Real Options for Traffic Congestion Relief in Honolulu

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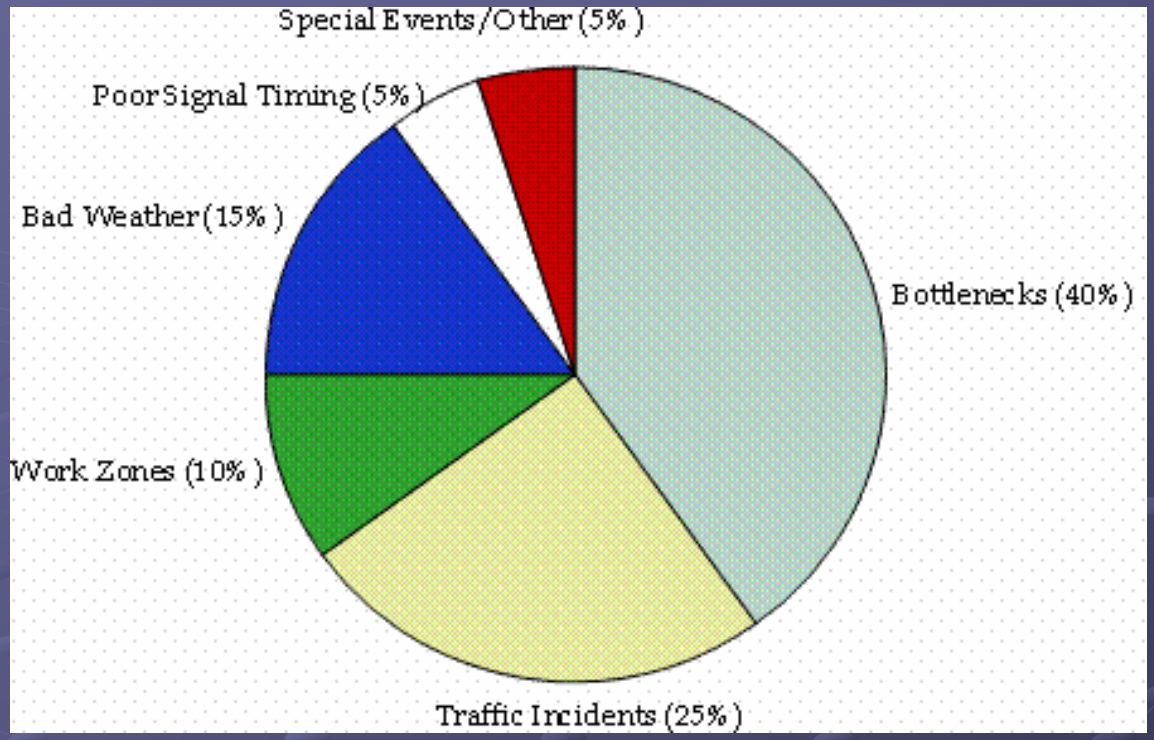
Fundamental Causes of Congestion



- Oahu's response: Rail Transit Again and Again
- Oahu's transportation "visions" should become a synonym for insanity (trying the same thing again and again and expecting a different result!)

There is a big difference between an unbiased citizen-driven set of alternatives looking for a solution and a made-up list to satisfy the $10 million contract of the City administration

City's Set of Alternatives

1. No Build
2. TSM
3. Managed lanes/HOT
4. Rail 1
5. Rail 2
6. Rail 3
7. Rail 4

Better Set of Alternatives

1. No build
2. Freeway bottlenecks, adaptive traffic signals
3. Express buses or Bus Rapid Transit
4. 2 + 3
5. Rail: Aloha Stadium to Waikiki
6. Reversible overhead tollway
7. Reversible undersea toll tunnel

Stop the Spin: Address the problem!

The Honolulu High-Capacity Transit Corridor Project is studying:

how to improve the ability of people to move in the congested E-W corridor between Kapolei and UH.

It says that:

Over 60% of Oahu's population lives within this corridor.

The problem is traffic congestion during extended peak periods, not "an ability to move." The ability to move is easily satisfied with 100,000 empty seats moving on a rail line every day. It is not a solution!

It is a direct avoidance of the problem that the community has asked them to solve.

Maybe 60% live to the left and the right of a single rail line, in valleys and ridges. They'll have to walk at least a few miles on heels, dress shoes or flip-flops in order to "improve their ability to move."

Way way less than 5% of Oahu is within one mile of rail stations and can somewhat conveniently use the rail line!

Now, let’s look at some real solutions to the real problem of traffic congestion …..

Near-Term Solutions: Improvements to H-1 freeway

Objective: Remove bottlenecks
Result: 30% reduction in travel time

- ❖ Add a lane to the Kalihi St. “choker” on both directions
- ❖ Add lane between Liliha St. on ramp and Pali Hwy. off-ramp
- ✓ Lunalilo St. on-ramp rerouting → automate it
- ❖ 4-lane viaduct between Vineyard and Punahou ramps
- ❖ Selective ramp metering
- ✓ Waimalu widening
- ❖ PM zipper lane (Aloha Stadium to Mililani) – we may have a shorter one in couple of years

Near-Term Solutions: Other Actions (1 of 3)

Contraflow along Dillingham Blvd. – Traffic simulation in 1991 estimated a capacity gain from the existing level of 1,440 vehicles per hour to 2,160 vph

Improve traffic signal timings and coordination – Los Angeles uses a computerized signal control system. It manages 1,170 intersections and 4,509 detectors (*FHWA*):

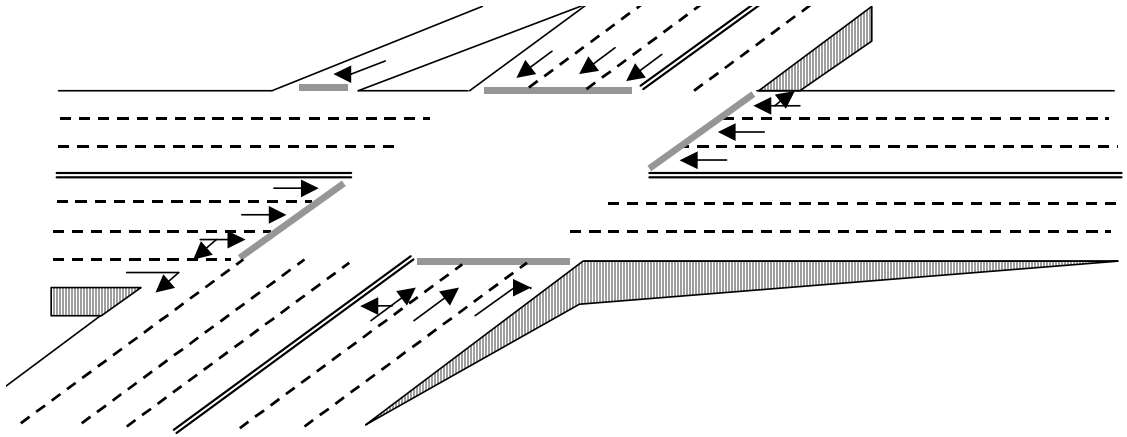
13% ↓ in fuel consumption	14% ↓ in emissions
41% ↓ in vehicle stops	18% ↓ in travel time
16% ↑ in average speed	44% ↓ in delay

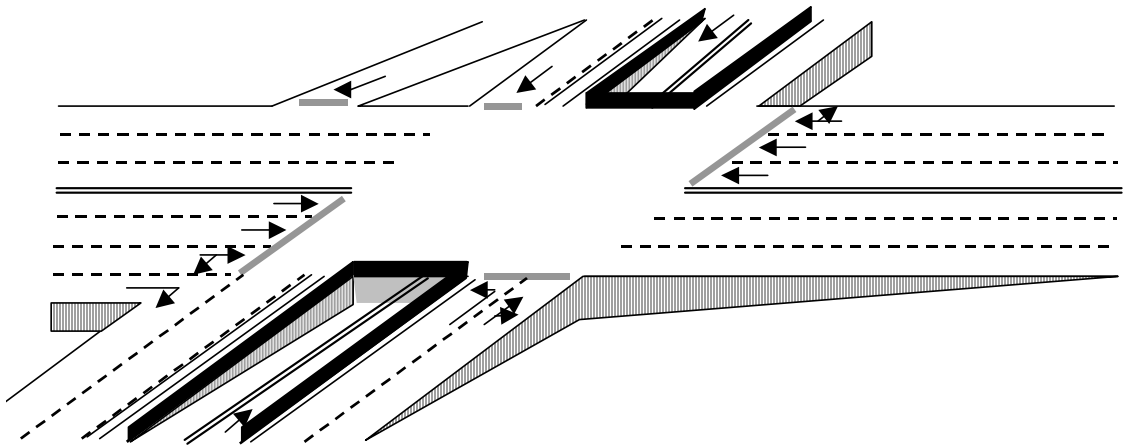
Near-Term Solutions: Other Actions (2 of 3)

- **Encourage or selectively mandate 4x10 work shifts** for a 10% to 20% reduction in peak traffic
- **Shift start time of some large schools** to reduce peak traffic: All high schools and UH-Manoa: 9 am
- **Clear accidents faster, and manage major disruptions to traffic flow**

Near-Term Solutions: Other Actions (3 of 3)

- Nimitz Viaduct (2 reversible lanes)
- Peak period contraflow on Pali Hwy.
- Grade separation at “maxed out” intersections





- Kapiolani and Kalakaua intersection
- Expected cost: $5 million
- Expected benefits: $2 million/year in AM and PM savings alone for 250 days per year (value of time = $7.8/hr and fuel price=$1.5/gln in 2001)
- Key difficulties: traffic during construction and utilities

Reality Check (1 of 4)

We are where we are because we do not implement any real solutions!

Actually we do too little to improve our transportation infrastructure while the economy, tourism, activities and traffic grow, as they should in a vital city.

Our traffic signals need a substantial upgrade in staff and technology.

Poor pavement on critical roads causes slowdowns and accidents.

HPD closes vital arteries and freeways for hours on end, even in single car crashes! They have resisted improvement.

Honolulu is the most lane deficient city in terms of lane miles per licensed driver. We simply need more roads → next slide…

We are now wasting $10 million and three years to study a different politician's transportation "vision."

Rail is a (literally) bankrupt 19th century mode that has little or no place in modern cities which did not develop around legacy rail systems.

Reality Check (2 of 4)

Large (500,000+) Urbanized Areas with the Most and Least per Capital Vehicle Travel in 2001

RANK	URBANIZED AREA NAME	STATE LOCATION	MILES OF ROADWAY PER 1,000 PERSONS	TOTAL DVMT PER CAPITA	AVERAGE DAILY TRAFFIC/ FREEWAY LANE
1	Houston	TX	6.1	37.6	18,174
2	Atlanta	GA	4.7	35.6	19,031
3	Birmingham	AL	6.9	34.8	12,847
4	Nashville	TN	4.4	34.3	13,763
5	Indianapolis	IN	4.7	33.6	16,911
6	Austin	TX	5.2	32.9	16,424
46	**Los Angeles**	**CA**	**2.1**	**22.2**	**23,123**
65	Philadelphia	PA	3.1	18.4	14,656
66	**Honolulu**	**HI**	**1.5**	**16.8**	**14,014**
67	New York-Northeastern NJ	NY	2.2	15.7	15,329
68	New Orleans	LA	3.1	14.4	13,478
69	San Juan	PR	2.2	13.4	15,557

Source: Highway Statistics, 2002

Reality Check (3 of 4)

Normal daily life for most adults is a **chain of events and trips**, the minority of which occur on a narrow rail "corridor."

A rail "corridor" is misnomer. You can't jump on the rails and catch the train. You have 12 to 15 individual access points (stations) between Kapolei and the UH. Can you imagine a major artery between UH and Kapolei with only 12 access ramps? The H-1 has 12 interchanges between UH and Mapunapuna.

It's easy for your car to drive half a mile to the next ramp. Will the average Honolulu commuter walk a mile to the station?

Park and ride? Where is the space and $$$ for parking structures? Most people have already spent 20 grand on a car and 2 spend grand a year on insurance and fees. They need the car for the majority of their activities which are outside "the corridor".

Who will park in desolate parking and ride spots? (Thief magnet!) Close to none like they did in the failed express bus P&R station on Hawaii Kai!

Rail needs stations that must to meet ADA. Rail has huge energy losses: It is along linear system that starts and stops even when tit is empty. We need an additional power plant (we have brown out as is…)

Reality Check (4 of 4)

	Trips by Rail?
Commutes (workers and students)	under 5% *
Personal (errands, entertainment)	under 1%
Household (groceries, rides to children, elders)	nil
Cargo, freight and heavy goods	none
Mail and package delivery	none
Visitor travel to attractions	nil
Access to airport(s)	nil **
Access to port(s) and harbor(s)	none
Service, repair and household deliveries	none
Social services to people	nil
Emergency services and evacuations	none

Under 1% overall!

(*) In U.S. cities with >1 million population

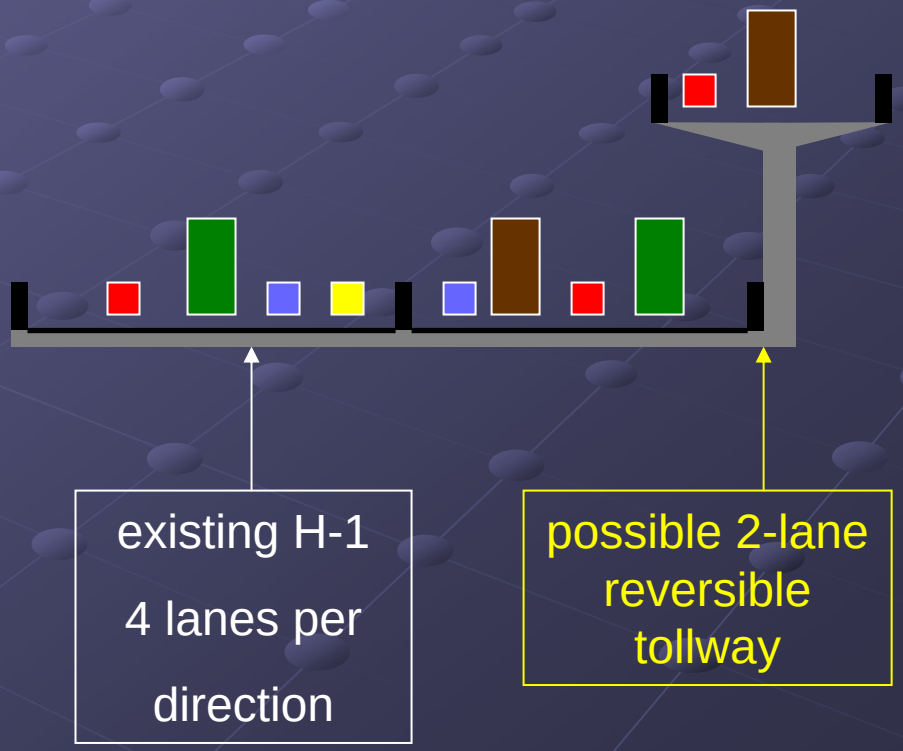
(**) Some use mostly by some business travelers and airport staff

Now, let’s take a look at some reality-driven transportation visions that are actually being built …

Tampa, FL Tollway (nearly completed)

Capital Beltway

ASCE: "Virginia DOT may have found a solution to the congestion on I-495." Under the state's Public-Private Transportation Act, they will add two HOT lanes per direction

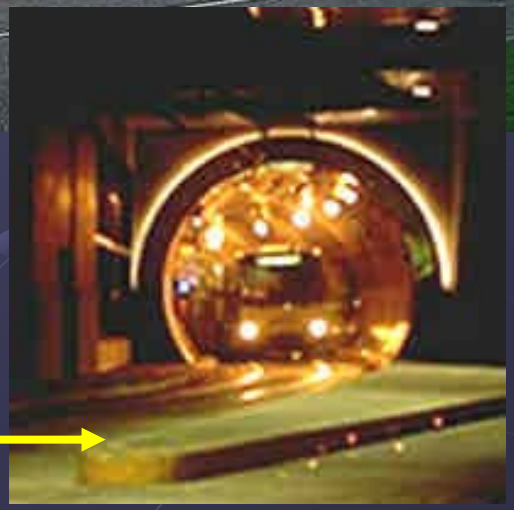


Bus Guideway System

- Guideway buses are slightly modified regular buses
- If *O-bahn* fails, then the buses can be used on any route

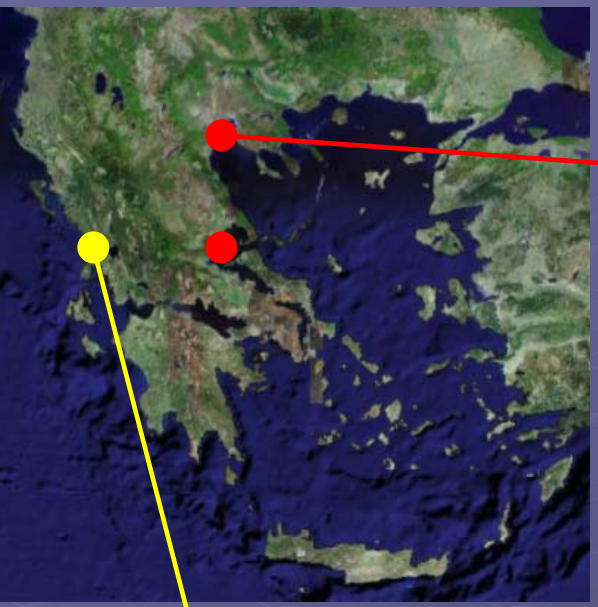
Adelaide, Birmingham, Bochum, Essen, Leeds

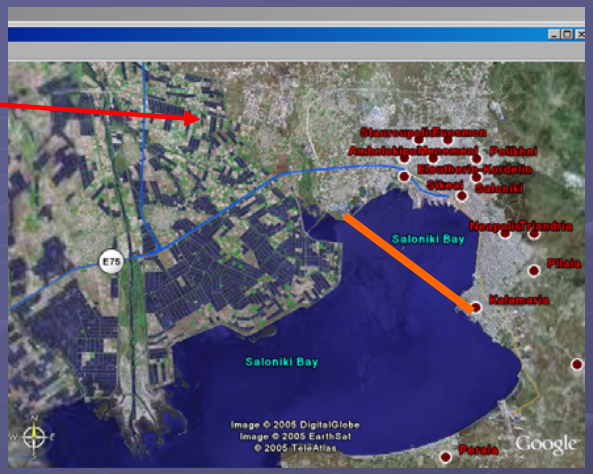
The British call it a curb-guided bus



German “dual mode”, progressively replacing inflexible rail with more flexible guided bus

Submersible Tunnels





Tokyo Bay Aqualine

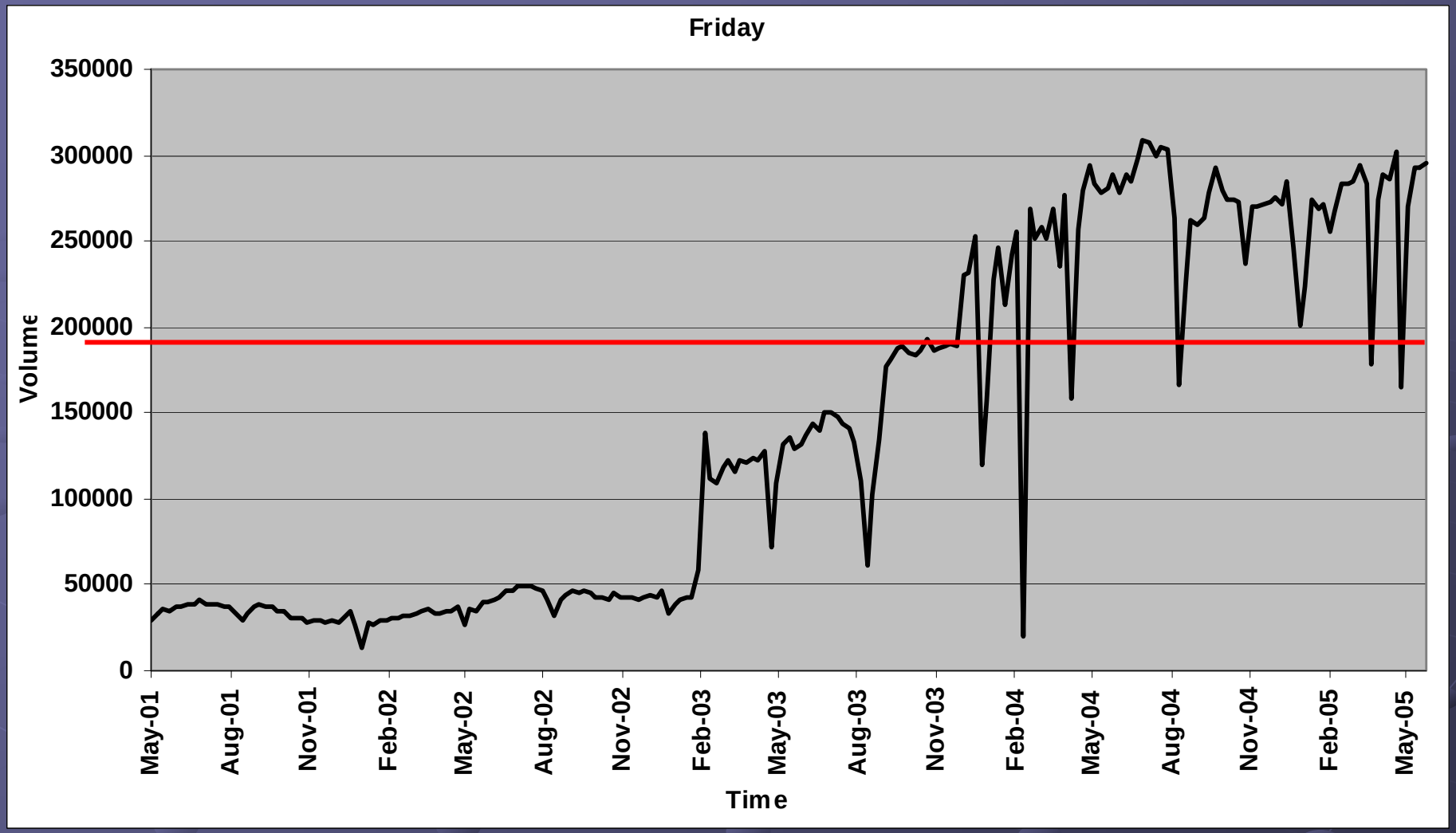
2004 Olympics and the Attica Tollway

Segment	Length (m)	Length (ft)	No. on-ramps	No. off-ramps
A	50,248	167,495	22	21
E	49,981	166,602	20	21
MB	12,460	41,535	6	6
MP	11,337	37,789	5	6
XK	11,310	37,701	5	6
YK	8,512	28,373	5	5
sum	***143.8 km***	***90.8 miles***	***63***	***65***

1997 – 2004

91 directional miles

232 lane-miles!!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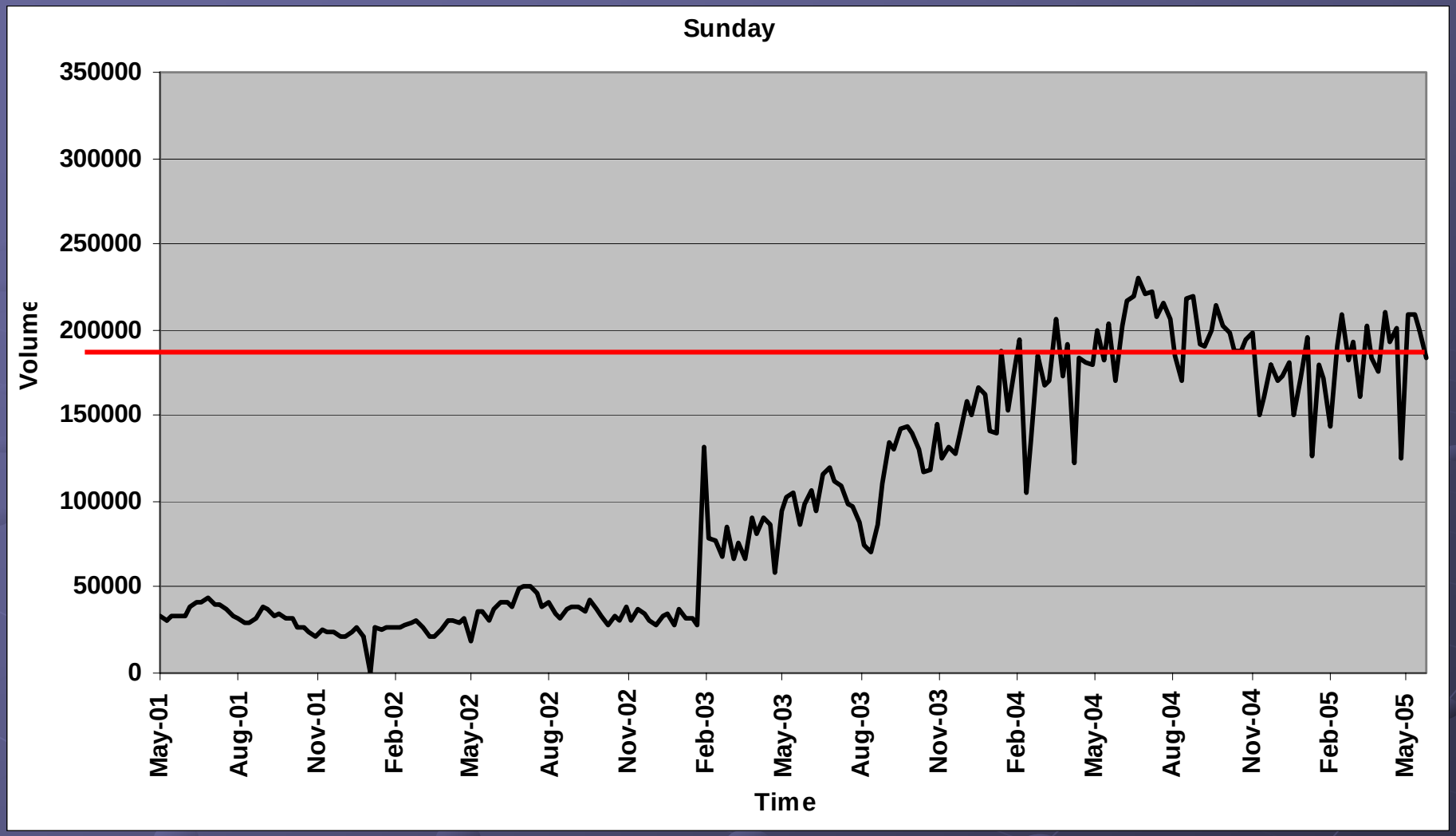
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Feb-05
May-05
Time

ATTIKI ODOS

- Forecast AADT for year 2004 in 1990s studies:

148,082 vehicles

- Actual AADT in 2004

231,542 vehicles

- Difference

65% higher than expected – 2004 actual traffic is close to the 2021 forecast of 244,932 vehicles

ATTIKES DIADROMES S.A.

Traffic Improvements

- Absorption of over 10% of the daily traffic in metropolitan Athens
- Significant Travel time savings where annualized savings reached 65.7 million hours
- Reduction on the cost of commercial transportation
- Expedites emergency response and facilitates express bus routes
- Contribution to the overall reduction of accidents by 5% to 12%


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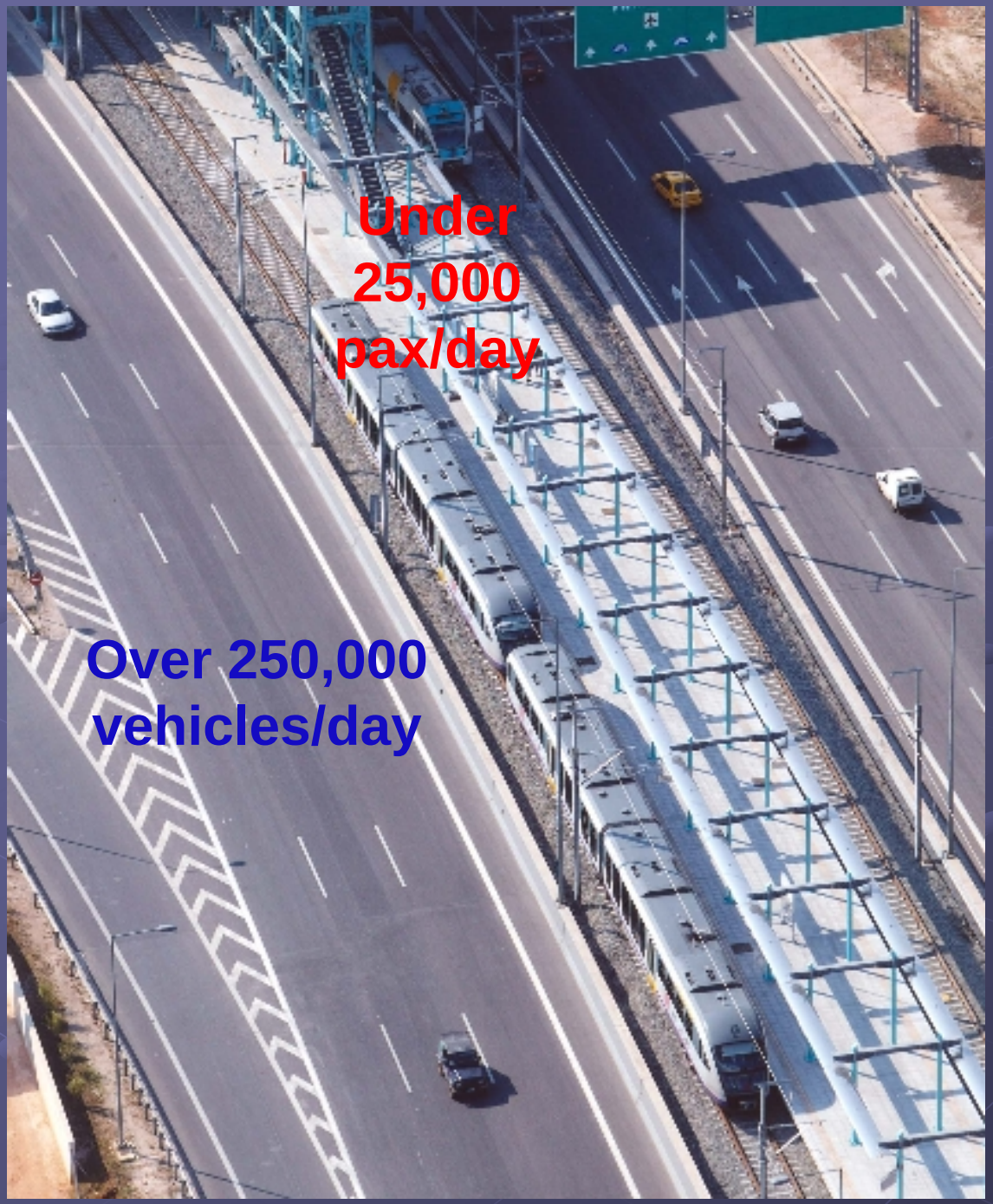

***Suburban Railway*, or Europe's most expensive limousine service.**

300 seats per train occupied by 30 or fewer passengers, if there are any passengers in the train!

"we need rail transit now more than ever since gas prices are so high"

NOT REALLY!

- People, will find a way to maintain private transport: flexibility, comfort, convenience, pride, necessity
- Hybrid cars: increasing variety in size, price, capabilities
- Mini cars (<1.2 liter engine) are abundant in Asia and EU
- 2-seater *Smart*: 70 mpg of diesel or filtered cooking oil
- Diesel powered cars -- US gets low sulfur diesel in 2006
- Car sharing services: *FlexCar, ZipCar, CarShare*
- Return to the city: well over 5,000 new condo units in central Honolulu

In Summary …

- Rail transit "dream team" Harris – Bainum – Soon: *Oahu Trans2K* → **rail transit was rejected** → too expensive at 50/50; wouldn't meet FTA demand requirements → BRT → Kuhio "beautification"
- Unnecessary, counterproductive competition to *TheBus*
- Billions of dollars in rail do nothing to improve freight movement, emergency response and evacuations
- "Unbenefitting" Oahu residents will pay the supermajority of taxes for rail: Kaimuki, Manoa to Hawaii Kai and Waimanalo, Nuuanu, Kailua, Kaneohe, North Shore, Salt Lake, Moanalua Valley, Aiea Heights, and anything ending in Heights!

Oahu needs traffic relief and tax relief. Rail is loaded with local taxes and subsidies, and is a congestion preservative.

What we are getting is exactly the opposite of what we need!

Thanks!

UHM - CEE - TTL

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