ACTIVE TRANSPORTATION IN A NEW LIGHT:
Connecting Everyday Destinations for Better Health for All
Assembled for PennDOT's Virtual Innovation Days online program
Presented as Part of the Multi-modal Breakout Session
(1 of 12 sessions, 1 of 6 presentations in that session)
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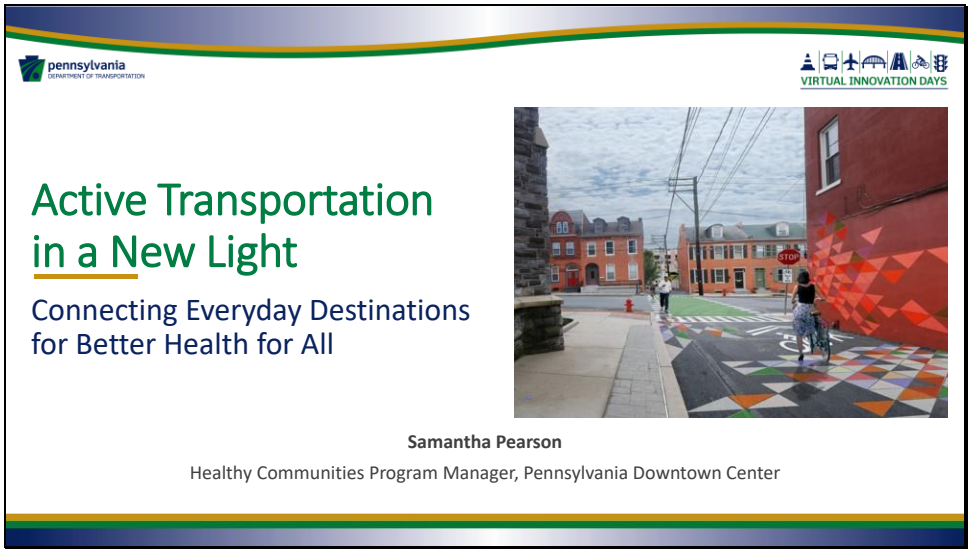

My name is… My topic is "Active Transportation in a New Light: Connecting Everyday Destinations for Better Health for All." You may be wondering, how exactly this is considered an innovation? Active transportation is not really new, is it? I will be sharing various ways in which we are now thinking about active transportation that constitute a sea change in multiple disciplines .

Let's look closely at the subtitle of this talk: Connecting Everyday Destinations for Better Health for All.

One quick insight into this is to note that both PennDOT's 2019 Statewide Active Transportation Plan and the Department of Health's State Health Improvement Plan promote active transportation. There has always been a connection between health and the built environment, but the explicit goal of collaboration between the fields is fairly new.

That's embedded in this subtitle, with the idea of improving health by connecting destinations. And there are other innovations lurking in there, too.

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Active transportation has long been the province of a select subset of "bike/ped people." It has long been considered a niche interest and mostly a pet topic of the wealthy, leisured, and slightly mad, whether cyclists or runners. That would be people with gear and chutzpah, willing to run or ride in places and under conditions others would avoid. Recent research has shown that the diehards are about 5% of the population and even if you add in the next tier of fairly confident cyclists, you get to about 10 to 15% of the population. But that's not really who we're talking about now! The subset of people who are interested in cycling for transportation but concerned about risk is more than 50% of the population. And if you add the usual suspects to that interested middle, you find it's more like 60 to 70% of the population that would be directly served by improvements. As these images show, we're not just talking about lycra-clad cyclists…

Though even these images are still somewhat limited in terms of age and fitness level.

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So we might expand it, like this graphic does, showing people and groupings of people in different stages of life and of all different abilities. And whereas the previous series of images was more focused on recreation and exercise, this page appears to show people likely engaged in functional or utilitarian mobility, getting from one place to another.

This is what the focus on "everyday destinations" refers to, returning to our subtitle -- connecting everyday destinations for better health for all. It means we're not just working to get a single project or stretch of path or regional amenity into place. We need networks that will get people from point to point under their own power: to school, to work, to the doctor, to a restaurant... These networks are also good for tourism and recreation and ideally connect well with trail systems, but they are about reasons and opportunities to be active just in the course of our day-to-day routines.

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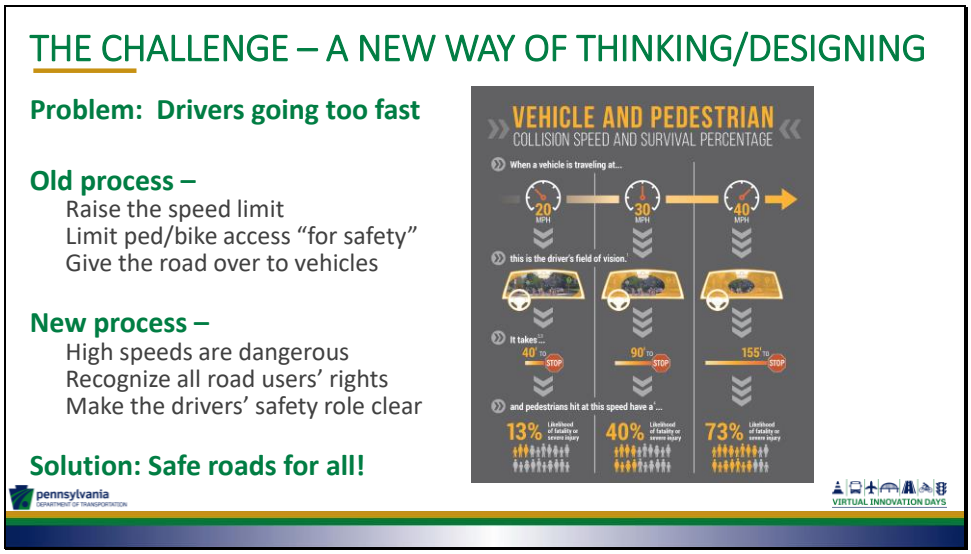

The challenge of putting this innovative take on Active Transportation into practice is recognizing that this is new – simply acknowledging that newness is worthwhile. It's very easy to just assume we already know about the subject. It might seem pretty basic. There isn't that much in the way of complex calculations or construction standards to master. Maybe you have a background in engineering, design, or planning and are pretty sure you covered this stuff back in school. But it turns out that unless you graduated quite recently, this probably wasn't covered.

To put the newness into perspective, two of the leading organizations at the forefront on this topic, the National Complete Streets Coalition and the Vision Zero Network, weren't created until 2004 and 2016 respectively.

Once we recognize that this is a new way of thinking, we also realize that we need new tools and techniques to put it into practice. We've already talked about expanding the definition of the design user, but it is not just about users; it's also about design strategy.

This graphic shows how several different factors correlate with the speed of a vehicle, including the scope of the driver's field of vision, the stopping distance, and the outcomes for pedestrians hit by a vehicle at that speed.

In the past, after confirming that people were chronically driving above the speed limit in given a location, one response would have been to raise the speed limit to reflect the 85th percentile speed of free-flowing traffic and limit pedestrian and bicyclist access "for their own safety." But what if we instead approach this as a problem not of smoothing the experience for the drivers alone, at the expense of the other road users, but rather of balancing everyone's needs? In that case, we might install traffic calming or other comprehensible street design tools to reduce the vehicular speeds such that drivers choose to travel at a speed at which they are able to perceive other road users and respond appropriately, slowing and stopping as necessary to yield the right of way.

The old process saw that drivers were not yielding and encouraged them to continue to not yield even if that meant others were more likely to be injured or killed. The new response is to recognize that all users of the road have a place and roles to play and to make the car's role clearer to the drivers.

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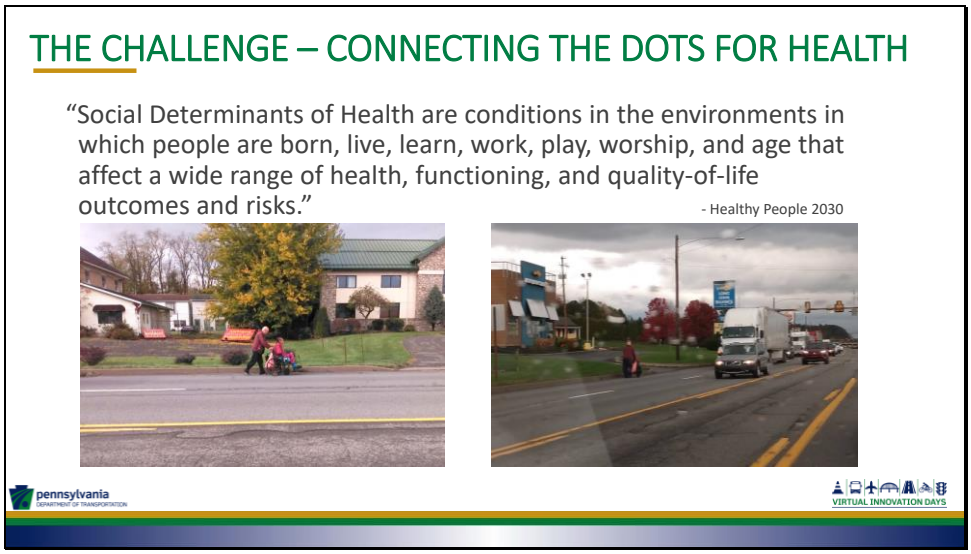

It's not just the transportation engineers and decision-makers who need to explore new ways of thinking to address this crisis; the public health community does, too.

As with Complete Streets and Vision Zero, the concept of Social Determinants of Health is also a more recent and more comprehensive approach to understanding the underlying and interwoven factors affecting health.

We are a product of all sorts of influences. We like to say "you are what you eat," and we could as easily say "you are where you live"… However, while public health professionals have expended a lot of effort to improve individual's diet and nutrition, far less has been done to similarly improve the larger physical context of people's lives.

So, in addition to the people pictured here being in very immediate peril, with heavy traffic bearing down on them, we are also starting to recognize the chronic peril of living in an environment that does not afford safe options for physical activity. We can both be in mortal danger because there isn't a way of walking or wheeling down the road safely at that instant. And we can also be at greater risk over the course of our lifetimes of developing any of a number of long-term adverse health conditions because there isn't a way of walking or wheeling around the community safely…

While the trails and tourism parts of active transportation are great, it's the opportunity for daily physical activity in the normal course of conducting one's life that has the most transformative potential. People don't lose 6 to 10 pounds by going on vacation to Italy, but on average that's how much lighter they are if they live in a walkable community…

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The reality is that our current active transportation infrastructure is -- in the main -- really, really, really lacking. The good news is that we can make a huge difference in people's lives right away. There is low-hanging fruit at literally every turn, probably every intersection. Right now people are confronted with barriers constantly and have to struggle to get where they want to go or to incorporate more healthy exercise into their lives.

The top three images here show typical conditions for many people walking and wheeling in Pennsylvania. On the left a bus stop that people have to magically get to and from, as it is not equipped with sidewalks or curb cuts leading anywhere else, in the middle the primary route from a neighborhood to the center of a small town which entails climbing over high curbs and walking across crowded parking areas, and on the right a crosswalk that ends at a curb with no ramp in sight, forming a blockade for wheelchair users.

The bottom three show what is needed, not just in those three upper locations but throughout our communities: sidewalks, curb cuts, crosswalks, bike lanes, in interconnected networks linking people's daily errands together. We want to exchange barriers and struggle with access and function, helping our communities to have more options to achieve better health.

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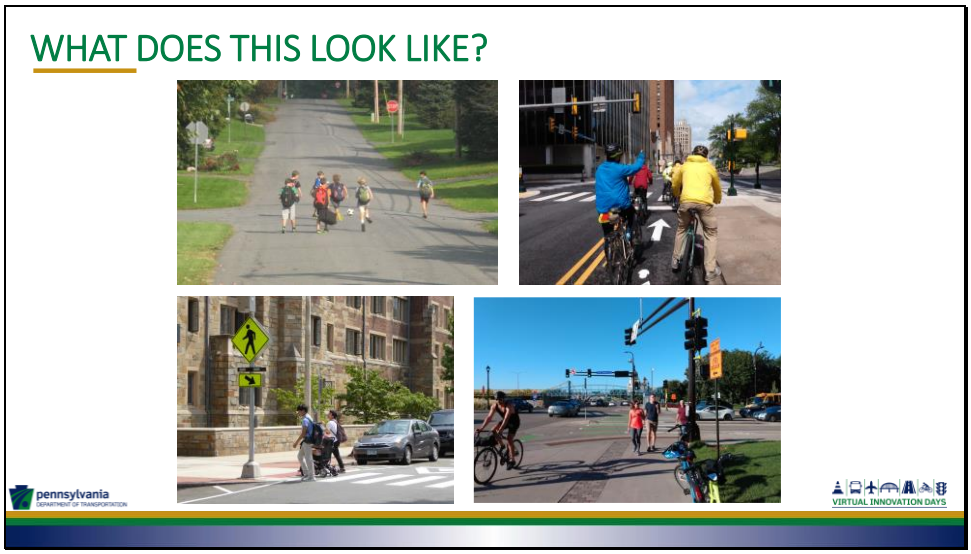

There is not one recipe or design to be applied everywhere. We need a transportation network that is as extensive and varied as our extensive and varied lives and experiences. In some places, we can recognize (and enhance) existing low stress street networks that allow for residents -- even kids -- to safely move around. In other places we may need to deploy designs that are a bit more involved: like a contra-flow bike lane, allowing two-way bike movement on roads that are one-way for motor vehicles or like the rectangular rapid flashing beacon on this mid-block crosswalk on the lower left. Other settings, especially intersections like the one in the lower right may have occasion to knit together many modes at once. But not every setting will call for every solution.

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There are great resources available to help with this now – though as this is early days for this work, this really is new material, just published in the past few years, in this case by the Federal Highway Administration (FHWA) and NACTO, the National Association of City Transportation Officials.

The state's design manual has also been getting some key updates. Even the MUTCD, the Manual on Uniform Traffic Control Devices, is getting a more comprehensive review this time around.

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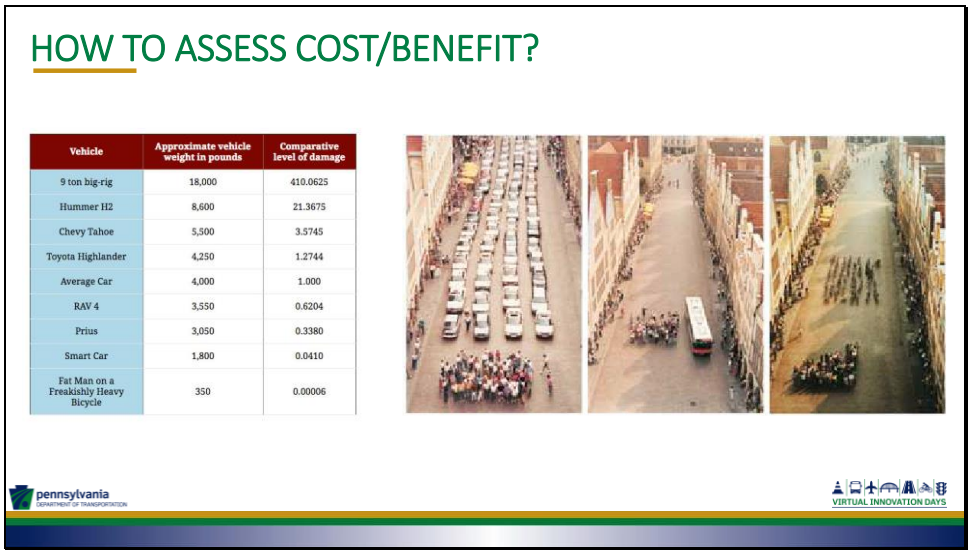

As with most innovations, this focus on active transportation involves change. How do we decide whether the change is worth doing?

This is still being assessed; it can be hard to frame the question such that you are able to compare apples to apples. But in general it comes across as a bargain and too expensive to consider not doing. What we are contending with now are the considerable costs of not having maintained active transportation infrastructure for far too long.

According to one study, constructing 300 miles of bike network has been shown to be equal in cost to building one mile of 4-lane urban highway. But that is just construction cost. In terms of wear and tear, the Federal GSA (General Services Administration) has provided numbers to estimate the impacts of different types of traffic on roadways; in that context, bicycles are off the chart in terms of having tiny impact. While a fully loaded semi can be 2 orders of magnitude more damaging to a road than a car, a bike is in turn 4 or more orders of magnitude less damaging than a car. Put another way, it would take approximately 10k trips by bike to incur similar wear to one trip by car.

There is also what you could think of as the spatial opportunity cost of the automobile as a transportation solution. The set of three images here show the same number of people and the amount of space they take up in several different transportation modes: car, bus, foot, and bike. (And this doesn't even consider the need for safe following distance between the vehicles once they start moving much less the proportion of space communities allot to cars: seven parking spaces for every vehicle (most of it empty at any given moment). All of that space devoted to private motor vehicles is space taken away from other streetscape enlivening activities.

And there are other ways of measuring cost and benefit as well. Avoidance of costs associated with crashes and injuries are significant. As is increased economic activity associated with strong active transportation networks. Real estate values have also been shown to increase appreciably for every increase in WalkScore rating. And, as mentioned, the long term health (and therefore also financial) impacts are only just being grappled with in terms not of avoiding acute injury or death in a crash, but rather avoiding quality-of-life-reducing health conditions. This can have concrete near-term economic impacts like reduced demand for healthcare services and reduced insurance rates.

The main takeaway for now is that it seems too expensive not to incorporate active transportation into our communities and lives.

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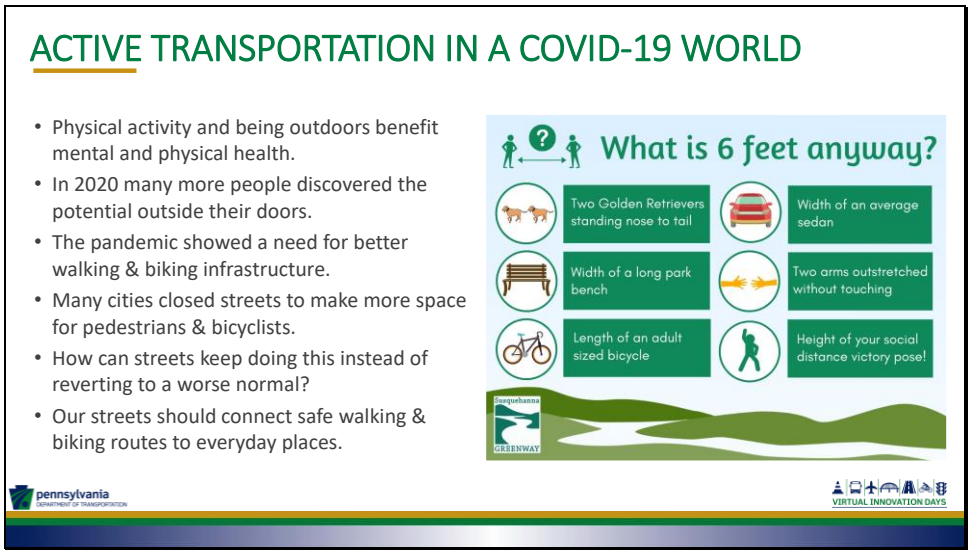

The pandemic really brought all of this into even clearer focus. You likely saw throngs (or the local equivalent of throngs) out in the street or in the parks and trails of your communities in spring of 2020. Further, who among us can now claim to be unaware of the prevalence of "underlying health conditions"? The chronic health challenges that have created added risks for so many during the pandemic are in many cases reduced at the population level by increased physical activity. So whether people newly drawn to walking and wheeling were bored or fitness-focused or trying to avoid indoor gathering, they all came together (at a distance) outside in the streets.

Surveys show that they like what they found there – what many communities worked hard to further enhance on the fly -- and they want to keep it up.

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Here is my contact information. I would love to hear from you about your ideas for connecting everyday destinations for better health for all.

Active transportation is a goal for everyone, has benefits for everyone, and needs the participation of everyone.

The innovation is new understanding:

- that everyday destinations and networks connecting them are critical,
- that road users are varied,
- that the health benefits extend beyond avoiding harm from crashes to improving long-term health, and
- that the benefits expand far beyond health to touch on many aspects of all our lives whether we ever imagine ourselves to have a stake in active transportation or not.