



TA Board of Directors  
Meeting of May 1, 2025

Correspondence as of April 4, 2025

# Subject

1. Relationship between congestion and emissions
2. Please fund and continue to improve public transit in the Peninsula and Bay Area

**From:** [Mike Swire](#)  
**To:** [cacsecretary \[ @smcta.com \]](#); [Board \( @smcta.com \)](#)  
**Subject:** Relationship between congestion and emissions  
**Date:** Thursday, April 3, 2025 11:23:52 AM  
**Attachments:** [image.png](#)  
[image.png](#)  
[image.png](#)

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Hi all,

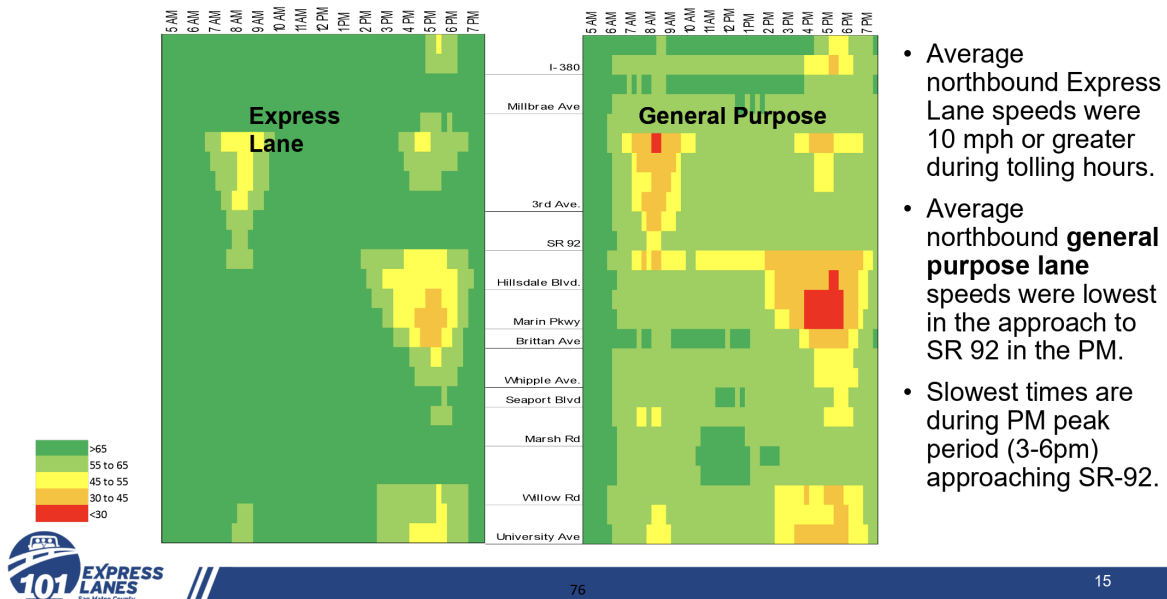
In yesterday's CAC meeting, someone raised the point that increasing highway capacity can reduce emissions by increasing average vehicle speeds (including reducing idling in traffic). I do not believe that this is accurate as it ignores the impact of capacity expansion on induced demand.

It is certainly true that an internal combustion car that moves very slowly emits more than one traveling at optimal speeds of 40 mph or so. This has become less troublesome in recent years, however, as [stop-start systems](#) are now standard on nearly all new cars. These systems deactivate engines when the car is idle. Plus, hybrid cars recapture more energy in stop start traffic. (I am ignoring the impact on electric cars as they don't emit emissions while driving.).

In addition, it is important to remember while congestion can be frequent (during peak periods primarily), average vehicle speeds seldom drop below 30 mph:

## Northbound Speeds by Location & Time - FY25 Q2

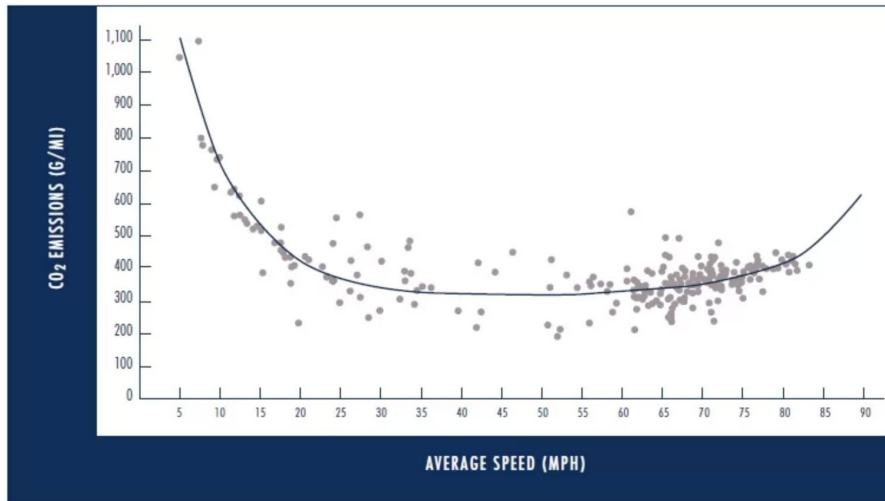
Item #11.b.  
4/7/2025



At 25 mph, which is much more common than stopped traffic/idling, emissions are only slightly higher than at 40 mph/optimal speeds:

FIGURE 5

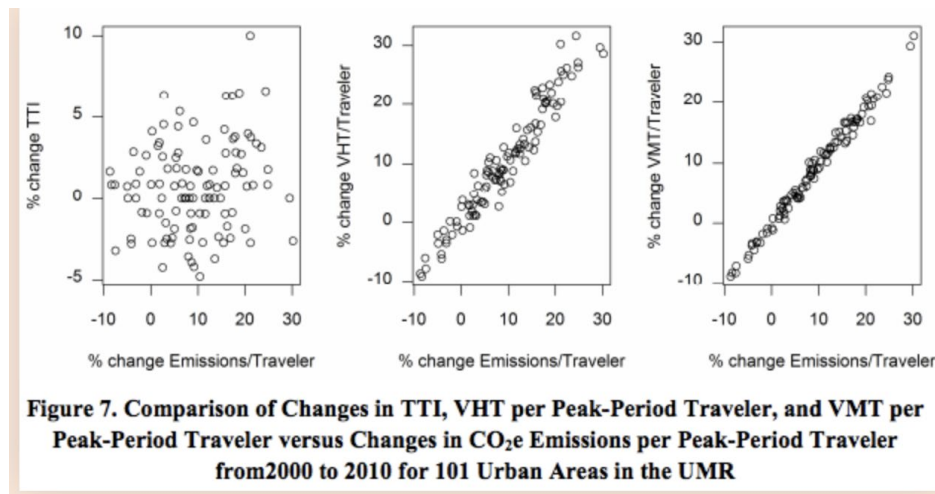
Emission-speed plot of individual trips or trip segments



Also, note that when speeds increase beyond 40 mph, emissions begin to increase again. If we increase speeds during non-rush hours, emissions will increase.

Most importantly, however, [when we increase highway capacity, we increase VMT](#) due to more cars on the road and longer trips. [This engineering study](#) suggests that when we increase highway capacity, net emissions increase. The increase in emissions due to induced demand offsets any (temporary) reduction in emissions due to increases in average vehicle speeds.

[This article](#) summarizes the findings and includes the following graphs that shows that there is no correlation between congestion (TTI) and emissions (graph 1) but that VMT and emissions are positively correlated (graph 3).



Let me know what you think. This would be a great discussion for the group as we try to increase our technical expertise.

Mike Swire

**From:** Aileen Sweeney <aileen@studioquadrifoglio.biz>

**Sent:** Thursday, April 3, 2025 11:51 AM

**To:** Public Comment <publiccomment@smcta.com>

**Subject:** Please fund and continue to improve public transit in the Peninsula and Bay Area

You don't often get email from [aileen@studioquadrifoglio.biz](mailto:aileen@studioquadrifoglio.biz). [Learn why this is important](#)

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Dear leaders of San Mateo County Transportation Authority,

My name is Aileen Sweeney. I live and work in Redwood City and am an active user of Caltrain.

Public transit is critical to the health of our region. It supports our economy, our quality of life and our health by reducing traffic congestion, improving air quality, and helping companies attract talent. In fact, proximity to Caltrain was a driving force in my decision to purchase a home and live walking distance from the Redwood City Caltrain station.

I knew taking Caltrain would enable me:

- to avoid commuting in miserable traffic, which is frustrating, results in an unhealthy sedentary lifestyle, and pollutes our air
- to exercise by walking to and from the station, get work done while in transit, and feel good about not contributing to air pollution.

I understand that SB 63 is a work in progress, including ongoing polling and discussions about expenditures.

I strongly, strongly support regional transit solutions that:

- prevent cuts for all agencies
- provide funding and policies that support seamless coordination of fares, schedules and signs.

Additionally, I strongly support state budget support for transit.

Public transit is a centerpiece of economically vibrant, healthy communities. Please provide the funding and policy support to make public transit viable and effective for the long-term.

Best regards,  
Aileen Sweeney