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MEMO

TO: Transportation Committee
Pennsylvania Senate
FROM: Samantha Pearson
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DATE: September 19, 2024
SUBJECT: Testimony on Optimizing Pennsylvania's Multimodal Transportation System

The Pennsylvania Downtown Center (PDC) works with state agencies to promote healthy downtowns and core neighborhoods. With the Department of Community and Economic Development (DCED), PDC promotes and supports Main Street and Elm Street Programs across the Commonwealth. For the Department of Health (DOH), PDC administers the WalkWorks Program, encouraging and enabling active transportation options through the development of municipal Active Transportation Plans.

WalkWorks identifies active transportation as encompassing the full range of travel modes outside of private motor vehicles: walking, biking or riding another micro-mobility device like scooter, using a wheelchair or other mobility aid, and accessing transit. Walking and biking are low-power modes that work from the doorstep into the neighborhood and perhaps to the next community center, but they tend to be limited in terms of the overall mileage that can be covered in the near term. Transit is essential to extending their range and making them an effective and even optimal transportation choice. Similarly, while transit does a great job of moving large numbers of people efficiently over both short, intermediate, and long distances, it is not truly useful until combined with last-mile active travel walks and rides.

No one mode works for all trips, all the time – not even driving. However, in the US it is often assumed as the default. To use a familiar example, it doesn't work when every child needs to get from their front door to their classroom every morning. If everyone drives, the school drop-off line is epic and the area around the school is incredibly dangerous for pedestrians, filled with delayed, distracted, and stressed-out caregivers driving cars, frustrated with their lack of transportation options. Whether that surrounding area is a network of streets or an isolated large site off a collector road, the result of driving being the dominant mode is that driving has to be the dominant mode. The crush of cars makes it too dangerous to walk or bike to school. Or the car-centric suburban/rural land use pattern makes it simply impossible to walk or bike there.

Just as cars are not ideal for all trips, if the only option ever available is walking, that is also often a challenge. There are inevitably trips that simply cannot be accomplished on foot. "You can't get there from here…" Ideally everyone should have an array of options available to choose from. Almost no one will chose to only walk in the US. It's the entire constellation of active transportation choices that can give driving a car to get to every destination a run for its money.

It is in this spirit of understanding the complementary nature of transit and active modes that PDC submits this public comment to the PA House Transportation Committee as part of the outreach sessions being conducted around the Commonwealth on the topic of "Moving PA Forward by Investing in Roads, Bridges, and Transit." The challenge of transportation funding, particularly for roads, bridges, and transit is the topic posed and the request is for suggestions and examples of ways to address current and future/growing funding

shortfalls. This document provides several different answers, all of which are organized around the theme of reconsidering how transportation can best be accommodated in the long term.

First, focusing on part of the title of these sessions, "Roads, Bridges, and Transit," it is important to point out that transit can be the solution to the funding of the Roads and Bridges. The efficiency, efficacy, and safety gains presented by transit as compared to conventional motor vehicle transportation means that transit can serve as a way of substantially shifting pressure off of roads and bridges. While maintenance of existing infrastructure continues to be a need, the relentless expectation and reality of endless expansion of roads and bridges, with concomitant increasing costs, could be slowed and even avoided. Transit allows people to use the existing infrastructure far more efficiently, moving more people in less space, with less wear and tear on the facilities, and less environmental impact. The spatial efficiency of transit is calculated at different levels depending on the type of service provided, level of utilization, and the land use pattern being served, but on a lane-to-lane comparison, it can move anywhere from twice to ten times to forty times as many people as private cars.[1] It would certainly be useful – and economical – to get twice as much transportation service out of Pennsylvania's existing infrastructure. How about ten times as much?

Where do such comparisons come from? It is a matter of assessing not the number of vehicles moving along a road, but tracking the number of people. As a metric, instead of using vehicle miles traveled (VMT), the more useful and productive alternative is person miles traveled (PMT).

If meaningful transit options are provided, the system can move more people and the Commonwealth can spend less on roads that aren't wearing out as fast. There are other quantifiable benefits, too. Such a shift can also reduce traffic crashes by a factor of 20.[2] And public health also sees positive impacts with a combination of reduced crashes, improved air quality, and increased physical activity/reduced chronic disease.[3]

These improvements in efficiency, safety, and health are real gains and they can support a healthy economy. Nevertheless, they don't translate directly into dollars available for maintenance and construction of the titular roads and bridges. Or do they? Independent of the abstract, or actuarial, question of what a life is worth, what is the operational cost of having an order of magnitude more crashes on the road network? For many fire departments in the US, calls to vehicle crashes dwarf the number of calls to fires. Rethinking roads and bridges in order to expand transit and the walking and biking that goes along with it can wind up reducing emergency services and medical treatment costs.

This big picture way of thinking about expanding transportation options falls under the rubric of "mode shift" and "Transportation Demand Management" or TDM. Mode shift simply refers to moving person miles into (ideally) more appropriate avenues depending on the trip to be taken. TDM refers to the planning, policy, and promotion of sensible and balanced transportation options to encourage mode shift.

Positive mode shift is a nice idea, but it doesn't just happen on its own. Give people the transportation system most of them have access to today in PA and most of them will decide to drive or struggle to get where they need to go if they don't have that option. In fact, the transportation system shifts people away from transit and walking and biking and to driving. As soon as a person gets the means or the option, they will abandon the other modes. It's not because those modes are inherently worse – many people spend big money to go on vacation and enjoy locations where they can engage almost exclusively in active travel – it's because they are worse in much of PA…

There are active TDM organizations and initiatives in the more populous parts of the Commonwealth, but typically they only start to be a priority once the congestion and oversubscription/overburden of the road system is already past a tipping point. The reality is that TDM would be useful throughout the state. It would look fairly familiar in places like Scranton/Wilkes-Barre or Erie, but it would also be useful in McKean County or Snyder or Butler.

The path the state is on right now, with the end of Act 89 of 2013 leading to austerity measures for transit agencies is pushing people even further into the unfundable drive-everywhere-all-the-time system. Doubling down on perpetual road and bridge widening is not rational or sustainable. In Centre County, municipalities looking at the growing local costs for transit are simply voting to exit the CATA system. Where will that leave the residents Bellefonte Borough who do not have access to a car when it goes into effect in June of 2025?[4] Isolated. Cut off from access to jobs, goods, services, and community. The "transit" that is currently nominally available in many of the more rural counties hardly merits the "public" modifier. It is transportation of last resort. It is only available to certain people deemed worthy – the elderly and those with disabilities – and it is not necessarily very functional for them – or for the service-providers themselves. If it worked well for patients, the health systems would not be working separately on programs to provide transportation to medical appointments. In many cases, the transit providers struggle to offer anything that would be considered useful or timely for people actually trying to get to specific places at specific times. Costs are too high to justify more service and service is too limited to justify use. More riders are needed. And more than rock-bottom minimal service (and arbitrary eligibility cut-offs) is needed to attract them. Otherwise the vicious cycle continues, with ever less viable transit service.

Who needs an expanded/expansive approach to transit? Is it only useful to the approximately 30% of the population that does not drive?[5] No, everyone needs it. The people who currently have to shuttle around non-drivers need their charges to have better, safer, more convenient options. Other drivers who have to share the roads with people taking four trips to drop a person off at a location and then retrieve them or with the profusion of individual trips in general would benefit from more efficient options which would leave more space on the roads and the roads in better condition. The business owners who are looking for employees who simply have no way of getting from their front door to the factory floor on a regular basis need better transit.

It is good to hear transit included in the "Roads, Bridges, and Transit" list and testimony to its relevance in places across the state. But it is important to move beyond that basic inclusion to understand its integral and interactive relationship with other transportation options and its relevance not just in all jurisdictions, but also to all people – even those who would never ride it.

Who is already thinking like this? What does it look like in other places when this is adopted as a guide for policy?

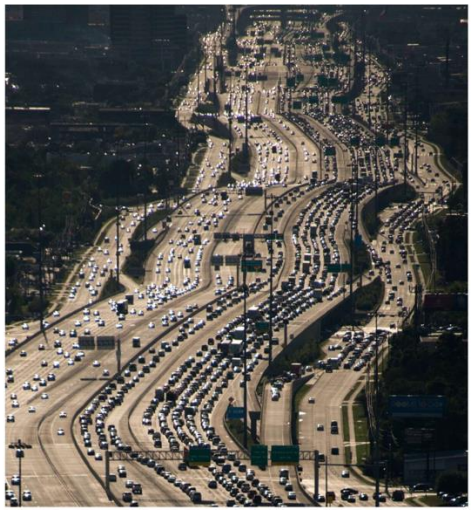
Pennsylvanians often don't like it when people point to examples from distant places like the Netherlands, but here is a classic contrast that illustrates this point. (Also, to head off the idea that the Netherlands has always been a bicycle wonderland, look up some pictures of Amsterdam in the 1960s and 70s. It was choked with cars – and with traffic deaths.[6]) Here is a tale of two transportation systems in two images (see below). On the left is a picture of the Veluwemeer Aqueduct. It shows a four-lane highway about 15 miles from Amsterdam, with an adjacent ample bicycle path, a surprising overhead aqueduct carrying a sailboat, and, off-screen, but only about a mile away, two tracks of regular intercity passenger rail service. It all looks very picturesque. The sailboat really puts it over the top. On the right is an image of the Katy Freeway about 10 miles outside of Houston, Texas. This is an area where the road has 28 lanes. The carrying capacity/throughput of these two transportation systems is roughly the same, in fact, the Katy Freeway arguably has lower throughput. Americans tend to look at the Dutch image and say that it's a luxury that the US can't afford. But the Dutch look at the US highway infrastructure and say they cannot afford that. The Dutch are the ones paying less to get more people where they need to go. Here's the math:

KATY FREEWAY
A 28-lane highway has a carrying capacity of approximately 2000 passengers/hour/lane or a total of 56,000 passengers/hour.

VELUWEMEER AQUEDUCT

A 4-lane road at 2000 passengers/hour/lane can carry 8000
Plus a two-way bike route at 12000 people/hour/3.5m lane can carry 12000
(Plus an aqueduct that is not being factored in as a mode of transportation, so adds 0)
Plus two-way rail at 40,000 to 90,000 passengers/hour/track can carry 80,000 to 180,000 passengers
Thus, in total moving up to 200,000 people/hour overall

The Dutch example moves almost four times as much as the US mega-highway. Alternatively, using more conservative numbers, such as the throughput for light rail as opposed to suburban or intercity rail, puts the capacity for the rail at 20000 people per track per hour. In that case the Dutch assembly still comes in at 60,000 people/hour as opposed to the 56,000/hour in the US version.



Next consider the wear and tear on the facilities. The Dutch example has the potential to carry the same number of people on their lanes, but they have far less total area to build and maintain. This also leaves much more space for natural systems, stormwater, and sailboats.

What might this look like closer to home? Consider the example of the I-83 South Bridge project. The bridge across the Susquehanna south of Harrisburg is currently seven lanes wide and has been proposed to expand to ten lanes. There are various reasons given in DOT documentation for why walking and biking will not be and should not be incorporated into the project, but it is notable that other states receiving the same federal funding for similar scale projects report that their bridges will accommodate walking, biking, and transit.[7] In those cases, adding other modes is not considered an added cost but rather a way of making the bridge move more people more efficiently and enhancing the resilience of the overall transportation network.

The current traffic noted on the I-83 South Bridge is 125,000 vehicles per day. There are public transit buses using crossing the bridge in regular traffic lanes. The Finding of No Significant Impact Report for the project notes that by easing congestion for some interim period, bus travel times will be improved. But the best way to improve transit is to provide dedicated lanes, whether separated bus lanes or tracks such as for light rail. Would that necessarily mean expanding the bridge? No, because switching existing lanes from low capacity car lanes to higher capacity bus or very high capacity tracks would increase the capacity of the bridge without increasing the number of lanes. If the existing seven lanes were instead five lanes of car traffic and two dedicated bus lanes, the road capacity could be substantially higher. The existing bridge accommodates up to around 11,000 vehicles per hour (1,600 per lane per hour) which is estimated to equate to 14,000 passengers per hour. The reconfiguration of the same number of lanes could accommodate 26,000 and 50,000 people per hour, basically doubling or tripling the bridge's capacity (using either 8,000 people per lane per hour for dedicated bus lanes or 20,000 people per lane per hour for light rail). If a useful bike lane were also added, that would also substantially increase capacity.

To make the decision-making on this project even more questionable, the FONSI (Finding of No Significant Impact) report for the bridge replacement notes that in 2050, the proposed ten motor vehicle lanes will once again be filled to capacity. Experience shows that added supply of lane capacity indeed tends to induce demand, expand trips and trip length in the area, and thus fill up even faster than projected.

What do such capacity estimates mean in the real world? Would those lanes for different modes automatically be filled to capacity? They would have so much capacity that the obvious answer would be no, certainly not initially. And their performance over time would depend on the rest of the transportation system. New access to data on the percent of trips in that are under 1 mile and under 3 miles could help to establish that potential. In general in the US, more than 50% of trips are under 3 miles in length. While there are many long-distance through-travel trips crossing the bridge, there are also many shorter trips that could be shifted to more efficient modes, if that option were presented and were itself inviting. That is only possible if transit is funded in keeping with a vision of a capacious, first class, enticing travel mode that makes the best use of available transportation dollars, materials, and land.

As the FONSI for the I-83 South Bridge Project shows, though, decision-making for transportation follows established and not necessarily optimal paths. There are other ways to think about delivering transportation options economically and sustainably.

- Colorado now has a new law that requires transportation planning agencies to set and meet targets for reducing greenhouse gas emissions, which puts the most efficient and sustainable ways of delivering transportation options at the top of the project priority list and directs funding accordingly.
- Virginia has been using a system for project assessment and ranking called the Smart Scale for about ten years to take into account project impacts and benefits, including figuring out whether more people are served (as opposed to vehicles) and what the climate impacts are.
- Minnesota has a law that requires projects to offset their carbon footprint. If a road project can't meet that target on its own; it can incorporate more sustainable elements within its project area or bundle off-site low-impact network investments to meet the targets.
- Washington State provides municipalities (especially small ones) with funding that can be used to repair and improve their sidewalks, recognizing that a safe, accessible and connected sidewalk network is key to the functionality and viability of transit in a given community. (This approach also reflects the reality that depending on property owners to maintain sidewalks doesn't work any better than that same system worked for roads 150 years ago.)
- Massachusetts passed a Millionaire's Surcharge that went into effect this year. It is a marginal tax of 4% on all earnings above $1M. The proceeds are going to education and infrastructure.

In terms of Pennsylvania-specific near-term policy options, PDC supports the proposal for a 1.75% increased allocation of the sales tax to the Public Transportation Fund. At the same time, it is important to note that that is a modest first step and must be accompanied by additional provisions to increase funding. Another avenue to consider would be to decide on a level of taxation for Skill Games commensurate with other gambling taxes and then allocation a substantial percentage of it for transit and active modes. While it is a regressive tax, at least the funding would go right back into all the communities it is coming out of now.

In the event individual members of this committee are not personally familiar with the realities of non-driving transportation options in Pennsylvania, everyone is encouraged to participate in the upcoming Week Without Driving from September 30 to October 6 of this year. Week Without Driving is a national initiative promoted by AmericaWalks, inviting people around the country and especially elected officials like yourselves to spend a week using means of transportation other than driving – whenever possible. Many people, as already acknowledged here, cannot manage to do so. But even if it is not really feasible, the idea is to consider what the options would be for someone facing the existing system for non-drivers and your need to travel:

perhaps you will be able to walk, bike, or take transit. But if not, would you take an Uber, ask a friend for a ride, or even forego the trip? What would it cost in terms of money and time? What would it cost in terms of dignity and your ability to achieve?

Ultimately, Pennsylvania has the potential to move toward a more comprehensive transportation strategy that takes into account the interplay between different modes of travel and moves investment into the most efficient and effective modes in order to reduce pressure to expand roads and bridges and ease the cost of maintaining them. This vexing funding challenge can be solved by creating a model of transportation resilience – making it possible for people to get to where they need to go by several reasonable means. Pennsylvania needs to be more thoughtful in planning, wise in investments, and efficient in delivery of transportation/access. Investing in both operational and capital funding for transit in a visionary way can help the entire transportation system work better, longer, for more people.

NOTES

[1] Capacity Comparison of Car-Oriented Streets and Multimodal Streets, NACTO (2016); Passenger Capacity of Different Transport Modes, Transformative Urban Mobility Initiative (2021).
[2] Litman. "A New Traffic Safety Paradigm," VTPI (2024); Litman. "Safer Than You Think!", VTPI (2016); Stimpson, et al., "Share of Mass Transit Miles Traveled and Reduced Motor Vehicle Fatalities," *Journal of Urban Health* 91, no. 6 (2014).
[3] Litman. "Evaluating Public Transportation Health Benefits," VTPI (2020).
[4] "Bellefonte Borough Council Votes to Withdraw From CATA," Centre Daily Times, (May 22, 2024).
[5] "Licensed Drivers By Sex and Ratio to Population," FHWA Office of Highway Policy Information (2022).
[6] Verlaan, T. (2021). Mobilization of the masses: Dutch planners, local politics, and the threat of the motor age 1960-1980. Journal of Urban History, 47(1), 136–156.
[7] Lieb. "Aging bridges in 16 states will be improved or replaced with the help of $5B in federal funding," AP News (July 17, 2024).