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From: Steve Linke <splinke@gmail.com>
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To: Traffic; City Clerk
Subject: 1/9/2024 City Council Agenda Item 15: Semiannual Transportation Report

All Receive - Agenda Item # 15
For the Information of the:
CITY COUNCIL
Date 1/8/24 CA ☒ CC ☒
CM ☒ ACM ☒ DCM (3) ☒

Carlsbad City Councilmembers (and Traffic Safety & Mobility Commissioners):

SUMMARY

In the new Semiannual Transportation Report, staff again makes the false claim that the narrowing of our high speed, high-volume arterial vehicle through-lanes to less than 11 feet in width is consistent with industry standards, and the misleading claim that the projects will decrease speeds and improve safety. These claims have been made in numerous staff reports and City Manager's Updates, but repetition does not make them true.

The consensus among the design standard-setting organizations, researchers, and other experts is that great caution needs to be exercised when narrowing lanes, and that arterial lane widths less than 11 feet should be restricted to streets with speeds of 30 to 35 mph or less with lower total volumes of vehicles and few large vehicles (buses, trucks). Inconsistent with these standards, staff's lane narrowing projects are being done on many streets with speeds of 40 to 55 mph--some of which carry high volumes and/or are truck/bus routes.

In addition, strong evidence shows that narrowing high-speed arterial lanes has little to no meaningful effect on speeds--let alone the completely unsupported 5 mph reduction suggested by staff. And there is no demonstrable effect on safety outcomes. In fact, increased lane encroachments and sideswipe collisions arising from the narrowed lanes can decrease safety for both vehicles and cyclists.

Staff is either unable to properly interpret the standards and individual research studies in the proper context, or they are knowingly defying the expert guidance, subjecting Carlsbad's street users to potentially dangerous experimentation. In either case, I would suggest that the "substantial evidence" requirement for "design immunity" has not been met, thereby exposing the city to liability when collisions occur, due to the creation of unsafe conditions.

While lane-narrowing on some streets may increase safety, staff's extrapolation of this approach to our high-speed, high-volume suburban arterials is misguided and unsupported by evidence. You, as our elected leaders, should mandate that staff provide detailed analyses for each of their lane narrowing projects, showing that they are consistent with their cited standards: AASHTO Green Book (specifically, Section 7.3.3.2) and the Caltrans Highway Design Manual (specifically, Section 308). If they are unable to provide that, you should end these experiments.

LACK OF STANDARDS COMPLIANCE

Staff claims that they have analyzed the conditions on all of the streets on which lanes are being narrowed and determined that there are no safety concerns. However, **in response to my public records request for those safety analyses, none were provided.** Instead, staff has only made the general statement that all of the projects are allegedly consistent with the following national and state standards.

AASHTO "Green Book" (national standard)

Staff cites an introductory sentence in Chapter 4 of the Green Book that describes the fact that city street lane widths are generally between 9 and 12 feet, and they state that their 10-foot lanes are within that range. However, this is extremely deceptive, because the next sentence explains how Chapters 5 through 8 need to be used for guidance on

specific street types.

The relevant guidance on **arterial streets** (Section 7.3.3.2) indicates that 12-foot through-lanes are desirable on high-speed, free-flowing principal arterials, while narrower 11-foot lanes are normally adequate for 45-mph or less arterials, but 10-foot lanes are only appropriate on arterials with speeds **less than 35 mph** and few large vehicles (buses, trucks).

Caltrans "Highway Design Manual" Section 308 (state standard)

Caltrans only regulates the portions of our streets at the highway interchanges, and the only reference to lane width in this standard requires **12 feet**. In fact, staff has been forced to seek special exceptions from Caltrans outside of their standards to allow lane widths less than 11 feet at the interchanges. Thus, staff's citation of this standard to justify widths less than 11 feet is mystifying.

Although not cited by staff, one of the most comprehensive and modern "complete streets" design standards is ITE's "**Designing Walkable Urban Thoroughfares**." Similar to the Green Book, it emphasizes street context and restricts the narrowing of arterial lanes to less than 11 feet to streets with speeds **less than 35 mph**.

INDIVIDUAL RESEARCH STUDIES

The only other evidence presented by staff is a 2007 research study by Potts et al., which reported no statistical differences in collisions with narrower lanes. However, the results of this under-powered study are already incorporated into the Green Book and other standards described above, and it includes virtually no data relevant to the projects in Carlsbad (high-speed arterial lanes being reduced to less than 11 feet).

The largest-ever nationwide study on narrowed lanes was published last year by Hamidi et al.—strong proponents of the practice. However, these authors also specifically recommend lanes less than 11 feet only on streets with speeds of **35 mph or less**, and former ITE President Randy McCourt issued a strong warning in an accompanying NPR interview:

"It's a slam dunk on the 20 and 25 [mph streets], but when you get to the 35, 40, you got to be very careful."

SPEED AND SAFETY NOT MEANINGFULLY AFFECTED BY LANE-NARROWING

Some small studies suggest that lane narrowing might reduce speeds by a few mph on some street types (e.g., NCHRP Project 03-72). However, more robust, nationwide studies have concluded that lane widths have little or no effect on speeds on high-speed suburban arterials, (e.g., NCHRP Project 17-53). Due to the much larger sample sizes and wider geographic distribution, the latter results are considered more credible by the Transportation Research Board (NHCRP Report 783).

But even if one assumes that narrowed lanes can reduce arterial speeds by a few mph, I am unaware of any published evidence directly linking that to better injury outcomes—it is all assumptions layered upon other assumptions. In fact, narrowed lanes can increase lane encroachments and sideswipes that can make things more dangerous for all users, including cyclists (Dai et al., 2020).

Best regards,
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