STRONG TOWNS

Podcast: Susan Handy

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Susan Handy of the University of California at Davis speaks on induced traffic and impacts of fighting congestion through adding capacity. A summary of the findings can be found here.

Strong Towns Podcast - Susan Handy on Induced Travel

Transcript of this Podcast

Chuck Marohn (CM): Hey, everybody. This is Chuck Marohn with Strong Towns. Welcome back to the Strong Towns podcast. We spend a lot of money in this country fighting congestion, and we do it often in the name of relieving things like greenhouse gas emissions, and reducing travel time, and increasing economic growth and development. I have, on the line with me today, Susan Handy. She is with the University of California in Davis, and she is one of the co-authors of a very interesting report that talks about induced demand. Susan, welcome to the podcast.

Susan Handy (SH): Thank you for having me.

CM: Hey, can you just talk a little bit about induced demand? What is it, and why are you studying it?

SH: Well, actually, the term I prefer to use is induced travel. So if you think about demand as being kind of -- the underlying demand that people have to get from one place to another -- that's one thing, and what we're talking about here is the effect that highway expansion -- either expanding an existing highway, building a new highway -- the impact that that has on

CM: Sure, sure.

SH: So that's kind of a fine point, but an important distinction. So usually we're now talking about induced travel as the phenomenon in question.

CM: Okay. So people have, essentially, when people have a certain amount of demand that can either be filled or unfilled by the system –

SH: Right.

CM: And you're talking about whether the system has the capacity to fill every trip everybody would want to make?

SH: Right, exactly.

CM: Okay. So, talk a little bit about the relationship between the projects that we do to relieve congestion and the impact that that has on induced travel.

SH: Yeah, so the question is, when we build a new highway, we are often hoping that that's going to help relieve congestion. That congestion relief is one of the benefits that we use to justify those investments in expanding the highway system.

So the question is, does it work? You know, if we expand the highway system, do we actually reduce congestion. So there's been a number of studies out there looking at this question, and you should know that I haven't done a study of this type myself but my colleague, Marlin Bornette and I, reviewed the studies that other people had done on behalf of the California Air Resources Board, and we pulled out the more rigorous studies and then summarized what they were saying about the impacts of adding capacity to the highway system.

lot of the programs that fund transportation improvements are funding them under the guise of reducing greenhouse gas emissions. We reduce congestion, and then because traffic can flow more smoothly, people aren't just sitting there stuck in traffic. The theory is, we have a reduction in greenhouse gas emissions. Is that how things actually turn out?

SH: Well, not so exactly. So, yeah, this is all tied together. The idea is, you expand capacity, you reduce congestion. By reducing congestion, and moving traffic more smoothly, at more moderate speeds, you will reduce emissions, not only of greenhouse gases, but air pollutants.

So, that last piece is technically true. If traffic is moving more smoothly, we know that, and at speeds that are above stop and go conditions, but people are not speeding. So if you're in the 50 to 60 mile an hour range, that tends to be where emissions are minimized.

Okay, so that part of the equation is pretty firmly and scientifically established. So the big question is does expanding the capacity in some way -- projects like improvements to traffic signal timing that are designed to smooth the flow of traffic – do projects like that actually have any impact on congestion? So that's where the studies that we reviewed come in.

And it's not an easy thing to study, to really sort out, what's happening with real world data. So the studies have used a number of different methods, and what we found is a very consistent finding that after the capacity of the system has been expanded, after you add lanes or build a new facility, there is an increase in the amount of driving in the system that is a result of that increase in capacity.

So, uh, in the short term, you may get, if you increase capacity by 10 percent, you get a 3 to 6 percent increase in traffic, so you do get some congestion reduction benefits, but not as much as you would think, because of this 3 to

So a 10 percent increase in capacity can lead to, in some studies it's shown a 10 percent increase in the amount of vehicle travel over some 5 to 10-year period of time. In other words, after some time, there's absolutely no congestion reduction benefit to that capacity.

CM: So in a sense, we're going in the opposite direction of what the policy intention is?

SH: Yes. Yeah. Now it's not to say that there are no benefits from adding that capacity, because you are accommodating more travel, but in terms of reducing congestion, and thus reducing emissions, you're not getting that benefit.

And of course, not only are you not reducing congestion, which would get you some reduction in emissions, you're increasing the total amount of travel, which is increasing emissions. So that the net benefit to emissions goes away because of this induced travel effect.

CM: I, I think as engineers, there's been a certain sense, for a long time now that we could build our way out of congestion. And budget issues are obviously forcing us to rethink that, but, let's say, that budget was not an issue. Is that an idea that has just not been tested, or is that an idea that's been tested, and been found to simply not be true?

SH: Yeah, well, you look back 100 years, and our cities were pretty darn congested, and we were talking about expanding, capacity in order to reduce congestion. For the last 50, 60 years, we've been investing vast sums of money in our highway system, in an effort, at least in part to reduce congestion and where are we today?

Would anybody say our congestion is any less than it was back when we started this whole effort? So I think, regardless of the money issue, which of course is a huge issue, there is a growing understanding, but certainly not a

And, you know, underlying that, it's a very simple economic principle of supply and demand. Essentially when we expand the system, we're expanding the capacity, the supply, we are making it cheaper for people to drive from a time standpoint. And then what do people do if you make a product cheaper?

CM: Yeah, they use more. Right.

SH: They're going to consume more. So that's what happens. It gets easier to drive from Point A to Point B, with the new highway, so people are going to choose to do that more often. Maybe they'll shift from a much closer destination to a farther destination. They may shift from taking the bus to driving instead. Over the longer term, having that new highway there is going to affect what kind of development happens where, which could then lead to more travel in that area. So you add capacity, you reduce the price, people consume more. And that's the simple economic principle underlying this induced travel effect.

CM: Essentially, if I would not have taken a trip before because the road was congested, now I'll take that trip because I can do it at a low cost to my time because there's no congestion delay.

SH: Yeah.

CM: And I join with all my neighbors in making that rational decision, and then, bam, the congestion's back, right?

SH: Yeah, exactly. So, as I said, we now have more travel, and that could be a good thing from the standpoint of the economy or society. But we're not getting rid of congestion, and we are adding to the environmental costs.

CM: We see all the time where political people, but also policy people, will make these really strong arguments that adding capacity and investing in essentially more roads and more highway capacity will increase

between economic growth and expansion of highway capacity? Your findings seem to suggest otherwise.

SH: Well again it's a very hard thing to definitively determine, right, because there's so many different things that go on, but the studies we reviewed mostly concluded that, if you look at the entire region, the investments in highway capacity were not contributing to overall economic growth.

It is a little bit of a chicken and an egg question. I mean, where are you going to be investing in highway capacity? Well, it's where economic growth is happening and congestion is getting worse, which then creates this political pressure to expand the system. So, I think that one's not been entirely decided. But there certainly is evidence both ways, including evidence that the investments in the highway system are not driving growth at a regional scale.

CM: You actually suggest -- and this is the first time I've seen this suggested in a research paper like this -- but you actually suggest that there are places where we've reduced capacity, where we've actually seen economic benefits from that.

SH: Well, yeah, it does appear so. I mean, a place like San Francisco, where there were two significant stretches of freeway that were removed following the Loma Prieta Earthquake back in 1989. It took many years after that to remove them, but they were. They had been damaged and the earthquake was the rationale for taking them out. And, there was a lot of outcry that this was just going to make traffic come to a complete standstill in the city. But what the city did was invest in some improvements to surface streets that would both handle some of that traffic, but also be more of an amenity for the community and it's been a total success. Traffic did not come to a standstill. It's exactly the reverse of adding capacity: when you change the capacity of the system, people adjust, in one way or another.

economic activity to these parts of the city. Europe has done a lot more of this than we have. There are a few other examples of removing freeways in the U.S., but not a whole lot. But think about European cities, where they close down streets in the core of the city to cars, and it's completely tied in to economic development kinds of efforts, within those cities. And they are certainly thriving. You know of course, there, people are much more ready and willing to jump on a streetcar or get on a bus or their bike to go downtown than in the U.S., so not clear that it would work so successfully here. But the point being that it can work. And sometimes communities are a lot better off with less capacity for cars than they would be with more capacity for cars.

CM: Have, have we crossed over a point -- I'm going to ask this question, and you can take it however you want. Have we crossed over a point of diminishing returns for highway construction, and not only that, but is there a, a point where, when you force a society to experience mobility in one dimension and take away the ability to get around, say by foot or by bike, do you change an economy in a way where you do experience those diminishing returns at some point?

SH: Yeah, I don't know that. I think about it in terms of diminishing returns so much. I mean maybe it's diminishing returns to quality of life, where if we continue to invest in the highway system, we're simply perpetuating this dependence on driving as our way to get around to get to the places we need to get to.

So there is a lot of shift in thinking in the transportation planning fields, at least, about the need to invest in alternatives to driving, whether that's transit or walking and biking, and that, in fact, is the solution to congestion. So the solution is not to eliminate or reduce congestion, because we've been trying that for a long time and not succeeding, but rather the solution to congestion is to give people alternatives. So that you can choose not to be stuck in traffic in your car. So, and then, I think in addition to that, as you

anyway.

But we also have a space problem. I mean, where would you, how can we continue to expand the system in existing metropolitan areas? There just simply isn't room, and a place like California, you know, LA, they managed to cram in a couple more lanes on the 405 recently, but it was a hugely expensive and really disruptive effort to try and squeeze in a little more capacity interrogatory expedited hearing space that we have. So I think those sorts of constraints are another reason for us to be moving away from this traditional focus on expanding the, the highway system, as the solution to our transportation problems.

CM: Is there a parallel takeaway here for local officials? For, your local officials and advocates in cities, not necessarily at the state or the federal level. Is there a takeaway for them, from your research?

SH: Yeah, I think so. Well I think they already get it a lot more than at the state level. I mean state departments of transportation, it's been their job for a century or thereabouts to build and maintain the state highway system. They own and operate the highways, the freeways. That's never been a responsibility of local government.

So local governments have always put priority on local streets. So I think they've, they sort of get it better from the start I guess. And in fact, they've been resisting highway expansions through their jurisdiction in many parts of the U.S. going back to the 1950s and 1960s.

So I think they get it already. I think they get that adding to the capacity is going to be a negative thing for their communities in most cases. And this isn't to say that there are no new highways that should be built, or we should not be fixing some of these horrible interchanges that we have. I think we've just got to be strategic about where we invest our limited funding to really

more about a safety fix, rather than any possibility of reducing congestion.

Special thanks to John Gear for obtaining this transcript.

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