
future technology car Second look at LRT

Posted by Baxter - 2010/02/10 01:16

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Posted by Bob Tiernan - 2010/02/10 01:16

If every seat is filled every time, that is 624 people per hour or roughly about a quarter of the capacity of one lane of traffic. With only 25K trips per day for all of Santa Clara County's multiple light rail lines, they don't have every seat filled very often. The real capacity is probably less than ten percent of one lane of traffic. I'm not familiar with details of Santa Clara County, but here in Portland the claims that MAX ridership is equaling the capacity of a highway lane is exposed as bullcrap when you compare ridership to the actual numbers of cars on either the Banfield or Sunset Highway. The number of cars that would be on the road if MAX didn't exist (even exaggerating this number since most MAX riders would go back to the buses) would be but a blip in the total - easily absorbed and nobody would notice. They might notice an increase due to additional cars driven by people new to the area or new to driving age but since the argument makes the claim about Max riders supposedly being kept off the highways, we'll stick to that. And it's a blip, if anything. Take a look at the numbers of people travelling on the Banfield per hour and you'll see an actual mass transit system. Bob Tiernan The government works best when it establishes the rules of the road, not when it seeks to determine the composition of the traffic.

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Posted by Ted Fisher - 2010/02/10 01:16

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Sheesh! How fast was I driving when I was a cabbie! Do try to compare apples to apples. 'Apples to apples' would be to compare the time it takes to get from the Expo Center to the bus mall by the routes each would take in the real world. If you were driving from the Expo to Pioneer Square, why in the world would you take Interstate? Such a comparison - making the car take the same route as IMAX - would be meaningless! Someone contemplating a trip from Expo to downtown isn't going to be comparing the time IMAX would take to the time it would take to drive down Interstate, but rather IMAX as compared to taking the freeway. That would be 'apples to apples' - real-world choices as a commuter would actually make them. Taking Interstate by car on such a trip would add considerably to the time of the trip. Though if we limit the discussion just to rush hour, a different equation results; then, I should think the IMAX

would beat out the car pretty handily. Anybody driven these routes lately?

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Posted by Ted Fisher - 2010/02/10 01:16

FEIS - 27 minutes by IMAX, 24 minutes by private auto. I was cab driver and dispatcher for too many years to accept that without testing the idea. I can see where my assumption that you were talking Kenton-to-Portland was faulty; however, even Expo-to-downtown wouldn't be much longer. Unless, of course, the comparison was done with the car travelling along Interstate; which would be silly - if your goal was to get to Pioneer Square, why would you travel Interstate by car? I do it all the time. The Interstate Ave route is much less stressful than I-5

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If every seat is filled every time, that is 624 people per hour or roughly about a quarter of the capacity of one lane of traffic. With only 25K trips per day for all of Santa Clara County's multiple light rail lines, they don't have every seat filled very often. The real capacity is probably less than ten percent of one lane of traffic. I'm not familiar with details of Santa Clara County, but here in Portland the claims that MAX ridership is equaling the capacity of a highway lane is exposed as bullcrap when you compare ridership to the actual numbers of cars on either the Banfield of Sunset Highway. Speaking of bullcrap, I recall when BT went out to count the riders on MAX. He found that at peak the outbound trains were packed and the inbound trains pretty empty - he proceeded then to proclaim that 'MAX only ran half-full'. Never mind that using that logic, roads run at less than 25% full.

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we'll stick to that. And it's a blip, if anything. Take a look at the numbers of people travelling on the Banfield per hour and you'll see an actual mass transit system. Hardly. Yes, there's traffic on the Banfield, but hardly mass transit. It has proven ineffective, for example, at trying to deliver large amounts of people during rush hour. It has a capacity that is quite fixed - at three lanes moving at walking speed, and increasing that is going to require some significant investment in land purchases for those extra lanes. Train spacing of one train every 6 minutes or less is not unusual on some high-density commuter railroads. The double deck Bombardier commuter cars that are used in SoundTransit and Coaster service, I believe, are configured for around 110 seated passengers per car. The Coast Starlight regularly runs around 12 cars, so the platform in Vancouver, WA can take at least that. Platform length in Portland is much longer. 12 cars per train operating at 10 trains per hour with 110 passengers per car is: $12 * 110 * 10 = 13,200$ passengers / hour. Good luck cramming that into a single highway lane, which is about the space a single side of the BNSF double-track main line consumes between the two cities. Obviously, in those high-density commuter railroad corridors where train frequency is more in the range of one train every 2 or 3 minutes (Long Island Railroad at Jamaica Station or Illinois Central electrified line heading south from Chicago.) have system capacity slightly greater than this.

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Posted by David Barts - 2010/02/10 01:16

The Coast Starlight regularly runs around 12 cars, so the platform in Vancouver, WA can take at least that. Platform length in Portland is much longer. The times I've ridden the Coast Starlight (always between Seattle and Portland, though this summer I hope to have a chance to ride it all the way to LA), the only stations they've opened all the doors at are Seattle and Portland. Other stations have had only a few, almost always adjacent, cars open their doors. Therefore, it's not certain that the platforms at Vancouver can accommodate a 12-car train if all the doors open.

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The times I've ridden the Coast Starlight (always between Seattle and Portland, though this summer I hope to have a chance to ride it all the way to LA), the only stations they've opened all the doors at are Seattle and Portland. Other stations have had only a few, almost always adjacent, cars open their doors. Therefore, it's not certain that the platforms at Vancouver can accommodate a 12-car train if all the doors open. How long ago has it been since you've been through Vancouver, WA? The eastbound platform is still fairly small, but the newly rebuilt one on the northbound track can serve a fairly long train. Not long ago a group I belong to ran an excursion train out that way, and we were able to board the entire train, somewhere around 18 cars, in Vancouver without double-spotting the train. We had to back out of the station onto the bridge in order to change to the eastbound track, as there is no way to board a train that long on the east side of the wye. I think we may have had to board some of the cars through doors in other cars, but then 18 cars is an awful long passenger train for the west coast. I'm fairly certain we had at least 12 of our cars boarding on the new platform.

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Posted by Hank Fung - 2010/02/10 01:16

(Indeed, most of Vancouver looks like a forgotten town. It's amazing how much traffic there is on Mill Plain east of I-205 that all of a sudden disappears as it goes into Downtown Vancouver.) It will be saved with tax dollars, though, if only for appearances. Brochure-image quality scenes. We must have a *viable* downtown they say. *Why?* The point is that they have tried to save downtown Vancouver for some time, and it hasn't worked. When I was there over the summer, I got bored and read old articles about the construction of the current 7th Street Transit

Center. They thought by building a bus mall, it would revitalize the southern part of downtown, but the opposite has been the case. They publicly subsidized the construction of the City Center 12, which has resulted in the closure of many other screens in the Vancouver area (still empty) and has basically relegated the historic Kiggins Theatre into a second-run house. One of the reasons my employer moved from downtown to a greenfield office park is that security of vehicles was difficult in downtown. It's somewhat sad in a way.

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The eastbound platform is still fairly small, but the newly rebuilt one on the northbound track can serve a fairly long train. Not long ago a group I belong to ran an excursion train out that way, and we were able to board the entire train, somewhere around 18 cars, in Vancouver without double-spotting the train. We had to back out of the station onto the bridge in order to change to the eastbound track, as there is no way to board a train that long on the east side of the wye. I think we may have had to board some of the cars through doors in other cars, but then 18 cars is an awful long passenger train for the west coast. I'm fairly certain we had at least 12 of our cars boarding on the new platform. That's a different data point than your earlier one about the Coast Starlight that I questioned. I'll admit that I've never paid particularly close attention to the platform length at any of the stations between Seattle and Portland. I'll be heading up to Seattle on the train next weekend, and will have to remember to pay attention to that in Vancouver. From what I remember, there certainly is plenty of room to extend the platform there; I always recall the depot as being in the midst of a large graveled expanse adjacent to the tracks. Extending the platform there would be no big deal, not much more involved than building a sidewalk and possibly erecting a few signs, so it doesn't surprise me much to hear it has already happened.

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How long ago has it been since you've been through Vancouver, WA? On the train? Last winter. It probably hasn't changed too much then. This would have been in the summer of 2001. Concrete looked brand-new then. They don't like opening too many doors on the Coast Starlight at the small intermediate points because the more doors that get opened, the longer it takes to make sure everything is safe for departure. For the Coast Starlight, Vancouver is supposed to be a simple, brief pause, so the fewer doors get opened the better, and they don't need to open all of the doors like they do in Portland. Another problem with Vancouver, that might effect commuter railroad operation, is the direction the platform goes. The Superliner cars are all equipped with lights by the doors, so that on a straight platform the crew in the cab can look down the side of the train and see a string of green lights that indicate that everything is safe for departure. This is not possible in Vancouver, because the platform is on the outside of the curve. It means a lot more radio communication before leaving, and all the more reason to leave as many doors closed as possible.

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Posted by James S. Gagliardi - 2010/02/10 01:16

This will not happen in our lifetime. Describe the computer you will trust with your life at 60 mph. Describe the operating system it runs. Tell me where that system has so far been tested. Tell me what happens when the computer crashes and you are in your car at 60 mph, two feet away from the cars in front and behind. Uh, well, as far as that goes...see, what it's gonna take is cellular computing. Nanoscale computers imbedded all over the joint. And, (the real kicker!), da' software! Yeah, that's what it's gonna take. And it'll come. However, I tend to favor the rail camp, it's many guises. Really, a highway civilization is a non-event. Us humans wanna keep human? We gotta hang on the straps and say pardon me as we head for the doors, and notice that that lady over there has nice perfume on, and let's take a look at the map to see where the transfer is... Transit encourages civility, as in using a bit more constraint when expressing personal viewpoints regarding our fellow travelers. It's so damn easy to be rude in a car. In a public conveyance however, it's a different story. Go ahead, flip the bird to that dude standing across the aisle there, right in front of you. Remember though, you can't push your little right foot down on the pedal and zoom outta there. Naaagh, you gotta deal with your actions face to face. Hmmmm. That's why I love subways. Sure keeps the people honest....

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Posted by glabah - 2010/02/10 01:16

Jack May <jack...@attbii.com wrote in message (snip) The capacity of traffic lanes is going to triple as we move to ITS computer controlled cars. ITS will make roads the most efficient land usage transportation ever developed. If you want to run trains, why would you use So, just what, exactly, is going to happen to all those computer controlled cars at 1/4 second intervals when someone has a tire blow out?

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Posted by Jim Patterson - 2010/02/10 01:16

use So, just what, exactly, is going to happen to all those computer controlled cars at 1/4 second intervals when someone has a tire blow out?

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Posted by David Barts - 2010/02/10 01:16

And how are we going to implement this before every single car on the road has the system installed. It seems like it would be nearly impossible to mix ITS and non-ITS cars on the same freeway. And if we're going to force older non-ITS cars to be retrofitted, who will pay for it? Currently, as the requirements for car safety/environmental devices are raised old cars are allowed to continue to exist based on the rules that were in place when they were manufactured. Maybe I'll be proven wrong (and I wouldn't mind it: it would be nice to have a real discussion on the issue), but I think you guys are wasting your time with Jack May. I've never seen a response from him to anyone who expresses any well-founded skepticism about his childlike faith in ITS to solve any and all urban transportation woes. ITS, like monorails, seems to attract those who prefer to dwell in the realm of fantasy rather than to address hard, practical, real-world issues. (That's not to say that _all_ ITS advocates are like that, but those so attracted to it do form a vocal and noisy subgroup.)

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Posted by Robin Payne - 2010/02/10 01:16

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ITS, like monorails, seems to attract those who prefer to dwell in the realm of fantasy rather than to address hard, practical, real-world issues. (That's not to say that _all_ ITS advocates are like that, but those so attracted to it do form a vocal and noisy subgroup.) In one city in Germany and several cities in Japan, there are some very good applications of monorails. Not sure they work any better or are less expensively built than anything else. However, so far they have at least proven themselves in several cities, which I have yet to see happen for ITS highways, despite a huge amount of \$\$ spent and several prototypes.

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Maybe I'll be proven wrong (and I wouldn't mind it: it would be nice to have a real discussion on the issue), but I think you guys are wasting your time with Jack May. I've never seen a response from him to anyone who expresses any well-founded skepticism about his childlike faith in ITS to solve any and all urban transportation woes. ITS, like monorails, seems to attract those who prefer to dwell in the realm of fantasy rather than to address hard, practical, real-world issues. (That's not to say that all ITS advocates are like that, but those so attracted to it do form a vocal and noisy subgroup.) I'd like to advocate for computer-controlled driving. I haven't seen anything about ITS, whatever that is, but ccd is certainly in our future. Monorails may be the best answer to specific questions in certain places, but computerized driving is the best answer to a problem that exists now and everywhere in the modern world. It is awfully easy, and a lot of fun, to speculate about future technology, while not usually fruitful - the very random and chaotic nature of society makes it impossible to know what will effect future decisions. However, some are of the famous 'no-brainer' variety; for example, I get no brownie points for correctly predicting, in the early 90's, that the Internet would be 1) ignored by most of the business world years past its proving its value 2) overinvested when Main Street did finally notice it 3) headlined as the New Paradigm and Savior, leading to South Seas-type bubble(head) investment by the Street for people who think like a Wall, 4) leading to a minor but significant Wall Street collapse and economic turndown. I get, as I say, no brownie points for such clairvoyance because 5) this has become the standard American business method for greeting all new important technology. Compare ccd with aircars as paradigms of prediction. There is a real world to fit these ideas into, even if no human will ever know what that real world is actually like; but it does have an effect. Aircars, no matter how appealing the idea, suffer from needing, somehow, to expend energy just staying up; cars roll across the surface of the land comparatively easily. Just that fact means aircars have a considerable handicap; energy would have to be very cheap indeed to support, literally, a sky full of such vehicles. So they are not on the horizon for some time, if they ever make much sense. But ccd is inevitable as it is clearly the best solution for many problems. The way our freeways act now is as a least-land solution to many cars driven many ways at many speeds for many reasons going to many destinations. People do the 'sorting logorythm' that is freeway travel pretty well, considering the endless peculiarities of individual drivers, speeds, etc. But computers can apply a different, individually-less-efficient sorting routine to freeway travel that is in sum much, much more efficient. In other words, I see ccd as the inevitable future, as it is the best solution to an efficiency challenge we are right now posed with; increasing highway efficiencies without using more land and resources. When you consider all the benefits, the computer simply **is** coming to this problem, whether you or I want it or not, as surely as water flows downhill; it gives people, governments, manufacturers a technology that so neatly solves a problem - a sorting routine. All highway traffic is a sorting routine. The computer is the better way to sort traffic. One can say other, more precise things with assurance. For example, that superior computerized sorting routine will be a network of individual units, rather than one centralized sorter. The individual needs and interests of drivers will see to that; since the goal will be to get each individual driver to his destination along a route he aproves, only a network of distributed computers individually negotiating will react quickly enough to these individual desires being expressed in 'real time'. If it was an army you were transporting, a centralized command structure would make sense; individual units would go where told. But since the goal-setting mechanism is distributed in each ccd car, that's where the 'thinking' will take place. So each car will negotiate with the cars around it to find the best route at the best speed, rather than one powerful computer deciding what each car will. In other words, the highway won't tell the car what to do, the cars will negotiate a shared set of commands to the highway. (Coolest prediction from this; in the future, bridges will flex and move.) Massive redundencies of very cheap powerful computers will come to majority decisions in each car, too; in such a system, any individual failure will obviously cause much mayhem. So conceptually, it is going to demand new computing design models as well, doubtless an application of the 'Algorithim of the Gods'; but with so much money and such a high payback in highway efficiencies, those models will surface. (And a personal bet; it'll be Linux. Or maybe the individual platform won't matter. But as Mr B has correctly pointed out - Gawd save us from Bill!) Sadly, another inevitability rears: business will, again, approach this as ineptly as it does every other new technology. Thus it will strike before the iron is hot. It is just too easy for the human brain, when forced with the decision of what technologies to deploy when, to decide self-interestedly - so at some point, in some boardroom in NY or Tokyo, a technician will say 'We're 99% sure this will work, but we'd like three billion and four years more research to eamine our findings' and a CEO will say, 'No, I think we're ready now, and of course some completely unsuspected - meaning insufficiently examined viewpoint of a minority of scientists labelled 'kooks' - problem will kill thousands, and we get right back to Bopal, Love Canal, the Challenger explosion, yada yada yada. And yet Science Marches On!

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In other words, the highway won't tell the car what to do, the cars will negotiate a shared set of commands to the highway. (Coolest prediction from this; in the future, bridges will flex and move.) At least some of what you say here is already being done. Even the moving bridge concept. This is, in fact, how the monorails previously mentioned in Japan have their track switching set up. What you describe here sounds like some of the modern dispatching methods used and undergoing development on railroads in Europe, and in some areas of North America. Such modern dispatching methods can lead to small improvements in speed and reliability, but it has to be part of a total package, including such things as locomotive (or, in the case of your adaptation of this to highways, automobile) maintenance, so that everything responds as the computer system thinks it will. There is a reason why all of the test cases of computer controlled highway experiments you will see photographs of have all of the exact same vehicle model from the exact same manufacturer: it is the best way for them to get a system the computer can work with. I haven't seen any documentation on a test system that uses many different types of vehicles. However, one reason that the railroads here in the USA have been slow to adapt this technology is that it doesn't solve some of their basic track capacity problems. All the theory and computer models aside, it just doesn't add that much additional capacity. I imagine that application in the USA to the highway system would face similar problems: no matter how carefully controlled the dispatching system is, there simply isn't enough infrastructure capacity.

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