

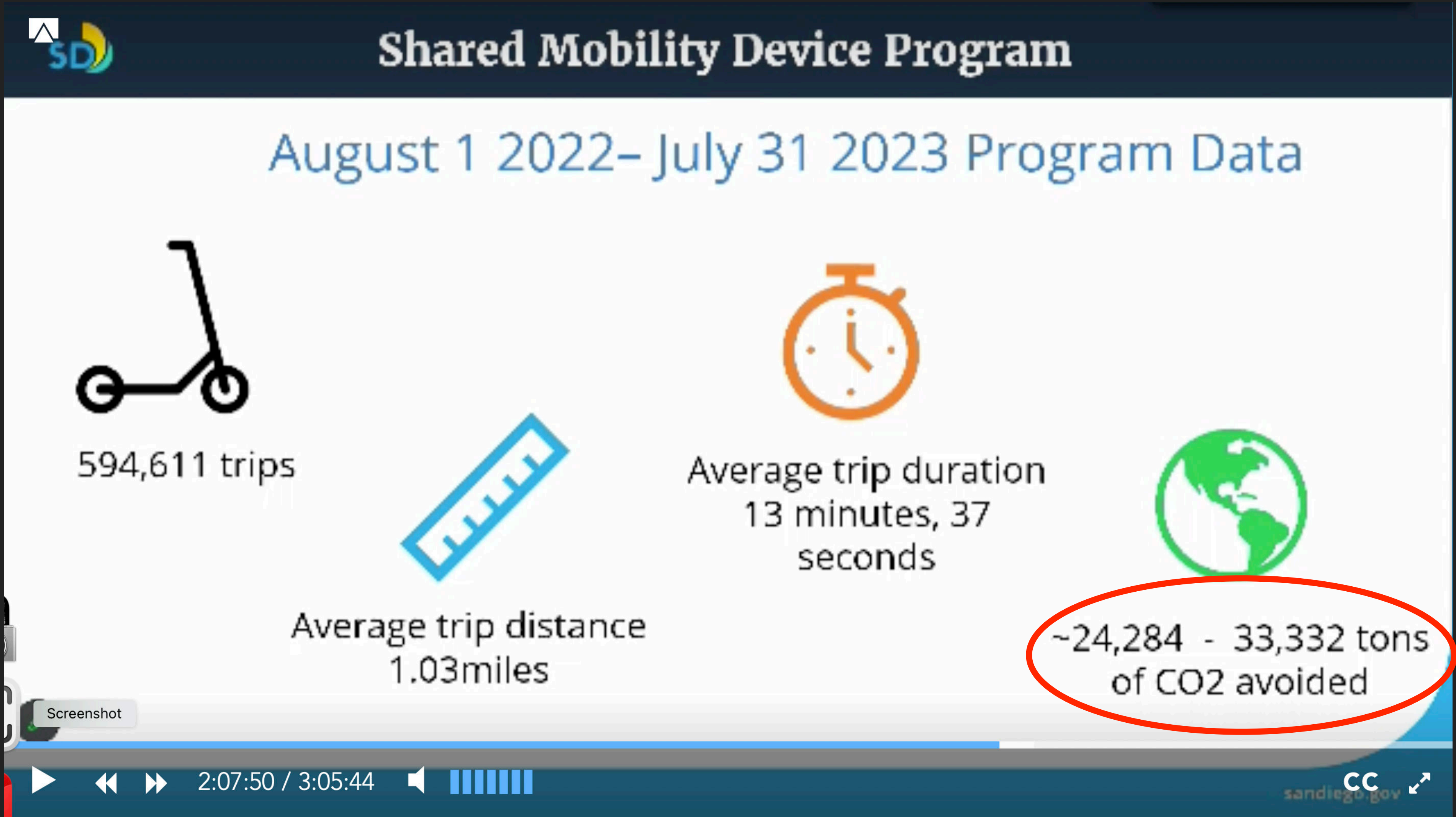
A QUESTION ABOUT THE CLAIMED CO₂ SAVINGS FROM
THE SMD PROGRAM:

ARE THEY CORRECT?

SUMMARY

1. Council Members have been misled about the contribution the SMD program makes to the City's Climate Action Plan (CAP) goals.
2. The contribution, if there is one, is negligible and most likely the SMD program actually **increases** the carbon-footprint of San Diego rather than decreases it.
3. Bringing scooter operators back will most likely undermine the CAP and, because of a history of injuries and deaths, will also undermine the City's Vision Zero plan.

The Shared Mobility Device program is claimed to have saved a lot of CO2 in one year.



The S&M department presented this slide to the AT&I committee.

In 2023, the Times of San Diego reported that the City needs to save approximately 11m tons of greenhouse gas (GHG) emissions by 2035, i.e over twelve years. That's an average of 917,000 tons per year.

GHGs comprise CO₂, Methane, Nitrous Oxide etc. The non-CO₂ gases have a more powerful warming effect than CO₂ and thus the target is a greater amount of CO₂ equivalents but to keep things simple let's assume that the City's target is to save 917,000 tons of CO₂ per year.

The range of CO₂ saved reported by the Sustainability and Mobility department to the AT&I committee is estimated at 24,284 - 33,332 tons for a year in which just under 600,000 trips were taken by scooter. Say the mid-point of this range is 29,000 tons.

The committee was told that that year the number of trips was far less than the previous year when there were five times more.

What percentage of the annual goal is 29,000 tons? It is an impressive 3.2%!

Had there been five times more trips one might imagine that the Shared Mobility Device program would have contributed a staggering 16% to the City's Climate Action Plan goal. This would be an impressive argument for having more scooters all over San Diego.

More scooters = more trips = more CO₂ saved!

It seems almost too good to be true, doesn't it?

This is the report of the SMD program CO2 saving produced for the Sustainability & Mobility department by Populus.

Mobility Manager

San Diego

Mobility Metrics

Trip Filters: All Operators All Vehicle Types

Daily

December 7, 2023 - December 8, 2023

Number of Trips	Total Trips Distance	Total Trips Duration	Average Trip Distance	Average Trip Duration	CO ₂ Savings
27	29 mi	450 mins	1.13 mi	16 mins 40 secs	1 - 1 kg-CO ₂ eq

Weekly

November 27, 2023 - December 3, 2023

Number of Trips	Total Trips Distance	Total Trips Duration	Average Trip Distance	Average Trip Duration	CO ₂ Savings
128	104 mi	1,094 mins	0.82 mi	8 mins 33 secs	4 - 5 kg-CO ₂ eq

Monthly

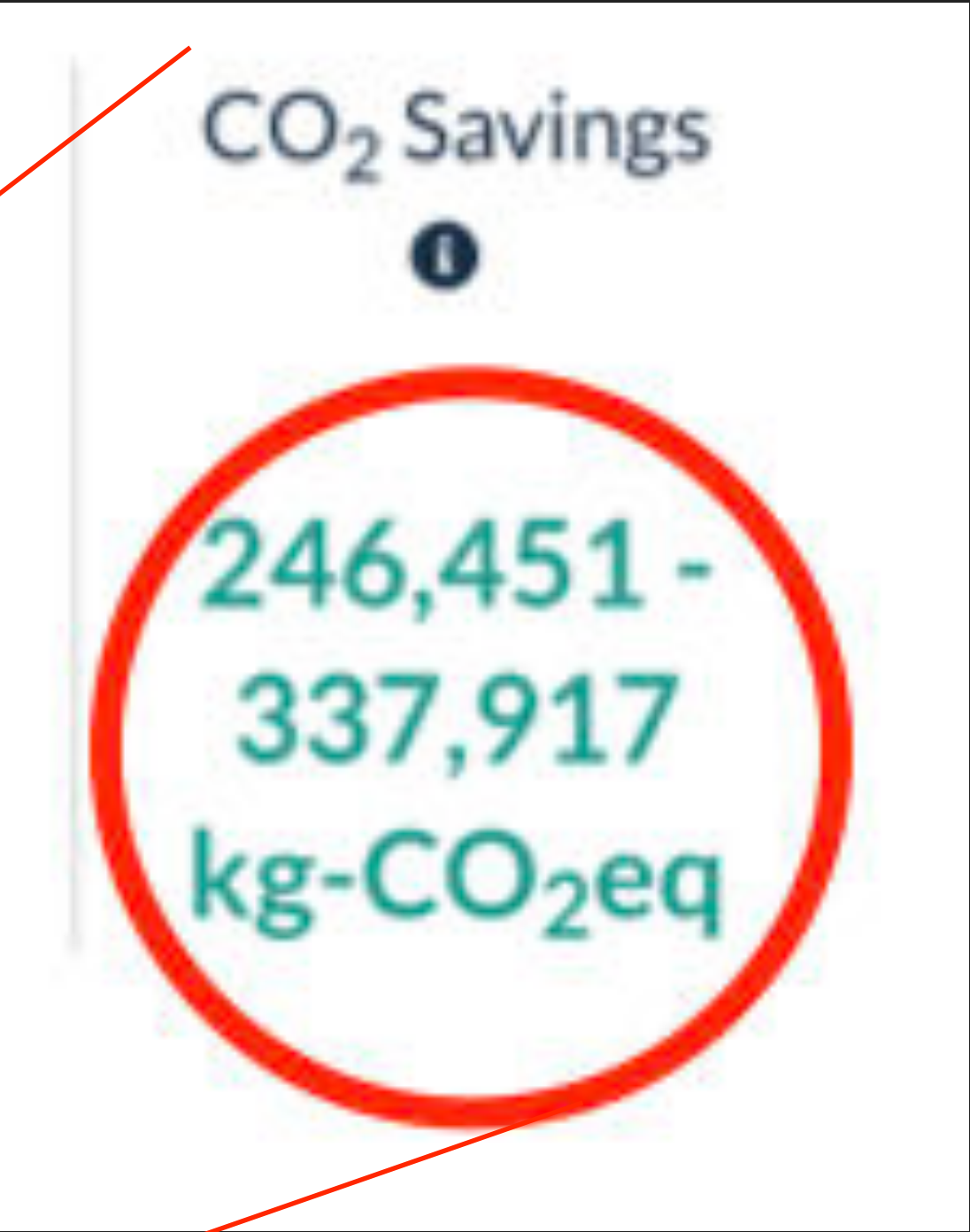
November 1, 2023 - November 30, 2023

Number of Trips	Total Trips Distance	Total Trips Duration	Average Trip Distance	Average Trip Duration	CO ₂ Savings
775	682 mi	7,996 mins	0.89 mi	10 mins 19 secs	29 - 37 kg-CO ₂ eq

Custom Date Range

01/01/2021 11/30/2023

Number of Trips	Total Trips Distance	Total Trips Duration	Average Trip Distance	Average Trip Duration	CO ₂ Savings
5,690,072	6,178,465 mi	73,801,017 mins	1.10 mi	12 mins 58 secs	246,451 - 337,917 kg-CO ₂ eq



This is NOT TONS. There are 1,000 Kg in a metric ton. So Populus reports a saving of 246 - 338 tons of CO₂.

Here's a quick estimation:...

The Environmental Protection Agency states that the CO₂ emission per mile of an average passenger vehicle is 411 grams.

Multiply the number of shared scooter trips (594,611) by the average length of a trip (1.03 miles) and you calculate the total number of miles travelled by scooter (612,449).

Assuming that:

- all car trips only involve one person, and
- every scooter trip replaces a car trip

then we can estimate the CO₂ saved as $612,449 \times 411\text{g} = 251,716,675\text{g}$ which is

252 tons. Populus reported a range of 246 to 338 tons. It looks like we agree.

But we made some assumptions that simply are not correct and missed quite a few things out like:

- CO2 is emitted when scooters are manufactured, and they don't last long so you need to make a lot.
- When scooters are staged, re-located and maintained, the operators use CO2-emitting vans to do so. The City's contractor, Sweep, does the same.
- Some people drive scooters for fun, not transport. That doesn't save a car trip.
- Some people replace walking, transit and cycling when they use a scooter. Doing that doesn't save CO2.
- Sometimes a car trip involves more than one person.

Because our numbers align it looks like Populus has not been instructed to take those factors into account.

When you do take those factors into account the estimated CO₂ saving drops from 0.02% of the annual target to at best zero, but more likely a negative number, meaning that overall the SMD program is increasing the carbon footprint of San Diego, not decreasing it.

More scooters = More trips = Less CO₂ Saved.

For more detail on relevant calculations and estimates see two studies of the SMD program in San Diego published in [2019](#) and [2022](#) by Dr. Jonathan Freeman and Dewey Szemenyei.

CONCLUSION

1. Council Members have been misled about the contribution the SMD program makes to the City's Climate Action Plan (CAP) goals.
2. The contribution, if there is one, is negligible and most likely the SMD program actually **increases** the carbon-footprint of San Diego rather than decreases it.
3. Bringing scooter operators back will most likely undermine the CAP and, because of a history of injuries and deaths, will also undermine the City's Vision Zero plan.