane Alternative (MLA) in the City's Alternatives Analysis (AA) was flawed.[1] At the same time, we also protested the issuance of two Notices of Intent (NOI) to perform the same Draft Environmental Impact Statement (DEIS) for the same project.

The first NOI, of 12/07/07,[2] called for an AA and DEIS to satisfy the National Environmental Policy Act (NEPA) and stated that the MLA was to be considered in both the AA and the DEIS.

The second NOI, of 3/15/07,[3] called for a DEIS and Scoping to satisfy NEPA but excluded the MLA even though the first NOI said it was to be studied in the DEIS. The second Scoping Information Package that accompanied the second NOI did not even want comments on alternatives that were "previously studied and eliminated for good cause." While not named, one can reasonably assume it meant the MLA. Thus, Honolulu found itself in the strange position of beginning Scoping while having already selected its Locally Preferred Alternative.

On April 13, 2007, we also protested to the City and the FTA that the AA was flawed in its purpose and needs statement.[4]

We have received no response to any of our concerns.

We believe that the City and Parsons Brinckerhoff (PB), with the FTA's concurrence, issued the second NOI in an attempt to evade the more stringent investigative requirements of the NEPA process for the MLA and possibly also the purpose and needs statement.

However, the first NOI makes it clear that,

> The first step in preparation of the EIS will be an AA that will be consistent with both the requirements of NEPA for evaluation of a range of reasonable alternatives and the requirements of Federal transit law for consideration of alternatives during the development of major capital investment projects proposed for Federal funding.

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1 www.honolulutraffic.com/AAMLcomments5.pdf

2 www.honolulutraffic.com/NOI121505.pdf

3 www.honolulutraffic.com/noi0307.pdf

4 www.honolulutraffic.com/SCOPEpurpneeds.pdf

AR00153589

The second Scoping Report declares, "As stated in the Notice of Intent issued on March 15, 2007, that Notice of Intent superceded (sic) the one published on December 5, 2005." In fact, the second NOI says no such thing.

Since the first NOI was not superseded and the AA states that its alternatives were developed "during a formal project scoping process held that would satisfy the requirements of the National Environmental Policy Act (NEPA) …"[5] then obviously the MLA was evaluated in the NEPA process and should be dealt with accordingly. Especially since, "both the planning process and the NEPA review process require alternatives analyses."[6]

The second Scoping Information Package (SIP) suggests that the first NOI was to merely satisfy the Hawaii environmental law requirements even though there is no mention of that in either one of the NOIs. In any case, that does not wash since, if that was the only intent of the first NOI, the NOI itself would have been unnecessary.

We ask that you investigate the adequacy of the AA. You will find that the City and PB and the FTA failed to provide "… an assessment of a wide range of public transportation alternatives …" and/or "… sufficient information to enable the Secretary to make the findings of project justification …" as required by statute.[7]

In addition, we believe that you will find that the City, PB and FTA failed to, "Rigorously explore and objectively evaluate all reasonable alternatives," and "Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits," as required by the Council on Environmental Quality (CEQ) Sec. 1502.14.[8]

We have sent a similar letter to the Chairman of the CEQ requesting that he also investigate this matter.

Purpose and needs statement

Both the first and second NOI and SIP fail to comply with SAFETEA-LU in that they did not *involve* the public in explaining,

- the *importance* of the purpose and need statement,
- that the statement should be what the alternatives must be measured against, and
- that it should be *a clear statement*.

The lack of public involvement was evident from the coverage of the scoping meetings by our newspapers. The head of the Outdoor Circle's environmental committee was quoted as saying, "It seems to have been designed in a way to limit public interaction."[9]

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5 http://www.honolulutransit.com/more_info/library/files/Alterntives_Analysis_Chapter2.pdf, page 2-2.

6 http://www.fta.dot.gov/documents/FAQ_Environmental_Provisions.doc

7 SAFETEA-LU (H.R. 3 119 STAT. 1574) ''(1) ALTERNATIVES ANALYSIS.—The term 'alternatives analysis' means a study conducted as part of the transportation planning process required under sections 5303 and 5304, which includes—
''(A) an assessment of a wide range of public transportation alternatives designed to address a transportation problem in a corridor or subarea;
''(B) sufficient information to enable the Secretary to make the findings of project justification and local financial commitment required under this section;"

8 *http://www.nepa.gov/nepa/regs/ceq/1502.htm#1502.23*

9 http://the.honoluluadvertiser.com/article/2005/Dec/14/ln/FP512140342.html
http://starbulletin.com/2005/12/14/news/story02.html

Most importantly, the City and FTA have not provided a purpose and need statement in clear English even though the SAFETEA-LU statute requires that,

> "The statement of purpose and need shall include a clear statement of the objectives that the proposed action is intended to achieve …" (emphasis added).[10]

Instead, the public is subjected to ambiguous language in the NOIs and SIPs that, as Orwell described it,

> "falls upon the facts like soft snow, blurring the outline and covering up all the details. The great enemy of clear language is insincerity. When there is a gap between one's real and one's declared aims, one turns as it were instinctively to long words and exhausted idioms."[11]

In short, the language, far from being clear, gives the impression that it was designed to deliberately mislead. Take, for example, the following two sentences:

> "Improved mobility for travelers facing increasingly severe traffic congestion." SIP2

> "Implementation of the project, in conjunction with other improvements included in the ORTP, would moderate anticipated traffic congestion in the corridor." NOI2 & SIP2.

The intent of the statute is for the public to be *involved* and to this end it is essential that the language be clear. Instead, this jargon lulls the average citizen into believing that the primary purpose of the Honolulu High-Capacity Transit Corridor Project is to reduce traffic congestion from current levels. When does one hear the ordinary citizen use phrases like "improved mobility for travelers," and "moderate anticipated traffic"? That the language is not *a clear statement* understandable to ordinary citizens proves that the process lacks *public involvement*. To *involve* is totally different than to *inform*.

If the intent was to involve and enlighten the public, the writer would quite clearly state, "It is not the intent of the Project to reduce traffic congestion below today's levels."[12] And, "After the rail transit line opens, traffic congestion will be worse than it is today, though somewhat less than what it might be otherwise." No statements of such clarity exist in the NOIs or SIPs.

Beginning with the first NOI and SIP, followed by the Draft Oahu Regional Transportation Plan (Draft ORTP), the Alternatives Analysis (AA), the final ORTP, and the second NOI and SIP, the City and PB have misled the public into believing that rail transit will relieve congestion. Further, PB and the City have been aided in their endeavors by the 'strategic misrepresentation'[13] of our local and federal elected officials as can be seen from the following:

> This video of Mayor Hannemann and Rep. Neil Abercrombie's city hall "Traffic sucks!" rally held on December 5th, 2005, typifies the grossly misleading statements emanating from our elected officials.
> http://mfile.akamai.com/12891/wmv/vod.ibsys.com/2005/0707/4695365.200k.asx

> "Judging by how much traffic has worsened in just in the past few years, that's probably a conservative prediction. The only way to prevent it is to act now to address the problem. Our quality of life is at stake. Rail transit is a key element in the solution." Congressman Neil Abercrombie. Honolulu Advertiser. April 17, 2005

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[10] SAFETEA-LU, Sec. 6002, (d)(7)f(3).

[11] Orwell, George. *Politics and the English language.*

[12] "Projects with the purpose of providing roadway mobility for automobiles and commercial vehicles are outside of the authorization of Act 247; therefore, they will not be considered for the Honolulu High-Capacity Transit Corridor Project." DTS Director Kaku to Slater letter of 6/20/2006. www.honolulutraffic.com/cliffslater.pdf

[13] www.honolulutraffic.com/JAPAFlyvbjerg.pdf

> "Hannemann said the yet-to-be-determined form of transit would run from Kapolei to downtown and the University of Hawai'i-Manoa. He said the system will help all parts of the island, easing traffic overall because 'there'll be less cars on the road.'"
> http://the.honoluluadvertiser.com/article/2005/May/12/ln/ln02p.html

> Mayor's Press Secretary: "Slater misrepresents just about everything Mayor Mufi Hannemann, Transportation Services Director Ed Hirata and other supporters of transit have said, from the timing of federal requirements to tax calculations, highway capacity and a rail system's potential to ease traffic congestion."
> http://the.honoluluadvertiser.com/article/2005/Aug/10/op/508100321.html

> "Mayor Mufi Hannemann chided Lingle at the rally and said the city needs a rail system to alleviate increasing traffic congestion. U.S. Rep. Neil Abercrombie, D-Hawaii, also blasted a possible veto and said that he and the rest of Hawaii have had enough of the traffic problems. He said commuters are fed up and don't need anymore "Lingle lanes" filled with traffic congestion."
> http://www.bizjournals.com/pacific/stories/2005/07/04/daily18.html?t=printable

Far from "aggressively supporting proactive public involvement," our elected officials, have continually alluded to the idea that building rail transit will result in traffic congestion relief even though the Alternatives Analysis clearly shows that traffic congestion will get significantly worse with the rail transit alternative.[14]

The net result of the current 'purpose and need' statement is that the public misunderstands the purpose of the rail transit proposal in the Project corridor. They believe it is to reduce the current traffic congestion to a more bearable level.

> "SAFETEA-LU requires a clear statement of identified objectives that the proposed project is intended to achieve for improving transportation conditions. The objectives should be derived from needs …" Question 33. Sec. 6002 final guidance.

The net result of the PB and the City's outreach efforts is that the public believes that the 'need' is to significantly reduce traffic congestion and that the 'purpose' of the transit Project is to do just that. Neither the City nor PB has made any effort to dispel this myth.

Our elected officials know precisely what is needed for "improving transportation conditions." Their public statements to gain support for their rail line constantly infer, or state outright, that the need is for traffic congestion relief. But they do not state that in documents to be transmitted to the federal government — only verbally and locally.

The MLA as "Straw Man"

We believe that the City and PB rigged the specifications and analysis such that the MLA became a classic "straw man," an alternative designed to make the Fixed Guideway Alternative — in reality the rail transit alternative — look good in comparison to the MLA. The FTA concurred with the City and PB in this process.

Professor John Kain, co-author of the classic *The Urban Transportation Problem,* who wrote extensively about such tactics, said in his *The Use of Straw Men in the Economic Evaluation of Rail Transport Projects* in the American Economic Review,

> Nearly all, if not all, assessments of rail transit systems have used costly and poorly designed all-bus alternatives to make the proposed rail systems appear better than they are.[15]

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14 http://www.honolulutransit.com/more_info/library/files/Alterntives_Analysis_Chapter3_to_End.pdf, tables 3-12 & 3-13.

15 Kain, John F. *The Use of Straw Men in the Economic Evaluation of Rail Transport Projects.* American Economic Review, Vol. 82, No. 2, Papers and Proceedings of the Hundred and Fourth Annual Meeting of the American Economic Association (May,

Five specific ways in which the "straw man" alternative was rigged are listed below.

1. PB and the City proposed that automobiles with two or more occupants should be allowed toll free on the MLA. This made the current contraflow zipper lane untenable and thus provided the rationale for removing it. The net result was that the additional two lane advantage that the MLA offered to the Corridor was reduced to one lane. They failed to publish their assessment of the option of having all autos pay a toll, which would have resulted in the zipper lane and the two-lane advantage being retained. And they failed to analyze MLA options with higher occupancy thresholds, such as three through five occupants.[16]
2. PB and the City added unnecessary costs to the project by proposing a 16-mile facility while not testing the viability of shorter 10 to 12-mile versions.
3. PB and the City inflated MLA operating costs to make the project appear uncompetitive with the Fixed Guideway Alternative. Just two examples are a) the projection of a totally unnecessary 5,400 parking stalls for the MLA, and b) saddling the MLA with inflated bus operating costs, which is dealt with later in more detail.
4. PB and the City engineered the ingress and egress ramps in a way that could only result in heavy traffic congestion at these points.
5. PB and the City grossly inflated the capital costs of the MLA with the result that, if correct, it would be twice the cost per lane mile of any highway ever built in the U.S.

In his letter to the City and copied to FTA, Dr. Panos Prevedouros, Professor of Traffic Engineering at the University of Hawaii, Chair of the Transportation Research Board's Highway Micro-simulations Committee and a member of the Task Force, commented, "the most egregious violation of FTA's rules on alternative specification and analysis was the deliberate under-engineering of the Managed Lanes Alternative to a degree that brings ridicule to prevailing planning and engineering principles."[17]

History of the MLA

The City agrees that the original proposal for a reversible dynamically-tolled highway was proposed by HONOLULUTRAFFIC.COM and led to its inclusion in the First Scoping authorized in the first NOI of December 2005.

The concept that we laid out for the City was what Reason Foundation's Robert Poole, calls a *Virtual Exclusive Busway* where buses and vanpools have priority and go free of toll charges and all others pay a dynamically-priced toll. It has all the virtues of an exclusive busway, while also having a significant impact on automobile traffic congestion in the Corridor.

The City's Chief Transportation Planner said that he used the map of our proposed route from our website and that, "This is what HONOLULUTRAFFIC.COM requested us to study and this is exactly

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1992) , pp. 487-493.
http://www.honolulutraffic.com/kainrail.pdf

16 It is not credible that no assessment was made of these options. These options would retain the zipper lane, would foster high occupancy carpools and would collect more revenue.

17 www.honolulutraffic.com/NEPAScopingReport.pdf p. A-180

what we studied."[18] One is reminded of what unions do bring a company to its knees, "work to rule," which is to do exactly what the written orders and policies tell you to do and nothing more.

However, our original proposal was a conceptual one; at the time we did not have the technical expertise to do anything else and we certainly did not have the temerity to submit a final design to a firm of PB's engineering talents. Far from being a design, a cursory look at our original map shows a freehand line drawn none too steadily along the route with a black marker pen. It never crossed our minds that PB would not apply its expertise to provide the best possible alternative.

HONOLULUTRAFFIC.COM had forecast a cost of $900 million for a 10-mile two-lane version. This estimate of cost came from a conference that Governor Lingle asked us to conduct in December 2002 to evaluate whether the reversible tolled transitway concept was worth pursuing.

In addition to me as Chair of the Conference, those in attendance at the conference were:

Mike Schneider, Executive Vice President of PB Consult,
Mel Miyamoto, Vice President, Heavy Construction, Dillingham Corporation,
Roger Morton, General Manager of OTS Inc, operators of the City's bus system,
Bruce Turner, Assistant Division Administrator, Hawaii Division FHWA,
Robert Poole, Director of Transportation Studies, Reason Foundation,
Glenn Yasui, Highways Division, Hawaii Dept. of Transportation (Hawaii DOT).

By phone:
Patrick DeCorla-Souza, AICP, Team Leader, Highway Pricing and System Analysis, Office of Transportation Policy Studies FHWA,
C. Kenneth Orski., Urban Mobility Corporation, consultant and publishers of *Innovation Briefs.*

In short, some of the nation's leading experts on this issue were represented either in person or by phone at the conference. The concept and cost estimates met with the general approval of the attendees and accordingly we recommended to the Governor that the project be further developed to a higher level of detail. This was not done.

The City's projection of MLA capital costs

The City's MLA was about four miles longer than the 10 to 12-mile length that we had proposed and in the AA the City estimated that the MLA would cost $2.6 billion.

The absurdity of the costs of the four-lane H-3 freeway, adjusted for inflation, being the same as the two-lane MLA should be evident to anyone who has ever seen the H-3.

The City's projected costs were calculated without any attempt to justify this high cost by comparing it to similar facilities in Hawaii or on the Mainland.

HONOLULUTRAFFIC.COM's projection of capital costs

As discussed earlier, our cost projection was for $900 million for a 10-mile two-lane elevated highway, or $90 million per mile in 2002. This cost when inflated using the *Price Trends for Federal-aid Highway Construction Index*,[19] results in $134.7 million per mile in 2006 dollars.

However, this estimate was made before we were aware of the astonishing cost savings offered by the new construction method devised by Figg Bridge Company and used to construct the Tampa Expressway.

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[18] League of Women Voters Forum video, http://www.brightcove.tv/title.jsp?title=1301088850&channel=293897125

[19] http://www.fhwa.dot.gov/programadmin/pt2006q4.cfm

Stone and Prevedouros[20] tell us that "The actual contract price for the 17.5 lane miles of bridge structure was just over $100 million. At approximately $120 million, the deck cost for the segmental bridge portion of the project was approximately $65 per square foot, far below the average cost for structures in Florida during the past 20 years. The average cost per lane mile for the reversible bridge is approximately $7 million and is among the lowest for bridges constructed in the U.S."

The Figg Bridge Company tells us they "have experienced savings of approximately 40 percent to 50 percent when using precast segmental span-by-span construction in urban settings when compared to segmental balanced cantilever construction."[21]

Using 45 percent as the average of these savings reduces our $134.7 million per mile projection to $74.1 million per mile in 2006 dollars, or $37.0 million per lane-mile.

Tampa Expressway

The 14-mile Expressway cost $320 million in 2006 (net of an impending award of $100 million for a sub-contractor's error). Using the same *Price Trends for Federal-Aid Highway Construction Index* that the City uses, and allowing the mid-point of costs to be 2004, we calculate that the cost to build it in 2006 would have been $458.7 million.

The cost comparison index used to inflate Florida construction costs to Hawaii's level is plus 32 percent, that being the rate given in the current Civil Works Construction Cost Index.[22] Applying this factor to the inflation adjusted cost, results in $605.4 million as the cost of constructing the facility in Honolulu. Dividing this by its 14-mile length results in $43.2 million per mile.

While Tampa has three lanes, the Expressway Authority tells us that the third lane only added 20 percent more to their costs than if they had only built two lanes. We have, therefore, divided the Tampa cost per mile by 2.4 instead of three to allow for this and it results in cost of $18.0 million per lane-mile as a comparable cost for building such a facility in Honolulu.

Hawaii's H-3 Freeway

The 16.1-mile H-3 freeway is a divided highway with two lanes in each direction and construction required boring two miles of tunnels through the solid rock of the Koolau Mountains. The total cost was $1.3 billion at completion in 1997 making it the most expensive highway per mile ever built in the U.S.

Lacking a distribution of costs by year, we have allowed the mid-point of construction cost as occurring in 1991. Inflating the $1.3 billion to 2006 dollars using the *Price Trends for Federal-Aid Highway Construction Index*[23], results in $2.7 billion in today's dollars.

This amount divided by the 16.1 mile length equals $166.2 million per mile and dividing that by the four lanes results in $41.6 million per lane-mile.

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[20] Panos D. Prevedouros, PhD and Martin Stone, PhD, AICP. This article is shown in full in Appendix C. It has been selected to appear in the 2008 McGraw-Hill Almanac of Engineering and Technology.

[21] Personal Communication, CEO, Figg Bridge Company.

[22] http://www.usace.army.mil/publications/eng-manuals/em1110-2-1304/entire.pdf p. A-34.

[23] http://www.fhwa.dot.gov/programadmin/pt2006q4.cfm

Costs summary

We show below an adjusted cost per lane-mile comparison with two highway facilities, one from Tampa, Florida and the other, the H-3 freeway in Honolulu together with both the City and our MLA cost projections.

The table below summarizes our calculations of all four facility costs per lane-mile after being adjusted for construction inflation costs and location cost differentials. This enables us to directly compare one with the other. The full calculation is given in detail in Appendix A.

Adjusted cost per lane-mile in 2006 dollars[24]	
Facility	**$millions**
Tampa Expressway actual, adjusted	$18.0
H-3 Freeway actual, adjusted	$41.6
Our MLA estimate, adjusted	$37.0
City's MLA estimate	$80.5

Note the following:

Our MLA estimate is within ten percent of the adjusted H-3 freeway cost. In consideration of the extensive trans-Koolau tunneling required for H-3 one would anticipate that our MLA estimate should be somewhat less.

Even allowing for inflation and location cost differences, the adjusted Tampa Expressway cost is still less than half of either the H-3 or our MLA estimate.

However, the most important comparison is that the City MLA estimate is twice that of the H-3 freeway and over four times that of the Tampa Expressway — after all adjustments. We do not believe that this will stand scrutiny by any ethical members of the engineering community.

The cost calculations, while compelling, need more work at a level of detail that we do not have. Our concern is that the City, PB, or the FTA, did not make any serious effort to investigate it at any level of detail, as the following shows.

The City's verification of the capital cost projections

In November 2006, the City Council convened a Transit Advisory Task Force consisting of seven individuals, one of whom, Kazu Hayashida, a former Director of Hawaii DOT, was appointed Chairman.

In turn the Chairman appointed two members to be a Technical Review Subcommittee (TRS) to review construction costs. One had been a long time senior employee of the state DOT and the other was the recently retired Director of Honolulu's City Department of Transportation Services and a former HDOT Director. Neither one had the expertise to judge construction costs in detail, especially a project of this magnitude. It would be the largest construction project in the state's history.

After the Subcommittee's first report to the Task Force, we asked the subcommittee members which companies they had contacted since there needed to be a reconciliation of the Tampa Expressway cost (less the design error) of $320 million and the PB estimate of $2.6 billion for the MLA. They told us they had only talked to the local office of PB, which had produced the projections, and had been assured that the cost estimates were reasonable.

This was hardly appropriate due diligence for a multi-billion dollar project. Accordingly, we pushed for a consultation with the Tampa Expressway Authority and with PCL Construction, Inc., the latter having built both the Tampa Expressway and the Hawaii Convention Center, and

[24] See Appendix A for details of cost adjustments for construction inflation and location differences.

maintained offices in both Tampa and Honolulu and would be familiar with the costs and construction difficulties in both cities.

We also suggested they contact the Figg Bridge Company since they had designed both the Tampa Expressway and its new low-cost construction methodology. One of the subcommittee members made a single, short phone call to the Tampa Expressway Authority; no one contacted PCL or Figg Bridge. The Subcommittee Report is attached as part of the Task Force Final Report.[25]

When one considers that PB maintains its national bridge practice in Tampa and actually designed a part of the Tampa Reversible Express Lanes project one would think that they should have been involved in the MLA evaluation. Our understanding is they were not.

MLA operating costs were inflated

The AA forecasts that operating costs for the MLA would be greater than the Fixed Guideway Alternative. These high operating costs occur "as a result of additional buses that would be put in service under [the MLA]" the AA tells us.

The AA projects that the MLA will need a fleet of 906 buses versus the No-Build Alternative requiring 614 buses, a nearly 50 percent increase, yet projects only 5 percent greater ridership than the No-Build.[26] This small increase is projected despite the MLA offering bus users the advantage of a congestion free bus ride from the Leeward end of the Corridor to Downtown.

The 906 buses projected are far too many buses for the projected MLA ridership. One would expect that more riders per bus would be achieved by the MLA option since buses using the MLA would be operating at far higher speeds than the No-Build Alternative and thus able to make more trips per bus; the round trip being made by returning on the relatively uncongested regular freeway.

Insufficient ridership projected for the MLA

The MLA should project significantly more riders than the No-Build Alternative since it will offer potential bus riders a significant time savings versus travel on the regular freeway. Currently, buses take 36 minutes to travel 12 miles at 20 mph on the regular freeway. Buses on the MLA will take 12 minutes and this significant time savings may well entice some motorists to switch to buses. The same benefits (and freedom from toll charges) will also apply to vanpools. Travel time savings can increase bus and van ridership and decrease both the amount of traffic and the share of low occupancy vehicles.

The Task Force Report ignored

> "… the Alternatives Analysis should have presented variations on the Managed Lane Alternative that could make this alternative more attractive. Appendix 3 contains suggestions for fleshing out possible variants of the Managed Lane Alternative." Task Force Final Report. p. 4/7

The Task Force Final Report makes it clear that there was inadequate study of the MLA. The Report's Appendix 3, "Suggestions for further development of the Managed Lane Alternative," written by the former Chief Counsel of the USDOT's Volpe Center, David Glater, acting as the

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[25] www.honolulutraffic.com/FinalReport.pdf

[26] The bus fleet data is taken from the AA, Table 2-1, and the daily trips data from the AA, Table 3-7. The percentages shown are calculated from these data.

Transportation Analyst for the Task Force, concurs in finding an under-engineering of the MLA by producing this list of suggested modifications.[27]

Following are just two examples from the Report's Appendix 3, first, its concern with the elimination of the current contraflow zipper lane, and, secondly, the City's contention that traffic would build up at the entry and exit points of the MLA, which would negate the free flow benefits of the MLA.

The City and PB ignored these and all other the recommendations of the Task Force regarding the MLA.

Zipper lane should be studied further

Appendix 3 contains the following statement,

> The description of the Managed Lane Alternative in Chapter 2 of the Alternatives Analysis states "The H-1 zipper lane would be maintained in the Two-direction Option but discontinued in the Reversible Option." (p. 2-4). However, no explanation is provided as to why the zipper lane would not be continued in the Reversible Option. The Managed Lane Reversible Option's addition of two Koko Head-bound elevated lanes for the morning commute appears to result in a net increase of only one lane if the inbound zipper lane were removed.

Why was the zipper lane taken out? When it remains in, it alone negates the conclusions of the AA that the MLA was inferior to rail. Congestion relief together with energy consumption, both of which are required to be analyzed by statute,[28] would be significantly improved with the MLA.

For example, the single major freeway into downtown Honolulu from the far end of the study Corridor is H-1. It has seven lanes inbound in the am peak hour, of which one is a zipper lane, one is an HOV lane, and five lanes are regular freeway lanes.

The MLA, with the H-1 zipper lane remaining, would add two additional dynamically-priced lanes, which, according to the FHWA carry twice as many vehicles per lane hour as are carried on a regular unpriced freeway lane.[29] Thus, the two new priced lanes would be the equivalent of four new regular freeway lanes. The congestion mitigation effects of this four lane equivalent addition to the existing seven-lane H-1 freeway are too obvious for the effect not to have been taken into account in the AA.

Ingress/egress insufficiently studied

Appendix 3 also contains the following statement,

> In its discussion of travel time benefits of the Managed Lane options, the Alternatives Analysis projects that traffic congestion at both the H-l Freeway access to the Managed Lane facility and at the Nimitz Highway exit at Pacific Street will negate travel time benefits gained from travel on the Managed Lane facility itself. The Analysis should explore how traffic congestion at these points could be alleviated (at least for mass transit vehicles) in order to enhance the overall performance of this Alternative as a transit guideway."

PB made no effort to apply its engineering competence and ingenuity to the question of ingress and egress for the MLA.

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[27] Task Force Final Report, pp. A-32 to A-33. www.honolulutraffic.com/FinalReport.pdf

[28] 119 STAT. 1576 (d) (3) (D) http://bulk.resource.org/gpo.gov/laws/109/publ059.109.txt

[29] FHWA Congestion Pricing Primer, www.honolulutraffic.com/congestionpricing.pdf

Dr. Prevedouros in his micro-simulation studies of differently designed entry and exit ramps for the MLA shows that with properly designed ramps traffic congestion can be reduced and excessive traffic congestion would not occur even during peak-hour traffic.

Summary

The City made no attempt to follow up the recommendation in the Task Force Report that various matters were worthy of further investigation. Nor did the City and its consultant consider the obvious possibilities of the benefits of a three-lane facility at least for part of the MLA length.

It is quite clear that the City, PB and the FTA have failed to "rigorously explore and objectively evaluate" the MLA during the NEPA process thus far.

We no longer have confidence that FTA objectively evaluates agency submissions since its employee career incentives can only lead to an unwarranted favorable treatment of rail transit projects.

We ask that the USDOT, in conjunction with the CEQ, require the FTA and the City re-assess the MLA in the EIS process. We believe the MLA should be re-studied within the DEIS process if the DEIS is to comply with NEPA. We also believe that an independent evaluation should be required by a firm of consultants who are less self-proclaimed "client-focused" and more taxpayer-focused.

Sincerely,
HONOLULUTRAFFIC.COM

Cliff Slater, Chair
CDS/rrs

Appendix A Table A-1

Tampa Expressway			
Year	Cost index		
2004	154.4	$320.0	original cost
2006	221.3	$458.7	inflated using construction cost index
	+32%	$605.4	to allow for Florida/Hawaii location cost change
		14.0	Length in miles
		$43.2	Cost per mile
		2.4	Lanes
		$18.0	Cost per lane/mile based on 2 lanes

H-3 Freeway			
Year	Cost Index	Real cost	
1991	107.5	$1,300	Original Cost
2006	221.3	$2,676	Allowing for Construction inflation
		16.1	Length in miles
		$166.2	Cost per mile
		4	Lanes
		$41.6	Cost per lane mile

City's Managed Lane Alternative projected cost			
Year		Real cost	
2006		$2,572	
	Length	16	miles
		$161	Cost per mile
	Lanes	2	
		$80.5	Cost per lane mile

Honolulutraffic.com Managed Lane Alternative projected cost			
Year	Cost index	Real cost	
2002	147.9	$900	
2006	221.3	$1,347	Increase for inflation
	Length	10	miles
		$134.7	Cost per mile
	Reduce cost 45 percent	$74.1	Figg construction method
	Lanes	2	
		$37.0	Cost per lane mile

Appendix C

Traffic Operations and Structures: Tampa's Reversible Express Lanes[50]

Project Overview

A most unique toll road, Tampa's Crosstown Expressway Reversible Express Lanes (REL) developed, owned and operated by Tampa-Hillsborough County Expressway Authority opened to motorists in July, 2006. REL is a common sense transportation solution that addresses urban congestion by combining the innovations of concrete segmental bridges, reversible express lanes, cashless open road tolling and full electronic controls. The revolutionary "six lanes in six feet" freeway was constructed within the existing right-of-way of the Lee Roy Selmon Crosstown Expressway. It provides three lanes toward Tampa in the morning peak and three lanes out of Tampa and into the rapidly growing suburb of Brandon in the afternoon peak. During midday, a central segment is closed and the Tampa and Brandon segments operate independently on a direction that optimizes local traffic circulation. Cars and buses are allowed on the REL. A $1.50 toll is charged in 2007 but entry is unimpeded because tolls are collected electronically via in-vehicle transponders or with license plate recognition. REL provided a spectacular reduction in congestion (before speeds of 15 mph in the peaks rose to free flow speeds of about 60 mph) which translates to a full hour of round-trip travel time savings for many commuters. REL was constructed at a record low cost per mile, had minimal environmental impacts, created a minimal disruption to adjacent traffic, and spurred development growth in both Tampa and Brandon. Actual traffic volumes have exceeded forecasts.

The growth of traffic from 13.1 million tolling transaction in 1982 to 30.2 million transactions in 2002 resulted in severe congestion for thousands of daily Crosstown Expressway commuters. The Authority's solution to relieve peak-hour congestion was to build 10 miles of reversible express toll lanes between Interstate 75 and downtown Tampa. Like many urban areas, purchasing the necessary additional land in this corridor for typical highway widening was neither physically nor financially feasible. Consequently, to minimize footprint, most of the project was constructed as a bridge built using only six feet of space within the existing median. This resulted in an aesthetically pleasing structure which also reduced project costs as well as impacts to the community and the environment. The shape of the box that supports the deck and transfers loads to the pier limits the view of the underside of the bridge to only half of the structure, providing light, and limiting the structure's visual impact. The resultant perception is that of an overpass instead of a "double-decker" structure.

Technological innovations include cashless 3-lane wide open road tolling at free flow speeds supplemented by a unique approach to video toll collection for motorists without transponders and a centralized Traffic Management Center with state-of-the-art software to control the reversible lane operations and provide multiple safeguards to preclude vehicles entering in the wrong direction.

The Expressway is a classic commuter toll road, with directional percentage splits of more than 75/25 during the peak hours. In the morning, more than 75% of the traffic is Tampa bound; the

[50] Panos D. Prevedouros, PhD and Martin Stone, PhD, AICP. Selected to appear in the 2008 McGraw-Hill Almanac of Engineering and Technology. (One of only three entries in the field of civil engineering.)

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reverse is true in the afternoon. Almost 80% of all of the daily traffic occurs during the morning and afternoon commuting peak periods.

Terminal Gateways

The Brandon and Downtown gateways to REL were planned by pro-actively engaging the public into the design of both gateways. This resulted in highly positive community acceptance and support at both ends of the project.

In addition to their value as transportation projects, these gateways were major investments in urban architecture, landscaping and public facilities that have been a catalyst for new private investment. They are a case study on the integration of major highway infrastructure into existing communities. They are also a case study of flexible traffic operations since REL is able to operate in six modes: All east-bound, all west-bound, and four combinations of directional operation of the Brandon and Tampa gateways.

The Brandon Parkway end of REL includes scenic landscaping, a winding off-road recreational trail for walking and cycling and numerous sites for resting, relaxing, and enjoying the environment. The Parkway has become the prime location for construction of over $100 million of new restaurants, shopping, residential and private leisure activities. The Brandon Parkway functions as a set of internal circulation roads. During off-peak travel periods, the Parkway facilitates local trips to shopping areas, public services and restaurants.

In downtown Tampa, REL descends to Meridian Street. It transformed a former narrow two-lane street through an aging industrial district into a modern 6-lane urban thoroughfare. Representing a $50 million investment in downtown Tampa, the gateway includes custom designed urban architecture and it offers a visually exciting and pedestrian friendly environment which became the primary catalyst for almost $1 billion of new residential and commercial development.

Traffic Improvement

Before opening REL, the traffic on the existing 4-lane divided toll facility was at Level of Service (LOS) F[51] during the peak hours of operation. Of the total 115,000 average trips during a weekday, more than 75,000 occurred between I-75 and downtown Tampa on the east end of the highway. The trip time from the east averaged between 30 and 40 minutes in the morning commute.

REL opened on a limited basis in mid-2006 and fully in January 2007. Since then, it provides motorists a trip time of 10 minutes or less for their morning and afternoon commute into and out of Tampa. The 10-minute-or-less trip yields time savings of 20-30 minutes for each of the peak-hour directions, thus delivering a time savings of up to one hour per day at a cost of $3.

Travel time was not only substantially shortened but became reliable due to the safe conditions resulting from the express lane design and the elimination of vehicle conflicts caused by large trucks and numerous entrance and exit ramps. The reduced trip time also is responsible for public transit development of enhanced express bus service from suburban Brandon to downtown Tampa. Within weeks of the initial opening of the REL, public transit ridership was up by over 40% on two express bus routes.

[51] LOS is a grading scheme for representing the quality of traffic operations; it ranges from A (best) to F (worst.)

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It is also noteworthy that the REL is ahead of traffic forecasts. The forecast number of entries for the first year of operation was 12,500 vehicles per day. In February 2007 REL carried 15,960 vehicles.

Figure C1. A single gantry facilitates tolling both directions of REL.

Figure C2. The segmental yard cast-matching technique was responsible for excellent on-site fit and large economies in construction.

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Tolling System Innovations

REL is the first transportation project in Florida to employ a totally cashless toll collection method known as Open Road Tolling and it is the first implementation of free-flow tolling in a configuration wider than two lanes for the SUNPASS™ statewide electronic toll collection system. In addition, video toll collection is added to ensure open-access to all users, with or without a transponder.

The Toll-by-Plate program creates a unique Video Toll Account (VTA) for occasional users who may call a special toll-free number in advance of using the REL, or up to 72 hours after use, to register for a VTA. By providing their license plate number and a credit card, motorists may register for either a limited time use of the facility or for an on-going VTA. The VTA, which requires a minimum $5 balance, is essentially a prepaid license plate account for those who use it infrequently.

The toll system has been made more customer friendly by changing the overall philosophy of identifying violators. Under normal business practices for electronic tolls in the US, violators are normally identified as those vehicles without a transponder or an ETC account. By providing multiple payment options, motorists can enter and pay later. A violation is registered only when "failure-to-pay" occurs. Not only is this a more user-friendly approach to toll collection, but it results in the reduction of mistaken violations and the increase in net revenues for the agency, while allowing the organization to focus their violation enforcement resources on those who intentionally and repeatedly refuse to pay tolls.

Construction and Cost

The 3-lane, reversible post-tensioned steel-reinforced concrete segmental bridge was constructed in 9-foot segments at an off-site casting yard, delivered to the Expressway and then assembled in the median of the existing roadway virtually eliminating any impacts to adjacent land uses, the surrounding community or the environment.

The construction started with the installation of piers in the median. Subsequently, a steel truss, designed for REL, was placed between the piers to temporarily support the segments while they were being assembled, allowing much of the work to be performed from above, therefore minimizing impacts to the traffic on the existing Crosstown Expressway lanes below. All segments were match-cast at the casting yard so the on-site assembly was rapid, the resultant geometry flawless and assembly was expedient.

Weighing about 70 tons each, the 59-foot-wide segments were delivered to the Expressway on 13-axle flatbed trucks, also designed for this project. The segments were then assembled during off-peak times. After the segments were lowered onto the truss, they were pulled together with post-tensioned steel cables inside the bridge.

Concrete segmental bridge construction is most efficient for longer structures and the efficiency increases as the length of the project increases. With more than 3,000 segments, REL took advantage of the cookie-cutter approach to bridge development. The total contract cost for the project was approximately $300 million in year 2004 terms. This includes all of the planning, design, right-of-way, construction, and construction management and inspection for the reversible express lanes and the two gateways. The cost also includes the electronic control and safety systems required to operate the lanes and the new three-story Traffic Management Center.

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The actual contract price for the 17.5 lane miles of bridge structure was just over $100 million. At approximately $120 million, the deck cost for the segmental bridge portion of the project was approximately $65 per square foot, far below the average cost for structures in Florida during the past 20 years. The average cost per lane mile for the reversible bridge is approximately $7 million and is among the lowest for bridges constructed in the U.S.

Most of the funding for REL was provided with revenue bonds. One of the most interesting financing components was a unique loan from the State of Florida. In 1999, based on an endorsement from the Florida Transportation Commission who called the REL project "…a unique demonstration of innovative ideas, new technology and the beneficial impact of transportation on economic development and urban revitalization," the State loaned the Expressway Authority $25 million in order to accelerate construction.

Worldwide Applicability

Several of the concepts employed on REL have direct application to other transportation needs throughout the world. The concept of increasing the capacity of transportation corridors through innovative design and maximizing the use of existing public rights-of-way is directly applicable to traffic congestion problems in all urban areas (tolled or not). The tolling technology, payment and enforcement programs are applicable to other express toll lanes, high-occupancy-toll (HOT) lanes and open road tolling facilities everywhere.

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