Imagine...no congestion

Rick Woodbury of Commuter Cars Corp. on how traffic congestion could be virtually eliminated at a fraction of the cost of highway infrastructure expansion

IN an analysis of traffic congestion in Auckland, New Zealand, Auckland city council member Toa Greening observed that traffic congestion problems are not because of the number of single occupied vehicles on the motorway at peak traffic times. It is because of the width of single occupied vehicles on the motorway at peak traffic times. The solution, he says, is to replace a specified number of the existing single-occupant vehicles with narrow cars that can travel side by side in a single lane, or in a half lane, made simply by painting a stripe (www.projectmicrocar.co.nz).

The risk of continuing with conventional transport planning methodologies of building more motorways, roads, rail tracks, bus lanes, cycle lanes, tunnels and bridges is that it will not solve traffic congestion. It will instead cause major financial crises in the very near future.

The challenge is to replace a specified number of the existing single occupied vehicles with a leased fleet of narrow electric vehicles that can travel side by side in a single lane, or in half lanes, to relieve peak time congestion. The significant economic, social and environmental benefits could turn almost any city into the most liveable city in the world.

Approximately 90% of commuter traffic is single-occupant. It makes no sense to use the wrong tool for the job now that the right tool is available. Why would a carpenter choose a sledgehammer to pound finish nails if he had a claw hammer at his disposal?

The interior provides the driver with as much room as a standard car does, and all the instruments are within easy reach. Note the rear seat which provides room for a passenger. Their legs comfortably straddle the driver's seat (unless they have a tight skirt, then they have to drive)

And while many motorists will see the benefit of switching to a narrow commuter vehicle, the likeliest solution will be for a government entity to implement such a revolutionary transportation scheme.

Two can Tango

Fortunately, the Tango ultra-narrow vehicle is available, which will accomplish the needed switch of motorists from wide to narrow automobiles. At just one metre wide and 2.5 metres long, two Tangos fit easily within the road space allotted to a standard vehicle. Because of the Tango's narrow width, four Tangos can fit into the parallel parking space required by a standard car. Plus it provides the safety and comfort of a full-sized car, even providing room for a passenger up to two metres tall, or cargo behind the driver of the same size.

Now imagine that in addition to solving the worst transportation headaches, your city could actually derive financial benefit from that solution, by leasing these vehicles to consumers at a profit, because who wouldn't want to take advantage of getting to and from work in the quickest, most flexible, and exciting way?

The Tango, as an ultra-narrow electric vehicle, offers key benefits both on the roadways and in parking facilities.

First, by reducing the size of vehicles, it reduces congestion. As early as 1990, William L Garrison and Mark E Pitstick, in a study for the Institute of Transportation Studies at the University of California at Berkeley, analysed the benefits of what they called a 'lean machine' – a car with a nearly-identical footprint to the Tango. It was a tiny three-wheeler that held only one person and required the driver to manually control the leaning like a motorcycle. For obvious reasons, this never took off. This study showed that with virtually no infrastructure increase, that lane capacity would rise from 2,000 vehicles per hour to 4,400 vehicles per hour.

However, with the worldwide patented, ballasted narrow Tango, all of the benefits that one would want in a freeway vehicle, including speed, safety, convenience, and carrying capacity, are included without any of the drawbacks for any single-occupant, and most double-occupant trips.

In a recent study of the effects of motorcycles on congestion in Belgium (www.acem.eu/index.php/media-corner/press-releases/80-more-powered-two-wheelers-would-ease-congestion) analysis indicated that a 25% shift from private cars to

Side by side on a motorway, two Tangos take less space than any standard-sized cars surrounding them. Photo courtesy David McClave, Case42 Creative Media

motorcycles or scooters would eliminate congestion entirely. The Tango is the size of a motorcycle but with the comfort and safety features of an automobile.

The Tango can fit up to four to a typical on-street parallel-parking spot. This results not only in more efficient use of city space, but it also reduces congestion caused by drivers circling through areas waiting for parking spots to open up. In parking facilities, the Tango allows a 350% increase in space utilisation, according to the above-mentioned California study; and is also able to make use of those oddly-shaped corner areas not accessible to larger vehicles. This results in reduced demand for parking facilities and allows more cost-effective use of expensive city real estate.

Secondly, the Tango is pure electric. The environmental benefits of this are clear: cleaner air and less dependence on fossil fuels. A high cost of commuting is the wasted fuel caused by traffic slowdowns. Electric vehicles not only don't use power when they are not actually in motion, they are normally charged overnight, during low electrical usage times, thus equalising demand on power-generating facilities. Additional economic advantages include factors such as reduced medical costs due to reduced air pollution.

Thirdly, commuters gain productive time since they are not spending as long commuting. This can have a significant economic impact and therefore benefit tax revenues. Everyone is aware of the time and frustration caused by bumper-to-bumper traffic. Imagine free-flowing traffic without those maddening slowdowns caused by congestion.

And fourth, because the solution is possible utilising the existing roadway infrastructure, it can be accomplished without significantly increased revenue requirements or increased debt load.

How is this possible?

It may be that many individual commuters will see the benefit of driving a Tango or similar ultra-narrow vehicle, especially if they are given some economic incentive to do so. However, the difficulty is convincing the masses to use electric vehicles with their shorter range and inability to compete head to head with petrol vehicles for the family car or truck. The Tango Narrow Commuter Vehicle (NCV) offers benefits the masses would be attracted to –

Perpendicular-to-the-curb parking allows up to four cars in a standard parallel space

With doors and windows on both sides of the driver compartment, driver-to-driver communication is easy. Photo courtesy David McClave, Case42 Creative Media

convenience, comfort, and speed of commuting, which outweigh the drawbacks, especially for the intended purpose of commuting.

By investing in a fleet of Tangos, which it could lease to commuters at a reasonable price, cities have the potential to facilitate this switch.

In his report cited above, Greening estimates the costs of purchasing a fleet of 15,000 Tangos, which would resolve the motorway congestion at Auckland's busiest central junction in four years:

- Purchase 15,000 Tangos at $29,000 = $435m;
- Amortise debt of $435m at 7% over ten years = $660m;
- Lease out Tangos at $55/week = $2,860/year (each) x ten years = $429m.

It goes in snow!

In other words, the costs of purchase would be essentially recouped over a ten-year span, for a fraction of the cost of increasing road infrastructure, and at the end of which time the Tangos could be sold or refurbished for continued use and benefit.

Compare this to the typical cost of a major construction project, whether roadway or urban transportation (rail, subway), or even the increased costs of acquiring and operating buses. Plus, unlike public transportation, which requires employees to maintain the government-owned equipment, the person leasing a Tango assumes the costs of normal upkeep and operation such as the electricity to operate it, cleaning it, tires, and other (minimal) routine maintenance.

The Tango can be manufactured in the country that implements it, which would add jobs and economic benefits as well.

If governments have capital resources for investing in infrastructure, why not put that money into true improvements. There are already cars on the road that can utilise 'smart technology' to improve traffic flow and reduce accidents. Installation of lane sensors and markers that facilitate traffic flow on current highways makes much more economic sense than trying to add additional travel lanes – a 'solution' which takes away valuable property, forces citizens to reside further from city centres, and thus increases the number of kilometres travelled each day.

Without any infrastructure added whatsoever, and no need for technology to become ripe, the Tango will sell in mass as soon as it's built in production.

This Tango 'family reunion' shows how Tangos increase parking lot capacity

Why the Tango?

The Tango is the fastest, safest, most practical, most convenient, and most fun to drive car in existence, for 90% of all urban trips. Who could make this statement about any other car in the world with any level of conviction?

The Tango is a new class of vehicle, the narrow commuter vehicle (NCV). With the footprint of a motorcycle, but with the protection and comfort of a car, it gives immediate benefits to anyone who drives one in a congested city. The Tango is a market-driven solution to global congestion and parking problems, while simultaneously weaning commuters off fossil fuels.

The Tango is not trying to be a one-car-fits-all. It is designed for commuters who drive up to 300 kilometres a day depending on the size battery pack chosen. In the 90% of all trips that are within its capabilities, it should be the natural choice for those trips. Although it is designed for the solitary occupant, it seats two comfortably. So there is no question one would choose a Tango rather than a full-sized car when going on a short trip. The Tango is the right tool for the job of commuting by oneself, or even with a passenger.

The Tango is safest, not only because it has a roll cage exactly like those used in 300+km/h race cars, but also because there is no other car in the world that can equal it in accident avoidance. It can respond to an emergency manoeuvre quicker than a motorcycle and yet has the same frontal area so as to be able to avoid an accident or slip between cars. The Tango is ballasted to the extent that it has an NTSA 5-star static rollover threshold, so it corners like a sports car despite its high, narrow design. It weighs 1,500 kg with over 900 kg of weight under the floor. The Tango was the fastest car through the emergency lane change manoeuvre (moose test) tested by Consumer Reports at the Automotive X-Prize competition in 2010.

Fully highway capable with a top speed of over 200 km/h, it has over 3,000ft/lbs (4,067 Nm) of torque at the motors, starting at 0rpm, and accelerates with a ferocity that has to be experienced to be appreciated.

Safe, comfortable, convenient. Who wouldn't want to drive a Tango?

Current Tango production is 'build to order' with a commensurate cost. At 2,500 per year, production the cost drops to $44,000 each. At 15,000 it drops to $29,000 and at 100,000 vehicles the price drops to $20,000. Completion of any of these quantities is possible within three years.

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