

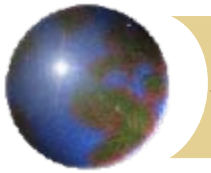
# *Addressing Honolulu's Mobility Crisis*

by

Robert W. Poole, Jr.

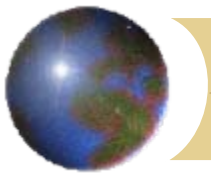
Director of Transportation Studies,  
Reason Foundation

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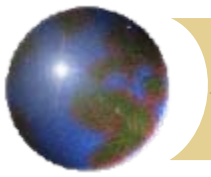
# *Congestion could strangle Honolulu—but it's a solvable problem*

- Under current plans, congestion will get much worse—and the cost of congestion is far more than you think.
- Expanding highway capacity is essential—but can also facilitate better transit.
- The benefits of this approach are far greater than the costs.



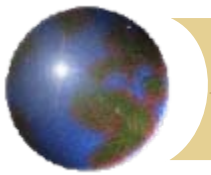
## *First, let's look at the national congestion picture*

- Texas Transportation Institute's annual *Urban Mobility Report*
- Data for 86 metro areas, from 1981 through 2003
- Travel time index = ratio of trip time at rush hour vs. trip time at off hours (1.3 means trip takes 30% longer)



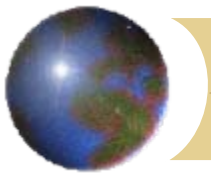
## *A Week spent in Traffic (1982)*





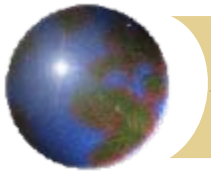
# *A Week (or more) spent in traffic (2003)*





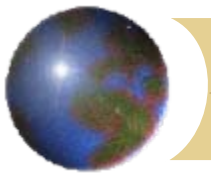
## *How Bad Will It Be by 2030?*

- Congested lane-miles up 50%
- 11 metro areas will have worse congestion than today's Los Angeles (TTI=1.75)
  - Atlanta
  - Baltimore
  - Chicago
  - Denver
  - Las Vegas
  - Miami
  - Minneapolis/St. Paul
  - San Francisco Bay Area
  - Seattle
  - Washington, DC



## *Honolulu's congestion picture*

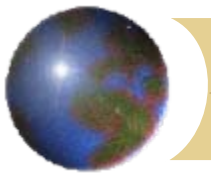
- Travel time index now = 1.19 (comparable to Nashville, Charleston, Milwaukee)
- Projected TTI in 2030 = 1.31 (comparable to today's Orlando, Charlotte, Minneapolis)
- Annual congestion cost now = \$129M, 75 million hours of delay.
- By 2030, cost would be in the \$300-600M range (wasted time + fuel only).



# *Congestion hurts all kinds of businesses*

- Delivery—from pizza to parcels
  - Wasted gas
  - Paying people to sit in traffic
- Cement business
  - Sat deliveries. Pay overtime



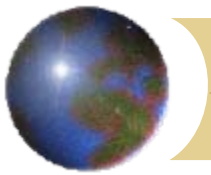


# *Congestion hurts all kinds of businesses*

- Blue collar

- Plumber
- Landscaper
- Air conditioning repairman

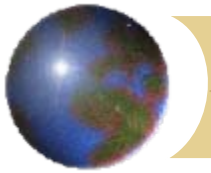




# *Congestion hurts all kinds of businesses*

- White collar
  - Real Estate Agent
  - Salesman
  
- Staffing headaches
  - High Tech
  - Accounting





*Congestion Shrinks the Pie*

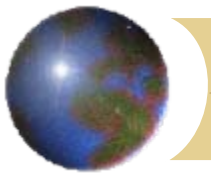
Your Potential Partner  
**Your Job Choices**  
Your Customers



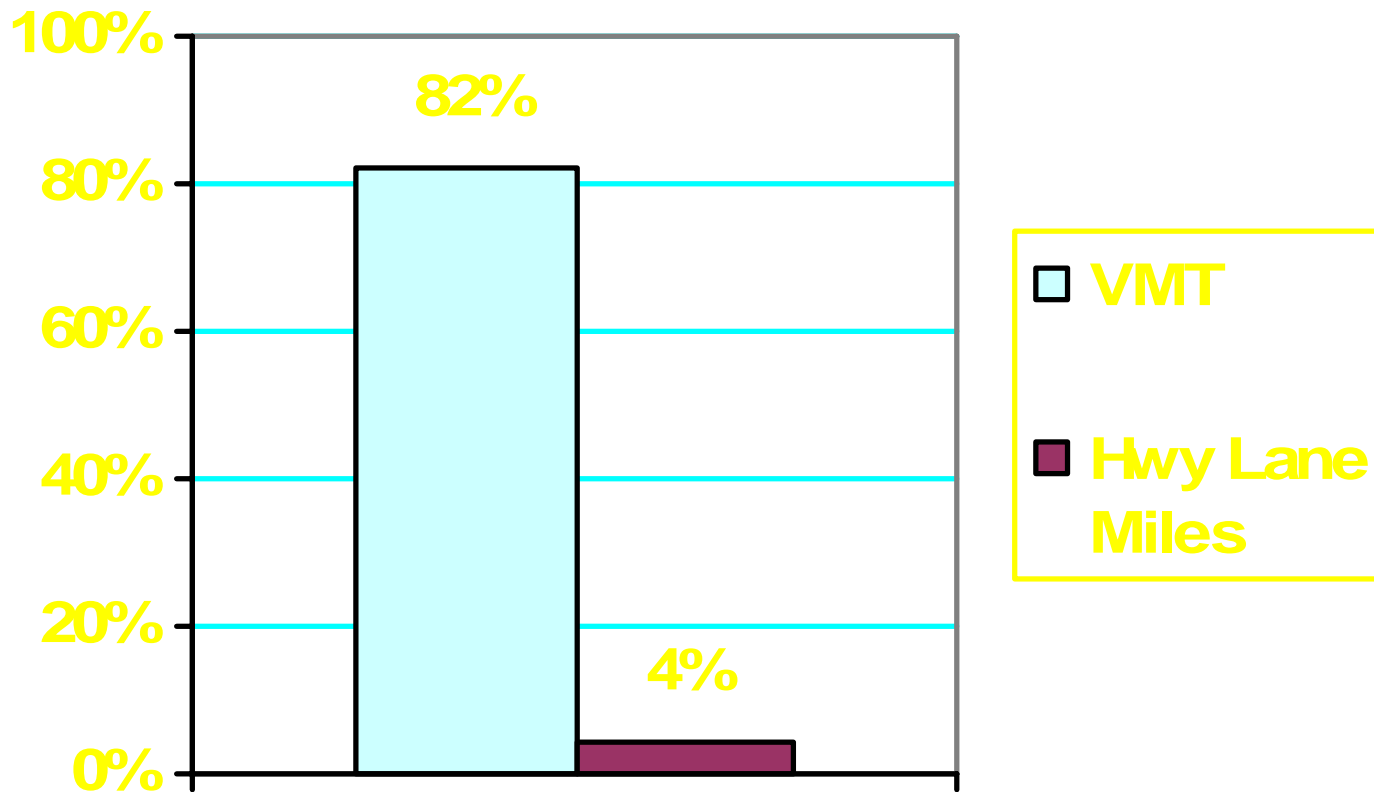
## *Congestion slows emergency care*

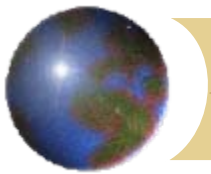
- 67,000 deaths from “savable” cardiac arrest.
- 6 min.
- Not just ambulances, not just heart attacks





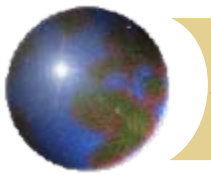
# *Lots More Driving, Not Much More Road*





# *Congestion is Directly Related to Roadway Capacity vs. Demand.*

<b>Metro area</b>	<b>Person Hours of Delay/Peak Traveler</b>	<b>Freeway Lane-Miles/ 1000 Daily VMT</b>
<b>Los Angeles</b>	<b>136</b>	<b>43</b>
<b>San Francisco</b>	<b>92</b>	<b>49</b>
<b>Washington, DC</b>	<b>84</b>	<b>55</b>
<b>Seattle</b>	<b>82</b>	<b>57</b>
<b><u>Houston</u></b>	<b><u>75</u></b>	<b><u>65</u></b>
<b>Salt Lake City</b>	<b>20</b>	<b>78</b>
<b>Pittsburgh</b>	<b>15</b>	<b>107</b>
<b>Oklahoma City</b>	<b>12</b>	<b>83</b>
<b>Rochester</b>	<b>8</b>	<b>91</b>



## *More Capacity = Less Congestion*

**TTI Data and other sources show that adding capacity reduces congestion**

**Not sustainable unless capacity is well managed, also. . .**

**SOV remains and WILL remain, the overwhelming choice:  
Only SOV and Telecommute have increased market share in last decade.**

**Despite major investment in HOV and transit:**

**Carpool to work: 11.2% in 2000 vs. 13.4% in 1990**

**Transit to work: 4.73% in 2000 vs 5.27% in 1990**

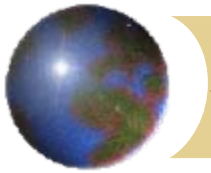


# *Adding Capacity to Kill Severe Congestion*

## *Reason's National Mobility Study*

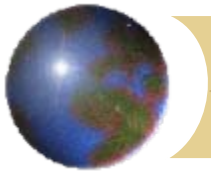
- Total cost over 25 years is a bit over \$21B/year, mostly in larger urban areas.
- This averages 28% of what MPOs already plan to spend on transportation.
- Average cost per commuter trip is 30-60 cents in most cities.
- Time saved is worth several times as much as cost/trip.





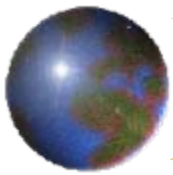
## *Preliminary Results for Honolulu*

- Eliminating all LOS F congestion by 2030 would require 296 new lane-miles.
- Of those:
  - 80.4 would be on freeways
  - 50.3 would be on arterials
  - 165.4 would be on local streets & roads
- Annual hours saved = 8.6 million



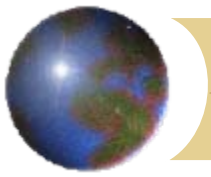
## *Where can we add new capacity?*

- Go up—add elevated lanes above existing freeway
- Go under—bored tunnels under sensitive areas (e.g., for missing links)
- Re-use untraditional ROW:
  - Rail lines
  - Flood plains
  - Power line corridors



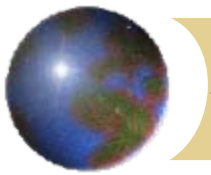
# *Tampa's elevated express toll lanes*





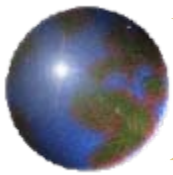
# *Elevated Tollway with Sound Tube (Melbourne)*



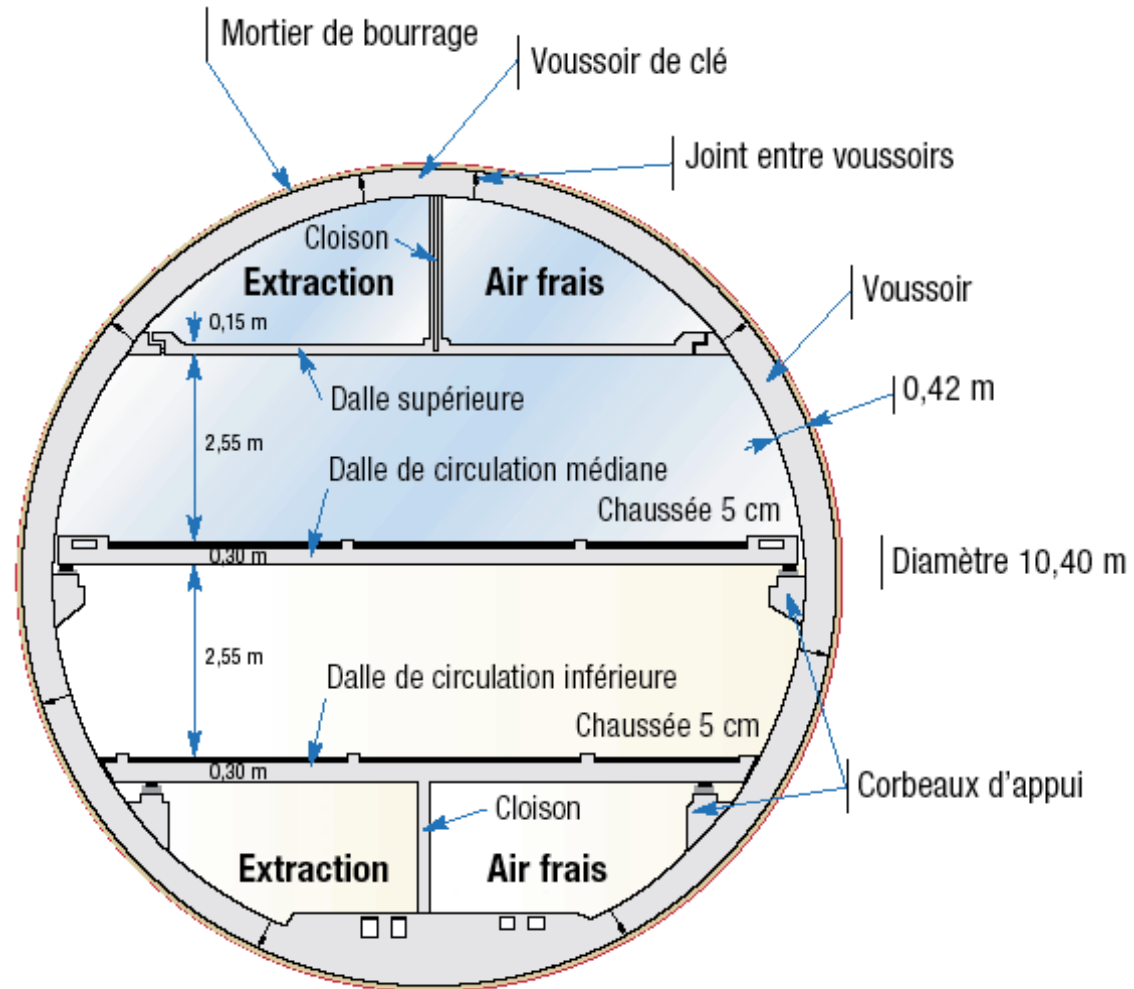


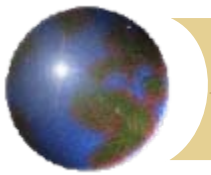
# *Missing Link on Paris A-86 Ring Road: Toll Tunnels*





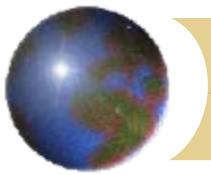
# *Double-Deck, Cars-Only Tunnel Slashes Cost*





# *Flood Plain: Trinity River Parkway in Dallas*

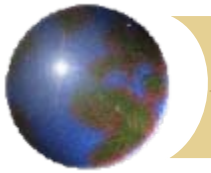




# *HOT Lanes*

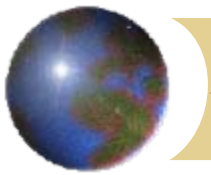
- Variable pricing
  - Keeps traffic moving
  - 65mph vs 20mph
- Electronic Toll Collection
- 50% greater throughput at rush-hour
- Popular
- Equitable





## + *High Quality Transit*

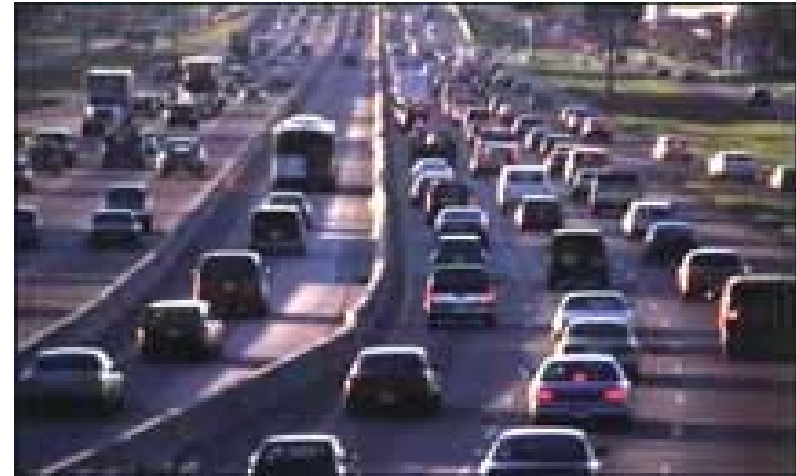
- Variable pricing can give bus riders the unthinkable—reliable travel.
- Priced lanes are the “virtual” equivalent of exclusive bus lanes, but most of the vehicles are cars that pay tolls.
- Houston Katy project: 25% for transit and super-HOVs

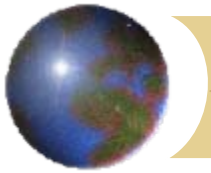


## = *VEB (Virtual Exclusive Busway)*

Something for everyone.

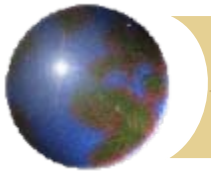
- Transit users get better service.
- Motorists get a free flowing escape route.
- Local govts get new funding source.





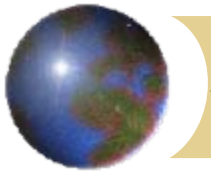
## *What would Honolulu capacity expansion cost?*

- Assume all freeway additions are elevated, and value-priced.
- Tampa system 2006 cost is \$14M/lane-mile. Assume 30% more costly in HI.
- 80 lane-mi. of elevated express lanes = \$1.445 billion



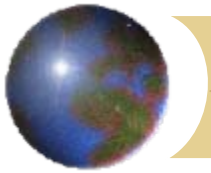
## *Other roadway additions*

- Assume arterial widening costs \$6M per lane-mi. Then 50 ln-mi = \$300M
- Assume local roads cost \$3.5M/lane-mi. Then 165 ln-mi - \$578M
- Total cost of all capacity additions = \$2.334 billion (including the elevateds)



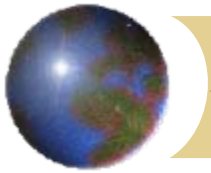
## *What would be the benefits?*

- 8.6 million hours/year saved.
- Cost/commuter/year = \$278
- Cost/resident/year = \$139
- Cost/commuter/weekday = \$1.12



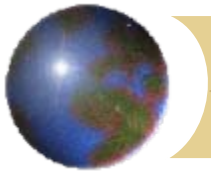
# *True Cost of Congestion*

- Jack Wells, chief economist, US DOT:
    - TTI's time/fuel cost, 86 cities = \$63.1B
    - Add other cities of 50K+ = 12.8
    - Add productivity losses = 38.0
    - Add unreliability = 38.0
    - Add cargo delays = 3.8
    - Safety & environmental costs = 12.8
- Total annual cost = \$168.3B



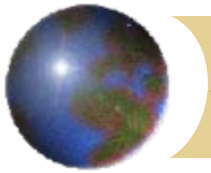
## *Adjust Honolulu congestion costs*

- DOT/TTI ratio =  $168.3/63.1 = 2.66$
- Honolulu 2003 cost x 2.66 = \$343M
- That values time saved at \$45.73/hr.
- Using that value, the 8.6M hours/year saved via capacity additions = \$393M/yr.
- That is achieved at one-time investment cost of \$2.23 billion.



# *Highway Capacity Expansion Is Affordable*

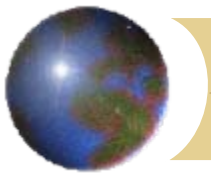
- Current Oahu long-range transportation plan totals \$13+ billion over next 25 years.
- Of that total, \$7 billion is for transit.
- Since elevated express lanes provide the guideway for express bus service, their \$1.4B cost would substitute for the \$4B rail transit capital expenditure.
- Toll revenues would also cover a portion of that cost.
- Thus, highway expansion is easily affordable.



## *Conclusion*

“Congestion is not a scientific mystery, nor is it an uncontrollable force. Congestion results from poor policy choices and a failure to separate solutions that are effective from those that are not.”

Norman Mineta, Secretary of  
Transportation, 2001-2006



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