

File No. 231016

Committee Item No. _____

Board Item No. 40

COMMITTEE/BOARD OF SUPERVISORS

AGENDA PACKET CONTENTS LIST

Committee: _____

Date: _____

Board of Supervisors Meeting

Date: October 3, 2023

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OTHER

- MTA Proposed Street Changes
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- Mayor Announcement 8/29/19
- Federal Highway Administration Vision Zero in SF Report
- Pedestrian Traffic Fatalities by State - 2022 Prelim Data
- ITE Journal Report May 2022
- _____
- _____
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- _____

Prepared by: Jocelyn Wong

Date: September 28, 2023

Prepared by: _____

Date: _____

1 [Urging MTA to Prohibit Right Turns on Red]

2
3 **Resolution urging the Municipal Transportation Agency (MTA) to develop and**
4 **implement a plan for No Turn On Red (NTOR) at every signalized intersection in San**
5 **Francisco and approve a citywide NTOR policy.**
6

7 WHEREAS, Allowing turns on red results in deaths, injuries, and collisions as well as
8 cars blocking, or driving through crosswalks, making it more dangerous and stressful for
9 people to cross the street, especially children, seniors, and those living with disabilities; and

10 WHEREAS, Turn-on red prohibitions can reduce vehicle-pedestrian and vehicle-bicycle
11 conflicts and increase safety for all, and fewer vehicles entering the crosswalk on a red light
12 can increase comfort for pedestrians; and

13 WHEREAS, San Francisco currently has No Turn On Red (NTOR) at approximately
14 110 intersections, which is about 9% of all traffic signals, and includes a blanket NTOR
15 restriction in the Tenderloin that includes 50 locations; and

16 WHEREAS, Following the implementation of NTOR in the Tenderloin in 2021, the MTA
17 released a factsheet outlining the success of the initiative: 92% of motorists complied with the
18 turn restriction, "close calls" decreased 80%, and vehicles blocking or encroaching the
19 crosswalk during a red light decreased more than 70%; and

20 WHEREAS, Municipal Transportation Agency (MTA) has already recommended
21 expanding No Turn on Red (NTOR) restrictions to business activity districts where speed
22 limits are being reduced under new state authority; and

23 WHEREAS, MTA has stated that prohibiting turns on red is a low-cost measure that
24 can help keep crosswalks clear and reduce close calls; and
25

1 WHEREAS, On August 29, 2019, Mayor London N. Breed announced a package of
2 Vision Zero projects to increase street safety at intersections throughout San Francisco, which
3 called on the MTA and the Department of Public Health (DPH) to analyze and develop policy
4 recommendations on limiting right turns at red lights by Spring 2020; and

5 WHEREAS, California Motor Vehicle Code permits drivers to make turns on red lights
6 unless a sign is in place prohibiting a turn at the intersection; and

7 WHEREAS, NTOR is proven to increase safety and make crossing easier, safer, and
8 more comfortable, including where it has been implemented in San Francisco; and

9 WHEREAS, MTA has the authority to implement NTOR and direct the installation of
10 NTOR signs, as required by state law; and

11 WHEREAS, An MTA study done in 2022 found that 20% of injury crashes involving
12 pedestrians or people biking in San Francisco involve drivers turning at intersections with
13 traffic signals (“signalized” intersections); and

14 WHEREAS, MTA’s collision report for 2012-2015 showed that around 38% of collisions
15 happen when drivers fail to yield to pedestrians in crosswalks; and

16 WHEREAS, According to the High Injury Network, 68% of severe and fatal traffic
17 collisions occur on 12% of San Francisco’s streets; and

18 WHEREAS, The Washington, D.C. District Department of Transportation found in a
19 2019 study that the number of times drivers failed to yield when the light was red dropped by
20 92%; and

21 WHEREAS, The Washington D.C. study also found that drivers were better about
22 yielding to pedestrians when their light was green, seeing violations drop by 59%; and

23 WHEREAS, According to the Governors Highway Safety Association (GHSA), over the
24 last decade, United States pedestrian fatalities increased from 4,302 in 2010 to an estimated
25 7,624 in 2021, a 56% increase ; and

1 WHEREAS, New York City has prohibited turns-on-red, unless signs indicate
2 otherwise, since 1937; and

3 WHEREAS, Cambridge, Massachusetts approved a citywide No Turn On Red policy in
4 2022 and is in the process of installing signs at all signalized intersections in the city where
5 applicable; and

6 WHEREAS, Washington, DC will begin prohibiting turns-on-red in 2025, and in 2023,
7 Seattle began to require all intersections to be equipped with NTOR signs when they are
8 updated or modified; now, therefore, be it

9 RESOLVED, That the Board of Supervisors urges the MTA Board to adopt a No Turn
10 On Red (NTOR) policy that stops turns on red at signalized intersections across San
11 Francisco to the greatest extent possible; and, be it

12 FURTHER RESOLVED, That the Board of Supervisors urges the MTA to develop a
13 plan to expand and implement Turn On Red (NTOR) to the greatest extent possible, and to
14 share that plan with the Board of Supervisors and the MTA Board within 120 days; and be it

15 FURTHER RESOLVED, That the Board of Supervisors urges the MTA Board to adopt
16 a policy requiring NTOR restrictions be added in connection with updates or modifications at
17 signalized intersections, including upcoming quick build projects, speed reduction efforts, and
18 future implementation of the Active Communities Plan; and, be it

19 FURTHER RESOLVED, That the Board of Supervisors urges MTA, to the extent that
20 state law or resource constraints limit immediate citywide implementation of NTOR, to
21 prioritize intersections on the High Injury Network for NTOR restrictions; and, be it

22 FURTHER RESOLVED, That the Board of Supervisors urges the MTA to consult with
23 vulnerable communities, including communities of color, people with disabilities, and seniors,
24 all of whom are disproportionately impacted, to identify additional intersections that should be
25 prioritized for NTOR; and, be it

1 FURTHER RESOLVED, That the Clerk of the Board shall transmit a copy of this
2 Resolution to the MTA Director of Transportation and the MTA Board.

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Proposed Street Changes

Cambios Propuestos en la Calle | 街道改變建議 | Ipinanukalang mga Pagbabago sa Kalye



Speed Limit Reduction to 20 MPH

Neighborhood wide between: Grove Street (south), Sutter Street (north), Mason Street (east), and Van Ness (west)
New Speed Limit Signs

SFMTA Engineering Public Hearing

Friday, February 19, 2021 at 10:00 AM
Online

Please visit: [SFMTA.com/committees/engineering-public-hearings](https://www.sfmta.com/committees/engineering-public-hearings) for weblink

No Turn on Red Regulations

Neighborhood wide inclusive of: Grove Street (south), Sutter Street (north), Mason Street (east), and Polk Street (west)
No Turn on Red Signs



The San Francisco Municipal Transportation Agency (SFMTA) Tenderloin Traffic Safety project proposes two traffic safety improvements in the Tenderloin: (1) reducing vehicle speed limits to 20 miles per hour and (2) prohibiting vehicle turns on red.

This project will address high crash locations while creating a more comfortable space for travel through the following changes:

- Installing “No Turn on Red” signs at approximately 50 intersections
- Lowering speed limits on 17 corridors from 25 MPH to 20 MPH

Pending project approvals, implementation could begin as early as March 2020.

Why lower speed limits to 20 MPH in the Tenderloin?

- Vehicle speed is the largest predictor of injury severity
- A pedestrian struck at 20 MPH is 2x more likely to survive than someone struck at 25 MPH
- Speed Surveys indicate current travel speeds warrant lowering the speed limit to 20 MPH

Why prohibit turns on red in the Tenderloin?

- Turn-related crashes occur more often in the Tenderloin than other neighborhoods
- Turn on red prohibitions can reduce vehicle-pedestrian and vehicle-bicycle conflicts and increase safety for all
- Fewer vehicles entering the crosswalk on a red light can increase comfort for pedestrians

For general project information and updates, we invite you to visit the project website at <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements> or email the project team at TLStreets@sfmta.com.

If you would like to comment on this proposed change, you may attend the SFMTA Public Hearing described above or file your comments in writing before the hearing:

- Email: Sustainable.Streets@SFMTA.com and TLStreets@sfmta.com with subject line “Public Hearing: 20 MPH/NTOR”
- Mail: Public Hearing, Sustainable Streets Division
One South Van Ness Avenue, 7th Floor, San Francisco, CA 94103-5417

To obtain a copy of this notice and proposed street changes, visit <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements>.

☎ 415.646.4270: For free interpretation services, please submit your request 48 hours in advance of meeting. / 如果需要免費口語翻譯，請於會議之前48小時提出。 / Para servicios de interpretación gratuitos, por favor haga su petición 48 horas antes de la reunión. / Para sa libreng serbisyo sa interpretasyon, kailangan mag-request 48 oras bago ang miting.

All comments will be reviewed by project staff and will be entered into the public record. Comments will be considered when a determination is made whether to implement the change. After the hearing, proposals can be approved by the City Traffic Engineer.

Following approval of the item by the SFMTA City Traffic Engineer, the CEQA determination is subject to appeal within the timeframe specified in S.F. Administrative Code Section 31.16, typically within 30 calendar days of the Approval Action. For information on filing a CEQA appeal, contact the Clerk of the Board of Supervisors at City Hall, 1 Dr. Carlton B. Goodlett Place, Room 244, San Francisco, CA 94102, or call (415) 554-5184. Under CEQA, in a later court challenge, a litigant may be limited to raising only those issues previously raised at a hearing on the project or in written correspondence delivered to the Board of Supervisors or other City board, commission or department at, or prior to, such hearing, or as part of the appeal hearing process on the CEQA decision.

☎ 311 Free language assistance / 免費語言協助 / Ayuda gratis con el idioma / Бесплатная помощь переводчиков / Trợ giúp Thông dịch Miễn Phí / Assistance linguistique gratuite / 無料の言語支援 / Libreng tulong para sa wikang Filipino / 무료 언어 지원 / การช่วยเหลือทางด้านภาษาโดยไม่เสียค่าใช้จ่าย / خط المساعدة المجاني على الرقم



تغييرات الشوارع المقترحة

Proposed Street Changes | Cambios propuestos en las calles | 街道改變建議

جلسة الاستماع العامة الهندسية التي تنظمها وكالة النقل المحلي في سان فرانسيسكو
يوم الجمعة، 19 فبراير، 2021 في الساعة العاشرة صباحًا على الانترنت
الرجاء زيارة:

<https://www.sfmta.com/committees/engineering-public-hearings>

لرابط الويب

مشروع تندرلويين للسلامة المرورية الذي وضعته وكالة النقل المحلي في سان فرانسيسكو (SFMTA) يقترح فكرتين لتحسين السلامة المرورية في تندرلويين: (1) تقليل الحد الأقصى لسرعة المركبة إلى 20 ميلاً في الساعة و(2) منع انعطاف المركبة عندما تكون الإشارة حمراء.

سيعالج هذا المشروع مواقع الاصطدامات المرتفعة مع توفير مساحة أكثر راحة للتنقل من خلال التغييرات الآتية:

- تركيب لافتات "ممنوع الانعطاف عندما تكون الإشارة حمراء" على 80 تقاطعًا تقريبًا
- خفض الحد الأقصى للسرعة على 17 ممرًا من 25 ميلاً في الساعة إلى 20 ميلاً في الساعة

في انتظار الموافقات على المشروع، يمكن بدء التنفيذ في أوائل مارس 2021.

ما الهدف من تخفيض الحد الأقصى للسرعة إلى 20 ميلاً في الساعة في تندرلويين؟

- سرعة المركبة هي أكبر مؤشر على شدة الإصابة
- احتمال نجاة أحد المشاة الذي يُدهس بسرعة 20 ميلاً في الساعة أكثر بمرتين من شخص يُدهس بسرعة 25 ميلاً في الساعة
- تشير استطلاعات الرأي عن السرعة إلى أن سرعات التنقل الحالية تستدعي خفض الحد الأقصى للسرعة إلى 20 ميلاً في الساعة

ما الهدف من منع المركبات من الانعطاف عندما تكون الإشارة حمراء في تندرلويين؟

- تقع الاصطدامات المرتبطة بالانعطاف في منطقة تندرلويين أكثر من الأحياء الأخرى
- منع الانعطاف عندما تكون الإشارة حمراء قد يقلل من التعارض بين المركبات والمشاة من جهة وبين المركبات والدراجات من جهة أخرى ويزيد من مستوى السلامة للجميع
- قلة عدد المركبات التي تدخل ممر المشاة عند الإشارة الحمراء قد يزيد من راحة المشاة

تخفيض الحد الأقصى للسرعة إلى 20 ميلاً في الساعة

الحي بين: شارع غروف (جنوبًا)، شارع سوتر (شمالًا)، شارع مايسون (شرقًا)، وفان نيس (غربًا)
لافتات وإشارات لحدود السرعة الجديدة

قوانين منع الانعطاف عندما تكون الإشارة حمراء
الحي الذي يشمل: شارع غروف (جنوبًا)، شارع سوتر (شمالًا)، شارع مايسون (شرقًا)، وبولك ستريت (غربًا)
لافتات منع الانعطاف عندما تكون الإشارة حمراء



للحصول على معلومات وتحديثات عامة عن المشروع، ندعوكم لزيارة موقع المشروع على <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements> أو إرسال بريد إلكتروني إلى فريق المشروع على TLStreets@sfmta.com.

إذا كنتم ترغبون في التعليق على هذا التغيير المقترح، فيمكنكم حضور جلسة الاستماع العامة المذكورة أعلاه التي تنظمها وكالة النقل المحلي في سان فرانسيسكو أو يمكنكم تقديم تعليقاتكم كتابيًا قبل جلسة الاستماع:

- البريد الإلكتروني: Sustainable.Streets@SFMTA.com و TLStreets@sfmta.com مع كتابة التالي في خانة الموضوع "جلسة الاستماع العامة: 20 MPH/NTOR"
- بريد: جلسة الاستماع العامة، قسم الشوارع المستدامة (Sustainable Streets Division) جادة وان ساوث فان نيس، الطابق السابع، سان فرانسيسكو، CA 94103-5417

للحصول على نسخة من هذا الإشعار وتغييرات الشوارع المقترحة، الرجاء زيارة <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements>

415.646.4270: For free interpretation services, please submit your request 48 hours in advance of meeting. / 如果需要免費口語翻譯，請於會議之前48小時提出要求。 / Para servicios de interpretación gratuitos, por favor haga su petición 48 horas antes de la reunión. / Para sa libreng serbisyo sa interpretasyon, kailangan mag-request 48 oras bago ang miting.

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街道改變建議

Proposed Street Changes | Изменения в организации дорожного движения: проект | Các thay đổi đề xuất cho đường phố



速度限制降低到每小時20英里

實施的鄰里範圍如下：Grove街（南）、Sutter街（北）、Mason街（東）以及Van Ness（西）新的速度限制標誌

三藩市交通局工程公聽會

2021年2月19日星期五上午10:00

以線上方式進行

請造訪：

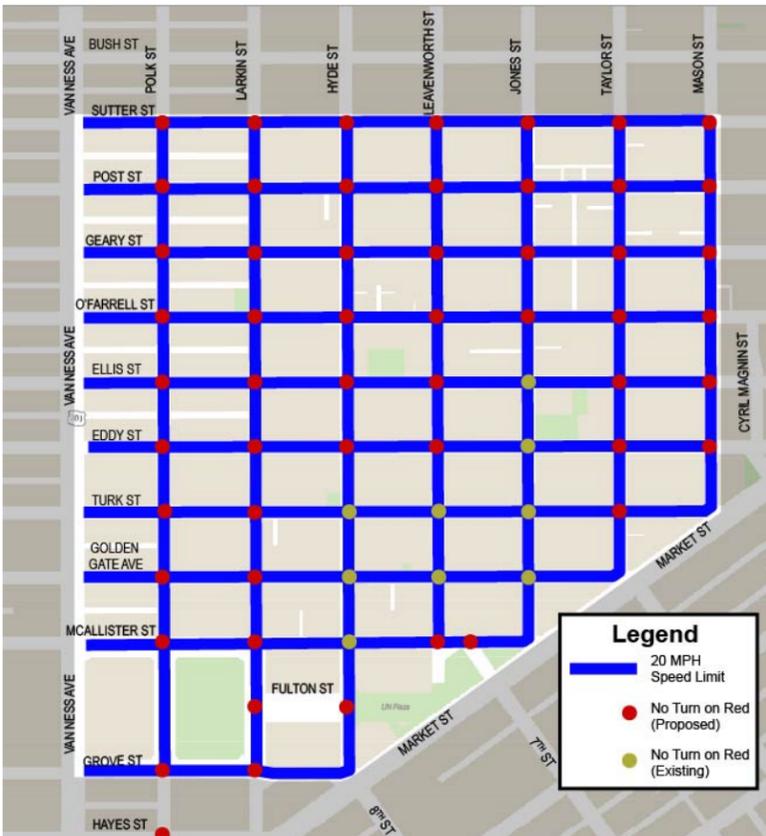
<https://www.sfmta.com/committees/engineering-public-hearings>

取得公聽會連接網址

紅燈時禁止轉彎規定

實施的鄰里涵蓋範圍：Grove街（南）、Sutter街（北）、Mason街（東）以及Polk街（西）

紅燈時禁止轉彎標誌



三藩市交通局（SFMTA）田德隆交通安全計劃針對田德隆區提出兩項交通改善措施：(1) 將車輛的速度限制降低到每小時20英里，以及 (2) 禁止車輛在紅燈時轉彎。

這項計劃將透過以下改變解決某些地點頻繁發生碰撞事故問題，並創造一個讓人更安心的交通環境：

- 在大約80個十字路口裝設「紅燈時禁止轉彎」標誌。
- 在17個交通要道將速度限制從每小時25英里降低到每小時20英里

待計劃批准後，最快可望在2021年3月開始實施。

為什麼要將田德隆區的速度限制降低到每小時20英里？

- 車速是車禍受傷嚴重程度的最大預測指標
- 被時速20英里車輛撞到的行人，其存活的可能性是被時速25英里的車輛撞到的兩倍
- 速度調查結果顯示，從目前的行車速度來看，將速度限制降低到每小時20英里是非常合理的

為什麼要在田德隆區禁止紅燈時轉彎？

- 田德隆區發生與轉彎有關的碰撞事故頻率比其他鄰里高
- 禁止在紅燈時轉彎能夠減少車輛與行人、車輛與自行車之間的衝突，增進所有人的安全
- 在紅燈期間減少進入行人穿越道的車輛能夠使行人感到更安心過馬路

如需計劃資訊和最新消息，請造訪計劃網站：<https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements>，或發送電子郵件至 TLStreets@sfmta.com 向計劃團隊洽詢。

如果想評論提出的這項改變，請參加上述的三藩市公聽會，或在公聽會舉行之前將您的書面意見透過下列方式交給我們：

- 以電子郵件寄到：Sustainable.Streets@SFMTA.com and TLStreets@sfmta.com 並在主旨行註明 "Public Hearing: 20 MPH/NTOR"
- 以一般郵件寄到：
Public Hearing, Sustainable Streets Division
One South Van Ness Avenue, 7th Floor, San Francisco, CA 94103-5417

如要取得本通知副本以及提議的街道改變建議內容，請造訪：<https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements>.

☎ 415.646.4270: For free interpretation services, please submit your request 48 hours in advance of meeting. / 如果需要免費口語翻譯，請於會議之前48小時

時提出要求。 / Para servicios de interpretación gratuitos, por favor haga su petición 48 horas antes de la reunión. / Para sa libreng serbisyo sa interpretasyon, kailangan mag-request 48 oras bago ang miting.

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Mga Mungkahing Pagbabago sa Kalye



Proposed Street Changes | Cambios propuestos en las calles | Изменения в организации дорожного движения: проект

Pagpapababa sa Limitasyon sa Bilis ng Sasakyan o Speed Limit tungo sa 20 MPH

Sa kabuuan ng mga komunidad na nasa pagitan ng Grove Street (timog), Sutter Street (hilaga), Mason Street (silangan), at Van Ness (kanluran). Mga Bagong Karatula Tungkol sa Limitasyon sa Bilis ng Sasakyan para sa weblink

SFMTA Engineering Public Hearing

Biyernes, Pebrero 19, 2021 nang 10:00 AM

Online (sa pamamagitan ng internet)
Mangyaring bisitahin ang:

<https://www.sfmta.com/committees/engineering-public-hearings>

Mga Regulasyon na Nagbabawal sa Pagliko kapag Pula ang Ilaw

Sa kabuuan ng mga komunidad, kung saan kasama ang: Grove Street (timog), Sutter Street (hilaga), Mason Street (silangan), at Polk Street (kanluran) Bawal ang Pagliko kapag Pula ang Ilaw



Nagmumungkahi ang proyekto para sa Kaligtasan sa Trapiko sa Tenderloin (Tenderloin Safety Project) ng Ahensiya ng San Francisco para sa Munisipal na Transportasyon (San Francisco Municipal Transportation Agency, SFMTA) ng dalawang pagpapahusay sa kaligtasan sa trapiko sa Tenderloin: (1) pagpapababa sa limitasyon sa bilis ng mga sasakyan tungo sa 20 milya kada oras at (2) pagbabawal sa pagliko ng mga sasakyan kapag pula ang ilaw.

Gagawan ng solusyon ng proyektong ito ang problema ng mga lugar kung saan maraming pagkabundol at banggaan, habang lumilikha ng mas komportableng espasyo para sa pagbibiyaha, sa pamamagitan ng mga sumusunod na pagbabago:

- Paglalagay ng mga karatulang “No Turn on Red (Bawal Lumiko Kapag Pula ang Ilaw)” sa humigit-kumulang 80 interseksiyon
- Pagpapababa sa limitasyon sa bilis ng sasakyan sa 17 corridor mula 25 MPH tungo sa 20 MPS

Kung maaaprubahan ang proyekto, posibleng maipatupad na ito sa maagang panahon, tulad ng Marso 2021.

Bakit dapat babaan ang limitasyon sa bilis ng sasakyan tungo sa 20 MPH sa Tenderloin?

- Ang bilis ng sasakyan ang pinakamahusay na paraan para mahulaan kung gaano katindi ang magiging pinsala sa pagkabundol
- Ang naglalakad na nabundol ng sasakyan na tumatakbo sa bilis na 20MPH ay 2x na mas malamang na mabuhay kaysa sa nabundol ng sasakyan na may bilis na 25MPH
- Ipinapakita ng mga Sarbey ukol sa Bilis ng Sasakyan (Speed Surveys) na kailangang babaan ang kasalukuyang bilis ng pagbibiyaha tungo sa 20 MPH

Bakit dapat ipagbawal ang pagliko sa Tenderloin kapag pula ang ilaw?

- Mas madalas na nagaganap sa Tenderloin kaysa sa iba pang komunidad ang pagkabundol at banggaan na may kaugnayan sa pagliko
- Posibleng maging mas kaunti ang pagkabundol at banggaan sa pagitan ng sasakyan at naglalakad, at ng sasakyan at bisikleta, sa pamamagitan ng pagbabawal sa pagliko kapag pula ang ilaw, kung kaya't higit na magiging ligtas ang lahat
- Posibleng higit na makaranas ng ginhawa ang mga naglalakad kung mas kaunti ang sasakyan na mapupunta sa tawiran

Para sa pangkalahatan at pinakabagong impormasyon tungkol sa proyektong ito, iniimbita namin kayong bisitahin ang website ng proyektong ito na nasa <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements> o i-email ang pangkat para sa proyektong ito sa TLStreets@sfmta.com.

Kung gusto ninyong magkomento tungkol sa mungkahing pagbabago na ito, puwede kayong dumalo sa Pamublikong Pagdinig (Public Hearing) ng SFMTA na nakalarawan sa itaas, o isumite ang inyong mga nakasulat na komento bago ang pagdinig:

- Email: Sustainable.Streets@SFMTA.com at TLStreets@sfmta.com na may paksa (subject line) na “Public Hearing: 20 MPH/NTOR”
- Pagpapadala sa Koreo: Public Hearing, Sustainable Streets Division
One South Van Ness Avenue, 7th Floor, San Francisco, CA 94103-5417

Para makakuha ng kopya ng abisong ito at ng mga mungkahing pagbabago sa kalye, bisitahin ang <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements>.

415.646.4270: For free interpretation services, please submit your request 48 hours in advance of meeting. / 如果需要免費口語翻譯，請於會議之前 48 小時提出要求。 / Para servicios de interpretación gratuitos, por favor haga su petición 48 horas antes de la reunión. / Para sa libreng serbisyo sa

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interpretasyon, kailangan mag-request 48 oras bago ang miting.

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Изменения в организации дорожного движения: проект



Proposed Street Changes | Cambios propuestos en las calles | 街道改變建議

Ограничение скорости движения автотранспорта до 20 миль в час

Затрагивает район, границы которого проходят по улицам Grove на юге, Sutter на севере, Mason на востоке и Van Ness на западе.

Новые дорожные знаки ограничения скорости движения

Общественные слушания Инженерного подразделения агентства SFMTA в режиме онлайн

в пят ницу, 19-го февраля 2021 г. в 10 часов утра

Ссылку вы найдёте на вебсайте:

<https://www.sfmta.com/committees/engineering-public-hearings>

Запрет на правый поворот на красный сигнал светофора

Затрагивает район, границы которого проходят по улицам Grove на юге, Sutter на севере, Mason на востоке и Polk на западе.

Дорожные знаки, запрещающие правый поворот на красный сигнал светофора



Проект Муниципального Транспортного агентства Сан-Франциско (SFMTA), направленный на улучшение безопасности дорожного движения в Тендерлоине, предполагает следующие меры: (1) ограничение скорости движения автотранспорта до 20 миль в час и (2) запрет на правые повороты на красный сигнал светофора

Этот проект нацелен на улучшение ситуации на дорогах в районах с наибольшим количеством дорожно-транспортных происшествий. Предполагается реализация следующих мер:

- Установка дорожных знаков «Запрет на правый поворот на красный сигнал светофора» на 80-ти перекрестках
- Снижение максимальной скорости движения с 25-ти до 20 миль в час в 17-ти транспортных коридорах

Проект находится на рассмотрении, его реализация может начаться уже в марте 2021 г

Зачем нужно вводить ограничение скорости движения автотранспорта до 20 миль в час в Тендерлоине?

- Уровень дорожного травматизма напрямую зависит от скорости движения автотранспорта
- Пешеход имеет вдвое больше шансов выжить при столкновении с машиной, которая движется со скоростью 20 миль в час, чем с машиной, которая движется со скоростью 25 миль в час
- Опрос об ограничении скорости подтвердил необходимость ограничения максимальной скорости до 20-ти миль в час

Зачем нужно ввести запрет на правый поворот на красный сигнал светофора в Тендерлоине?

- В Тендерлоине столкновения при повороте происходят чаще, чем в любом другом районе города
- Эти ограничения уменьшат количество конфликтов между водителями и пешеходами, водителями и велосипедистами и, в целом, приведут к улучшению дорожной безопасности для всех участников движения
- Меньшее количество автомобилей, въезжающих на перекресток на красный свет светофора, поможет пешеходам чувствовать себя в безопасности

Всю информацию о проекте, включая самые последние изменения, вы сможете получить на вебсайте:

<https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements> Вы можете также написать команде разработчиков проекта: TLStreets@sfmta.com.

Если вы хотите оставить отзыв или предложение по поводу предлагаемых мер, вы можете «посетить» вышеупомянутые виртуальные общественные слушания агентства SFMTA или подать свои замечания в письменном виде до слушаний:

- Электронная почта: Sustainable.Streets@SFMTA.com and TLStreets@sfmta.com с заголовком "Public Hearing: 20 MPH/NTOR"
- Почтовый адрес: Public Hearing, Sustainable Streets Division
One South Van Ness Avenue, 7th Floor, San Francisco, CA 94103-5417

Получить копию данного уведомления и информацию о предлагаемых мерах вы можете на вебсайте:

<https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements>.

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Cambios propuestos en las Calles



Proposed Street Changes | Mga Mungkahing Pagbabago sa | Изменения в организации дорожного движения: проект

Reducción del límite de velocidad a 20 MPH

En todo el vecindario entre: Grove Street (sur), Sutter Street (norte), Mason Street (este) y Van Ness (oeste)

Nuevos letreros de límite de velocidad

Audiencia pública de Ingeniería de la SFMTA

Viernes, 19 de febrero de 2021 a las 10:00 a.m.

En línea:

Por favor visite:

<https://www.sfmta.com/committees/engineering-public-hearings> para obtener el enlace de Internet

Reglamentos de no voltear con la luz roja.

En todo el vecindario, dentro de: Grove Street (sur), Sutter Street (norte), Mason Street (este) y Polk Street (oeste)

Letreros de No Voltear en Rojo.



El proyecto de Seguridad Vial de la Agencia Municipal de Transporte de San Francisco (SFMTA) propone dos mejoras de seguridad vial en Tenderloin: (1) reducir el límite de velocidad de los vehículos a 20 millas por hora y (2) prohibir que los vehículos volteen con la luz roja.

Este proyecto abordará los lugares donde ocurren muchas colisiones y a la vez creará un espacio donde sea más cómodo viajar mediante los siguientes cambios:

- Instalar letreros de “No Voltear en Rojo” en aproximadamente 80 intersecciones
- Reducir los límites de velocidad en 17 corredores, de 25 MPH a 20 MPH

Dependiendo de la aprobación del proyecto, la ejecución podría empezar a partir de marzo de 2021

¿Por qué reducir los límites de velocidad a 20 MPH en Tenderloin?

- La velocidad de los vehículos es el predictor principal de la gravedad de las lesiones
- Una persona atropellada a 20 MPH tiene el doble de probabilidad de sobrevivir que una persona atropellada a 25 MPH.
- Los Estudios de Velocidad indican que las velocidades de circulación actuales ameritan reducir el límite de velocidad a 20 MPH.

¿Por qué prohibir las vueltas con la luz roja en Tenderloin?

- Las colisiones relacionadas con las vueltas ocurren con más frecuencia en Tenderloin que otros vecindarios.
- Las prohibiciones de las vueltas con la luz roja pueden reducir los conflictos entre vehículos y peatones y entre vehículos y bicicletas, y mejorar la seguridad para todos
- Al tener menos vehículos que ingresan al cruce con la luz roja se crean condiciones más favorables para los peatones

Para información general y actualizaciones sobre el proyecto, le invitamos a visitar el sitio web del proyecto en <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements> o escribir por correo electrónico al equipo del proyecto a TLStreets@sfmta.com.

Si quisiera comentar sobre este cambio propuesto, puede asistir a la Audiencia Pública de la SFMTA descrita anteriormente o presentar sus comentarios por escrito antes de la audiencia:

- Correo electrónico: Sustainable.Streets@SFMTA.com and TLStreets@sfmta.com ponga “Audiencia Pública: 20 MPH/NTOR” en la línea de Asunto
- Correo postal: Public Hearing, Sustainable Streets Division
One South Van Ness Avenue, 7th Floor, San Francisco, CA 94103-5417

Para obtener una copia de este aviso y de los cambios propuestos en las calles, visite <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements>.

☎ 415.646.4270: For free interpretation services, please submit your request 48 hours in advance of meeting./ 如果需要免費口語翻譯，請於會議之前48小時

時提出要求。 / Para servicios de interpretación gratuitos, por favor haga su petición 48 horas antes de la reunión. / Para sa libreng serbisyo sa interpretasyon, kailangan mag-request 48 oras bago ang miting.

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Các thay đổi đề xuất cho đường phố



Proposed Street Changes | Mga Mungkahing Pagbabago sa Kalye | Cambios propuestos en las calles

Speed Limit Reduction to 20 MPH

Toàn bộ khu vực ở giữa: Grove Street (phía nam), Sutter Street (phía bắc), Mason Street (phía đông) và Van Ness (phía tây)
Đặt bảng tốc độ tối đa mới

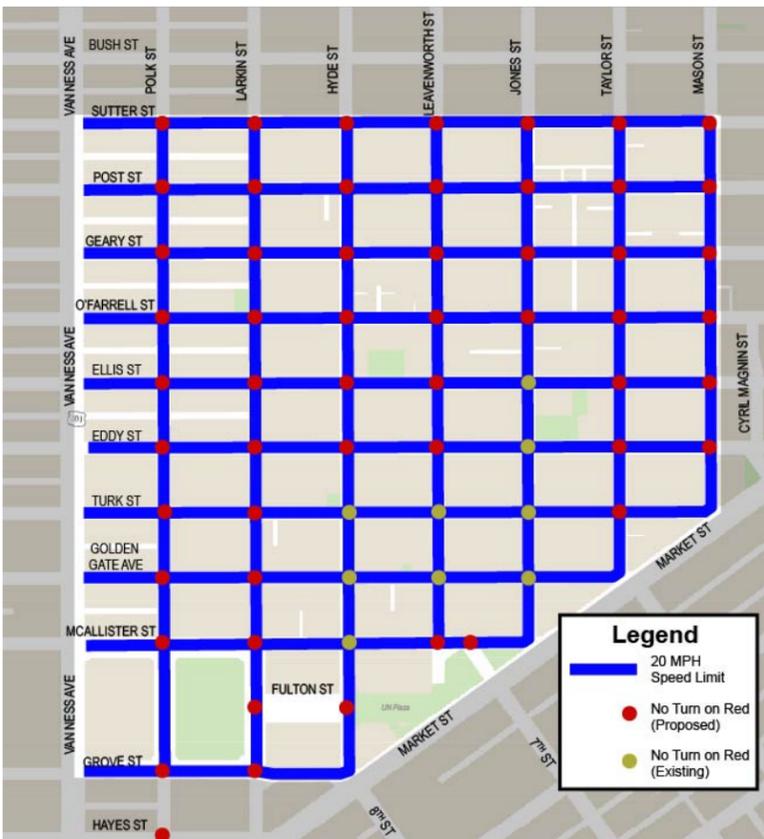
Cuộc họp cộng đồng với Bộ phận Kỹ thuật của SFMTA

Thứ Sáu, ngày 19 tháng 2 năm 2021 lúc 10:00 sáng
Trên mạng
Vui lòng truy cập:

<https://www.sfmta.com/committees/engineering-public-hearings>
để có các liên kết trực tuyến

Quy định cấm queo khi đèn đỏ

Toàn bộ khu vực, bao gồm: Grove Street (phía nam), Sutter Street (phía bắc), Mason Street (phía đông) và Polk Street (phía tây)
Bảng cấm queo khi đèn đỏ



Dự án An toàn Giao thông ở Tenderloin của Sở Giao thông Đô thị San Francisco (SFMTA) đề xuất thực hiện hai thay đổi để cải thiện an toàn giao thông ở khu Tenderloin: (1) giảm tốc độ tối đa quy định cho xe cộ xuống còn 20 dặm/giờ và (2) cấm xe queo khi đèn đỏ.

Với hai thay đổi dưới đây, dự án này nhằm giải quyết vấn đề về va chạm tại các địa điểm có tỷ lệ tai nạn cao đồng thời tạo môi trường đi lại thoải mái hơn:

- Đặt bảng “Cấm queo khi đèn đỏ” tại khoảng 80 giao lộ
- Giảm tốc độ tối đa từ 25 xuống còn 20 dặm/giờ ở 17 hành lang giao thông

Nếu dự án được chấp thuận thì việc thi công có thể bắt đầu sớm nhất là tháng 3 năm 2021.

Tại sao nên giảm tốc độ tối đa xuống còn 20 dặm/giờ ở khu Tenderloin?

- Tốc độ xe là yếu tố dự báo chính xác nhất mức độ chấn thương của nạn nhân
- Một người đi bộ mà bị đụng bởi một chiếc xe chạy 20 dặm/giờ thì có cơ hội sống sót cao gấp đôi so với người bị đụng bởi chiếc xe chạy 25 dặm/giờ
- Các nghiên cứu về tốc độ giao thông cho thấy rằng tốc độ chạy xe hiện tại cần được giảm xuống còn 20 dặm/giờ

Tại sao nên cấm queo khi đèn đỏ ở khu Tenderloin?

- So với các khu vực khác, khu Tenderloin có nhiều tai nạn liên quan đến việc queo xe hơn
- Việc cấm queo khi đèn đỏ có thể làm giảm va chạm giữa xe cộ và người đi bộ hay đi xe đạp đồng thời tăng độ an toàn cho tất cả mọi người
- Người đi bộ sẽ cảm thấy thoải mái hơn khi bước xuống lối qua đường nếu có ít xe queo vào khi đèn đỏ hơn

Để được biết và cập nhật thông tin chung về dự án, chúng tôi xin mời quý vị truy cập trang web của dự án tại <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements> hoặc gửi email cho nhóm dự án tại địa chỉ TLStreets@sfmta.com.

Nếu quý vị muốn đóng góp ý kiến về thay đổi đề xuất này thì quý vị có thể tham gia cuộc họp cộng đồng của SFMTA được miêu tả ở trên hoặc có thể góp ý kiến qua thư trước cuộc họp:

- Email: Sustainable.Streets@SFMTA.com and TLStreets@sfmta.com với chủ đề “Public Hearing: 20 MPH/NTOR”
- Thư: Public Hearing, Sustainable Streets Division
One South Van Ness Avenue, 7th Floor, San Francisco, CA 94103-5417

Để lấy bản sao của thông báo này cùng với thông tin về các thay đổi đề xuất cho đường phố, vui lòng truy cập <https://www.sfmta.com/projects/tenderloin-traffic-safety-improvements>.

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SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY
Order # 6358
FOR PUBLIC HEARING

The Sustainable Streets Division of the San Francisco Municipal Transportation Agency will hold an on-line public hearing on Friday, February 19, 2021, at 10:00 AM to consider the various matters listed on the agenda below.

The purpose of the public hearing will be to get public feedback on these proposals. **No decisions will be made on these items at the public hearing.** Based upon all public feedback received, the SFMTA will make and post the decision on these items by 5pm. the following Friday on the SFTMA website.

Public opinion about these proposals can be shared in any of the following ways:

- Online Skype Meeting: [SFMTA.com/ENGhearing](https://www.sfmta.com/ENGhearing)
- To speak about any items, please follow the phone-in instructions.
- Phoning during the public hearing: please dial **888-398-2342** and enter the code 8647385. When public comment is open key in "1" and then "0" to join the queue of people wishing to comment.
- Sending an email to Sustainable.Streets@SFMTA.com with the subject line "Public Hearing."

Online Participation	1. For the best online experience, join the Skype session and select "Don't join audio". For the audio, use the phone instructions below. This will allow you to listen and participate through the same audio experience.
Phone Participation	1. When prompted, dial "1 - 0" to be added to the speaker line. The auto-prompt will indicate callers are entering "Question and Answer" time; this is the "Public Comment" period.
<ul style="list-style-type: none">• Ensure you are in a quiet location• Speak clearly• <i>Turn off any TVs or radios around you</i>	2. Callers will hear silence when waiting for your turn to speak.
	3. When prompted, callers will have the standard two minutes to provide comment.

For clarification about any items before the public hearing, the responsible staff person is listed, along with an email address.

Irving Street, south side, between 8th Avenue and 9th Avenue

1. ESTABLISH – RESIDENTIAL PERMIT PARKING ELIGIBILITY, AREA J

Irving Street, south side, between 8th Avenue and 9th Avenue
(Supervisor District 5) Kathryn Studwell, kathryn.studwell@sfmta.com

Extension of RPP Area J will enable residents to obtain RPP permits for Area J.



SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY
Order # 6358
FOR PUBLIC HEARING

Monterey Boulevard, both sides, at Hazelwood Avenue – Red Zones

2. ESTABLISH - RED ZONES

- A. Monterey Boulevard, north side, 26 feet to 30 feet east of Hazelwood Avenue (Engineer)
- B. Monterey Boulevard, north side, from Hazelwood Avenue to 20 feet westerly (removes 1 parking space) (Engineer)
- C. Monterey Boulevard, south side, 15 feet to 35 feet west of Hazelwood Avenue (removes 1 parking space) (Engineer)
- D. Monterey Boulevard, south side, 14 feet to 30 feet east of Hazelwood Avenue (removes 1 parking space) (Engineer)
(Supervisor District 7) David Sindel, david.sindel@sfmta.com

Additional daylighting requested by SFMTA to address pattern of left-turn collisions.

Revere Avenue, between Ingalls Street and Jennings Street – Speed Cushions

3. ESTABLISH – SPEED CUSHIONS

Revere Avenue, between Ingalls Street and Jennings Street (2 speed cushions) (Engineer)
(Supervisor District 10) Shahram Shariati, Shahram.shariati@sfmta.com
This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

10th Avenue, between Noriega Street and Moraga Street – Speed Humps

4. ESTABLISH – SPEED HUMPS

10th Avenue, between Noriega Street and Moraga Street (2 Speed Humps) (Engineer)
(Supervisor District 7) John Garzee, john.garzee@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

10th Avenue, between Irving Street and Judah Street – Speed Humps

5. ESTABLISH – SPEED HUMPS

10th Avenue, between Irving Street and Judah Street (2 Speed Humps) (Engineer)
(Supervisor District 5) John Garzee, john.garzee@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

28th Avenue, between Cabrillo Street and Fulton Street – Speed Humps

6. ESTABLISH – SPEED HUMPS

28th Avenue, between Cabrillo Street and Fulton Street (2 Speed Humps) (Engineer)
(Supervisor District 1) John Garzee, john.garzee@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds



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to qualify for traffic calming.

Idora Avenue, between Laguna Honda Boulevard and Garcia Avenue – Speed Humps

7. ESTABLISH – SPEED HUMPS

Idora Avenue, between Laguna Honda Boulevard and Garcia Avenue (2 speed humps) (Engineer) (Supervisor District 7) Alison Mathews, alison.mathews@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

19th Street, between Dolores Street and Guerrero Street– Speed Humps

8. ESTABLISH – SPEED HUMPS

19th Street, between Dolores Street and Guerrero Street (2 speed humps) (Engineer) (Supervisor District 8) Alison Mathews, alison.mathews@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Divisadero Street, between 14th Street and Duboce Avenue – Speed Humps

9. ESTABLISH – SPEED HUMPS

Divisadero Street, between 14th Street and Duboce Avenue (2 speed humps) (Engineer) (Supervisor District 8) Pallavi Panyam, pallavi.panyam@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Lawton Street, between 11th Avenue and 12th Avenue – Speed Cushion

10. ESTABLISH – SPEED CUSHION

Lawton Street, between 11th Avenue and 12th Avenue (1 speed cushion) (Engineer) (Supervisor District 7) Pallavi Panyam, pallavi.panyam@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Guttenberg Street, between Mission Street and Morse Street – Speed Hump

11. ESTABLISH – SPEED HUMP

Guttenberg Street, between Mission Street and Morse Street (1 speed hump) (Engineer) (Supervisor District 11) Mark Manalo, mark.manalo@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.



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14th Street, between Alpine Terrace and Divisadero Street – Speed Cushion

12. ESTABLISH – SPEED CUSHION

14th Street, between Alpine Terrace and Divisadero Street (1 speed cushion) (Engineer)
(Supervisor District 8) Mark Manalo, mark.manalo@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

14th Street, between Castro Street and Divisadero Street – Speed Cushion

13. ESTABLISH – SPEED CUSHION

14th Street, between Castro Street and Divisadero Street (1 speed cushion) (Engineer)
(Supervisor District 8) Mark Manalo, mark.manalo@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

18th Avenue, between Ulloa Street and Vicente Street – Speed Humps

14. ESTABLISH – SPEED HUMP

18th Avenue, between Ulloa Street and Vicente Street (2 speed humps) (Engineer)
(Supervisor District 7) John Garzee, john.garzee@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Hancock Street, between Noe Street and Sanchez Street – Speed Tables

15. ESTABLISH – SPEED TABLES

Hancock Street between Noe Street and Sanchez Street (2 speed tables) (Engineer)
(Supervisor District 8) Alison Mathews, alison.mathews@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Hancock Street, between Church Street and Sanchez Street – Speed Tables

16. ESTABLISH – SPEED TABLES

Hancock Street between Church Street and Sanchez Street (2 speed tables) (Engineer)
(Supervisor District 8) Alison Mathews, alison.mathews@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.



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Jersey Street, between Castro Street and Diamond Street – Speed Humps

17. ESTABLISH – SPEED HUMPS

Jersey Street between Castro Street and Diamond Street (2 speed humps) (Engineer)
(Supervisor District 8) Pallavi Panyam, pallavi.panyam@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Chestnut Street, between Mason Street and Powell Street – Speed Humps

18. ESTABLISH – SPEED HUMPS

Chestnut Street, between Mason Street and Powell Street (2 Speed Humps) (Engineer)
(Supervisor District 1) John Garzee, john.garzee@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

23rd Street, between Noe Street and Sanchez Street – Speed Cushions

19. ESTABLISH – SPEED CUSHIONS

23rd Street, between Noe Street and Sanchez Street (2 Speed cushions) (Engineer)
(Supervisor District 5) John Garzee, john.garzee@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

28th Street between Church Street and Sanchez Street – Speed Humps

20. ESTABLISH – SPEED HUMPS

28th Street between Church Street and Sanchez Street (2 Speed Humps) (Engineer)
(Supervisor District 8) Mark Manalo, mark.manalo@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

11th Avenue between Cabrillo Street and Fulton Street – Speed Cushions

21. ESTABLISH – SPEED CUSHIONS

11th Avenue between Cabrillo Street and Fulton Street (2 Speed Cushions) (Engineer)
(Supervisor District 1) Mark Manalo, mark.manalo@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.



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Flood Avenue, between Foerster Street and Genessee Street – Speed Cushions

22. ESTABLISH – SPEED CUSHIONS

Flood Avenue, between Foerster Street and Genessee Street (2 three-lump cushions)
(Engineer)
(Supervisor District 7) Jeff Banks, jeffrey.banks@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Loma Vista Terrace, between Masonic Avenue and Roosevelt Way – Speed Cushion

23. ESTABLISH – SPEED CUSHION

Loma Vista Terrace, between Masonic Avenue and Roosevelt Way (1 three-lump cushion)
(Engineer) (Supervisor District 8) Jeff Banks, jeffrey.banks@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Palmetto Avenue, between Alemany Boulevard and Chester Avenue – Speed Cushion

24. ESTABLISH – SPEED CUSHION

Palmetto Avenue between Alemany Boulevard and Chester Avenue (1 three-lump cushion)
(Engineer) (Supervisor District 7) Alison Mathews, alison.mathews@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Palou Avenue, between Barneveld Avenue and Industrial Street – Speed Cushions

25. ESTABLISH – SPEED CUSHIONS

Palou Street between Barneveld Avenue and Industrial Street (3 three-lump cushions)
(Engineer)
(Supervisor District 10) Pallavi Panyam, pallavi.panyam@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Upland Drive, between Manor Drive and North Gate Drive – Speed Cushions

26. ESTABLISH – SPEED CUSHIONS

Upland Drive between Manor Drive and North Gate Drive (2 three-lump cushions)
(Engineer)
(Supervisor District 7) Pallavi Panyam, pallavi.panyam@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents.



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SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Clipper Street, between Dolores Street and Sanchez Street – Speed Cushions

27. ESTABLISH – SPEED CUSHIONS

Clipper Street, between Dolores Street and Church Street (2 3-lump cushions) (Engineer)
Clipper Street, between Church Street and Sanchez Street (2 3-lump cushions) (Engineer)
(Supervisor District 8) Daniel Carr, daniel.carr@sfmta.com

This proposal installs traffic calming devices on the block at the request of block residents. SFMTA collected data and confirmed that typical motorist speeds exceed agency thresholds to qualify for traffic calming.

Cortland Avenue, between Mission Street and Bayshore Boulevard – Speed Cushions

28. ESTABLISH – SPEED CUSHIONS

- A. Cortland Avenue, between Mission Street and Coleridge Street
(1 Speed Cushion) (Engineer)
 - B. Cortland Avenue, between Prospect Avenue and Winfield Street
(1 Speed Cushion) (Engineer)
 - C. Cortland Avenue, between Bronte Street and Bradford Street
(1 Speed Cushion) (Engineer)
 - D. Cortland Avenue, between Peralta Avenue and Hilton Street
(1 Speed Cushion) (Engineer)
- (Supervisor District 9) Daniel Carr, daniel.carr@sfmta.com

This proposal installs four (4) traffic calming speed cushions at the request of the community.

46th Avenue, between Lincoln Way and Irving Street – Speed Cushions

29. ESTABLISH - SPEED CUSHIONS

46th Avenue, between Lincoln Way and Irving Street (Two 5-lump speed cushions)
(Engineer)
(Supervisor District 4) Philip Louie, philip.louie@sfmta.com

Supervisor requested speed cushions on this block to address speeding concerns.

Cole Street, both sides, between Haight Street and Waller Street – Residential Permit Parking Extension

30(a). ESTABLISH – RESIDENTIAL PERMIT PARKING AREA J

Cole Street, both sides, between Haight Street and Waller Street

30(b). ESTABLISH – 2-HOUR PARKING, 8AM TO 5PM, MONDAY THROUGH FRIDAY, EXCEPT VEHICLES WITH AREA J PERMITS

Cole Street, east side, from 76 feet south of Haight Street to Waller Street
Cole Street, west side, from 113 feet south of Haight Street to Waller Street



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(Supervisor District 5) Kathryn Studwell, kathryn.studwell@sfmta.com

This proposal will extend RPP Area J to the 600 block of Cole Street.

Polk Street/Pacific Ave – Red Zone

31(a). RESCIND - YELLOW METERED LOADING ZONE

(30 MIN LIMIT 8AM-1PM, MON-FRI)

Polk Street, west side, from 7 feet to 47 feet north of Pacific Avenue (meter space #2001 & 2003). (Engineer)

31(b). RESCIND – YELLOW METERED LOADING ZONE

(30 MIN LIMIT 10AM-1PM, MON-FRI)

Polk Street, east side, from 104 feet to 148 feet south of Broadway Street (meter space #2024 & 2020). (Engineer)

31(c). RESCIND - RED ZONE

Polk Street, west side, from 64 feet to 68 feet north of Pacific Avenue. (Engineer)

Polk Street, west side from 86 feet to 89 feet north of Pacific Avenue. (Engineer)

31(d). ESTABLISH - RED ZONE

Polk Street, west side, from 7 feet to 20 feet north of Pacific Avenue. (Engineer)

31(e). ESTABLISH - YELLOW METERED LOADING ZONE

(30 MIN LIMIT 8AM-6PM, MON-SAT)

Polk Street, west side, from 20 feet to 47 feet north of Pacific Avenue (extends yellow meter space #2003 from 22 feet to 27 feet) (Engineer)

Polk Street, west side, from 64 feet to 89 feet north of Pacific Avenue (converts general meter space #2011 into a 25-foot yellow metered space). (Engineer)

31(f). ESTABLISH – YELLOW METERED LOADING ZONE

(30 MIN LIMIT 10AM-6PM, MON-SAT)

Polk Street, east side, from 104 feet to 148 feet south of Broadway Street (meter space #2024 & 2020) (Engineer) (Supervisor District 3) Shahram Shariati, Shahram.Shariati@sfmta.com

This project is designed to improve pedestrian safety by daylighting the intersection.

32. ESTABLISH - STOP SIGNS (Converting 2-Way to All-Way Controlled)

A. 46th Avenue northbound and southbound at Pacheco Street (Engineer)

B. Lawton Street westbound and eastbound at 47th Avenue (Engineer)

C. Moraga Street westbound and eastbound at 47th Avenue (Engineer)

D. Santiago Street westbound and eastbound at 47th Avenue (Engineer)

E. Taraval Street westbound and eastbound at 47th Avenue (Engineer)

F. Ulloa Street westbound and eastbound at 47th Avenue (Engineer)

G. Lawton Street at westbound and eastbound 48th Avenue (Engineer)



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- H. Moraga Street westbound and eastbound at 48th Avenue (Engineer)
- I. Santiago Street westbound and eastbound at 48th Avenue (Engineer)
- J. Irving Street westbound and eastbound at La Playa (Engineer)
- K. Lower Great Highway, northbound and southbound, at Moraga Street (Engineer)
- L. Lower Great Highway, northbound and southbound, at Quintara Street (Engineer)
(Supervisor District 4) Maurice Grownney, maurice.grownney@sfmta.com

Addressing traffic diversion due to the Upper Great Highway vehicular closure.

Tenderloin – Speed Limit

RESCIND – 25 MPH SPEED LIMIT

33. ESTABLISH – 20 MPH SPEED LIMIT

- A. Grove Street, between Van Ness Avenue and Market Street
- B. McAllister Street, between Van Ness Avenue and Market Street
- C. Golden Gate Avenue, between Van Ness Avenue and Market Street
- D. Turk Street, between Van Ness Avenue and Market Street
- E. Eddy Street, between Van Ness Avenue and Mason Street
- F. Ellis Street, between Van Ness Avenue and Mason Street
- G. O'Farrell Street, between Van Ness Avenue and Mason Street
- H. Geary Street, between Van Ness Avenue and Mason Street
- I. Post Street, between Van Ness Avenue and Mason Street
- J. Sutter Street, between Van Ness Avenue and Mason Street
- K. Polk Street, between Sutter Street and Grove Street
- L. Larkin Street, between Sutter Street and Grove Street
- M. Hyde Street, between Sutter Street and Market Street
- N. Leavenworth Street, between Sutter Street and Market Street
- O. Jones Street, between Sutter Street and Market Street
- P. Taylor Street, between Sutter Street and Market Street
- Q. Mason Street, between Sutter Street and Market Street
(Supervisor Districts 3 and 6) Tom Folks, tom.folks@sfmta.com

These streets are all part of the City's High Injury Vision Zero Network, with either the entire street segment or a substantial portion included. The signal timing progression in this area was set at 20 mph in the recent NOMA/SOMA area-wide retiming effort.

Tenderloin – No Turn on Red

34. ESTABLISH – NO TURN ON RED

- A. Sutter Street, westbound, at Larkin Street (Engineer)
- B. Sutter Street, westbound, at Hyde Street (Engineer)
- C. Sutter Street, westbound, at Leavenworth Street (Engineer)
- D. Sutter Street, westbound, at Jones Street (Engineer)
- E. Sutter Street, westbound, at Taylor Street (Engineer)
- F. Sutter Street, westbound, at Mason Street (Engineer)
- G. Post Street, eastbound, at Larkin Street (Engineer)
- H. Post Street, eastbound, at Hyde Street (Engineer)
- I. Post Street, eastbound, at Leavenworth Street (Engineer)



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- J.** Post Street, eastbound, at Jones Street (Engineer)
- K.** Post Street, eastbound, at Taylor Street (Engineer)
- L.** Post Street, eastbound, at Mason Street (Engineer)
- M.** Geary Street, westbound, at Larkin Street (Engineer)
- N.** Geary Street, westbound, at Hyde Street (Engineer)
- O.** Geary Street, westbound, at Leavenworth Street (Engineer)
- P.** Geary Street, westbound, at Jones Street (Engineer)
- Q.** Geary Street, westbound, at Taylor Street (Engineer)
- R.** Geary Street, westbound, at Mason Street (Engineer)
- S.** O'Farrell Street, eastbound, at Larkin Street (Engineer)
- T.** O'Farrell Street, eastbound, at Hyde Street (Engineer)
- U.** O'Farrell Street, eastbound, at Leavenworth Street (Engineer)
- V.** O'Farrell Street, eastbound, at Jones Street (Engineer)
- W.** O'Farrell Street, eastbound, at Taylor Street (Engineer)
- X.** O'Farrell Street, eastbound, at Mason Street (Engineer)
- Y.** Ellis Street, westbound, at Larkin Street (Engineer)
- Z.** Ellis Street, eastbound, at Hyde Street (Engineer)
- AA.** Ellis Street, westbound, at Leavenworth Street (Engineer)
- BB.** Ellis Street, westbound, at Taylor Street (Engineer)
- CC.** Ellis Street, westbound, at Mason Street (Engineer)
- DD.** Eddy Street, westbound, at Larkin Street (Engineer)
- EE.** Eddy Street, eastbound, at Hyde Street (Engineer)
- FF.** Eddy Street, westbound, at Leavenworth Street (Engineer)
- GG.** Eddy Street, eastbound, at Mason Street (Engineer)
- HH.** Turk Street, westbound, at Larkin Street (Engineer)
- II.** Turk Street, westbound, at Taylor Street (Engineer)
- JJ.** Golden Gate Avenue, eastbound, at Larkin Street (Engineer)
- KK.** McAllister Street, eastbound and westbound, at Larkin Street (Engineer)
- LL.** McAllister Street, westbound, at Leavenworth Street (Engineer)
- MM.** McAllister Street, eastbound, at Charles J. Brenham Place (Engineer)
- NN.** Fulton Street, westbound, at Larkin Street (Engineer)
- OO.** Fulton Street, eastbound, at Hyde Street (Engineer)
- PP.** Grove Street, westbound, at Larkin Street (Engineer)
- QQ.** Larkin Street, northbound, at Post Street (Engineer)
- RR.** Larkin Street, northbound, at Geary Street (Engineer)
- SS.** Larkin Street, northbound, at O'Farrell Street (Engineer)
- TT.** Larkin Street, northbound, at Ellis Street (Engineer)
- UU.** Larkin Street, northbound, at Eddy Street (Engineer)
- VV.** Larkin Street, northbound, at Turk Street (Engineer)
- WW.** Larkin Street, northbound, at Golden Gate Avenue (Engineer)
- XX.** Larkin Street, northbound, at McAllister Street (Engineer)
- YY.** Larkin Street, northbound, at Fulton Street (Engineer)
- ZZ.** Larkin Street, northbound and southbound, at Grove Street (Engineer)
- AAA.** Hyde Street, southbound, at Sutter Street (Engineer)
- BBB.** Hyde Street, southbound, at Post Street (Engineer)
- CCC.** Hyde Street, southbound, at Geary Street (Engineer)



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- DDD.** Hyde Street, southbound, at O'Farrell Street (Engineer)
- EEE.** Hyde Street, southbound, at Ellis Street (Engineer)
- FFF.** Hyde Street, southbound, at Eddy Street (Engineer)
- GGG.** Hyde Street, southbound, at Fulton Street (Engineer)
- HHH.** Leavenworth Street, northbound, at Sutter Street (Engineer)
- III.** Leavenworth Street, northbound, at Post Street (Engineer)
- JJJ.** Leavenworth Street, northbound, at Geary Street (Engineer)
- KKK.** Leavenworth Street, northbound, at O'Farrell Street (Engineer)
- LLL.** Leavenworth Street, northbound, at Ellis Street (Engineer)
- MMM.** Leavenworth Street, northbound, at Eddy Street (Engineer)
- NNN.** Charles J. Brenham Place, northbound, at McAllister Street (Engineer)
- OOO.** Jones Street, southbound, at Sutter Street (Engineer)
- PPP.** Jones Street, southbound, at Post Street (Engineer)
- QQQ.** Jones Street, southbound, at Geary Street (Engineer)
- RRR.** Jones Street, southbound, at O'Farrell Street (Engineer)
- SSS.** Taylor Street, northbound, at Post Street (Engineer)
- TTT.** Taylor Street, northbound, at Geary Street (Engineer)
- UUU.** Taylor Street, northbound, at O'Farrell Street (Engineer)
- VVV.** Taylor Street, northbound, at Ellis Street (Engineer)
- WWW.** Taylor Street, northbound, at Eddy Street (Engineer)
- XXX.** Mason Street, southbound, at Sutter Street (Engineer)
- YYY.** Mason Street, southbound, at Post Street (Engineer)
- ZZZ.** Mason Street, southbound, at Geary Street (Engineer)
- AAAA.** Mason Street, southbound, at O'Farrell Street (Engineer)
- BBBB.** Mason Street, southbound, at Ellis Street (Engineer)
- CCCC.** Mason Street, southbound, at Eddy Street (Engineer)
- DDDD.** Sutter Street, westbound, at Polk Street (Engineer)
- EEEE.** Post Street, eastbound, at Polk Street (Engineer)
- FFFF.** Geary Street, westbound, at Polk Street (Engineer)
- GGGG.** O'Farrell Street, eastbound, at Polk Street (Engineer)
- HHHH.** Ellis Street, westbound, at Polk Street (Engineer)
- IIII.** Eddy Street, eastbound, at Polk Street (Engineer)
- JJJJ.** Eddy Street, westbound, at Polk Street (Engineer)
- KKKK.** Turk Street, westbound, at Polk Street (Engineer)
- LLLL.** Golden Gate Street, eastbound, at Polk Street (Engineer)
- MMMM.** McAllister Street, eastbound, at Polk Street (Engineer)
- NNNN.** Grove Street, eastbound, at Polk Street (Engineer)
- OOOO.** Grove Street, westbound, at Polk Street (Engineer)
- PPPP.** Polk Street, southbound, at Sutter Street (Engineer)
- QQQQ.** Polk Street, northbound, at Post Street (Engineer)
- RRRR.** Polk Street, northbound, at O'Farrell Street (Engineer)
- SSSS.** Polk Street, northbound, at Ellis Street (Engineer)
- TTTT.** Polk Street, northbound, at Eddy Street (Engineer)
- UUUU.** Polk Street, northbound, at Golden Gate Street (Engineer)
- VVVV.** Polk Street, northbound, at McAllister Street (Engineer)
- WWWW.** Polk Street, southbound, at McAllister Street (Engineer)



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- XXXX.** Polk Street, southbound, at Grove Street (Engineer)
- YYYY.** Polk Street, southbound, at Hayes Street (Engineer)
- ZZZZ.** Eddy Street, westbound, at Taylor Street (Engineer)
(Supervisor Districts 3 and 6) (Engineer)
David Sindel, david.sindel@sfmta.com & Amy Chun, amy.chun@sfmta.com

Adding NO TURN ON RED restrictions in the Tenderloin.

Categorically exempt from Environmental Review:
CEQA Guidelines Section 15301 Class 1(c): Operation,
repair, maintenance, or minor alteration of existing
highways and streets, sidewalks, gutters, bicycle
and pedestrian trails, and similar facilities.

Andrea Contreras, SFMTA Date

The following items have been environmentally cleared by the Planning Department on January 14, 2021 Case No. 2011.1323E:

Avalon Avenue, Lisbon Street, and Mission Street – Tow-Away, No Stopping Anytime, Red Zone

- 35(a). ESTABLISH – TOW-AWAY NO STOPPING ANYTIME
ESTABLISH – SIDEWALK WIDENING**

Avalon Avenue – north side, from 123 feet to 246 feet east of Mission Street,
(sidewalk widening for 6-foot-wide bulb, removes 6 parking spaces)
Lisbon Street – west side, from 27 feet to 131 feet south of Silver Street,
(sidewalk widening for 4-foot-wide bulb, removes 4 parking spaces)

TOW AWAY NO STOPPING ANYTIME due to the sidewalk improvements for the 302 Silver Street project

- 35(b). ESTABLISH – RED ZONE
ESTABLISH – SIDEWALK WIDENING**

Mission Street – east side, from 10 feet to 49 feet north of Avalon Avenue, (sidewalk widening for 6-foot-wide bulb, removes 2 metered parking spaces #4359 and #4357)
Lisbon Street - west side, from 60 feet to 72 feet north of Avalon Avenue,
(sidewalk widening for 6-foot-wide bulb, removes 1 parking space)

RED ZONE due to sidewalk improvements for the 302 Silver Street project

♦ Items denoted with (Engineer) can be given approval by the City Traffic Engineer after the public hearing. Otherwise, the SFMTA Board will make the final approval at a later date based on the outcome at the public hearing.



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California Environmental Quality Act (CEQA) Appeal Rights under Chapter 31 of the San Francisco Administrative Code: For Approval Actions, the Planning Department has issued a CEQA exemption determination or negative declaration, which may be viewed online at <http://www.sf-planning.org/index.aspx?page=3447>. Following approval of the item by the SFMTA City Traffic Engineer, the CEQA determination is subject to appeal within the time frame specified in S.F. Administrative Code Section 31.16, typically within 30 calendar days of the Approval Action. For information on filing a CEQA appeal, contact the Clerk of the Board of Supervisors at City Hall, 1 Dr. Carlton B. Goodlett Place, Room 244, San Francisco, CA 94102, or call (415) 554-5184. Under CEQA, in a later court challenge, a litigant may be limited to raising only those issues previously raised at a hearing on the project or in written correspondence delivered to the Board of Supervisors or other City board, commission or department at, or prior to, such hearing, or as part of the appeal hearing process on the CEQA decision.

Whether the City Traffic Engineer's decision is considered a Final SFMTA Decision is determined by Division II, Section 203 of the Transportation Code. If the City Traffic Engineer approves a parking or traffic modification, this decision is considered a Final SFMTA Decision. If a City Traffic Engineer disapproves a parking or traffic modification and a member of the public requests SFMTA review of that decision, the additional review shall be conducted pursuant to Division II, Section 203 of the Transportation Code. City Traffic Engineer decisions will be posted on <https://www.sfmta.com/committees/engineering-public-hearings> by 5 p.m. on the Friday following the public hearing. Final SFMTA Decisions involving certain parking or traffic modifications, whether made by the City Traffic Engineer or the SFMTA Board, can be reviewed by the Board of Supervisors pursuant to [Ordinance 127-18](#). Information about the review process can be found at: https://sfbos.org/sites/default/files/SFMTA_Action_Review_Info_Sheet.pdf.

Approved for Public Hearing by:

Ricardo Olea
City Traffic Engineer
Sustainable Streets Division

cc: James Lee, SFMTA Parking and Enforcement
Matt Lee, SFMTA Service Planning

RO:TF:ND
ISSUE DATE: 2/5/21

TENDERLOIN NO TURN ON RED EVALUATION



SFMTA

In San Francisco, turn on red crashes account for less than 1% of all injury crashes, but 20% of pedestrian or bicycle related injury crashes involving turning drivers at signalized intersections. In Fall 2021, the SFMTA posted No Turn On Red signs at over 50 intersections in the Tenderloin to study how they can make streets safer to cross. Findings from a before/after study reveal that No Turn on Red (NTOR) restrictions can keep crosswalks clear and reduce close calls on major intersections.

PROJECT FINDINGS - AT A GLANCE



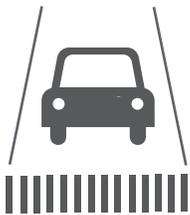
Motorist Compliance

Motorists are demonstrating a high compliance with NTOR restrictions. On average, **92%** of vehicles are complying with the turn restriction.



Close Calls at Intersections

While pedestrian-vehicle interactions increased (expected given NTOR restriction), **close calls for vehicle-pedestrians decreased** from 5 close calls before NTOR signs were posted to 1 close call after restrictions were in place at observed intersections.



Crosswalk Encroachment

Vehicles blocking or encroaching onto crosswalks on a red signal was reduced by more than **70%** after the restriction was implemented.



Yielding Behavior

There was no significant change in the percentage of turning vehicles that yield at the crosswalk to pedestrians on a green light.

For more information, please visit: [SFMTA.com/SafeStreetsEvaluation](https://www.sfmta.com/SafeStreetsEvaluation)

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Observed Intersections

- Larkin Street at Turk Street
- Taylor Street at Ellis Street
- Larkin Street at Eddy Street
- Hyde Street at Turk Street (control intersection)

Date of Implementation

Fall 2021

Project Elements

- No Turn on Red Signs

Key Evaluation Metrics

- Vehicle compliance with no turn restriction
- Vehicle-pedestrian interactions and yielding behavior
- Close calls
- Vehicle encroachment into crosswalk



NEXT STEPS



Prohibiting turns on red is a low-cost measure that can help keep crosswalks clear and reduce close calls. Given initial results of this evaluation, SFMTA staff are recommending expanding NTOR restrictions to business activity districts where speed limits are being reduced under new state authority. Further expansion may be considered in the future.

For more information, please visit:
[SFMTA.com/SafeStreetsEvaluation](https://www.sfcta.com/SafeStreetsEvaluation)



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News

Mayor London Breed Announces New Vision Zero Initiatives to Improve Safety at Intersections

Building on Mayor Breed's quick-build policy and push to create 20 miles of new protected bike lanes, a package of steps to address safety at dangerous intersections will improve pedestrian safety

August 29, 2019

Mayor London N. Breed today announced a package of Vision Zero projects to increase street safety at intersections throughout San Francisco. The projects include expanded enforcement, piloting left-turn traffic calming to reduce turn speeds, analyzing and developing policy recommendations to restrict right turns at red lights, updating walk signals to extend time for pedestrians to cross the street, and adding new diagonal pedestrian crossings at busy intersections.

The package of safety improvements, which will be presented on Tuesday, September 3 at the San Francisco Municipal Transportation Agency (SFMTA) Board of Directors meeting, is a continuation of Mayor Breed's commitment to increasing street safety for pedestrians and bicyclists by moving forward the City's Vision Zero goals. Over the past five years, 60% of fatal crashes have occurred at intersections, highlighting the need for these safety improvements.

"This year we have been reminded far too often that we have so much more work to do to reduce traffic fatalities in our City and make our streets safe," said Mayor Breed. "That's why we instituted our new 'quick-build' policy to make immediate changes to dangerous corridors, and why we're creating 20 miles of new protected bike lanes in the next two years. But until our streets are safe we need to keep doing more, and this package of safety improvements is going to make a number of important improvements at dangerous intersections to keep people safe."

Over the past five years, 27% of severe and fatal crashes involved a turning vehicle, with the majority of these involving a left turn. To help address this, the SFMTA will begin piloting left-turn traffic calming designed to reduce turning speed. These pilots will be installed and evaluated at eight intersections by early 2020. Furthermore, the SFMTA and the Department of Public Health (DPH) will be analyzing and developing policy recommendations on limiting right turns at red lights by Spring 2020. SFMTA currently restricts rights turns on red at over 200 intersection locations.

Additionally, SFMTA is continuing to make progress on a number of important changes to put pedestrians first. By the end of the year they will have completed:

- 260 signal updates to extend walking time for pedestrians,
- 165 leading pedestrian intervals, which change signals for pedestrians to walk before changing signals to green for drivers in order to increase visibility,
- Nine new diagonal pedestrian crossings, also known as pedestrian scrambles,
- Seven new signalized intersections,
- 25 new pedestrian countdown signals,
- 46 new corner red zones (daylighting), which increase visibility of pedestrians to drivers.

"To achieve Vision Zero, we need to use tools that work," said Tom Maguire, SFMTA

Interim Director of Transportation. “The SFMTA has adopted a safe systems, data-driven approach to eliminating fatalities, including engineering improvements, enforcement and education, all of which work together to create safer streets and change behavior.”

The San Francisco Police Department has also been stepping up their enforcement on the five most dangerous traffic behaviors: speeding, violating pedestrian right-of-way in a crosswalk, running red lights, running stop signs, and failing to yield while turning. In June, the Department created a new pilot program of traffic company officers to exclusively work on enforcing these violations. Early feedback indicates positive results with the team issuing over 400 citations, with 99% being “Focus on the Five” violations. As a result, they will be doubling the size of this program to eight traffic company officers. In addition, District Stations will bring a renewed focus to traffic safety violations, including regular updates to the Police Commission associated with “Focus on the Five” citations.

Finally, Mayor Breed has directed City departments to model safe habits on our street and has established guidelines that, unless responding to an emergency, City vehicles should never block the pedestrian right-of-way or bicycle lanes.

Departments

[Office of the Mayor](#)

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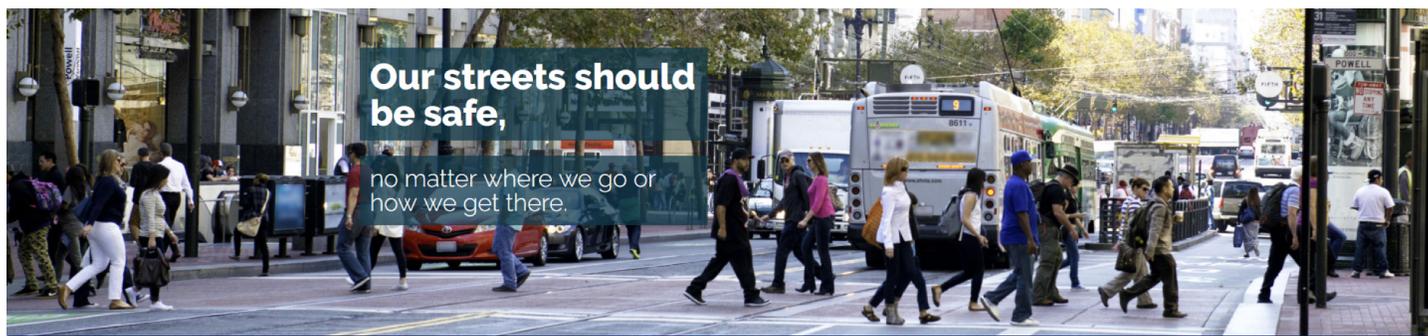
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City and County
of San Francisco



Vision Zero in San Francisco



An image from the [Vision Zero SF homepage](#) of a busy, multi-modal San Francisco street.

Problem

In 2017 and 2018, San Francisco saw historic lows in traffic-related deaths on its streets. However, every year in San Francisco, approximately 30 people lose their lives and more than 500 are severely injured while traveling on city streets. San Francisco has resolved that even one death is unacceptable, and is committed to stopping further loss of life.

Solutions

The city adopted Vision Zero in 2014 to set an ambitious strategy to eliminate all traffic fatalities and reduce severe injuries in San Francisco. Vision Zero reflects the city's commitment to building better and safer streets, educating the public on traffic safety, increasing enforcement of traffic laws, and adopting policy changes that save lives.

More than a dozen city agencies have signed resolutions in support of the city's Vision Zero policy, including the San Francisco Municipal Transportation Agency (SFMTA), San Francisco Department of Public Health (SFDPH), the San Francisco Police Department (SFPD), and the San Francisco Department of Public Works (SFDPW).

SFMTA and SFDPH co-chair the Mayor's Vision Zero Task Force. The Task Force includes city agencies, community members, and community organizations, which meet quarterly to advance projects, programs, and policy changes for Vision Zero.

City agencies report quarterly to the San Francisco County Transportation Authority's (SFCTA) Vision Zero Committee. Through this Committee, the agencies report on progress and updates related to Vision Zero and identify policies that can advance the Vision Zero goal. The Vision Zero Coalition, a community-based coalition comprised of more than 30 organizations and led by Walk SF, regularly engages with both the Task Force and city agencies to advance Vision Zero and hold the city accountable.

Vision Zero in San Francisco

Interagency coordination is a key component of San Francisco's Vision Zero goal. The inclusion of SFDPH is particularly notable because it reflects the city's view that traffic injuries and fatalities are a public health crisis. For example, the SFDPH staff working on Vision Zero includes a dedicated epidemiologist whose responsibilities include coordinating and analyzing data in collaboration with Zuckerberg San Francisco General Hospital (ZSFG) trauma surgeons, staff, and the SFPD.

Vision Zero recognizes that reducing traffic fatalities on San Francisco city streets can only occur through a safe systems approach that better incorporates safety and livability into its streets. The goal of the safe systems approach is to design a more forgiving road system that takes human fallibility and vulnerability into account. Guided by the safe systems concept, designers develop a comprehensive transportation system in which, when one part fails, other parts can protect people from death and serious injury. To support this approach, [San Francisco's Vision Zero](#) policy focuses on *safe streets*, *safe people*, and *safe vehicles*. Highlights of recent progress in each of these areas are included below.

Safe Streets

- SFDPW spends approximately \$65 million annually in engineering projects that aim to increase street safety. Projects range from quick and effective improvements (such as pavement markings and signal modifications) to larger corridor and Complete Streets projects. SFDPW focuses its investments on the [High Injury Network](#), where 13 percent of streets account for 75 percent of the city's severe and fatal traffic crashes. In 2018, more than 70 miles of safety improvements were installed on city streets, 21 miles of which were on the High Injury Network.
- SFMTA launched a Safe Streets Evaluation Program to standardize data collection and analysis for safety improvement projects. These evaluation results will be published annually to summarize the safety benefits of capital improvements.
- SFDPW continues to identify opportunities for design or policy changes that emphasize street safety. For example, in coordination with community organizations, the SFMTA implemented new guidance on signal crossing times to better accommodate slower walking speeds for seniors, youth and people with disabilities.
- SFDPW launched a Rapid Response team that identifies engineering treatments for consideration immediately after a fatal collision. This Rapid Response team includes coordination with the SFPD and SFDPH.

Safe People

- Through broad communications, the city is working to promote a cultural shift in how people think about traffic safety; collisions are “crashes”—not accidents—and are considered unacceptable and preventable.
- SFDPH provides community grants to senior centers, service providers, and community-based organizations to build support for safer streets. These grants provide funding for educational outreach and community engagement, including assistance with translation and culturally appropriate communications.



- SFMTA, in partnership with SFPD and SFDPH, developed a [Safe Speeds campaign](#) that uses a variety of communication tools to teach people about the dangers of speeding. These tools include bus and transit shelter ads, radio spots, and social media. The city is also developing a new education campaign focused on changing driver behavior to reduce left-turn collisions.
- SFMTA leads San Francisco’s Safe Routes to School program to elevate Vision Zero safety around schools and with youth and their families.
- The SFPD, through its [Focus on the Five](#) program, prioritizes enforcement of the five violations most frequently cited in injury collisions—speeding, red-light running, stop-sign running, failure to yield to pedestrians, and failure to yield while turning—to encourage drivers to follow the rules of the road.
- The SFPD conducts high-visibility enforcement along the High Injury Network. Through this enforcement, the SFPD targets unsafe driving behaviors, such as speeding or distracted driving, and also increases community awareness about ticketing for these unsafe behaviors.
- San Francisco is participating in a State task force that is identifying opportunities to urge drivers to reduce excessive speeding, including the possibility of pursuing State authorization for an [Automated Speed Enforcement](#) pilot.

Safe Vehicles

- SFMTA currently collects telematics (i.e., data on how vehicles are driven) for all qualified city vehicles. This data provides information on trends for speeding city vehicles and can be used to improve driver training programs.
- SFMTA monitors industry reports to identify safety improvements for the city fleet, including potential advances in collision avoidance technology.
- With continued emerging technologies, SFMTA is launching a mobility permit program to identify safety features and data that will be required for permitting new transportation services on city streets.
- Vision Zero will be a key component of a new “Automated Vehicle Technology Vision and Policy Playbook” that is currently under development. City agencies are providing comments on potential Federal and State rulemaking related to autonomous vehicles to ensure that safety is elevated.
- SFCTA released a transportation network company (TNC) safety study that identifies the impacts of TNCs on safety and recommends potential improvements. (Sometimes known as “mobility service providers” or “ride-hailing services,” a TNC is a company that matches passengers with drivers via websites and mobile apps.)

Vision Zero in San Francisco

Data Initiatives

Collecting data and tracking performance are critical to the success of San Francisco's Vision Zero program. The following list describes San Francisco's data initiatives:

- SFDPH created [TransBASESF.org](https://transbasesf.org), an online database and analytical tool that summarizes injury data alongside data on transportation, land use, and community characteristics.
- Every 3 years, SFDPH leads the update of the [High Injury Network](#), a map that identifies the 13 percent of city streets where 75 percent of severe and fatal injuries occur. The High Injury Network helps the city to prioritize its investments for engineering projects and to target enforcement and education efforts for the greatest impact.
- SFDPH, in coordination with ZSFG has led the development of a [comprehensive, coordinated injury and fatality surveillance](#) system that uses police, hospital, and EMS data.
- San Francisco's Vision Zero SF Injury Prevention Research (VZIPR) Collaborative is a coordinated effort between epidemiologists, trauma surgeons, nurses, geospatial analysts, and other key staff from SFDPH and ZSFG. The collaborative is coordinating with the SFPD and SFMTA to develop an emerging mobility injury monitoring system. This system is used to track data on injuries associated with newer vehicle types and services, such as e-scooters.
- SFDPH has worked with SFPD to add specific data variables to their collision reporting form to capture data that can inform targeted Vision Zero efforts, including involvement of TNCs and taxis, autonomous vehicles, suspected use of cannabis, and whether an injured person has a disability.

Early Successes

The city's [2017-2018 Action Strategy](#) includes annual metrics for tracking progress against Vision Zero and conducts evaluations on key individual projects. In 2018:

- The city installed more than 70 miles of safety improvements on its streets, 21 miles of which were on the High Injury Network. This includes more than 9 miles of new or upgraded bikeways and 6 miles of new protected bikeways.
- SFPD's [Focus on the Five](#) initiative resulted in more than 17,000 traffic citations being issued.
- Education and outreach campaigns generated more than 250 million media impressions, and community events reached more than 25,000 people. Some 94 percent of community outreach events had Chinese, Spanish, and/or Filipino ambassadors and materials present.
- The SFDPH Safe Streets for Seniors program funded 8 community-based organizations, which reached more than 3,000 seniors, people with disabilities, and service providers.
- As part of the [Safe Routes to Schools](#) program, 92 schools and 13,000 students participated in Walk and Roll to School Day.

Spotlight on
Highway Safety



Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA (January - December)



Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

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Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

EXECUTIVE SUMMARY

Each year, the Governors Highway Safety Association (GHSA) provides a first look at national and state-level pedestrian fatality data and trends through a *Spotlight on Highway Safety* report, typically published in late spring or early summer.

This year's report is divided into three sections. It presents pedestrian fatality projections for all of 2022 based on preliminary data provided by the states, an in-depth analysis of recently released 2021 pedestrian fatality data from the National Highway Traffic Safety Administration's (NHTSA) Fatality Analysis Reporting System (FARS) and a review of strategies to reduce pedestrian crashes, injuries and deaths. As in previous reports, some preliminary data have been adjusted slightly to account for historical underreporting. A preliminary report analyzing state-reported pedestrian fatality data for the first six months of 2022 was released in February.

The first section of this report presents preliminary 2022 fatality data using information reported to GHSA by all states (except Oklahoma) and the District of Columbia (D.C.). Based on the state data, GHSA projects 7,508 pedestrians were killed in traffic crashes, a 1% increase over the 7,443 pedestrian fatalities recorded by these 49 states and D.C. in 2021. This continues the upward trend that the United States has been experiencing for decades and represents the highest number of pedestrian deaths since 1981.

GHSA projects 7,508 pedestrians were killed in traffic crashes in 2022, the highest number of pedestrian deaths since 1981.

The second portion of the report analyzes the federal 2021 FARS data (the most recent national motor vehicle-related fatality data available), parsing out various characteristics of pedestrian fatalities. This includes fatality rates (per state population), where and when the crashes occurred, whether speeding or alcohol was involved, the type of vehicle involved and more.

Finally, the report includes examples of state- and community-level efforts to better understand the factors that contribute to pedestrian crashes and fatalities and, more importantly, how to prevent them from happening in the future. There is a particular emphasis on the Safe System approach, which recognizes both human mistakes and human vulnerability and designs a system with many redundancies in place to protect everyone.

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

INTRODUCTION

During the past 11 years, federal data show that U.S. pedestrian fatalities increased from 4,302 in 2010 to an estimated 7,624 in 2021 (Table 1). These fatalities represent nearly 18% of all traffic deaths in 2021, the highest annual proportion during this more than decade-long period.

Table 1 Pedestrian Fatalities and Percent of All Traffic Fatalities, 2010-2021

Year	Pedestrian Fatalities	All Other Traffic Fatalities Combined	Total Traffic Fatalities	Pedestrian Deaths as a Percentage of All Traffic Fatalities
2010	4,302	28,697	32,999	13.0%
2011	4,457	28,022	32,479	13.7%
2012	4,818	28,964	33,782	14.3%
2013	4,779	28,114	32,893	14.5%
2014	4,910	27,834	32,744	15.0%
2015	5,494	29,990	35,484	15.5%
2016	6,080	31,726	37,806	16.1%
2017	6,075	31,398	37,473	16.2%
2018	6,374	30,461	36,835	17.3%
2019	6,272	30,083	36,355	17.3%
2020	6,565	32,442	39,007	16.8%
2021 ¹	7,624	35,729	43,353	17.6%
% Change from 2010 to 2021	+77%	+25%	+31%	

Sources: FARS

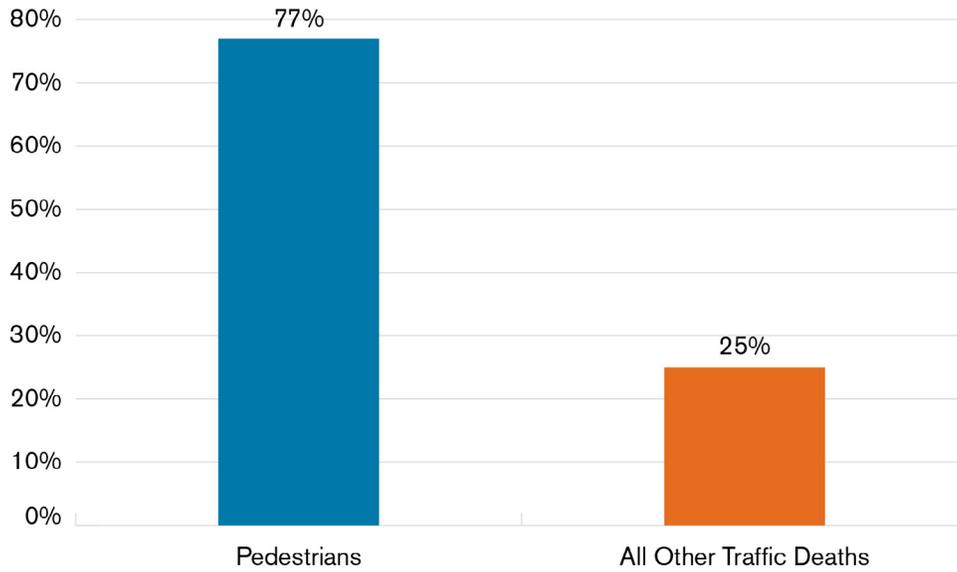
¹ Adjusted for this table only using a pedestrian fatality adjustment factor of 1.032 and an adjustment factor of 1.005 for all other fatalities. Factors are based on averaging historical underreporting between FARS preliminary and final data.

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

Between 2020 and 2021, pedestrian deaths increased 16%, while other traffic fatalities increased 10%. More alarmingly, since 2010, **pedestrian deaths have gone up a shocking 77%, compared to a 25% increase in all other traffic fatalities** (Figure 1).

Figure 1 Percent Increase in Number of Traffic Deaths, 2010 to 2021



Source: FARS

Everyone deserves to arrive at their destination safely, regardless of their transportation choice. But people walking are facing increased and historic threats on America's roadways. Exploring the patterns and characteristics of past pedestrian fatalities is essential for uncovering what is behind this tragic trend and how the safety community must work together to end it.

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

PART 1: PRELIMINARY 2022 STATE DATA

In early 2023, State Highway Safety Offices (SHSOs) reported preliminary full-year pedestrian fatality counts for 2022 to GHSA. Forty-nine states and D.C. provided data. The preliminary state data were adjusted by a factor of 1.032, based on historic differences between preliminary counts of pedestrian fatalities reported by SHSOs and final data provided by SHSOs approximately one year later.

Because of differences between SHSO-reported data and federal FARS data, this report does not make direct comparisons between the two sources. The numbers reported by SHSOs are generally higher than those reported by FARS (about 2% higher nationwide). This occurs because there are some variations between how deaths are classified under the FARS format and by certain states with slightly different data analysis and classification processes.

FARS	Some States
Counts only traffic fatalities that occur within 30 days of the crash	May include deaths that occur more than 30 days after the crash
Only includes fatal crashes that occur on public roadways	May include deaths that occur on non-public roads such as parking lots
Does not classify people on e-scooters, skateboards or other personal conveyances as pedestrians	May classify these people as pedestrians
Only includes fatalities that involve a motor vehicle	May include pedestrian deaths that did not involve a motor vehicle, such as a pedestrian struck by a bicycle

Based on state data, GHSA projects 7,508 pedestrians were killed in 2022 among the 49 states and D.C. included in this analysis. This is a projected 1% increase from the 7,443 pedestrian fatalities reported by the same states in 2021, representing 65 additional lives lost (Table 2). Not since 1981 have this many pedestrians been killed on U.S. roads. The data presented in this section builds on [GHSA's prior analysis of state data for the first six months of 2022 released in February.](#)

What is a State Highway Safety Office?

State Highway Safety Offices (SHSOs) are state-level agencies that leverage federal highway safety grants (under U.S.C. Title 23 Sections 402 and 405) – and sometimes state and/or private sector funding – to implement behavioral highway safety programs that address the choices that all road users make. Most SHSOs are also the state agencies that aggregate statewide crash data.

The 7,508 projected pedestrian fatalities in 2022 is up 1% from the year before and is the highest number of pedestrian deaths since 1981.

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

Table 2

Pedestrian Fatalities by State, 2019-2022

Sources: State Highway Safety Offices and GHSA data analysis

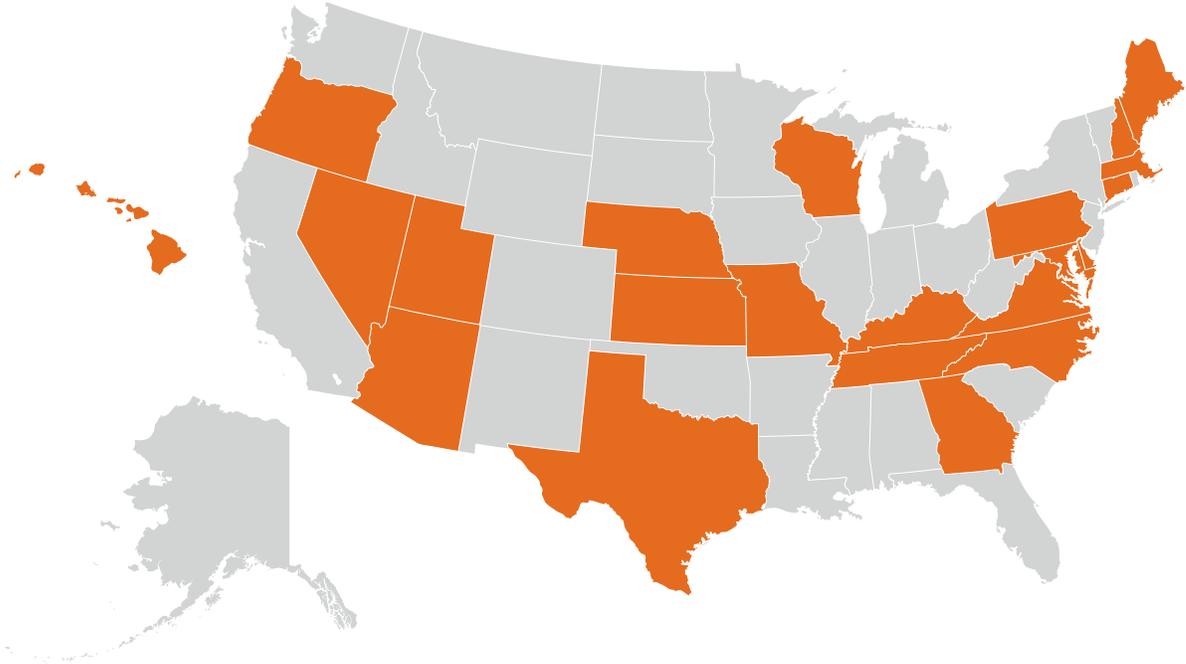
State	2019 Final	2020 Final	2021 Final	2022 Preliminary (adjusted)	Change from 2021 to 2022	
					#	%
Alabama	114	101	126	112	-14	-11.1
Alaska	6	13	16	12	-4	-25.0
Arizona	220	235	260	307	47	18.1
Arkansas	61	81	76	67	-9	-11.8
California	1,020	1,026	1,120	1,100	-20	-1.8
Colorado	76	87	88	71	-17	-19.3
Connecticut	53	61	56	62	6	10.7
Delaware	32	25	29	33	4	13.8
District of Columbia	9	10	17	16	-1	-5.9
Florida	745	716	833	824	-9	-1.1
Georgia	239	281	321	335	14	4.4
Hawaii	37	21	25	29	4	16.0
Idaho	14	14	22	19	-3	-13.6
Illinois	171	175	212	200	-12	-5.7
Indiana	75	123	125	109	-16	-12.8
Iowa	22	30	32	18	-14	-43.8
Kansas	18	46	45	47	2	4.4
Kentucky	77	96	76	99	23	30.3
Louisiana	122	149	182	166	-16	-8.8
Maine	17	9	20	21	1	5.0
Maryland	125	131	128	129	1	0.8
Massachusetts	76	55	76	100	24	31.6
Michigan	149	175	183	179	-4	-2.2
Minnesota	50	45	56	46	-10	-17.9
Mississippi	67	104	94	81	-13	-13.8
Missouri	111	128	120	129	9	7.5
Montana	17	17	24	22	-2	-8.3
Nebraska	20	19	15	24	9	60.0
Nevada	69	82	84	90	6	7.1
New Hampshire	10	15	9	16	7	77.8
New Jersey	175	179	217	190	-27	-12.4
New Mexico	83	81	103	93	-10	-9.7
New York	286	241	304	298	-6	-2.0
North Carolina	236	228	256	275	19	7.4
North Dakota	5	8	10	6	-4	-40.0
Ohio	128	151	171	166	-5	-2.9
Oregon	85	76	90	131	41	45.6
Pennsylvania	154	146	182	186	4	2.2
Rhode Island	8	17	7	7	0	0.0
South Carolina	164	187	194	174	-20	-10.3
South Dakota	8	14	14	12	-2	-14.3
Tennessee	148	172	177	205	28	15.8
Texas	661	714	826	834	8	1.0
Utah	38	36	46	53	7	15.2
Vermont	3	6	8	7	-1	-12.5
Virginia	124	114	125	169	44	35.2
Washington	101	111	144	130	-14	-9.7
West Virginia	32	18	37	26	-11	-29.7
Wisconsin	53	50	50	75	25	50.0
Wyoming	10	7	12	8	-4	-33.3
TOTAL	6,324	6,626	7,443	7,508	65	1.0%

Oklahoma was not able to provide data and is excluded from this chart.

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

Figure 2 States with an Increase in Pedestrian Traffic Fatalities in 2022



Interestingly, the 1% increase in total projected pedestrian fatalities nationwide in 2022 can be attributed to a few states with large increases (Arizona, Virginia, Oregon). In 2022, pedestrian fatalities are projected to have increased in 22 states, remained unchanged in one (Rhode Island) and decreased in 26 states and D.C. The fact that more states saw decreases in pedestrian fatalities could be an encouraging sign that the deadly trend is slowing and may even be reversing. However, other troubling data, like the increase in speeding and impaired driving, points to continued elevated risks for people walking.

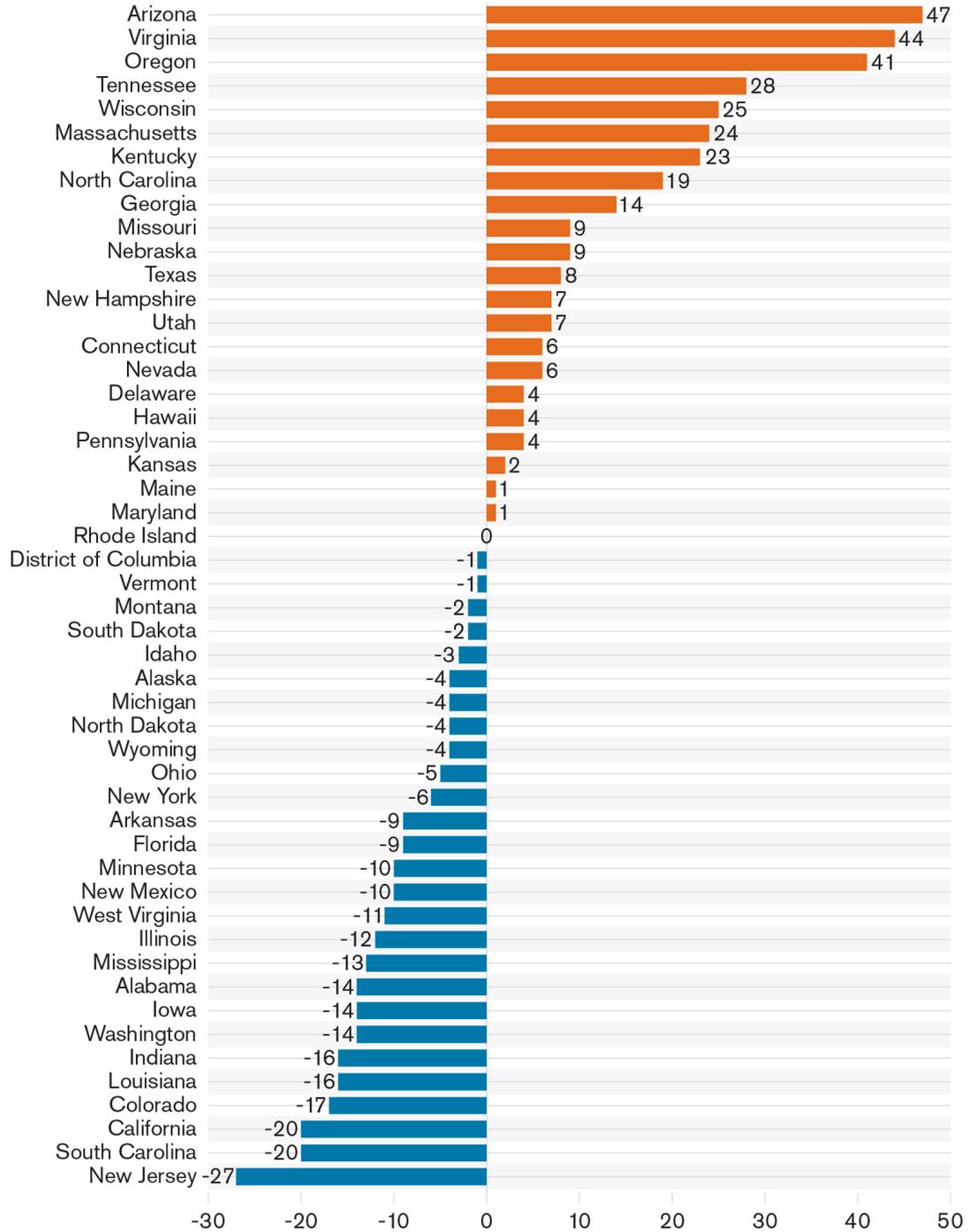
Figures 3 and 4 illustrate the year-to-year difference in both the raw number of fatalities and the percentage change.

As usual, states with smaller populations had larger swings in percentages and smaller changes in the raw number of fatalities. In contrast, more populous states tended to have greater raw number changes but smaller percentage shifts. For example, New Hampshire's seven additional deaths in 2022 represent a 78% increase over 2021, whereas 20 fewer fatalities in California translated to just a 2% decrease.

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

Figure 3 Difference in Pedestrian Fatalities, 2021-2022



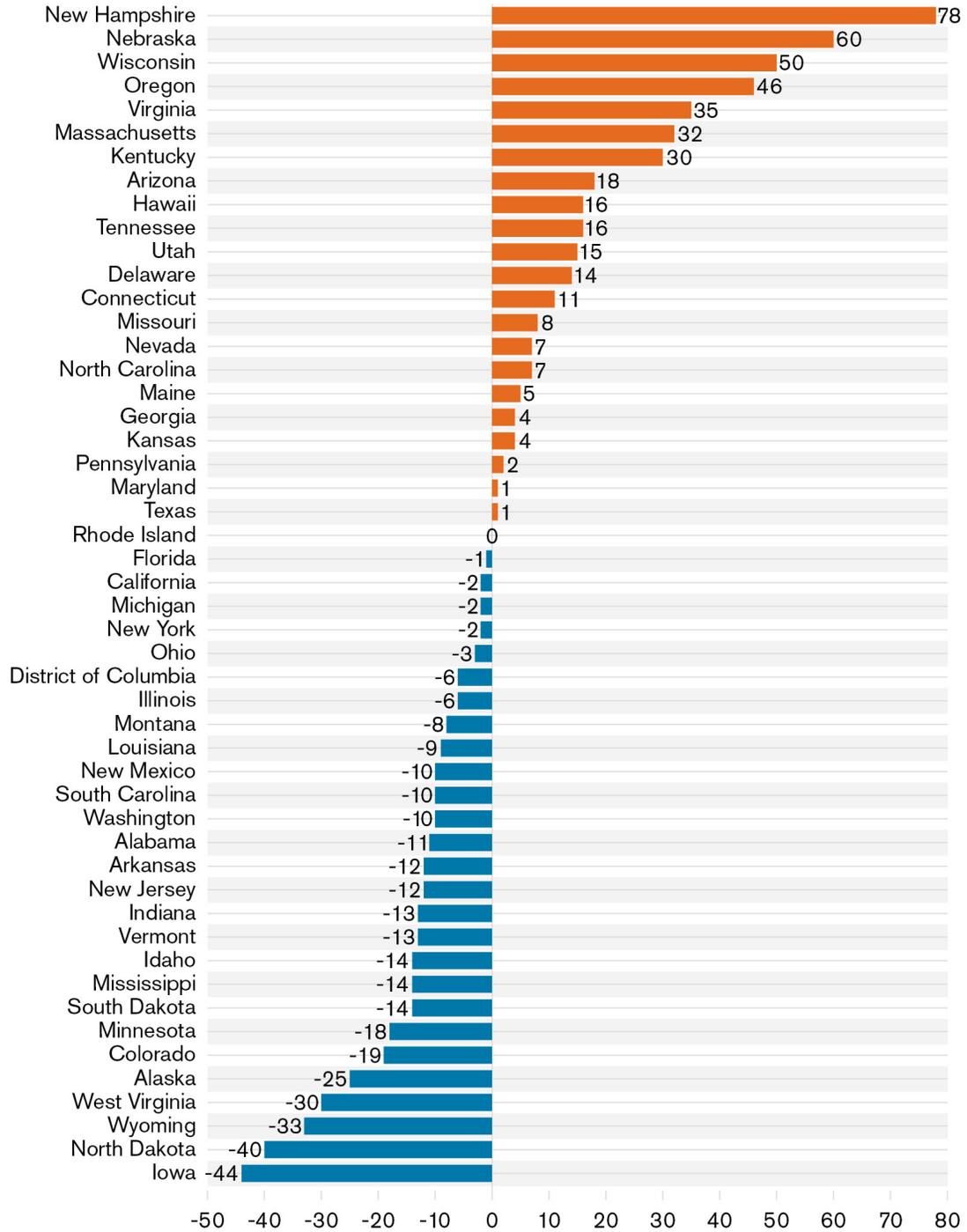
Oklahoma was not able to provide data and is excluded from this chart.

Sources: State Highway Safety Offices and GHSA data analysis

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

Figure 4 Percentage Difference in Pedestrian Fatalities, 2021-2022



Oklahoma was not able to provide data and is excluded from this chart.

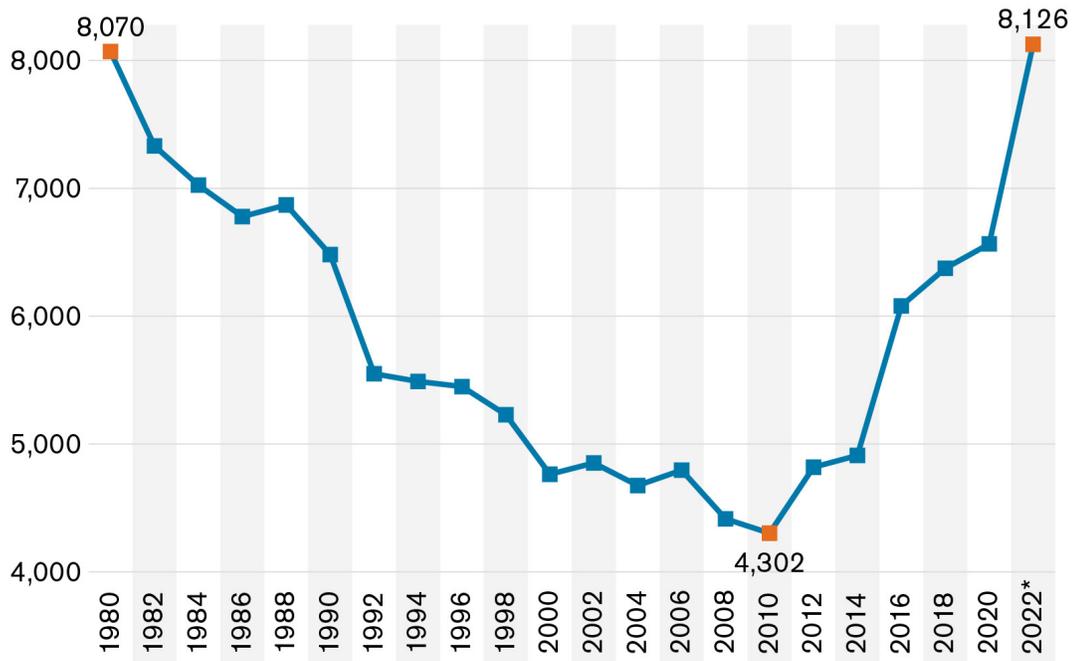
Source: State Highway Safety Offices and GHSA data analysis

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

As noted, direct comparisons between SHSO data and FARS data are not made due to differences in these two sources. However, if the projected 1% increase in the number of SHSO-reported pedestrian fatalities is applied to 2021 FARS (Release 1) data, **the number of pedestrian fatalities in FARS for 2022 could be greater than 8,000 for the first time since 1980** (Figure 5).

Figure 5 Number of Annual U.S. Pedestrian Fatalities, 1980-2022



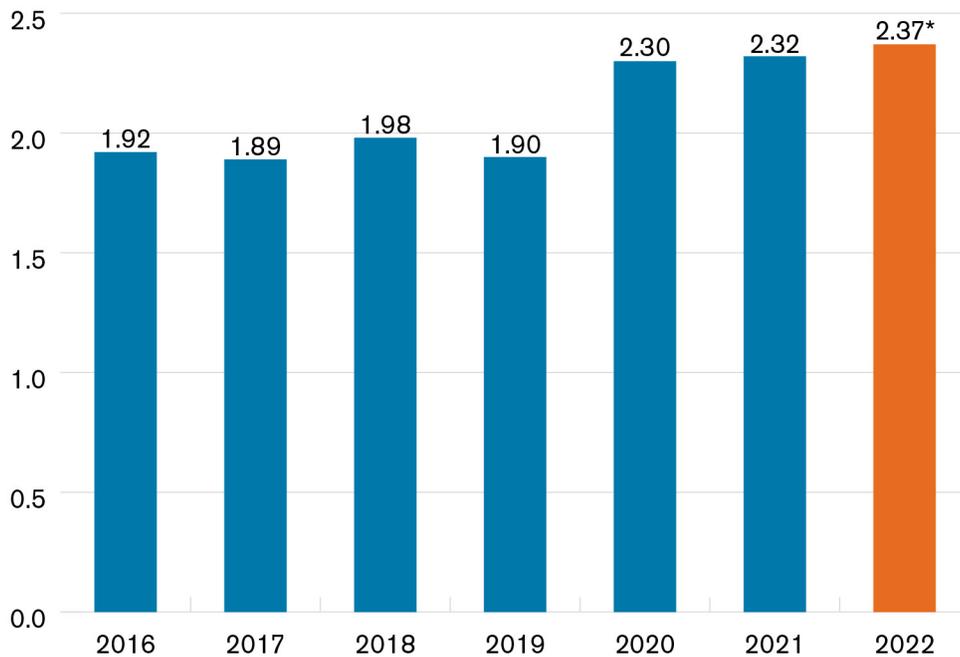
*Projected
Sources: FARS and GHSA analysis of SHSO data

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

The Federal Highway Administration (FHWA) estimates 3,169.4 billion vehicle miles traveled (VMT) in 2022, a 1.8% decrease from 2021. Factoring in the 7,508 predicted pedestrian fatalities for 2022 results in a projected pedestrian fatality rate of 2.37 per one billion VMT, a slight increase for the second year in a row. The VMT data include Oklahoma but the pedestrian fatality data do not, so the actual national fatality rate is slightly higher. Figure 6 below presents the rate for the past seven years.

Figure 6 U.S. Pedestrian Fatality Rate Per One Billion VMT



*Projected
Sources: FARS and GHSA analysis of SHSO data

Table 3 presents the rate of pedestrian fatalities per 100,000 residents for all 49 reporting states and D.C. From 2021 to 2022, the overall rate stayed nearly constant, rising slightly from 2.27 to 2.28. Twenty-two states had a fatality rate above 1.0 (down from 23 states in 2021).

Pedestrian Traffic Fatalities by State

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Table 3

Pedestrian Fatality Rate by State Per 100,000 Population, 2021-2022

Sources: State Highway Safety Offices and U.S. Census Bureau

State	2021	2022
Alabama	2.50	2.21
Alaska	2.18	1.64
Arizona	3.57	4.17
Arkansas	2.51	2.20
California	2.85	2.82
Colorado	1.51	1.22
Connecticut	1.55	1.71
Delaware	2.89	3.24
District of Columbia	2.54	2.38
Florida	3.82	3.70
Georgia	2.97	3.07
Hawaii	1.73	2.01
Idaho	1.16	0.98
Illinois	1.67	1.59
Indiana	1.84	1.60
Iowa	1.00	0.56
Kansas	1.53	1.60
Kentucky	1.69	2.19
Louisiana	3.94	3.62
Maine	1.46	1.52
Maryland	2.08	2.09
Massachusetts	1.09	1.43
Michigan	1.82	1.78
Minnesota	0.98	0.80
Mississippi	3.19	2.76
Missouri	1.95	2.09
Montana	2.17	1.96
Nebraska	0.76	1.22
Nevada	2.67	2.83
New Hampshire	0.65	1.15
New Jersey	2.34	2.05
New Mexico	4.87	4.40
New York	1.53	1.51
North Carolina	2.43	2.57
North Dakota	1.29	0.77
Ohio	1.45	1.41
Oregon	2.12	3.09
Pennsylvania	1.40	1.43
Rhode Island	0.64	0.64
South Carolina	3.74	3.29
South Dakota	1.56	1.32
Tennessee	2.54	2.91
Texas	2.80	2.78
Utah	1.38	1.57
Vermont	1.24	1.08
Virginia	1.45	1.95
Washington	1.86	1.67
West Virginia	2.08	1.46
Wisconsin	0.85	1.27
Wyoming	2.07	1.38
National Rate	2.27	2.28

Oklahoma was not able to provide data and is excluded from this chart.

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

PART 2: 2021 NATIONAL DATA

In addition to analyzing the preliminary state pedestrian fatality data for all of 2022, which provides raw numbers only, GHSA also examined the recently released national pedestrian fatality data for 2021 from FARS. This data includes specific crash factors such as speeding, alcohol involvement, light condition and roadway factors.

Note that the following analyses were based on the raw (unadjusted) total number of 2021 pedestrian fatalities reported in the recent FARS release, which was 7,388.

National and State Fatality Rates

Researchers calculated 2021 state by state fatality rates by multiplying the number of each state's fatalities by 100,000 and dividing that by the state population. The result is the number of pedestrian deaths per 100,000 people who reside in the state. The national U.S. fatality rate per 100,000 population in 2021 was 2.3, an increase from the 1.98 observed in 2020.

At the state level, 2021 saw pedestrian fatality rate increases across the board, consistent with the increase in national pedestrian fatalities. Table 4 lists the pedestrian fatality rate for all states and D.C. from 2018 through 2021.

Key findings include:

- Twenty-three states had fatality rates greater than 2.0 in 2021. Only 19 states had rates of 2.0 or higher in both 2019 and 2020.
- New Mexico continued to have the highest rate, at 5.1. (It had rates of 4.0 and 3.7 in 2019 and 2020, respectively.)
- Louisiana (4.2) and Florida (4.0) had the next highest rates.
- New Hampshire and Rhode Island, at 0.6 each, had the lowest rates.

Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

Table 4

Pedestrian Fatality Rate by State Per 100,000 Population, 2018-2021

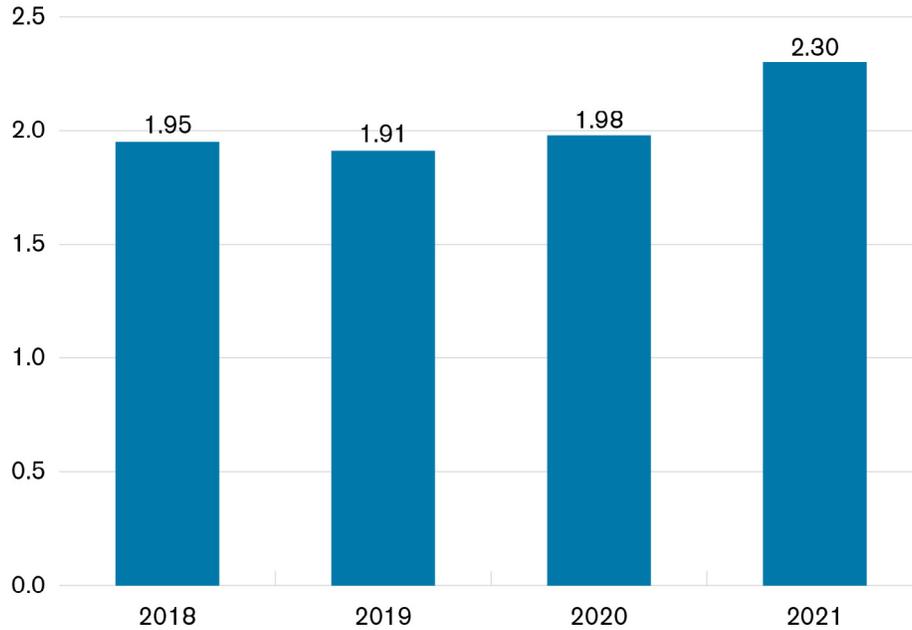
Source: FARS

State	2018	2019	2020	2021
Alabama	2.19	2.43	2.01	2.62
Alaska	1.90	0.82	1.77	2.32
Arizona	3.30	2.89	3.09	3.52
Arkansas	2.06	2.05	2.72	2.71
California	2.48	2.56	2.56	2.91
Colorado	1.56	1.27	1.50	1.63
Connecticut	1.65	1.51	1.64	1.53
Delaware	2.38	3.29	2.52	2.99
District of Columbia	1.57	1.28	1.45	2.84
Florida	3.32	3.32	3.22	3.87
Georgia	2.49	2.22	2.60	2.93
Hawaii	2.96	2.54	1.45	1.80
Idaho	0.97	0.67	0.76	1.16
Illinois	1.30	1.37	1.37	1.70
Indiana	1.70	1.08	1.37	1.69
Iowa	0.70	0.67	0.91	0.97
Kansas	0.96	0.55	1.57	1.50
Kentucky	1.64	1.63	2.02	1.71
Louisiana	3.52	2.54	3.10	4.11
Maine	0.45	1.19	0.66	1.46
Maryland	2.17	2.05	2.17	2.16
Massachusetts	1.12	1.12	0.74	1.09
Michigan	1.42	1.41	1.71	1.79
Minnesota	0.75	0.83	0.79	0.91
Mississippi	2.99	2.18	3.55	3.29
Missouri	1.55	1.78	2.08	1.96
Montana	1.41	1.50	1.57	1.72
Nebraska	1.25	1.03	0.92	0.76
Nevada	2.61	2.01	2.60	2.64
New Hampshire	0.66	0.74	1.16	0.58
New Jersey	1.95	1.96	1.88	2.36
New Mexico	3.97	3.96	3.73	4.96
New York	1.37	1.41	1.14	1.52
North Carolina	2.16	2.11	2.20	2.43
North Dakota	0.79	0.66	1.03	1.29
Ohio	1.09	1.06	1.35	1.47
Oklahoma	1.52	2.15	2.17	2.73
Oregon	1.84	1.94	1.67	2.12
Pennsylvania	1.54	1.15	1.10	1.40
Rhode Island	0.66	0.76	1.55	0.64
South Carolina	3.25	3.17	3.66	3.78
South Dakota	1.14	0.79	1.58	1.56
Tennessee	2.01	2.17	2.49	2.62
Texas	2.15	2.24	2.35	2.85
Utah	1.14	1.19	1.01	1.32
Vermont	0.96	0.48	1.25	1.24
Virginia	1.39	1.44	1.29	1.47
Washington	1.32	1.34	1.36	1.90
West Virginia	1.22	1.73	1.01	2.08
Wisconsin	0.96	1.01	0.85	0.85
Wyoming	1.04	1.90	1.04	1.90
National Rate	1.95	1.91	1.98	2.30

Pedestrian Traffic Fatalities by State

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Figure 7 National Pedestrian Fatality Rate Per 100,000 Population, 2018-2021



Sources: FARS and GHSA analysis of SHSO data

Speeding

The faster a vehicle is traveling, the higher the risk of it killing someone it strikes. This risk grows from just 10% at 23 miles per hour (mph) to 90% at 58 mph.² Additionally, a driver has less time to react to a pedestrian in the roadway when they are traveling at greater speeds.

Research confirmed that speeding and other risky driving behaviors increased during the pandemic and persisted into 2021, and national FARS data bear this out. In 2020 and 2021, speeding was cited as a factor in 29% of all fatalities, a greater proportion than the prior four years.³ In fact, the total number of speeding-related fatalities in 2021 increased by 7.9% from the previous year.

2 Tefft, B.C. (2011). Impact speed and a pedestrian's risk of severe injury or death [Technical Report]. AAA Foundation for Traffic Safety. <https://aaafoundation.org/impact-speed-pedestrians-risk-severe-injury-death>

3 National Safety Council. (2023, May 4). Speeding – Injury facts. <https://injuryfacts.nsc.org/motor-vehicle/motor-vehicle-safety-issues/speeding>

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Speeding as a factor in pedestrian fatalities has followed a similar trend. The rates in 2020 and 2021 – 8.8% and 8.1%, respectively – were both higher than the previous four years (Table 5).

Table 5 Pedestrian Fatalities in Which Speeding Was Indicated as a Factor, by Year

Year	Speeding Indicated	Total	% with Speeding Indicated
2016	442	6,080	7.27
2017	413	6,075	6.80
2018	412	6,374	6.46
2019	451	6,272	7.19
2020	580	6,565	8.83
2021	599	7,388	8.11

Source: FARS

Researchers also looked at what percentage of pedestrian fatalities by roadway types cited speeding as a factor. In 2021, percentages varied from about 6% of deaths on freeways and expressways to approximately 10.6% of deaths on local roads. Table 6 breaks down 2021 pedestrian fatalities by roadway type and illustrates what percentage of these fatalities included speeding as a factor.

Table 6 2021 Speeding-Related Pedestrian Fatalities by Roadway Type

Type of Roadway	Speeding Indicated?		Total	% with Speeding Indicated
	Yes	No		
Interstate, principal arterial	83	858	941	8.82
Freeway and expressway, principal arterial	22	348	370	5.95
Principal arterial, other	193	2,551	2,744	7.03
Minor arterial	150	1,571	1,721	8.72
Collector	76	810	886	8.58
Local	71	598	669	10.61
Unknown	4	53	57	7.02
Total	599	6,789	7,388	8.11

Source: FARS

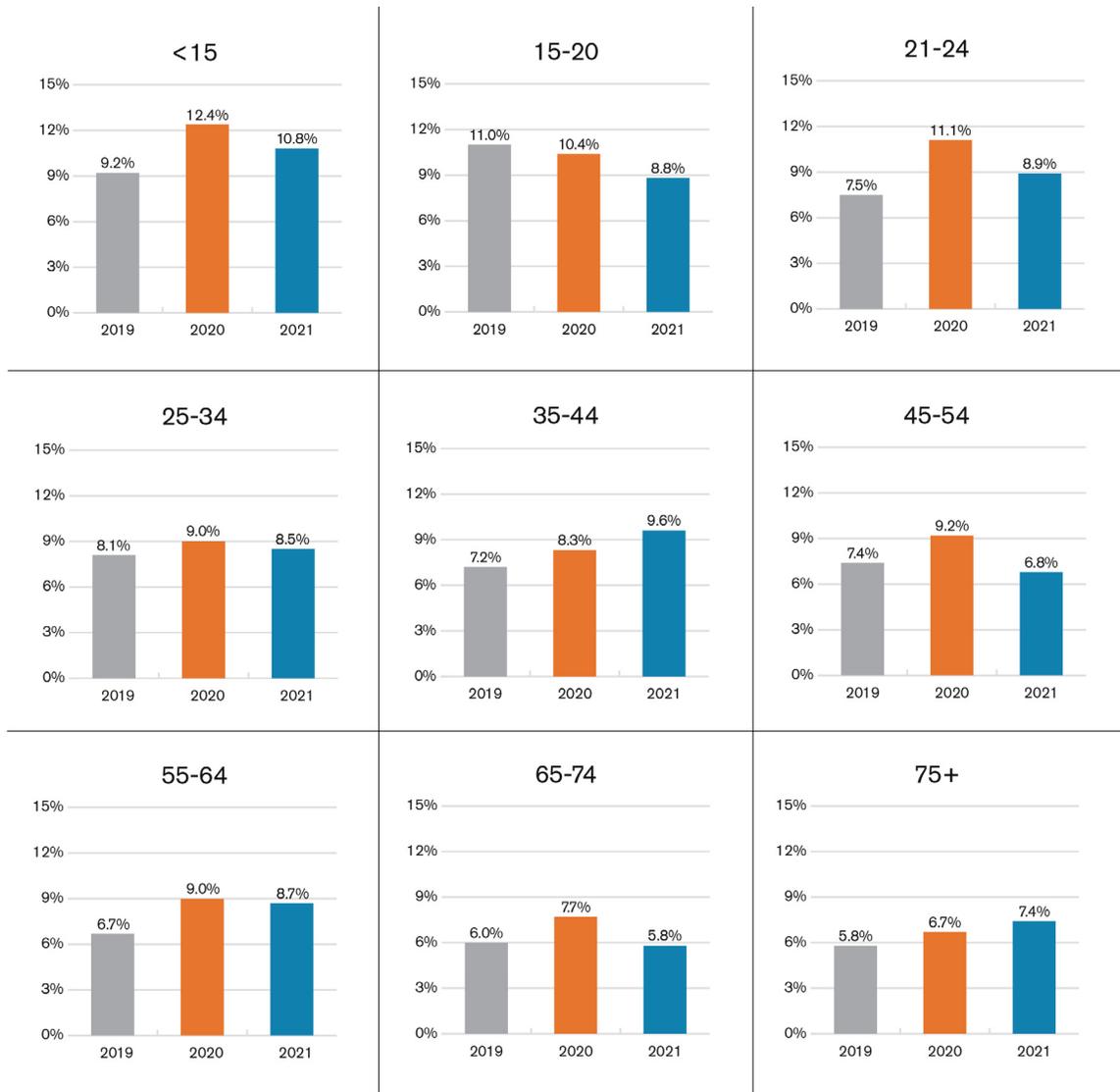
Pedestrian Traffic Fatalities by State

2022 PRELIMINARY DATA

Parsing all pedestrian fatalities by age groups and exploring what proportion were speeding-related can also prove illuminating (Figure 8).

For most age groups, the percentage of pedestrian fatalities that were speeding-related decreased between 2020 and 2021. However, this proportion increased in 2021 for the 35-44 and 75+ age groups. This is particularly concerning for the 35-44 age group: The 1,324 deaths among pedestrians ages 35-44 in 2021 included 127 speeding-related deaths, which is the most in any age group.

Figure 8 Speeding-Involved Pedestrian Fatalities by Age Group, 2019-2021



Source: FARS

Pedestrian Traffic Fatalities by State

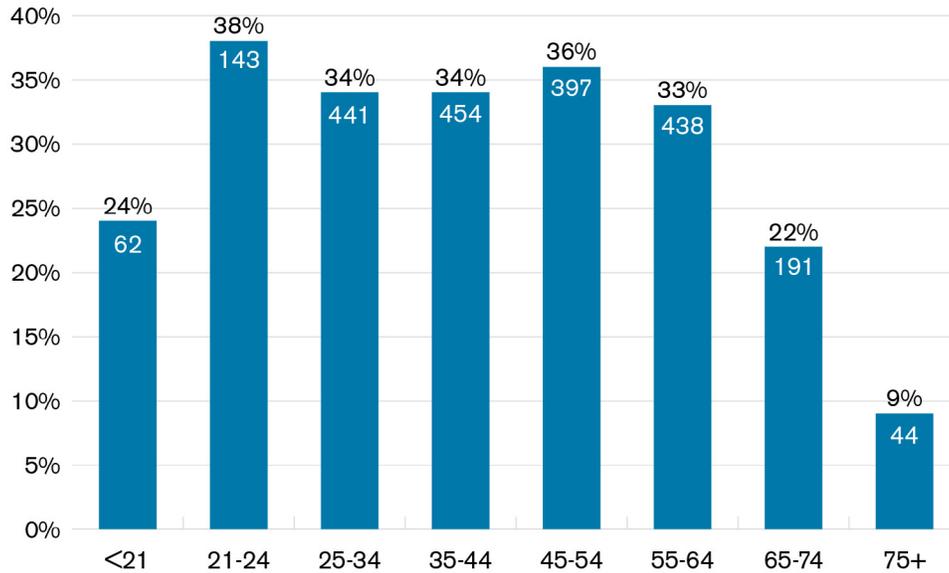
2022 PRELIMINARY DATA

Alcohol Impairment

Alcohol consumption can lead to impairment for both drivers and pedestrians. Drunk driving remains a pervasive highway safety threat to all road users. In fact, according to FARS, police-reported alcohol-related traffic deaths increased 5% from 2020 to 2021, following a dramatic 14% spike in 2020. And the laws of physics dictate that a drunk driver presents a much greater threat to a pedestrian than a drunk pedestrian does to a vehicle driver. Regardless, many pedestrians killed in motor vehicle crashes have a blood alcohol concentration (BAC) of 0.08 or higher. Alcohol (or drug) impairment can contribute to a pedestrian's reduced motor skills and poor judgment when sharing roadway space with vehicles, particularly at night.

In 2021, 30.5% of pedestrians ages 16 or older killed in motor vehicle crashes had a BAC of 0.08 or greater. This is comparable to the 2020 rate (30.6%). This analysis is limited to pedestrians ages 16 or older because higher BACs are rare among people younger than 16. Figure 9 breaks down all pedestrian fatalities involving a pedestrian with a BAC of 0.08 or greater by age group.

Figure 9 2021 Pedestrian Fatalities with Pedestrian BAC \geq 0.08, by Age Group



Source: FARS

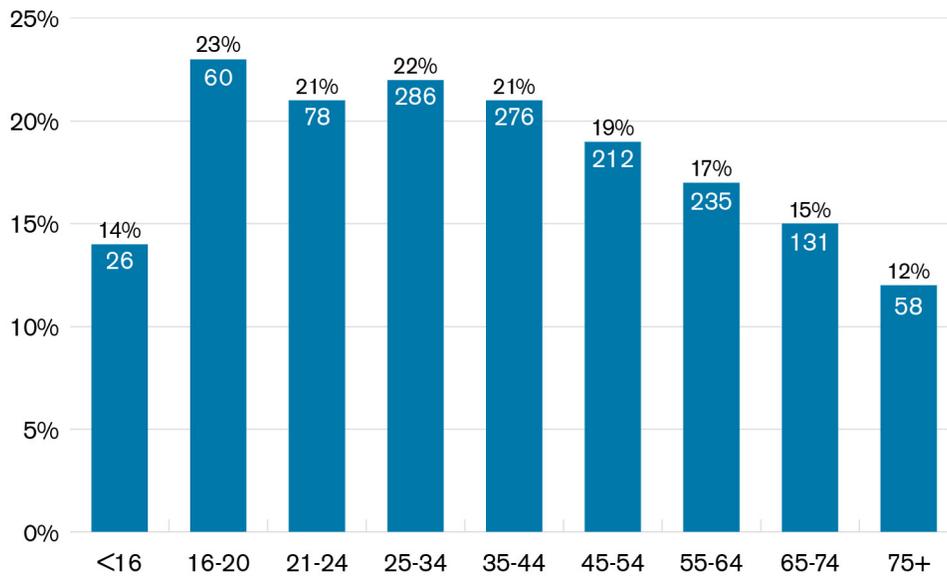
Note: Counts within each bar denote the number of pedestrian deaths involving a pedestrian with a BAC \geq 0.08 within each age range.

Pedestrian Traffic Fatalities by State

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In comparison, 19% of pedestrian fatalities in 2021 involved a driver with a BAC of 0.08 or higher. (This count includes fatalities of pedestrians younger than 16.) The comparable ratio for 2020 was 17%. Except for 2019, when the ratio was 13%, this figure has been constant at 16-17%. As a result, 2021 had a larger proportion of drunk drivers involved in pedestrian fatalities than usual. Figure 10 breaks down all impaired driver-involved pedestrian fatalities by the age of the impaired driver.

Figure 10 2021 Pedestrian Fatalities with Driver BAC \geq 0.08, by Age Group



Source: FARS

Note: Counts within each bar denote the number of pedestrian deaths involving a driver with a BAC \geq 0.08 within each age range.

The discussion of alcohol impairment among pedestrians is controversial. While alcohol impairment puts a pedestrian at greater risk while walking near vehicle traffic, motor vehicle drivers bear the brunt of responsibility, as the machines they operate have the kinetic potential to fatally injure pedestrians and other vulnerable road users. Nevertheless, public safety professionals should identify and implement more countermeasures to keep impaired pedestrians out of harm's way on the road. This could include identifying transportation alternatives for inebriated bar patrons or investing in safer roadways and separating pedestrian and vehicle traffic, as discussed in Part 3 of this report.

Pedestrian Traffic Fatalities by State

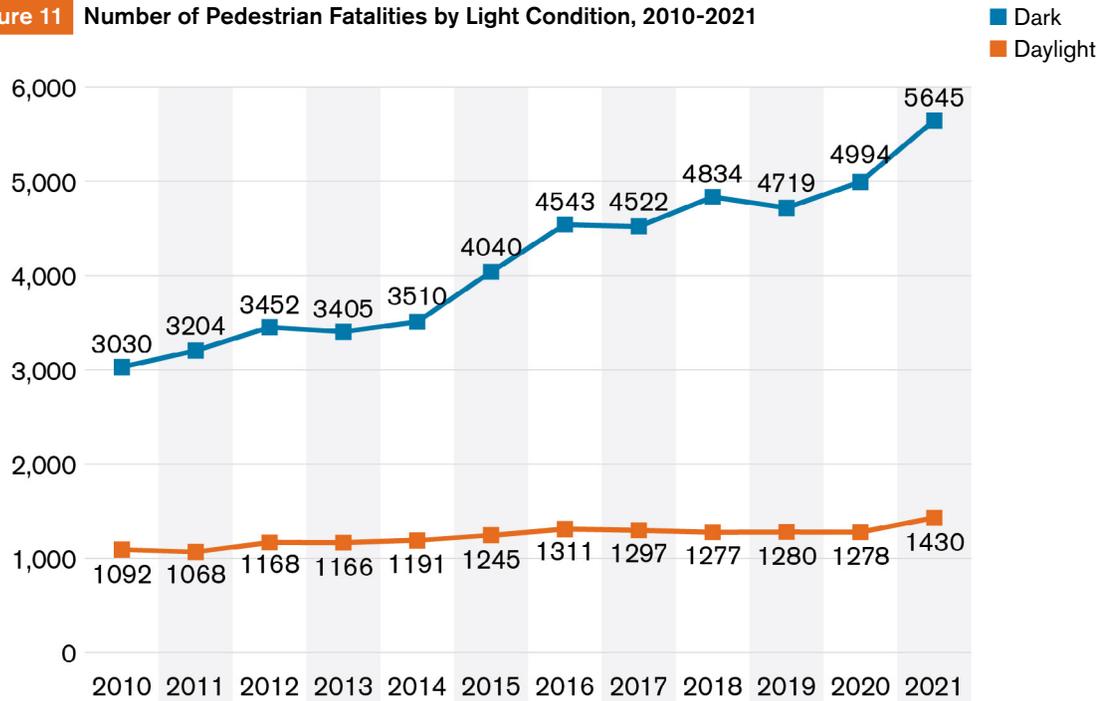
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Light Condition

Consistent with prior years, most pedestrian fatalities occurred at night. In 2021, 77.1% of crashes with known light conditions occurred after dark (regardless of whether there was artificial lighting), compared to 19.5% during daylight hours and 3.3% during dawn or dusk.

Figure 11 illustrates the wide disparity between deaths during daylight hours and at night. (Dawn or dusk are excluded considering the small share of fatalities they represent.)

Figure 11 Number of Pedestrian Fatalities by Light Condition, 2010-2021



Source: FARS

In 2021, about half (51.2%) of fatalities after dark occurred in conditions with artificial lighting, the same proportion as 2020. Good lighting is a proven countermeasure for increasing pedestrian visibility and helping to prevent crashes at night. However, the quality of the artificial lighting must be considered in areas where pedestrian crashes have occurred.

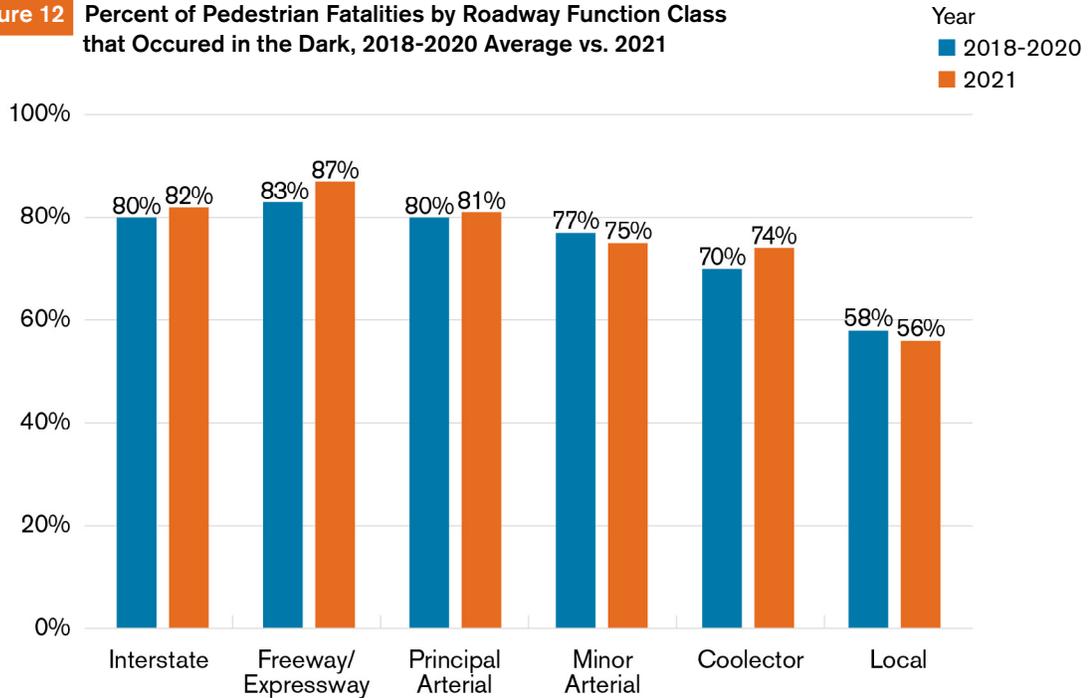
Freeways and expressways are particularly dangerous after sunset. Interstates and principal arterials also saw high percentages of pedestrian fatalities at night. Drivers tend to be traveling at higher speeds on these roads and do not expect to see pedestrians in their path. In 2021, more than 80% of all pedestrian fatalities on these roads happened at night.

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Consistent with prior years, pedestrian fatalities on local roads were less likely to occur in the dark. Even so, more than half of these fatal crashes took place at night. Figure 12 compares 2021 data to the prior three-year average.

Figure 12 Percent of Pedestrian Fatalities by Roadway Function Class that Occured in the Dark, 2018-2020 Average vs. 2021



Source: FARS

Roadway Factors

Roadway factors include whether sidewalks were present, if the crash occurred at an intersection and the type of roadway where the crash occurred.

Sidewalks

A growing proportion of pedestrian fatalities are happening where no sidewalk was noted on the crash report. In 2021, this figure was 68.7%, the fourth straight yearly increase, from 59.2% in 2017 (Table 7 on the following page).

This increase correlates with a decline in transit ridership: Nationally, public transportation ridership in 2020 and 2021 was less than half of what it was before the pandemic — about 4.7 billion and 4.9 billion trips, respectively, compared with approximately 10 billion trips in 2019.⁴ Presumably, some of these riders transitioned their essential trips to walking, and many of these routes likely lacked sidewalks.

⁴ Mallett, W. J. (2022, November 10). Public Transportation Ridership: Implications of Recent Trends for Federal Policy. Congressional Research Service. Retrieved May 8, 2023, from <https://crsreports.congress.gov/product/pdf/R/R47302>

Pedestrian Traffic Fatalities by State

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Table 7 Pedestrian Fatalities by Presence of a Sidewalk, 2017-2021

Year	Sidewalk Present?			Total	% None Noted
	None Noted	Yes	Unknown		
2017	3,598	2,341	136	6,075	59.2
2018	3,973	2,306	95	6,374	62.3
2019	3,976	2,247	49	6,272	63.4
2020	4,381	2,138	46	6,565	66.7
2021	5,078	2,271	39	7,388	68.7

Source: FARS

Intersections

The majority of pedestrian fatalities in 2021 were not at an intersection (5,675 or 76.8%). This is a slight increase from the 75.8% of pedestrian fatalities not at intersections in 2020. In 2021 there were 1,686 (22.8%) pedestrian fatalities at intersections.

Functional Class

Roads can be divided into three major functional classes:

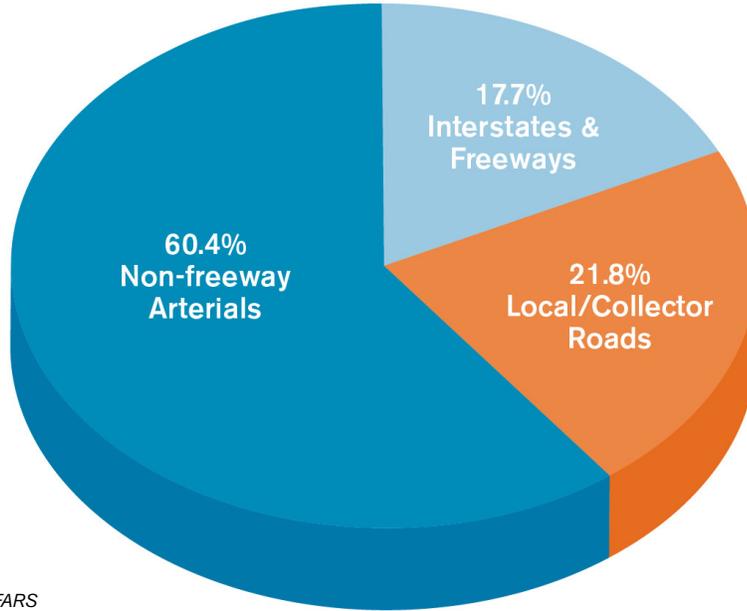
- Interstates and freeways: Controlled access highways with high volumes of traffic traveling at higher speeds.
- Collectors and local streets: Roads with slower speed limits that connect local areas to arterials or with the primary function of providing access to residential areas or businesses.
- Non-freeway arterials: High-capacity roads without controlled access but with more traffic flow and higher speeds than local roads; used primarily to connect collector roads with interstates and freeways.

Of all pedestrian fatalities in 2021, a majority (60.4% or 4,465) happened on non-freeway arterials. The remainder were split between interstates and freeways (17.7% or 1,311) and local/collector roads or roads of unknown functional class (21.8% or 1,612). See Figure 13 on the following page. These proportions are consistent with the prior five years.

Pedestrian Traffic Fatalities by State

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Figure 13 Percentage of Pedestrian Fatalities by Roadway Class, 2021



Source: FARS

Despite representing the smallest proportion of fatalities by roadway type, the fact that 1,311 pedestrians were killed on interstates and freeways raises the question: Why were people walking on roadways that prohibit people on foot? Stranded motorists who exit their vehicle, construction workers, first responders and tow truck drivers are all examples of “pedestrians” who have been killed on interstates and freeways. All states have Move Over laws that require drivers to slow down and change lanes, if possible, when they see a stopped vehicle. However, the volume of fatalities on interstates and freeways indicates these laws need to be strengthened, better publicized and more heavily enforced.

Further, the roadway types experiencing the greatest number of fatalities are non-freeway arterials. These are often mixed-use roadways where walkers interact with higher-speed, and thus higher-risk, traffic. States and localities should examine their data to identify problem areas, keeping in mind that non-freeway arterials are likely to be the roadways that are in greatest need of lifesaving countermeasures.

Vehicle Type

The type of vehicle (passenger car, SUV, van, pickup, etc.) can make a significant difference in survivability for a struck pedestrian.⁵ A general rule is the larger and heavier the vehicle, the lower the chances a person on foot will survive a crash.

⁵ Roudsari, B. S., Mock, C. N., Kaufman, R., Grossman, D., Henary, B. Y., & Crandall, J. (2004). Pedestrian crashes: Higher injury severity and mortality rate for light truck vehicles compared with passenger vehicles. *Injury Prevention Journal of the International Society for Child and Adolescent Injury Prevention*, 10(3), 154–158. <https://doi.org/10.1136/ip.2003.003814>

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As seen in Table 8, in 2021, approximately 35% of pedestrian fatalities had a passenger car as the striking vehicle, while 40% involved an SUV or pickup.

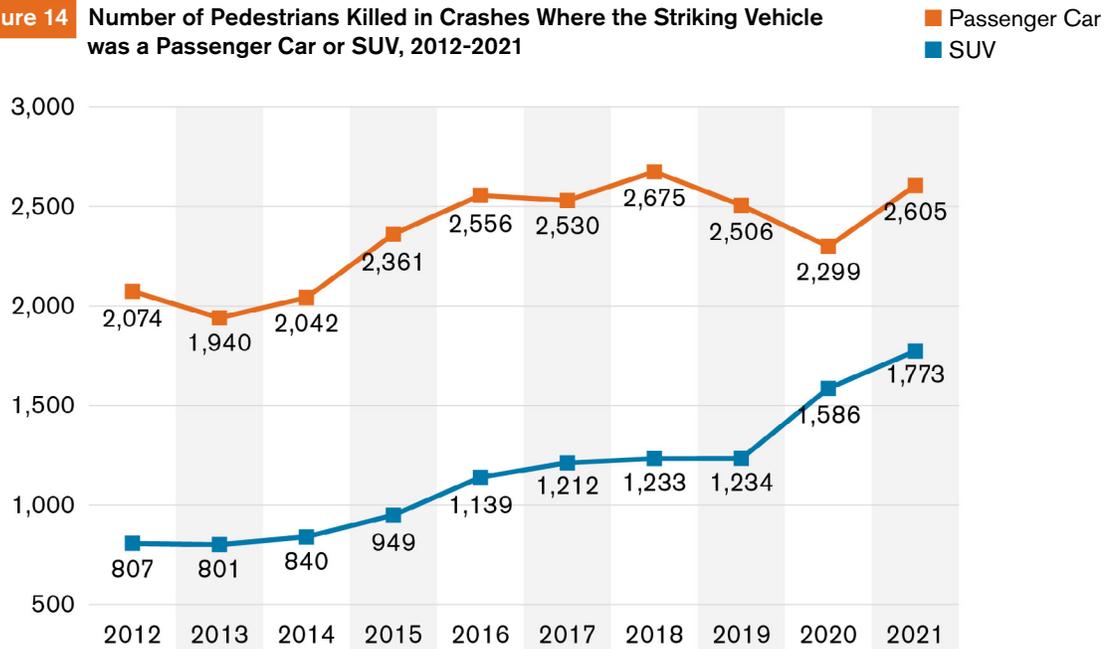
Table 8 2021 Pedestrian Fatalities by Striking Vehicle Type, All Crashes

Vehicle Type	Count	Percent
Passenger Cars	2,605	35.3%
SUVs	1,773	24.0%
Pickups	1,115	15.1%
Other/Unknown	330	4.5%
Large Trucks	479	6.5%
Vans	51	0.7%
Buses	44	0.6%

Source: FARS

It is telling to look at the growth over the past 10 years in the number of pedestrians struck and killed by drivers of SUVs compared with the number of pedestrians struck and killed by drivers of passenger cars. The number of deaths involving SUVs increased 120%, while deaths involving passenger cars grew 26%. Figure 14 illustrates this disparity.

Figure 14 Number of Pedestrians Killed in Crashes Where the Striking Vehicle was a Passenger Car or SUV, 2012-2021



Source: FARS

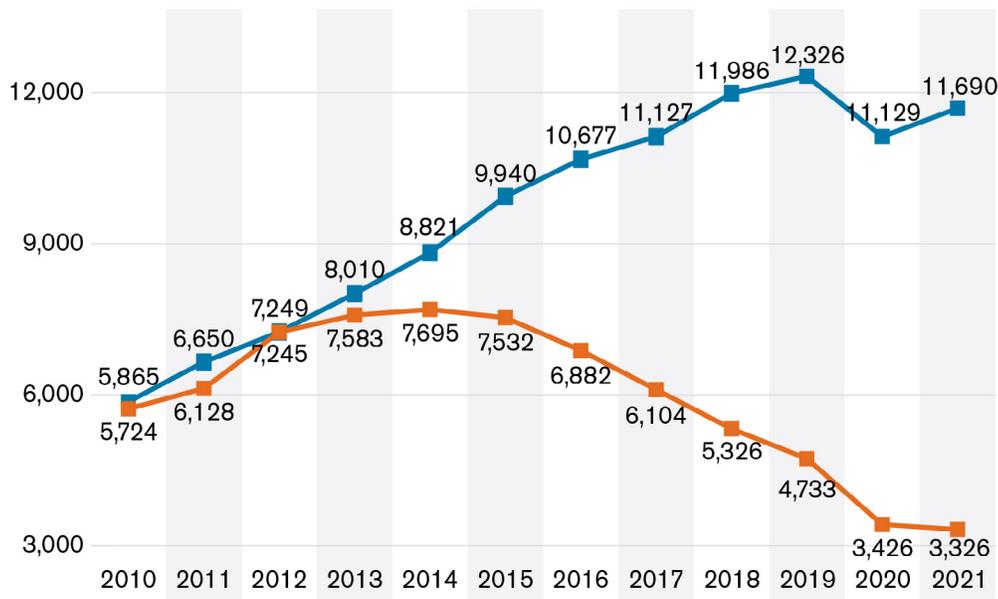
Pedestrian Traffic Fatalities by State

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Two additional vehicle factors may have put people on foot at greater risk in 2021 – the slowed integration of newer (safer) vehicles on the road, and the growing proportion of light trucks (a classification that includes SUVs).

The new vehicle market still tracks well below pre-pandemic levels (Figure 15). Economic factors may have contributed to fewer people purchasing or leasing new cars. Newer vehicles tend to be safer than older vehicles: They generally have better crash avoidance technology, and some even have pedestrian detection as a standard feature. Fewer new vehicles entering the vehicle mix means pedestrians – and all road users – were less protected than they could have been if there were more new vehicles on the road.

Figure 15 Light Truck and Passenger Car Sales & Leases (in Thousands), 2010-2021 ■ Light Trucks, Including SUVs
■ Passenger Cars



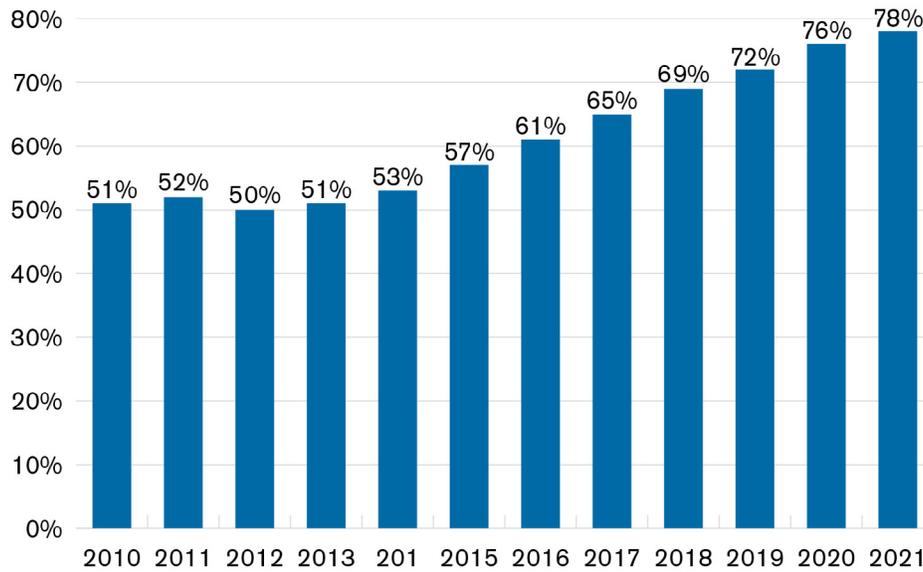
Source: Bureau of Transportation Statistics

Pedestrian Traffic Fatalities by State

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While total new vehicle sales and leases have dropped, the portion of those sales/leases that are classified as light trucks – including SUVs – continues to rise (Figure 16). A growing body of research concludes that larger vehicles are inherently more dangerous to pedestrians. Because of their greater body weight and larger profile, light trucks can cause greater harm to a pedestrian than smaller, lighter cars.⁶

Figure 16 Light Trucks as a Percent of Total Light Vehicle Sales, 2010-2021



Source: Bureau of Transportation Statistics

NHTSA, the federal agency tasked with vehicle safety oversight, recently [proposed](#) a pass/fail designation for pedestrian safety for all new cars. This would ostensibly incentivize auto manufacturers to make safer vehicles, but the metric would only need to be displayed on the NHTSA website, not the vehicle itself, and it would not be integrated into the agency's current five-star safety rating system, which is being overhauled as of the time of publication. NHTSA is accepting comments on its proposal through July 25, 2023.

In addition, NHTSA has [proposed](#) to require that all light vehicles (including trucks) be equipped with automatic emergency braking (AEB) technology that can detect and automatically stop for pedestrians, including at night. The proposed rule would mandate that nearly all light vehicles (gross vehicle weight of 10,000 pounds or less) will be required to have AEB technology within three years after the rule is finalized.

⁶ Monfort, S. S., & Mueller, B. C. (2020). Pedestrian injuries from cars and SUVs: Updated crash outcomes from the vulnerable road user injury prevention alliance (VIPA). *Traffic Injury Prevention*, 21(sup1), S165–S167. <https://doi.org/10.1080/15389588.2020.1829917>

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2022 PRELIMINARY DATA

Race and Ethnicity

Complete race and ethnicity data for 2021 pedestrian fatalities are not yet available from FARS due to delays in processing death certificates. However, it is well documented that people of color are disproportionately overrepresented in pedestrian fatalities.

A 2022 research study published in the American Journal of Preventative Medicine found non-Hispanic Black individuals experience a pedestrian death rate 118% higher than non-Hispanic white people. More alarmingly, when looking at rates for pedestrian deaths occurring at night, the rate for this same racial group spikes to 236%. Hispanic or Latino pedestrians are also much more vulnerable at night, experiencing a fatality rate 84% higher than non-Hispanic white individuals.⁷

Between 2018 and 2020, the proportion of pedestrians whose race and ethnicity are reported as White non-Hispanic on their death certificate has decreased, while the proportion reported as “other” without Hispanic ethnicity has increased. Table 9 illustrates the increasing disparities.

Table 9 Pedestrians Killed in Fatal Crashes by Race, 2018-2020

Race (Using Office of Management and Budget Guidelines)	Crash Year					
	2018		2019		2020	
	Count	%	Count	%	Count	%
Hispanic	1,242	19.5%	1,355	21.6%	1,367	20.8%
White, Non-Hispanic	3,020	47.4%	2,725	43.4%	2,662	40.5%
Black, Non-Hispanic	1,223	19.2%	1,178	18.8%	1,340	20.4%
American Indian, Non-Hispanic/Unknown	142	2.2%	121	1.9%	114	1.7%
Asian, Non-Hispanic/Unknown	161	2.5%	142	2.3%	132	2.0%
Pacific Islander, Non-Hispanic/Unknown	12	0.2%	1	0.0%	3	0.0%
Multiple Races, Non-Hispanic/Unknown	15	0.2%	30	0.5%	26	0.4%
All Other Non-Hispanic or Other Race	242	3.8%	324	5.2%	564	8.6%
Unknown Race and Unknown Hispanic	317	5.0%	396	6.3%	357	5.4%
Total	6,374	100.0%	6,272	100.0%	6,565	100.0%

Source: FARS

⁷ Raifman, M. A., & Choma, E. F. (2022, June 7). Disparities in activity and traffic fatalities by race/ethnicity. *American Journal of Preventative Medicine*. [https://www.ajpmonline.org/article/S0749-3797\(22\)00155-6/fulltext](https://www.ajpmonline.org/article/S0749-3797(22)00155-6/fulltext)

Pedestrian Traffic Fatalities by State

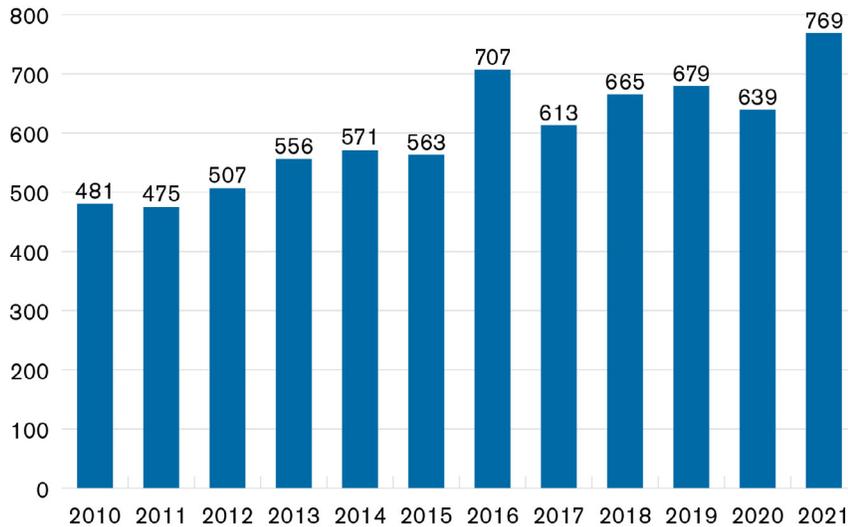
2022 PRELIMINARY DATA

A Closer Look at Cities

Most pedestrian fatalities occur in urban areas, where people on foot and people in motor vehicles are more likely to be sharing the same roadways. Because of this, researchers homed in on data for the 10 most populous U.S. cities: Chicago, Dallas, Houston, Los Angeles, New York, Philadelphia, Phoenix, San Antonio, San Diego and San Jose. For the purposes of this report, cities are defined as the areas within the city limits, versus larger Metropolitan Statistical Areas (MSA) within which cities are located.

In 2021, these ten cities accounted for a combined 769 pedestrian fatalities. This is a 20% increase from the previous count of 639 in 2020, and a 19% increase over the 679 in 2019 (pre-pandemic). Figure 17 illustrates the total number of fatalities in these same 10 cities over the past 11 years.

Figure 17 Pedestrian Deaths in the 10 Largest U.S. Cities, 2010-2021



Source: FARS

Figure 18 provides the 2019-2021 pedestrian fatality data for all 10 cities. Looking across each city individually, there are mixed patterns:

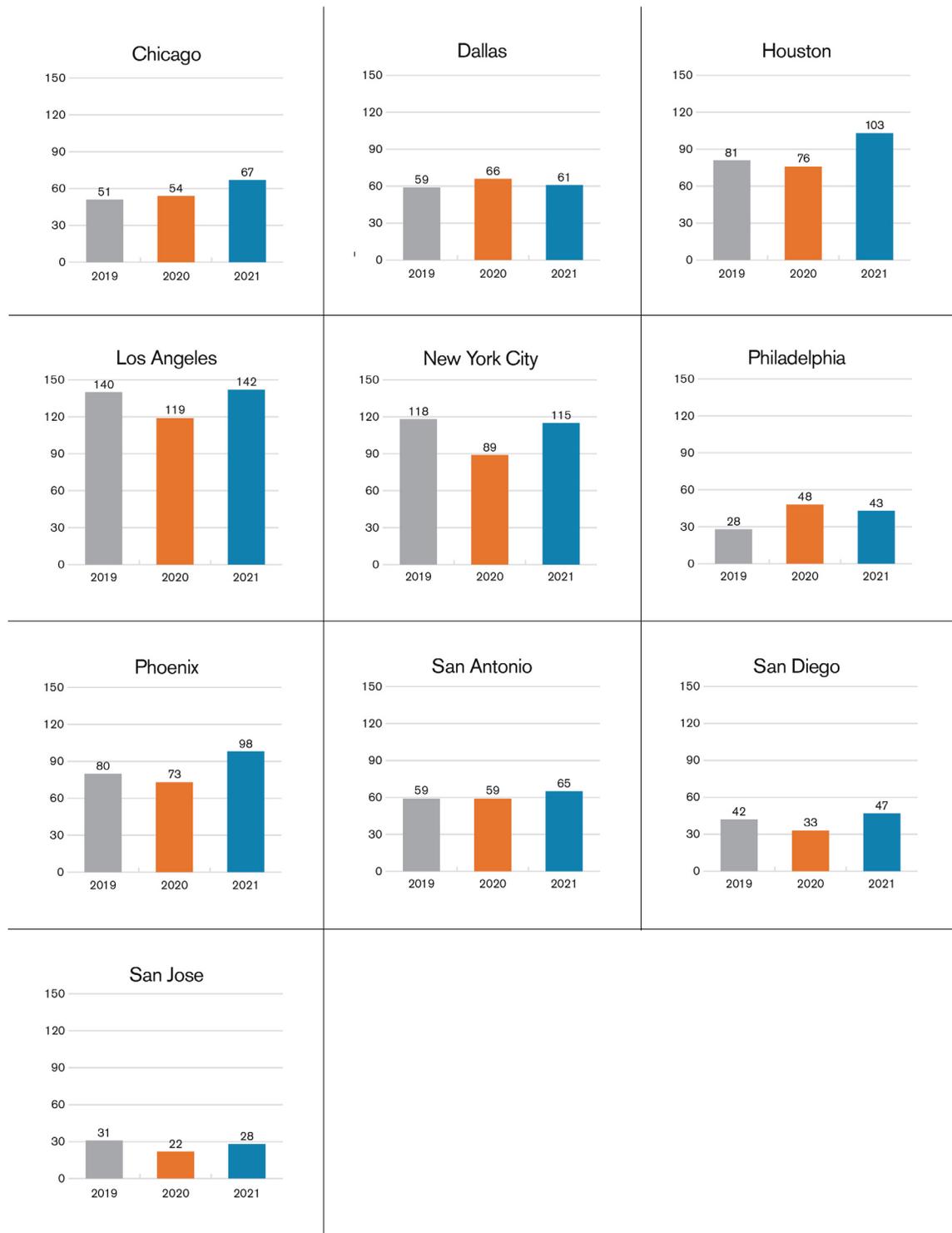
- In Chicago and San Antonio, pedestrian fatalities have trended upward since 2019.
- In Dallas and Philadelphia, pedestrian fatalities increased in 2020 but dropped in 2021.
- In Los Angeles, New York City and San Jose, fatalities decreased in 2020 but returned to near-2019 levels in 2021.
- In Houston, Phoenix and San Diego, fatalities decreased in 2020 but increased somewhat above 2019 counts in 2021.

These patterns may reflect different city- and state-level reactions to the pandemic and the length/impact of any restrictions. For example, New York City and the cities in California saw sharp drops in pedestrian fatalities in 2020, when stay-at-home orders were in place limiting pedestrian exposure. This may explain the dips in that year.

Pedestrian Traffic Fatalities by State

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Figure 18 Pedestrian Deaths in the 10 Largest U.S. Cities, 2019-2021



Source: FARS

PART 3: HOW TO REDUCE PEDESTRIAN FATALITIES AND INJURIES

The heartbreaking trend of increasing pedestrian fatalities on U.S. roadways begs the question: What can be done? Every one of these deaths was preventable. By building a safer mobility system, with redundancies that avoid putting pedestrians in harm's way in the first place and mitigate the effects of crashes that do occur, it is possible to prevent these tragedies from happening.

This section of the report explains how states and communities are working to improve safety for people on foot and what more can be done, with a focus on following the six principles of a Safe System approach, as outlined below. The U.S. Department of Transportation (DOT) *National Roadway Safety Strategy*⁸ is grounded in these same principals, with a goal of zero traffic fatalities.

- 1. Death and Serious Injuries are Unacceptable.** The Safe System approach focuses on eliminating crashes that result in death and serious injuries, rather than trying to prevent all crashes. Considering the vulnerability of the human body when struck by a moving vehicle, prioritizing pedestrian safety aligns naturally with this principle.
- 2. Humans Make Mistakes.** Understanding that humans will never be perfect, the Safe System approach emphasizes designing a system to avoid death and serious injuries when a crash occurs. For example, measures to slow vehicle speeds in high-pedestrian areas greatly improve survivability odds for pedestrians struck by a motor vehicle.
- 3. Humans Are Vulnerable.** People have physical limits for tolerating crash forces before death or serious injury occurs. A safe transportation system is human-centric – it is designed and built to accommodate physical human vulnerabilities. While motor vehicle safety design has improved drastically in recent decades, a pedestrian's body does not come equipped with airbags.
- 4. Responsibility is Shared.** The Safe System approach understands that all stakeholders bear the responsibility to prevent fatalities and serious injuries on our roadways.
- 5. Safety is Proactive.** Proactively identifying and addressing safety issues in the transportation system before deaths and serious injuries occur is preferable to analyzing crashes after the fact. For example, equitable enforcement of traffic laws addressing high-risk behaviors such as speeding or impaired and distracted driving can help prevent a crash from happening. Asking community members where they feel unsafe walking or where they have experienced near misses is another proactive strategy.
- 6. Redundancy is Crucial.** Transportation and safety professionals must strengthen all components of the system, so if one fails, another component provides the necessary protection. For example, adding leading pedestrian intervals (LPIs) to crosswalk signal timing gives pedestrians the opportunity to enter the crosswalk before vehicles are given a green light. If a driver's ability to see a pedestrian in the crosswalk is compromised by the vehicle's A pillar (the roof support structure on the side of the windshield), the driver will not be able to turn until the pedestrian is safely beyond that blind spot.

⁸ U.S. Department of Transportation (2022, January). *National Roadway Safety Strategy*. <https://www.transportation.gov/sites/dot.gov/files/2022-02/USDOT-National-Roadway-Safety-Strategy.pdf>

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The Safe System approach emphasizes equity across all disciplines. For example, public health and safety groups should develop educational materials with community input and deliver them within a culturally appropriate context. Police officers should enforce traffic laws equitably, with a focus on risky driving behaviors rather than unsafe walking. And planners and engineers should design and build transportation corridors with the safety of all users in mind and integrate safety features in communities of all socioeconomic levels.

When states were surveyed for their preliminary 2022 pedestrian fatality data presented in the first part of this report, they were also asked to provide information about their pedestrian safety programs as well as any state-level trends. Below are some examples of how the SHSOs and their partners are incorporating Safe System principles into their pedestrian safety work.

- **Refining Educational Materials** – **California** developed a social media toolkit to explain the core principles of the Safe System approach, focusing on the benefits of slower speeds and road design changes that improve the safety of people on foot. Grantees and other partners utilize the toolkit to help achieve public buy-in. The state also launched a new series of “We Are Human” public service announcements to emphasize the shared responsibility and critical role drivers play in keeping others safe on the road.

Maine is conducting demonstration projects to educate decision-makers on low-cost traffic calming measures shown to improve pedestrian safety, such as curb extensions with flexible posts and paint to separate motor vehicles from walkers.

Minnesota is using its social media channels to advance Safe System principles, including humanizing language (for example, “the person driving the car hit the person walking” instead of saying “the car hit the pedestrian”), eliminating blame and emphasizing shared responsibility. In addition, its Active Transportation Program’s Planning Assistance Program pairs planning consultants with 13 communities across the state that work together to develop engagement strategies that will resonate with children, older adults, people of color and people with disabilities. Communities finish the planning process with a clear set of strategies for advancing safe and active transportation.

- **Injecting Pedestrian Safety into Driver Education** – Historically, driver education curriculum focused largely on the safety of the driver and their passengers. More states are refining their curriculum to teach new drivers the responsibilities they have toward other road users, including pedestrians. In the **Montana** Office of Public Instruction’s Driver Education program, pedestrian and bicycle safety are covered as integral elements. During the 2021 legislative session, **Florida** passed a bill on safety issues impacting this population. The new law requires that at least 25 questions in the state driver education test bank address bicycle and pedestrian safety.
- **Engaging with People Experiencing Homelessness** – A notable trend in proactive, community-centered transportation safety is working with people experiencing homelessness. For example, **Hawaii** has started working with homeless outreach coordinators to solicit feedback related to areas of concern and traffic calming measures. This year, **Oregon** began holding listening sessions with people experiencing homelessness in the Portland metro region to inform effective outreach and engagement with these vulnerable pedestrians. **Delaware** provides reflective items to people living in homeless shelters. **Utah’s** data

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reveal that many pedestrian crashes happen near homeless shelters, which could inform its outreach efforts.

These programs align with the Safe System principal of being proactive and equitable. Asking people experiencing homelessness where they feel unsafe can influence future engineering and education efforts.

- **Focusing Enforcement on Dangerous Driving Behaviors** – FHWA recommends that pedestrian enforcement operations focus on drivers rather than pedestrians.⁹ GHSA's August 2021 report, *Equity in Highway Safety Enforcement and Engagement Programs*, also recommends that traffic enforcement efforts be directed to the most dangerous and unlawful traffic violations.¹⁰ States have been taking heed.

California reports that enforcement efforts are focused on the most dangerous and risky driving behaviors. For example, law enforcement agencies conduct “sting” operations, where officers in plain clothes cross at a crosswalk, identify drivers who do not yield the right of way and radio to another officer stationed ahead who stops the driver. **D.C., Maine, Maryland, Massachusetts, New Jersey** and **South Carolina**, among other states, use similar pedestrian decoy tactics.

In **Hawaii**, law enforcement focuses on driving behaviors, such as speeding, failure to yield and distracted driving in and around areas with crashes or high volumes of people walking.

Indiana has an innovative school bus stop arm violation enforcement program. The SAVE Project utilizes high visibility enforcement during school bus loading and unloading in areas where stop arm violations have been reported. Considering that Indiana Department of Education data report nearly 2,000 stop arm violations daily, this enforcement program clearly focuses on an extremely dangerous – and prevalent – driver infraction that puts children on foot at risk. A **Minnesota** grant project combines enforcement, education and awareness efforts, so drivers obey the law and stop for buses with flashing lights and stop arms extended. Cameras installed on the buses are helping schools and law enforcement find the violators and hold them accountable.

Enforcement of speeding, impaired and distracted driving, and other laws pertaining to driver behavior – particularly in areas with high volumes of foot traffic – will improve safety for pedestrians. Unfortunately, there has been a sharp drop in traffic enforcement in recent years, which may be contributing to an increase in risky driving behavior, resulting in more pedestrian fatalities.¹¹

9 Federal Highway Administration (2013). *Pedestrian Safety Guide and Countermeasure Selection System*. http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=62

10 Sprattler, K., & Statz, L. (2021, August). *Equity in Highway Safety Enforcement and Engagement Programs*. Governors Highway Safety Association. <https://www.ghsa.org/sites/default/files/2021-09/Equity%20in%20Highway%20Safety%20Enforcement%20and%20Engagement%20Programs%20FINAL%20with%20Date.pdf>

11 Kaste, M. (2023, April 6). *America's roads are more dangerous, as police pull over fewer drivers*. NPR. <https://www.npr.org/2023/04/06/1167980495/americas-roads-are-more-dangerous-as-police-pull-over-fewer-drivers>

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- **Designing and Building Safer Roadways** – Recognizing human bodies can only tolerate so much crash force before succumbing to serious injury or death, states are doing more to engineer transportation systems that better protect pedestrians from harm. While most SHSOs are not charged with implementing engineering solutions, they work in concert with their state DOTs and other entities, such as Metropolitan Planning Organizations, that can influence and change road design. Some SHSOs provide education on the value of safer street design that includes guidance to help road users maximize the countermeasure.

Washington works with colleges and universities to monitor, educate and influence planning, engineering and design training about vulnerable road users. Educating a new generation of planners and engineers will positively affect future road design projects.

The **Idaho** highway safety office provided funding to Idaho Smart Growth, which assists communities with walk audits to identify safety concerns. The results of these audits help determine the best engineering and planning remedies for problem locations.

In **Ohio**, the highway safety office partners with the state DOT to provide highway safety related training to state, county and municipal employees and consultants to educate them on current roadway safety and traffic practices. Courses focus on planning and design for pedestrian safety.

Most states reported instituting one or more of these proven infrastructure countermeasures to improve pedestrian safety:

- ◆ **Road diets** reduce vehicle speeds and the number of lanes pedestrians cross and create space to add new pedestrian facilities.
- ◆ **Pedestrian refuge islands** provide walkers a safe place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for older pedestrians or others with limited mobility.
- ◆ **Crosswalk visibility enhancements**, such as lighting and enhanced signing and markings, help drivers detect pedestrians, particularly at night.
- ◆ **Rectangular Rapid Flashing Beacons (RRFB)** are active (user-actuated) or passive (automated detection) amber light-emitting diodes (LEDs) that use an irregular flash pattern at mid-block or uncontrolled crossing locations. They significantly increase driver yielding behavior.
- ◆ **Pedestrian Hybrid Beacons (PHBs)** are a beneficial intermediate option between RRFBs and a full pedestrian signal. They allow pedestrians to activate a series of warning and stop beacons for drivers in areas without the high pedestrian traffic volumes that typically warrant full traffic signal installation.
- ◆ **Leading Pedestrian Intervals (LPIs)** at signalized intersections allow pedestrians to walk, usually three to four seconds, before vehicles get a green signal to turn left or right. The LPI increases visibility, reduces conflicts and improves motorists' propensity to yield to people crossing the road on foot.
- ◆ **Sidewalks** separate people on foot from motor vehicle traffic, yet many roadways, particularly in rural areas, still lack them.

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- **Slowing Down Motor Vehicles Where Pedestrians are Present** – Several of the engineering measures listed above will achieve the goal of slowing down motor vehicles, particularly in areas with high foot traffic. In addition, some states are passing laws that will help slow traffic speeds. **Massachusetts** is considering a law that will allow municipalities to set a 25 mph speed limit in densely populated areas on state roads. A new law in **Washington** authorizes the state's DOT to establish a maximum speed limit of 20 mph on non-arterial state highways without making a determination based on an engineering and traffic investigation. The law also allows all local authorities to set 20 mph speed limits on certain roadway types. Other states have implemented, or are debating, similar measures.

State Trends in Pedestrian Fatality Data

As expected, states reported different trends in terms of pedestrian fatalities. However, some universal themes emerged. Most states reported the bulk of their pedestrian fatalities involved males. Many states noticed more older pedestrians are being injured or killed, although the definition of "older" varied. In **Vermont**, more than half of all pedestrians killed in motor vehicle crashes were over the age of 60. Other common characteristics, consistent with past national data analyses, included urban settings and dark conditions.

Several states noted a disproportionate number of pedestrians killed in motor vehicle crashes were minorities, which mirrors national trends. Of note, **Montana** reported that Native Americans represented 36% of its pedestrian fatalities, but only 7% of the state's population, an alarming disparity. While not classified as a minority, **Hawaii** noted nearly half of its pedestrian fatalities involved people who were experiencing homelessness.

Other states pointed out that an increasing number of pedestrian fatalities involved alcohol or drug impairment on the part of the pedestrian and/or the driver of the striking vehicle.

A few states theorized that more larger vehicles on the roads or an increase in speeding and other reckless driving behavior could be contributing to the rising number of pedestrian fatalities, although none presented data to this effect.

States are using their unique pedestrian fatality data trends to focus their programming on specific locations and communities. For example, **Connecticut** runs an educational and media program geared specifically to improve the safety of older pedestrians. **California** is reaching out to minority communities to proactively identify locations of concern that will inform countermeasures to make it safer to walk in those areas. Several states are working to improve lighting conditions in areas with high pedestrian traffic.

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Federal Grant Programs

SHSOs have access to several federal grants to improve pedestrian safety, though federal regulations limit how this money can be spent. The State and Community Highway Safety Grant Program under 23 U.S.C. Section 402 (also known as Section 402) provides funding to all states and territories for a wide range of highway safety purposes, including pedestrian safety, though this competes with all other safety needs.

The National Priority Safety Program under 23 U.S.C. Section 405 (also known as Section 405) provides for 5% of all Section 405 funds to be annually distributed to qualifying states specifically for programs to improve non-motorized safety (Section 405 (h)). A state is eligible if its annual combined pedestrian and bicyclist fatalities exceed 15% of total annual crash fatalities using the most recently available final FARS data. For Federal Fiscal Year (FFY) 2023, 27 states, D.C. and Puerto Rico qualified for this funding. Since this grant was created by the FAST Act in 2015, states encountered significant roadblocks as the law strictly connects the use of these funds to training, education and/or awareness programs addressing state bicycle and pedestrian safety laws, but not every state has such laws in place.

Alongside safety partners, GHSA worked with Congress to amend this program to better meet highway safety needs through language in the 2021 Infrastructure Investment and Jobs Act (IIJA, also known as the Bipartisan Infrastructure Law). Beginning in FFY 2024, the program will be re-designated as Section 405(g) and expanded so states can use these funds for a wider range of nonmotorized safety purposes, including public education and awareness about speed, safety equipment and safety infrastructure, police training and enforcement, and research and data analysis.

In addition, IIJA creates a new Section 405(h) program, earmarking 1% of Section 405 funds for incentive grants to prevent roadside crashes and deaths, particularly those involving first responders, construction workers and other motorists that need to make emergency stops on roadways. Allowable uses include traditional education and enforcement efforts as well as purchasing digital alerting technology. Digital alerting enables authorized users such as first responders, tow truck operators or DOT workers to notify drivers of a disabled vehicle, roadway incident or work zone ahead through a message display on vehicle dashboards and navigation apps. The Section 405(h) program begins in FFY 2024.

In the meantime, SHSOs are overcoming funding limitations by getting creative and partnering with state DOTs and other groups to educate planners and the public about the positive impact of engineering changes to enhance pedestrian safety.

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CONCLUSION

Both state and national data confirm that the pedestrian safety crisis on U.S. roads is worsening. While the projected increase in pedestrian fatalities in 2022 (compared with the prior year) is not as high as recent years (just 1%), it is still on par to be the highest number since 1981. GHSA projects 7,508 pedestrians were killed in 2022 among the 49 states and D.C. included in this analysis. And this number excludes an entire state (Oklahoma), which has averaged 92 fatalities annually over the past three years, according to prior GHSA reports.

Interestingly, more states saw a decline in their overall number of fatalities (26 plus D.C.) than did not (22), with one state (Rhode Island) reporting no change. However, the overall increase can be attributed to states with large increases, such as Arizona, Virginia and Oregon.

The federal FARS data include more information on crashes and yield more insights on specific factors involved in pedestrian deaths but lag one year behind the state data. In 2021, excessive speed was reported as a factor in a growing proportion of pedestrian fatalities for the second year in a row. Alcohol impairment was reported in more fatally injured pedestrians (30.5%) than motor vehicle drivers involved in these deaths (19%). Consistent with past trends, most pedestrian fatalities occurred at night and a greater proportion are taking place in locations without sidewalks.

The good news is that states are increasingly adopting a Safe System approach to help prevent pedestrian/motor vehicle crashes. This approach has been implemented successfully in other countries for many years.¹² The approach stresses that it will take a holistic change to protect pedestrians. While much of the Safe System emphasis is placed on building infrastructure that ensures safe and equitable mobility for everyone on the road, SHSOs can – and do – have an important role to play. They can educate elected officials, law enforcement, the media and the public about the benefits of infrastructure improvements and how they work, as well as reinforce that we all share responsibility for keeping people on foot safe.

¹² Safe Systems Consortium (2021, May 11). *Recommendations of the Safe System Consortium*. Johns Hopkins Bloomberg School of Public Health. <https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-injury-research-and-policy/our-impact/documents/recommendations-of-the-safe-system-consortium.pdf>

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Safer people



Safer vehicles



Safer roads



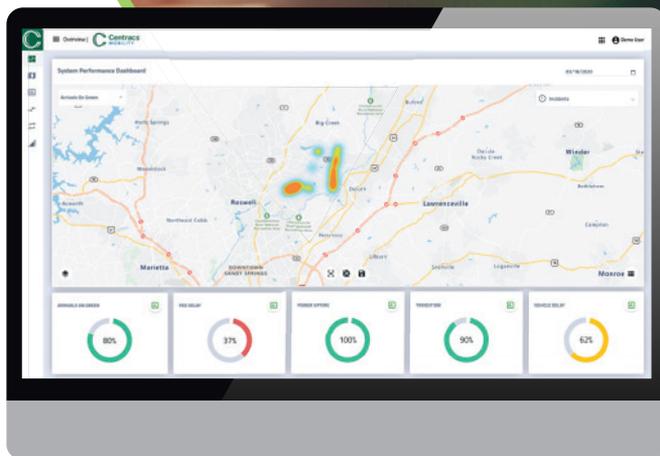
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SIDRA INTERSECTION

HCM Extended Roundabout Capacity Model for enhanced model calibration

New major version out soon!

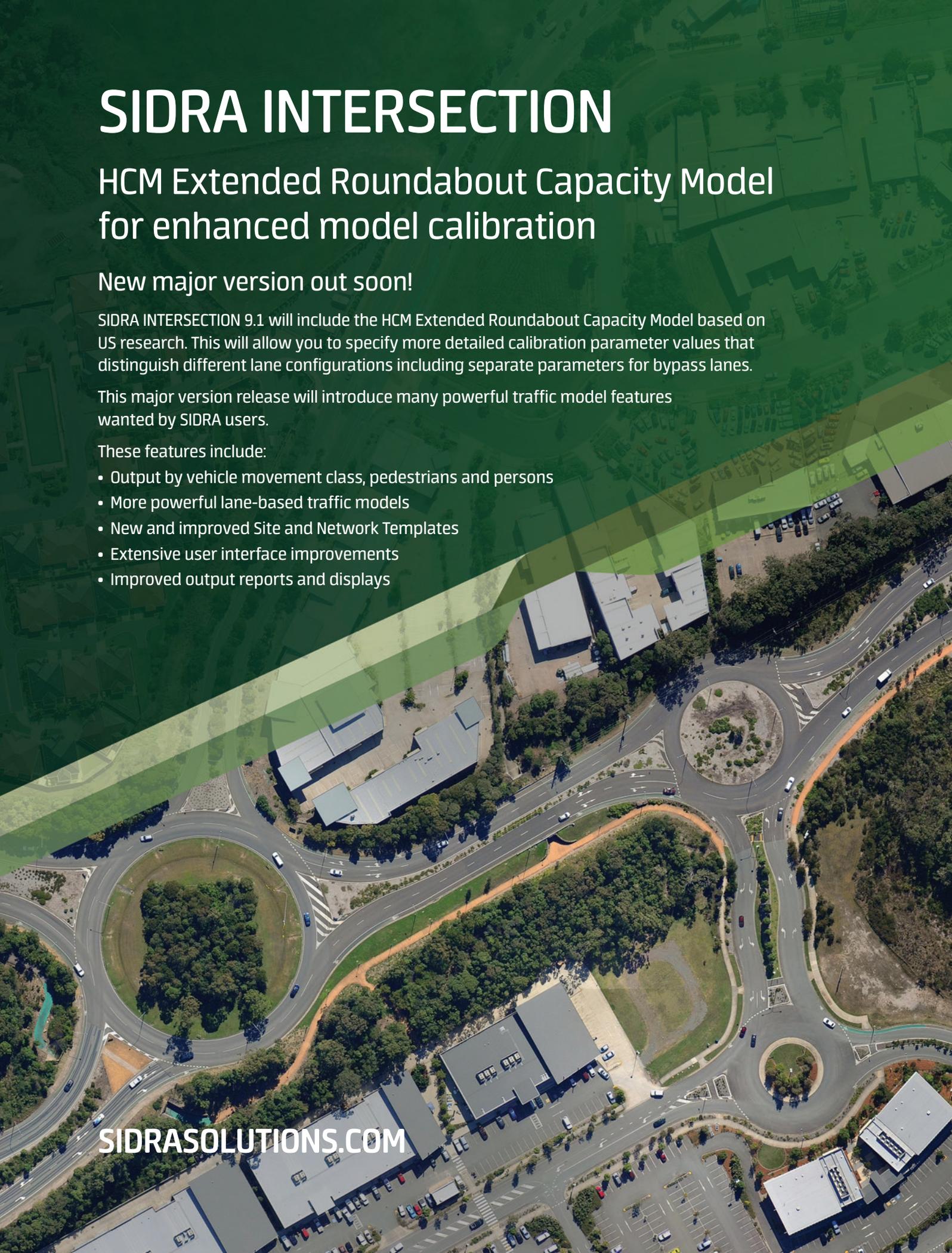
SIDRA INTERSECTION 9.1 will include the HCM Extended Roundabout Capacity Model based on US research. This will allow you to specify more detailed calibration parameter values that distinguish different lane configurations including separate parameters for bypass lanes.

This major version release will introduce many powerful traffic model features wanted by SIDRA users.

These features include:

- Output by vehicle movement class, pedestrians and persons
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Our Community

ITE describes itself as a community of transportation professionals that includes engineers, planners, consultants, educators, technologists, researchers, and more. The use of the word “community” is intentional and seeks to include all who work to improve mobility and safety for all transportation system users and help build smart and livable communities.

Merriam-Webster online defines community as either a unified body of individuals, a social state or condition, or society at large. A synonym is “neighborhood,” and words related to community include city, commune, hamlet, town, village, denizens, dwellers, inhabitants, residents, citizenry, culture, people, populace, public, and society.

I recently read a series of articles in *Forum* from Phi Kappa Phi that explored the importance of different perceptions and experiences that help make a community.* The subjects of these articles span a diverse array of communities, including small towns, schools, films, a remote tribal village, corporations, health care, and even the animal kingdom. All these communities have an established culture among their residents. They are everywhere and have specific characteristics that make them unique. A common thread among them is a desire to support every member, including newcomers, visitors, and outsiders.

What is your idea of a community? For me, I remember the unincorporated town of my youth. In summer, my sisters and I would ride our bikes to the swimming pool with nary a helmet or bike lane to be found (frightening). When we reached the pool, we would call home on the pay phone (ring once and hang up to retrieve our quarter) to let our parents know we had arrived safely. The teenage lifeguards and most of the adults knew us by name. We might leave and head to a friend's house (cutting through backyards since fences were rare), ride the bike trails we had made in the vacant wooded lots, and more. The family rule? Be home before dinner. If you were within earshot of the homestead, you knew to head home when you heard the ring of the bell hung by the back door. While we were free-range kids, we knew that folks were keeping an eye out for us and would step in if we needed help. We looked out for each other to help achieve the common goal of reaching adulthood intact.

Reflecting on the ITE community, I see two distinct components: the physical space, and those who inhabit or use that space. As transportation professionals, we are what Danny Heitman of Phi Kappa Phi describes as a network of stakeholders who support one another in a common enterprise. That enterprise is helping ensure that the physical community—the space in which we live, play, and work—is as safe, effective, and productive as possible so that the human community can thrive. The ability to accomplish that goal is strengthened when we listen to all voices. As Martha White, the granddaughter of E.B. White stated, “[F]or the most satisfying sense of community, it takes all kinds of people, with a wide diversity of backgrounds, choosing to act in sync.”

Do you have a community anecdote or memory to share? Reach out to me on the ITE e-Community or on Twitter: @BeverlyKuhn.

*Phi Kappa Phi, *Forum*, Winter 2021. https://bit.ly/PhiKappaPhi_Winter2021

Beverly Thompson Kuhn, Ph.D., P.E., PMP (F)
ITE International President



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Our Biggest Challenge

One of the most confounding and unexpected results of COVID-19 has been the dramatic increase in the loss of life on our nation's roadways. If you had told me at the start of the pandemic that travel would drop dramatically during this period, but fatalities would increase significantly, it would be hard to believe.

Unfortunately, that is exactly what happened. In 2019, prior to the pandemic, the National Safety Council estimated that there were 39,107 motor-vehicle deaths. That increased to 42,339 in 2020,

and again in 2021 to 46,020. Across this same period, the fatality rate increased from 1.20 fatalities per hundred million vehicle miles traveled in 2019, to 1.43 in 2021.

What to do? No single action or solution will reverse this trend. As a community of transportation professionals, this vexing problem requires all the tools in our toolbox. This is the essence of the Safe System Approach. ITE has championed this approach in the United States, which is built around the idea of creating a multifaceted safety net of safer users, safer vehicles, safer roads, safer speeds, and effective post-crash care.

A critical underpinning of the Safe System Approach is accepting the realities that humans will make mistakes, and that speed kills. This does not mean that we should tolerate the egregious driving behavior that's been on the rise. Enforcement is critical to addressing excessive speeds and aggressive driving. But, we also need to accept that the planning, design, and operational decisions we make every day can determine whether a mistake results in a minor crash, or the loss of life. We need to embrace design concepts that help lower speeds and increase survivability in the event of a crash. This proactive, systematic, human-centered philosophy is what distinguishes the Safe System Approach.

It was encouraging to see the U.S. Department of Transportation embrace the Safe System Approach in its recent release of their National Roadway Safety Strategy as outlined starting on page 23. This federal leadership, combined with increased financial resources, are critical for affecting change. The Infrastructure Investment and Jobs Act/Bipartisan Infrastructure Law provides funds and programs that support the advancement of the Safe System Approach. From increases across all categories of federal-aid funding, to increased emphasis on pedestrians and bicyclists as part of the Highway Safety Improvement Program, to significant discretionary funds targeted to local jurisdictions through the Safe Streets and Roadways for All Program, an unprecedented level of resources are available.

ITE is working hard to support our members through our active role in the Road to Zero Coalition, our leadership in advancing Vision Zero and the Safe System Approach, the efforts of Councils and Committees, and the wide array of professional development offerings and technical tools available through our website. Safety will be a key part of this year's ITE Annual Meeting in New Orleans, July 31-August 3, including our Plenary Panel session featuring safety leaders from the federal, state, and local levels.

While federal and national leadership are critical, the safety problem must be solved one street, one neighborhood, and one community at a time. We must do our part if we are going solve our biggest and most important transportation challenge. As always, reach out to me on the ITE e-Community or on Twitter: @JeffPaniatiITE.

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Executive Director and Chief Executive Officer

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Volume 92 | Issue 5

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PEOPLE IN THE PROFESSION

Obituaries

ITE recently learned of the passing of the following members. We recognize them for their contributions to ITE and the profession, and send condolences to their families.

Robert D. Caldwell (M) of Nelson Bay, New South Wales, Australia passed away in August 2018. He was a Life Member of ITE.

Edward B. Lieberman, P.E. (M) of Islandia, NY, USA passed away on October 25, 2018. He was a Life Member of ITE.

A. Cecil Jones, P.E. (F) of Birmingham, AL, USA passed away in December 2020. He was a Life Member of ITE.

John R. Jamieson, P.E. (M) of Bondi Junction, New South Wales, Australia passed away on December 3, 2020.

James W. Ford, P.E. (F) of Newtown, CT, USA passed away on January 28, 2022. He was a Life Member of ITE.

Keith E. Fenton, P.Eng. (M) of West Vancouver, British Columbia, Canada passed away on February 11, 2022. He was a Life Member of ITE.

Jose J. Parejo, P.E., PTOE (F) of Caguas, Puerto Rico passed away in March 2022. He was a Life Member of ITE.

Ronald F. Marks (M) of Harare, Zimbabwe passed away at an unknown date. He was a Life Member of ITE.



Harry Rice (M) of Grayson, GA, USA passed away on January 16, 2022. A long-standing active member in the Georgia Section of ITE, Harry

had a 40-year career in engineering and was dedicated to helping his clients. He earned a bachelor's in Civil Engineering from Auburn University and a master's in Civil Engineering and Transportation Planning from Georgia Tech, and most recently served as director of traffic engineering and transportation planning at Barge Design Solutions, Inc., where he joined in 2019. Harry enjoyed giving back to the community, including causes such as the Norcross Cooperative Ministries and Operation Christmas Child. [itej](#)

**THEIR
SAFETY.
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PRIORITY.**

May is National Bike Safety Month. Learn how we can work together to improve safety for cyclists and other vulnerable road users in your city or state.



iteris.com/Bike-Safety

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New Members

ITE welcomes the following new members who recently joined our community of transportation professionals.

Canada

Kanchan Maharaj, P.Eng.
Tamara Soltykevych
Jeff Hunt
Tariq Habib PMP
Jaime Thomas, P.Eng.
Sunny S. Petrujkic CEP
Ashley Donovan
Nirmalan Vijeyakumar
Tammy Lamey, P.Eng.
Heather Pugh, P.Eng.
Matthew Rushton, P.Eng.
Shane Robichaud, PTech
Aaron Jackart, PTech
Andrew Oliver, PTech
Corey M. White, P.Eng.
Roger Kierstead P.Eng.
Taylor Wood, E.I.T.
Charles Parks, PTech
Veronica Pelkey, P.Eng.
Katie Lawlor, P.Eng.
Sheldon M. Illsley, P.Eng.
Jeeshan Ahmed
Rylin Halpin
Gabriella Monagan
Muhammad Miah
Sophie Eckard
Samantha Lorraine Bennett, E.I.T., RSP1

Florida Puerto Rico

Subhadipto Poddar
Jeff Thompson
Ahsan Khalil
Peter Nguyen, E.I.

Global

Shane A. Turner
Parwez Jahmeerbacus
Moath Mohammad Alomari

Great Lakes

Jay Korros, P.E., PTOE
Alison Boan
James Jeninga
Nora Anderson, P.E., PTOE
Madison A. Carlson
Alan Moran
Wade Gambos
Gregory Sprungle
Duncan Schwensohn
Alejandro Chock
Tim Thomas
Nathynn James Mitchell

Mid-Colonial

Adison E. Zoretic, P.E., PTOE
Bala Akundi
Zakary T. Ruppert
Yi Zhao
Ben Hogan
Michelle Greenberg
Christopher C. Flad, P.E.
Daniel Piatt
Kevin Mullen
Dustin Chickis
Alex Fisher
Vivian Berra Figuereo, P.E.
Michelle Vrikkis, P.E.
Kimberly M. Tran, P.E.

Missouri Valley

Zachary Kane Abrams
Newman Abuissa
Eric J. Reinkemeyer P.E., PTOE
Jenifer Bates
Gary Kretlow
Craig Wood
Roxanne Seward
Bethany Waltersdorf

Brad Lauderman

Chad Lohrer

Mountain

Nick Foster, RSP1
Brian Bern P.E., PTOE
Kent Barnes
Daniel Thurgood
Travis Fast
Eric Tuin
Melanie Turner
Allison Dennett
Caryn Wascovich
Scott Newin
Joshua Barger
Scott Johnson

Northeastern

Kevin A. Williams
Michael Hattershield
Emily Bolt

Southern

Jason Richardson
Nate Prathaftakis
Jennifer Nelson
Shane McKenzie
Ricky Sizemore
Kenny Carrico
Parker Niebauer
Wannetta Mallette, PTP
John Tyler Mills
Kelli Roberts
Melvin Hill
Jeremy Borden, P.E.
Benjamin E. Nichols, P.E.
Ryan T. Roberts
Colin Alexander
Haresh Modi

Mukti Patel

Sunny Desai

Jeffery Jackson

Eric Baskerville

Christina Argo

Eliza Bigham

John Edward Callihan

Jayalakshmi Balaji, P.E.

Scott Thomson

David M. Coley

Texas

Jemal M. Ali
John Fletcher
Lauren Elizabeth Simcic
Kolter Jennings
Amber Christenson
Maysam Kiani, P.E.
Chiara Silvestri Dobrovolny

Western

David Kelly
Orooba Mohammed, P.E., PTOE
Domenic Lupo
Daniel Hendricks
Ellie Jensen
Michael Rooney
Matt Dorado
Eric Nordby
Yoshimitsu Goto
Rohit Ammanamanchi
Yuta Hagiwara
Asha Pai D'Souza
Zhongjie Chen
Jeffrey Suway
Adam Mueller

ITE NEWS

Community Corner

Community Corner highlights the efforts of ITE members to not only encourage transportation education among our youth but to improve the daily lives of people in their communities beyond transportation through acts of service.

Play in the Streets:
Síclovía Community Program

Síclovía is a free, bi-annual event, organized by the YMCA of Greater San Antonio in Texas, USA, that turns city streets into a safe place for exercise and play. The family-friendly event encourages residents and visitors to get out, get active, and explore their city through car-free streets. The YMCA accomplishes this by activating parks, bringing exposure to local businesses, and inviting community organizations. Participants can enjoy walking,



We want to hear from you!

Have you, your Section, or Chapter taken on a community project or provided assistance to a nonprofit organization? Large or small, we want to hear about it! Please send photos (300 dpi or higher) along with a write-up (no more than 300 words) to Pam Goodell for inclusion in a future issue of Community Corner.



ITE Talks Transportation Podcast



New from the Thought Leadership Series

U.S. Deputy Secretary of Transportation Polly Trottenberg – National Roadway Safety Strategy, Bipartisan Infrastructure Law, and More

U.S. Deputy Secretary of Transportation Polly Trottenberg joins the *ITE Talks Transportation* podcast to discuss the Department of Transportation's newly announced National Roadway Safety Strategy, which utilizes the Safe System Approach to achieve zero fatalities and serious injuries on roadways. She also shares the administration's plans and perspective on transportation-related goals for the Infrastructure and Investment Jobs Act, as well as how equitable outcomes are a major priority for implementing this historic legislation.



All episodes available at www.ite.org/podcast/ | Subscribe for free via iTunes at <http://apple.co/2hOUz8t>



biking, exercise classes, activities for youth, treats for their pets, food trucks, and more. The San Antonio Transportation Department was represented at the event and asked residents what they would like to see change in their neighborhoods to make them more accessible for walking, biking, rolling, and other forms of non-motorized transportation. Since the event began in 2011, more than 1 million people have participated! **itej**



Go Green with *ITE Journal*



Not in the office to get your mail, or would you like to be more “green?” You can choose to stop the mailed delivery of *ITE Journal* by completing a quick online survey at <http://bit.ly/ITEJGoGreen>. You will still get the emailed version of *ITE Journal* that goes out on the first or second of each month and have full access to the digital edition. **itej**

A Unique Way to Network through the ITE Mentoring Program



Getting involved with professional organizations exposed me to people from all levels of experience in the transportation field ... I had always wondered how could I learn more about their inspirations and get guidance on how to be impactful to my society through transportation. When I found out about the mentoring program, I did not shy away from reaching out to different individuals who inspire me.

A mentor is someone you can talk to about your goals and they can help advise you on several steps towards and during your career. I find the best way to get a mentor is reaching out to people who are doing the things you do or aspire to do. People in the ITE community are always willing to share their experiences and assist students in transitioning to their dream careers. The mentoring program through the ITE community is one great way to reach out to mentors. As a student, I am always looking to learn beyond what we are taught in school. I have learned so much about leadership, communication, professional etiquette, and other soft skills from my mentors. I encourage my fellow students to take advantage of the program.

—Cecilia Kadeha

Read Cecilia's entire blog here: www.ite.org/professional-and-career-development/mentoring/

Learn from the Experience of Others & Share Your Experience with Others



Get involved: www.ite.org/professional-and-career-development/mentoring/

CONGRATULATIONS TO THE NEWEST TPCB CERTIFICANTS!



The Transportation Professional Certification Board, Inc. (TPCB) and ITE congratulate the following 60 new Professional Traffic Operations Engineers (PTOE), 13 Professional Transportation Planners (PTPs), 76 Road Safety Professionals–Level 1 (RSP1s), and 15 Road Safety Professionals–Level 2 (RSP2s, Behavioral or Infra-

structure) who passed certification exams in the February 2022 exam period. To learn more about these certifications and how to apply, visit www.tpcb.org. The next application deadline for the October 2022 exam period is July 20, 2022.

PTOE

Mohammad Badrul Ahsan	David Lopez
Bharadwaj Bommanayakanahalli	Kurtis P. Mayne
Arisse M. Caba	Brandon McCloskey
Jason A. Carder	Garret Menard
Daniel Carrera	Gautam Mistry
Julia Colman	Scott Moeller
Kevin Reed Crider	Orooba Mohammed
Hidi Marie Criswell	Ragab M. Mousa
Hamid Dehghan Niri	Shannon Elizabeth Ness
Caryl J. DeVries	Boniface M. Njoroge
Patrick Downey	Kristofor David Norberg
Claudio Alberto Figueroa Bueno	Virginia Roach O'Connor
Melissa M. Gende	Ameena Salim Padiath
Xiaocen Gui	Jaykrushna R. Patel
Robert Halcomb	Milan Patel
Zachary Handy	Nikesh S. Patel
David Hastings	Lasaro L. Picasso
Tyler Austin Houston	Bryan Proska
Jesus Juarez	Nathan Rahaim
Anup Kafle	Erin Cope Ralovo
Aasish Khadka	Amol Ranade
Easa Khan	Nikhil Ravindra Sarwate
William Kresic	Michael Keith Scavo
Beverly Thompson Kuhn	Adam D. Selver
Michael Larson	Douglas Philip Smith
Hunter W. Lemley	Kevin M. Solli
Adam J. Leslie	Deepak Somarajan
Brent David Littlejohn	Liming Sun
Jessica Lizza	Bret Allen Taylor
Redeat Kibret Lodamo	Ellen Regina Webster



PTP

Lester E. Adkins, III	Justin MacDonald
Robert Monroe Browning, III	Kimberly McDaniel
Isidro Delgado	Corbin Kyle Peterson
Stephen Lawrence Edwards	Grady Padriac Vaughan
Rodney Gomez	Jiangbo Yu
Trevor Jenkins	Daniel J. Zeggelaar
Mary Karlsson	



RSP1

Laurell L. Adams
 Timothy Adams
 Olanrewaju O. Akindipe
 Ravi Arora
 Tawfik Ashour
 Nancy Badeau
 Kelly Becker
 Samantha Lorraine Bennett
 Kush Hitesh Bhagat
 Garrett S. Bolella
 Gerald T. Bollinger
 Shannon Bonilla
 Challa D. Bonja
 Regina Page Bowman
 Steven Bronzell
 Paul L. Burton
 William Burton
 Anagha Chethalamana Krishnan
 Wai Tsun Cheung
 PilJin Chun
 Richard C. Coakley
 John Joshua Coburn
 Dane S. Coke
 Sevim Coskun
 David W. Craft
 Patra Crenshaw
 Shengfeng Deng
 Ehsan Doustmohammadi
 Ashley Dowell
 Stephen Lawrence Edwards
 Laurel Eileen Alissa Flanagan
 Tahir Hameed
 Diane C. Hammonds
 John Jeffrey Hess
 Alexandra C. Jahnle
 Colleen Jaltuch
 John Clark Kennedy
 Hussain A. Khan
 Suhasini Kilim
 Paul E. Kornyoh
 Xuewen Le
 Corrinne Lochtefeld
 Graham E. Malone
 Emmanuel Marin
 Taylor Christopher Marino
 Amr Ali Shalkamy Mohamed
 Martha L. Moore
 Austin W. Obenauf
 Robert Paquin

Rahul Pasawala
 Amal Pazhanilam Chacko
 Joshua Peterman
 Kari Pucker
 Christopher M. Puglisi
 Brett Rice
 Matthew D. Ridgway
 Dylan Ridsdale
 Geoffrey M. Rubendall
 Derek Salomonsen
 David B. Samba
 Gholamreza Sayyadi
 Setul Pareshbhai Shah
 Jeffrey B. Shaw
 Dustin J. Skilbred
 Clayton Smith
 Jesse E. Smith
 Jerod Stanley
 Pradeep Thummala
 Gregory Dale Trahan
 Cole G. Villalobos
 Geoffrey K. Warr
 Edith Wong
 Hong Ming Xia

RSP1 – Saudi Arabia

Abdullah Rashed Aldausry
 Ahmed Ali Ahmed AlMohammed
 Omar Awadh Alshaban

RSP2 Behavioral

Paige Sophia Martz

RSP2 Infrastructure

Challa D. Bonja
 Austin P. Chapman
 Richard C. Coakley
 Mario Dipola
 Emmeth D. Duran
 Nora Hallett
 Vishal S. Kakkad
 Tyson W. King
 Francisco R. Klein
 Virginia Roach O'Connor
 Nathan Michael Shay
 Christian R. Sternke
 Ivana Vladislavljevic
 Darlene Danehy Yellowhair



Getting to Know ITE Headquarters Staff

We recently hired two new professionals to join the team at ITE headquarters. Read a little more about them below and get to know ITE's newest staff members.



Adam Martin, CMP, DES

ITE Senior Director of Meetings

ITE JOURNAL: Tell us more about your professional history as a meeting planner. What drew you to the field, and what were some of your positions prior to ITE?

MARTIN: As some meeting planners will tell you, I fell into this role by accident. I participated in my first behind the scenes role at an association event in New York City in 2006. There, I helped with registration and interacted with members for the first time. The experience of being a part of something bigger than myself solidified my desire to be in the business events industry. Since then, I have strategized events for associations related to public transportation, federal credit unions, and digital journalism. I even spent a few years supporting corporate members at one of those associations.

ITEJ: The big Annual Meeting in New Orleans is coming up. What are you most enjoying about the planning process and looking forward to about the meeting?

MARTIN: I have always enjoyed the “meeting of the minds” approach to planning a conference and the ITE Annual Meeting will be no different. Everyone on the team brings a skillset to the table and puts their energy into creating a wonderful experience for attendees. I’m fortunate to help mold that into something special, with the hopes that folks return and, perhaps, bring some colleagues with them! I’m looking forward to being back in a hotel planning a conference. It has been a long and arduous 3 years for most of us and a return to events, to me, is a return to normalcy that I took for granted in 2019. I want to see people get reacquainted after being apart for so long. That is one of the things that drive me to do this work.

ITEJ: Outside of work, what are some of your passions/hobbies that you like to be involved in?

MARTIN: I really enjoy my DC sports teams (except the football one). As a native of Washington, DC, USA, professional sports are ingrained in the local culture, and they’ve been a favorite pastime for me since I was a child. The photo with the tall gentleman is Gheorghe Muresan, who played several seasons with the Washington Wizards basketball team. At the time, he was the tallest active player in the NBA at 7 feet, 7 inches tall. I’m also fond of catching the next best program on streaming platforms—I love movies, music, and the occasional read. Quality time with my family and friends is my deepest passion. As Guy Lombardo says, “Enjoy yourself, it’s later than you think.”



**Luana Broshears,
Ph.D., P.E., PTOE, RSP2I (M)**

ITE Planning and Safety Director

ITE JOURNAL: How did you first get involved in the transportation field and what do you enjoy about being in the profession? Also, tell us about some of your previous positions prior to ITE.

BROSHEARS: When I was in high school, my family moved to a remote area in Brazil for my dad’s work (he was in the Brazilian Army). A new road had just started being built to connect two existing communities in the area. With the road, a new gas station was built, then a new convenience store, then new houses—entire communities were formed. I thought it was amazing how a road brought life to the area, and I knew I wanted to get involved in the transportation field. I went on to get my degree in Civil Engineering and attended graduate school with a focus in transportation. Before joining ITE, I have worked as researcher, an adjunct instructor, a consultant (traffic engineer/project manager), and as a traffic/safety engineer at a state and at a city. What I enjoy the most about being in the profession is how we can save lives by improving safety for all road users.

ITEJ: Why did you decide to pursue your Ph.D. as well as your certifications? What value did you see in them?

BROSHEARS: Civil Engineering is so broad—I wanted to learn more and specialize in transportation after graduating. I graduated with my bachelor’s degree in Brazil and moved to the United States to attend graduate school. When I was about to finish my master’s thesis, I was offered the opportunity to work on a traffic safety project. I then decided to pursue my Ph.D. so I could better understand and make contributions in the safety field. For the certifications, the motivation was similar. I always wanted to stay informed about the most recent trends and developments in transportation. Certifications bring learning and networking opportunities, since the required professional development hours motivate me to attend conferences, workshops, seminars, and other technical events. Also, having a professional certification is a way to show commitment to the profession, as well as knowledge and skills, which can be helpful in achieving career goals.

ITEJ: Outside of work, what are some of your passions/hobbies that you like to be involved in?

BROSHEARS: When I am not at work, you will probably see me cheering for Brazil soccer or Auburn University. If not there, I will be at a barre studio attending or teaching a class. I have been part of the barre community since 2015 and an instructor since 2020. Barre brings empowerment, positivity, and a time for me to unplug. My husband and I also love traveling and getting to know different cultures (this photo is from a trip we decided to go last minute after seeing a good deal, we spent a weekend in Greece and it was awesome). **itej**

A photograph of a woman with long brown hair and glasses, wearing a white blazer, sitting at a desk. She is looking at a laptop screen and smiling. There is a white coffee cup on the desk in front of her. The background is a bright, modern office setting.

Virtual Career Fair for Engineering Professionals

Online Recruiting Event
Where Engineering Professionals
Meet Employers Nationwide

CAREER CENTER

The logo for ITE (Institution of Transportation Engineers) is located in the bottom left corner of the advertisement. It features the word "ite" in a stylized, lowercase font with a horizontal line through the letters. Below it, the text "A Community of Transportation Professionals" is written in a smaller font.

www.ite.org/jobs

May 18, 2022
11:00 a.m.—2:00 p.m. ET

Co-Hosted by ITE
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- Save time, travel, and staff required to participate in all day, on-site events
- Efficiently involve subject matter experts and other decision-makers in the recruiting process
- Eliminate transportation and overhead costs associated with booth design and production

Safety Scholar



Priyanka Alluri, Ph.D., P.E., RSP2BI (M)

Associate Professor,
Florida International University
Miami, FL, USA

Education

Ph.D., Civil Engineering
Master of Science, Civil Engineering
Clemson University
Bachelor of Science, Civil Engineering
Osmania University, India

Professional Involvement

Member, Committee on Pedestrians (ACH10),
Transportation Research Board
American Society of Civil Engineers (ASCE)
Young Member, ASCE Transportation
Safety Committee

ITE Involvement

Faculty Advisor for the Florida International
University ITE Student Chapter
Vice Chair, ITE Safety Council
Member, Professional Development Committee
Member, ITE Coordinating Council Rebrand
Task Force
Mentor, *Leadership* ITE Class of 2021

Honors and Awards

Leadership ITE Alumna – Class of 2020
ITE District Rising Star – Florida Puerto Rico
District, 2020

Did You Know?

Priyanka co-authored the book
*Connected and Automated Vehicles:
Developing Policies, Designing Programs,
and Deploying Projects - From Policy to Practice.*

ITE JOURNAL: How has the teaching of safety evolved over the past 10 years you've been in academics? What are some of the newest and most effective approaches to addressing transportation safety that you convey to your students?

ALLURI: Traffic safety, just like any other field, has evolved over the last few years. As I reflect on my decade-long academic career, I have personally seen the paradigm shift in thought and how we view and perceive highway safety. We have slowly and systematically moved from being reactive to proactive. We no longer wait for crashes to happen; we now focus on near-misses, traffic conflicts, and predictive analytics. We have moved from blaming the driver to accepting that humans make mistakes. We have begun to truly believe in the Safe System Approach and embrace Vision Zero. We have moved from being defensive about our roadway designs to designing forgiving systems. We have begun to acknowledge the role emerging technologies play in improving safety. We have moved from putting cars at the center of our design to being inclusive of other modes. We have begun to appreciate interdisciplinary perspectives in achieving a safe, efficient, sustainable, and equitable transportation system.

ITEJ: You co-authored a book with Dr. Raj Ponnaluri, P.E., PTOE (M) on connected and automated vehicles (CAV). How do you see the impact of these vehicles shaping safety and the transportation system in the next decade?

ALLURI: I am very excited about the future of our profession, especially the opportunities to improve safety by reducing the frequency and severity of traffic crashes. I believe that we are at the cusp of the next big thing in transportation, particularly in mitigating crashes, improving mobility, driving economic development, and enhancing environmental quality. While the last few decades have seen an increased focus on the traditional transportation engineering practices and safety improvements, I believe that the emerging technologies and CAVs have the potential to provide tangible outcomes, especially with respect to *Safety, Mobility, Environment, and Economic Development (SMEEEd)*. These technological advancements have the potential to equip various road users with the means to help mitigate mobility and safety concerns. More than ever, there is now a need to believe in and explore the deployment of emerging technologies and CAV applications. Now is the time to move in full gear; a safer and more resilient transportation system is closer than we think.



ITEJ: You've achieved the Road Safety Professional (RSP) certification in both behavioral and infrastructure areas. Why was obtaining these certifications important to you? How do you feel it will advance your career?

ALLURI: I commend ITE and the Transportation Professional Certification Board (TPCB) for taking such a significant step in recognizing road safety as a profession. The RSP certification, especially Level 2, recognizes the expertise in safety from two broad domains, engineering and behavior. I am honored to earn my RSP2 certification in both behavioral and infrastructure areas. I believe that these certifications helped me ensure that I maintain a high level of knowledge and skill in highway safety. I want to lead by example. As a university faculty member

who teaches a graduate-level safety course, I believe that this certification has kept my professional skills updated, has improved my teaching quality, and raised my self-confidence. As a researcher who conducts research in highway safety, I trust that my credentials are a subtle reminder of my competence and my willingness to continue to expand my knowledge on safety. As a Vice Chair of the ITE Safety Council, I feel that my RSP2BI certification helps me advocate for this certification and practice what I preach. To me, it's a small personal accomplishment.

ITEJ: You are a *Leadership* ITE alumna, a District Rising Star, and are currently serving as Vice Chair of the ITE Safety Council. What do you enjoy about being a volunteer leader within ITE, and how has being involved in the organization shaped your career so far?

ALLURI: I was drawn to ITE since I was a graduate student at Clemson University. My involvement with ITE has only continued to grow since then. As Paulo Coelho stated, “... And, when you want something, all the universe conspires in helping you to achieve it...” For me, becoming a part of the ITE family did not happen by chance or without any support. I have found several passionate mentors along the way who helped me find my place in ITE. When I felt lost, there was always someone who showed me the path. I have begun to just trust where I am. As I reflect on my journey thus far, I have realized that ITE has given me so much. It has helped me become a better teacher, mentor, professional, colleague, and leader. I sincerely believe that it's time for me to give back, and there is no better way than to serve ITE in whatever capacity I can. **itej**



Fun Fact

Priyanka recently became obsessed with fitness, and recently started running. She already has a couple of half marathons under her belt –and is looking forward to running the 2023 Miami Marathon.

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North Central Section of ITE—Supporting Students and Younger Members



The North Central Section of ITE (NCITE), part of the Great Lakes District, understands the value and importance of recruiting and retaining younger members for current and future health of the organization. The Section's Younger Member Committee (YMC) is incredibly active. The purpose of the YMC is to connect young professionals in the diverse field of transportation and create opportunities to build relationships and grow professionally. These opportunities are provided through social and educational events held throughout the year. This committee additionally seeks to fulfill the following goals:

- Promote engagement in the NCITE mentorship program, which aims to assist younger members as they progress through their careers.
- Connect with university students and build relationships with individuals who are potential future members of NCITE.
- Promote engagement in the NCITE Technical Committees to encourage professional development and provide opportunities for younger members to share their ideas.
- Coordinate with the NCITE Membership Committee to promote membership in NCITE and track YMC membership.
- The YMC began a Professional Engineer Exam Study group in 2019 that continues to be active today.

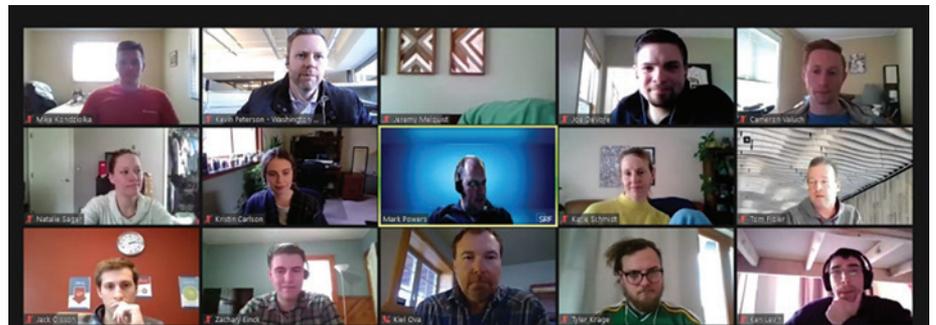
NCITE also supported the Duluth Transportation Student Organization by hosting a Section Meeting at the University of Minnesota Duluth.

Student Chapter activity is also helping to engage student members and recruit new members from this population to the Section. NCITE has three Student Outreach Coordinators. Their responsibilities include managing the student scholarship programs, attending student career fair events, participating in the Great Lakes District Student Activities Committee, and serving as a liaison for ITE Student Chapter groups to coordinate funding opportunities, participation of such groups in District annual meetings, and their interaction with ITE headquarters.

NCITE, by policy, supports student attendance at Section events by offering reduced registration costs. They typically plan to have at least one of their Section meetings hosted by the University of Minnesota's Interdisciplinary Transportation Student Organization (ITSO). This provides students a better opportunity to participate in the meeting and learn about NCITE. To encourage students to become involved in ITE, NCITE annually awards four scholarships valued up to \$1,000, and two of those scholarships are dedicated to a student who completed a transportation-related internship.



NCITE Student Outreach Coordinators award a Student Scholarship at the 2021 NCITE Annual Meeting.



Virtual NCITE Section Meeting.

Technical Committees are a unique feature of NCITE and a point of pride for the Section. They allow transportation specialists to bring up-to-the-minute information to their members through committee meetings. Below is a summary of the committees and their roles within NCITE:

Technical Committee	Role	Chair(s)
Geometric Design	Establishes a forum for NCITE members to share, discuss, and explore the traffic operations and safety effects of roadway design elements.	Vacant
Emerging Technologies in Transportation (ETT)	Re-branded in 2021 and formerly known as the ITS Committee, the ETT Committee provides a forum for participants to address technical issues related to developing technology in the industry (ITS, CAV, Big Data, etc.) and to share lessons learned. This Committee works jointly with ITS-MN.	Jake Eisinger (M), Zach Parsons
Intersection Traffic Control	A forum for NCITE members to discuss issues related to traffic signal design and operation.	Benjamin Brassler (M)
Planning Methods & Applications	The purpose of this committee is to discuss and author NCITE standards of practice relating to issues in the transportation planning field.	Krista Anderson, Charles Gorugantula
Complete Streets and Safety (CSS)	A forum for NCITE members to discuss issues related to improving safety and mobility for everyone, with an emphasis on vulnerable road users (VRUs), transit riders, and multimodal transportation systems.	Hannah Johnson (M), Sarah Irmien (M)
Simulation & Capacity Analysis (SimCap)	A forum for analysis methods with the intention of developing best practices for traffic modeling in the region.	Michael Kondziolka, P.E., PTOE (M), Kelsey Retherford (M)
Traffic Operations and Maintenance	A forum for operations and maintenance staff to discuss best practices, tips, and ideas.	Greg Boche

To help fund the Section, NCITE has set up a robust sponsorship program. The Section provides three different advertising packages for their agency/vendor partners. The Bronze package provides the specific sponsor a business card newsletter ad, a company spotlight in the Annual Meeting Presentation, a sponsor logo on webpage with a link to the company website, and one free job posting. The Silver package provides the benefits of the Bronze package but with the addition of a quarterly newsletter article. The Gold package provides the benefits of the Silver package with the addition of a project picture on the NCITE website. The Section's advertising packages are very popular and sell out annually.

When COVID hit, NCITE was extremely well positioned for the switch from in-person to virtual Section meetings, as the group was already live-streaming most events. The Section has found that the switch to being entirely virtual has opened their meetings up to a broader audience, dramatically increasing attendance. To integrate networking opportunities into their virtual meetings, NCITE incorporated 5-minute breakout sessions for introductions and to answer a "question of the day."



North Central Section of ITE

Great Lakes District

Membership

Approximately 500 members

Board Members

President – **Natalie J. Sager, P.E. (M)**
 Vice President – **Jeremy M. Melquist, P.E., PTOE (M)**
 Secretary – **Philip N. Kulis, PTOE, RSP2I (M)**
 Treasurer – **Niklas H. Costello, P.E. (M)**
 Past President – **Kevin M. Peterson, P.E. (M)**
 Director – **KC Atkins, P.E. (M)**
 Director – **Justin D. Sebens, P.E. (M)**
 District Representative – **Nicholas J. Erpelding, P.E., PTOE (M)**

Committee Leadership

Advertising – **Nick Grage, P.E., PTOE, RSP1 (M)**
 Newsletter – **Courtney Falero (M)**
 Website – **Jonah Finkelstein**
 Social Media – **Tyler Krage, P.E., PTOE (M)**
 Technology – **Jordan Schwarze, P.E., RSP1 (M)**
 Membership – **Jack Olsson, P.E. (M)**
 Student Outreach – **Ann Stewart (M), Chad Jorgenson, P.E., PTOE (M), Eden Rogers (M)**
 MUTCD Liaison – **Joe Gustafson, P.E., PTOE (M)**
 Professional Development – **Joe Devore, P.E., PTOE, RSP2I (M)**
 Younger Member – **Cameron Valuch (M), Michael Odell (M)**

Special Awards and Scholarships

NCITE annually awards the following: Transportation Professional of the Year, Young Transportation Professional of the Year, and the Project Transportation Achievement Award. In addition, the Section gives out four Student Scholarships.

Student Chapters

NCITE has four Student Chapters: Interdisciplinary Transportation Student Organization (University of Minnesota Student Chapter), University of Minnesota Duluth, North Dakota State University, and South Dakota State University.



Today's Students to Tomorrow's Transportation Engineers.



INTERDISCIPLINARY TRANSPORTATION STUDENT ORGANIZATION



Since COVID-19, the Section's first in-person meetings were the 2021 Summer Social at Walker Art Center and 2021 Annual Meeting at Park Tavern, both attended by approximately 55 people. Some of the Section's committees have been meeting in-person as well. NCITE hasn't had an in-person Section meeting since early 2020; however, NCITE planned a gathering for April 2022, hoping to attract members with a hot breakfast at a local restaurant. A virtual option will be provided for all in-person Section meetings to continue to allow flexibility for members.

With an active Younger Member Committee, strong student recruitment and retention efforts, a robust sponsorship program, and plans to continue to offer hybrid event options, NCITE is poised for continued success as they come back from the interruptions of the COVID-19 pandemic. [itej](#)



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Receive the Emails You Want from ITE!

With the work-from-home environment created by the pandemic and recent malware incursions, many organizations, including ITE, and email providers have increased security and imposed stronger filters. In some cases, this means you may no longer be receiving ITE emails outside of ITE's e-Community. As a result, you may be missing information and updates from ITE. These emails focus on professional development opportunities, new technical resources, upcoming meetings and conferences, and other critical information that helps you stay engaged with ITE and make the most of your membership.

Are You Getting Our Emails? If our emails are not showing up in your inbox, the first step is to check your junk/spam folders. You can search on the email info@ite.org. You can select on one of the emails and indicate it is not junk. Moving forward these emails should appear in your inbox.

If you've checked your inbox and spam/junk mail folders and do not see any email from ITE, it could be that security features are preventing our emails getting through to you. To receive the ITE emails, you can add info@ite.org to your contacts or work with your email provider or with your IT team to whitelist both the email info@ite.org and the IP address 205.201.41.40.

Now That You're Getting Our Emails, How Do You Only Receive What Is of Most Interest to You? We get it. Our job is to make sure we inform our members. But we know that maybe not everything we send is of interest or relevant to you. We have given you two ways to indicate your preferences. (Note: there are certain emails, including dues renewal and critical emails about business operations, that you will receive regardless of your preferences.)

1. Change your preferences in your profile:

- Go to www.ite.org
- Click on Connect (menu item to the far right)
- Click on My Profile
- Log in with your member credentials (*if you need assistance with your credentials, please email membership@ite.org. Do not create a new account.*)
- Select on the Communication Opt-Out
- Follow the instructions to select the type of communications you would like to receive

2. Use the survey at <https://bit.ly/ITEemailsurvey> to indicate the type of communications you would like to receive.

How Do e-Community Emails Differ from ITE-generated Emails? If you are part of any e-Community, including All Member Forum, you may receive emails when someone posts to that e-Community. You are able to choose if you receive those emails and when you receive them. Please follow the instructions below:

1. Log into ITE e-Community (if you aren't already in e-Community while reading this message)
2. In the upper right-hand corner, click on the downward-facing triangle
3. Select profile
4. Click on My Communities and select Communities from the drop-down menu
5. Select the Community
6. Click settings (this is to the right of the name of the group)
7. There will be a pop-up that includes email notifications and how you are receiving notifications from that group. The options are real-time (when posts are made), daily digest (emails once a day with all posts to the community), plain text, or no email.
8. Click on your preferred notification mode
9. You will need to do this for each e-Community you have joined

If you have any questions, please reach out to ITE's Membership Team at membership@ite.org.



ITE Partners with McTrans Center

ITE has established a new partnership with the McTrans Center at the University of Florida Transportation Institute (UFTI). The McTrans Center (UFTI) is a unique organization of university and industry partners working to further the goals of safety and reliability in the transportation system through training and education in transportation technology. Its primary mission is to educate professionals in the use of the Highway Capacity Software (HCS) tool.

The ITE and McTrans partnership provides ITE members access to selected McTrans offerings at a 20 percent discount by registering through ITE.

Transportation Equity Certification

The Transportation Equity (TE) Certification training provided by McTrans Center helps transportation professionals, policymakers, and project managers gain an insightful perspective of equity implications, tools to identify implications of inequities and uplift equity, methods to design an inclusive engagement process to collaborate with communities overburdened with health and social inequities, and strategies to mitigate potential adverse impacts.

Transportation Equity III: Transit Planning for Equity Outcomes

Session 2: May 3, 2022 | 1:00 pm - 5:30 p.m. ET

Transportation Equity I: Equitable Mobility and Effective Engagement

June 15-16, 2022 | 1:00 – 5:30 p.m. EDT

For more information on each of the certification applicable courses, please visit the ITE Learning Hub to learn more and register.

Webinars

Signal Timing Corridor Management – Part 1 (Traditional Synchronization)

Thursday, May 12 | 2:00 – 3:30 p.m. ET **1.5 PDHs***

Led by the ITE Traffic Engineering Council

Strengthening Communication between Consultants and Clients

Tuesday, May 17 | 2:00 – 3:00 p.m. ET **1.0 PDHs***

Led by the ITE Consultants Council

Reminder of New ITE PDH Certificate Policy:

All ITE individual live webinars are free to members to attend. Professional development hours (PDHs) are not included in registration; there will continue to be a \$20 processing fee for those seeking professional development hours. Please see the PDH Credit Certificate section on each webinar course page for more information on receiving PDHs.

On-Demand Webinars

COVID Impacts in Australia/New Zealand

Last Day to Register: May 10

Digital Badge Program - Advancing STEM Education Through Transportation Studies (ASETTS)

Last Day to Register: May 31

Roundabout Education and Enforcement of Operations in the United States

Last Day to Register: June 7

The Relationship between Freight Movements and Land Use in Urban Areas

Last Day to Register: June 12

Vehicle Miles Traveled As a Measure of Sustainability

Last Day to Register: June 14



National Roadway Safety Strategy: USDOT Adopts the Safe System Approach

In January of this year, the U.S. Department of Transportation (USDOT) announced a major strategy to take meaningful steps over the next few years to reduce the number of fatalities and serious injuries on the America's roadways and move toward achieving the goal of zero roadway fatalities and serious injuries on U.S. road networks by 2050.

The National Roadway Safety Strategy (NRSS) is a department-wide adoption of the Safe System Approach that identifies significant actions that USDOT will undertake, working with stakeholders across the country, to achieve the department's vision for roadway safety.

In this article, we provide an overview of the Safe System Approach concepts, the key elements of the USDOT's NRSS, and highlight the resources available from ITE to support the implementation of the Safe System Approach at the state and local level.

Safe System Approach Concepts

Traditionally, responsibility has been placed largely on the user for driving safely (or walking, or biking, etc.), unimpaired and without distractions. The Safe System Approach as shown in Figure 1 recognizes that creating a safe environment requires safer users, safer vehicles, safer roadways, safer speeds, and effective post-crash care.

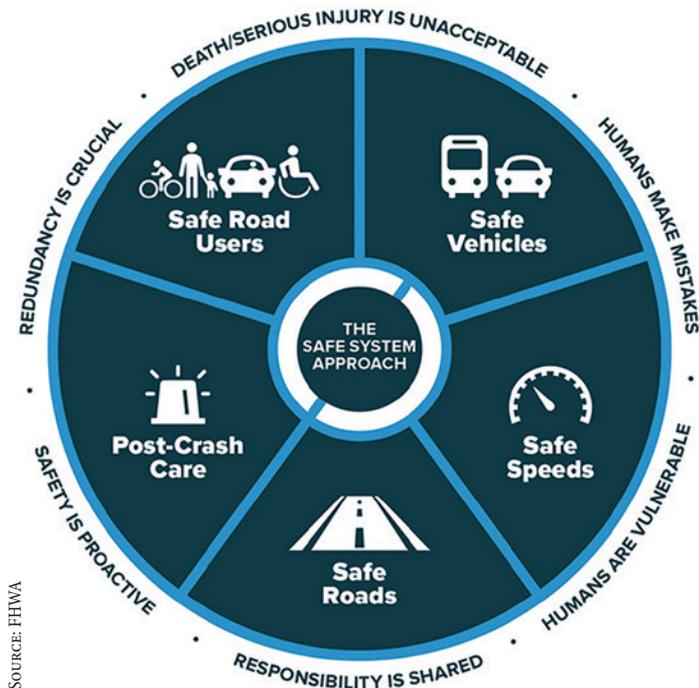


Figure 1. The Safe System Approach principles and elements.

Using a Safe System Approach, specific roadway and vehicle design techniques can be used to help prevent crashes, or reduce the severity of injuries should a crash occur. Embracing a Safe System Approach does not mean absolving the user of responsibility. Rather, it recognizes the important role that the planning, design, and operation of the infrastructure can play. Two key Vision Zero concepts underpin the application of the Safe System framework by infrastructure owners and operators:

- **Reducing Human Error.** Humans are fallible and will make errors. Safe System designs anticipate and reduce the likelihood of errors.
- **Accommodating Human Injury Tolerance.** The human body has a limited ability to absorb energy. Safe System designs reduce or eliminate opportunities for crashes resulting in forces beyond human endurance.

The Safe System Approach takes these two concepts and uses them as a basis for providing practitioners with a methodology and tools for applying them in practice.

Summary of the National Roadway Safety Strategy

For the purposes of this article, much of the language below and the graphics are taken directly or indirectly from the NRSS document, available on the USDOT website at www.transportation.gov/NRSS.

At the heart of the NRSS is a vision and goal for the safety of the nation's roadways, adoption of the Safe System Approach principles to guide safety actions, and identification of critical and significant actions USDOT will take in pursuit of five core objectives: Safer People, Safer Roads, Safer Vehicles, Safer Speeds, and Post-Crash Care. The NRSS highlights new priority actions that target what USDOT sees as the most significant and urgent problems, as well as highlights notable changes to existing practices and approaches. USDOT notes in its strategy that the recent passage of the Infrastructure Investment and Jobs Act, or Bipartisan Infrastructure Law, will support the funding, program, and policy provisions described in the NRSS safety actions.

Safe System Approach

In the NRSS, USDOT adopts the Safe System Approach as the guiding paradigm to address roadway safety. The Safe System Approach and this roadway safety policy are inclusive of all road users in all communities and the many people who use roads and streets outside of motor vehicles. Just as the needs of people change and how they move evolves over time, how the department implements the Safe System Approach will be iterative and will adapt to how people use the nation's highways, roads, and streets. The department will work to ensure the goal of reaching zero roadway fatalities and the principles of an integrated Safe System Approach are part of the implementation of all USDOT program activities that affect the nation's roadways.

Opportunities to Simultaneously Address Safety, Equity, and Climate

Safety is and will always be USDOT's top priority. Roadway safety is also a foundational prerequisite to the department's success in addressing two other major priorities: equity and climate.

Equity: To achieve zero roadway fatalities and a transportation system that is safe for all users, all actors in our transportation system must acknowledge and address historic and ongoing inequities. Under the Safe System Approach, efforts to make our roads safer should affirmatively improve equity outcomes. The department will advance equity as an instrumental component of transportation safety and convene key stakeholders—government at all levels, law enforcement, advocacy, community organizations, and the general public—to develop both a better understanding of the intersection of equity and roadway safety, and a comprehensive

approach to incorporating equity into all of the Department's efforts to achieve zero roadway fatalities and serious injuries.

Climate Change and Safety: As climate change continues to reshape our environment, its future effects on roadway safety will need to be taken into account. The climate, health, and other co-benefits of safety improvements on our roadways and in the surrounding environment are substantial, and further support the benefits of a focused roadway safety effort. Improved safety on our roadways is also needed to support one critical component of strategies to achieve transportation greenhouse gas reductions goals: increased use of transit, walking, rolling, and riding. Yet people walking and biking suffer disproportionately from serious injuries and fatalities when a crash occurs compared to people in vehicles. The climate, health, and other co-benefits of safety improvements on our roadways and in the surrounding environment are substantial, and further support the benefits of a focused roadway safety effort.

National Roadway Safety Strategy Core Objectives

In the NRSS, the five core objectives—Safer People, Safer Roads, Safer Vehicles, Safer Speeds, and Post-Crash Care—are each accompanied by a set of key departmental actions that will help USDOT meet the safety goals. These objectives can be viewed on USDOT's website at the links below.

Safer People

The safety of people is USDOT's core mission. Enabling people to be safer includes actions to encourage safer behaviors among the driving public, commercial drivers, and all road users. People generally use the roadway system in a safe manner on any given trip, but mistakes, lapses in judgement, and other more significant risky behaviors still occur. The three most frequent and persistent behavioral safety factors in fatal crashes are people in motor vehicles not wearing seat belts, driving while impaired from alcohol, and speeding. Through the NRSS, the department will focus on using all available tools, including education, outreach, engineering solutions, and enforcement to address persistent behavioral safety issues. A robust and comprehensive approach to influencing human behavior also requires deepening our understanding of underlying causes through research. **View the key objectives at www.transportation.gov/NRSS/SaferPeople.**

Safer Roads

Roadway design strongly influences how people use roadways. The environment around the roadway system—including land use and the intersections of highways, roads, and streets with other transportation modes such as rail and transit—also shapes the safety risks borne by the traveling public. The Safe System Approach emphasizes that redundancy is critical, and safer roadways mean

incorporating design elements that offer layers of protection to prevent crashes from occurring, and mitigate harm when they do occur. Through the NRSS, the department will focus on advancing infrastructure design and interventions that will significantly enhance roadway safety. **View the key objectives at www.transportation.gov/NRSS/SaferRoads.**

Safer Vehicles

The role of vehicle safety performance in avoiding or mitigating the harm of crashes cannot be overstated. Seat belts and air bags, for example, prevented an estimated 425,000 fatalities in traffic crashes since they were first required through regulatory requirements called the Federal Motor Vehicle Safety Standards (FMVSS). Enabling safer vehicles also means employing strategies to improve the safety of the commercial motor vehicles that transport goods and carry thousands of passengers locally and across the country every day. Through the NRSS, the department will continue to leverage enhanced motor vehicle safety performance and technologies to improve safety for vehicle occupants, and other road users too. **View the key objectives at www.transportation.gov/NRSS/SaferVehicles.**

Safer Speeds

The department believes it is important to prioritize safety and moving individuals at safe speeds. Speeding increases both the frequency and severity of crashes, yet it is both persistent and largely accepted as the norm amongst the traveling public. Unsafe speeds are now a well-documented and understood factor in death and injury, especially among people outside of a vehicle. In alignment with the Safe System Approach, achieving safe speeds requires a multi-faceted approach that leverages road design and other infrastructure interventions, speed limit setting, education, and enforcement. Roadway design and other infrastructure factors play a significant role in managing speeds and can deter excessive speeding behaviors from occurring in the first place. **View the key objectives at www.transportation.gov/NRSS/SaferSpeeds.**

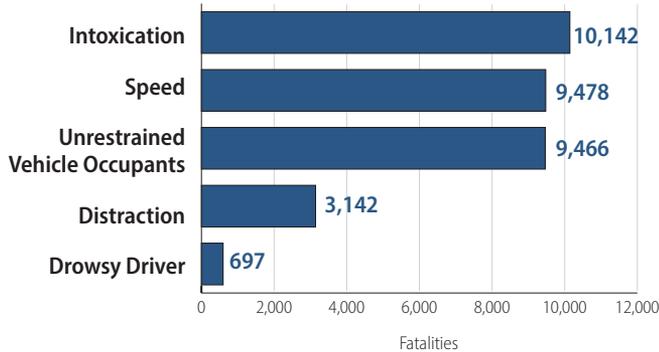
Post-Crash Care

Our ability to save lives does not end when a crash occurs. Caring for people injured in a crash to prevent their injuries from becoming fatal is just as critical. The timing of the arrival of ambulances and emergency responders is a major factor in whether an injured person survives a crash, and crash location is a major determinant of response time. Our ability to save lives does not end when a crash occurs. Caring for people injured in a crash to prevent their injuries from becoming fatal is just as critical. The timing of the arrival of ambulances and emergency responders is a major factor in whether an injured person survives a crash, and crash location is a major determinant of response time. **View the key objectives at www.transportation.gov/NRSS/PostCrashCare.**

Core Objectives

SAFER PEOPLE: Encourage safe, responsible behavior by people who use our roads and create conditions that prioritize their ability to reach their destination unharmed.

2019 Fatalities Involving Risky Behaviors



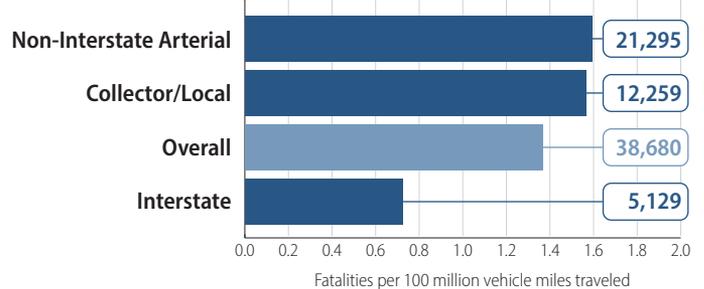
SAFER ROADS: Design roadway environments to mitigate human mistakes and account for injury tolerances, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users.

Fatality Rate by Roadway Function Class

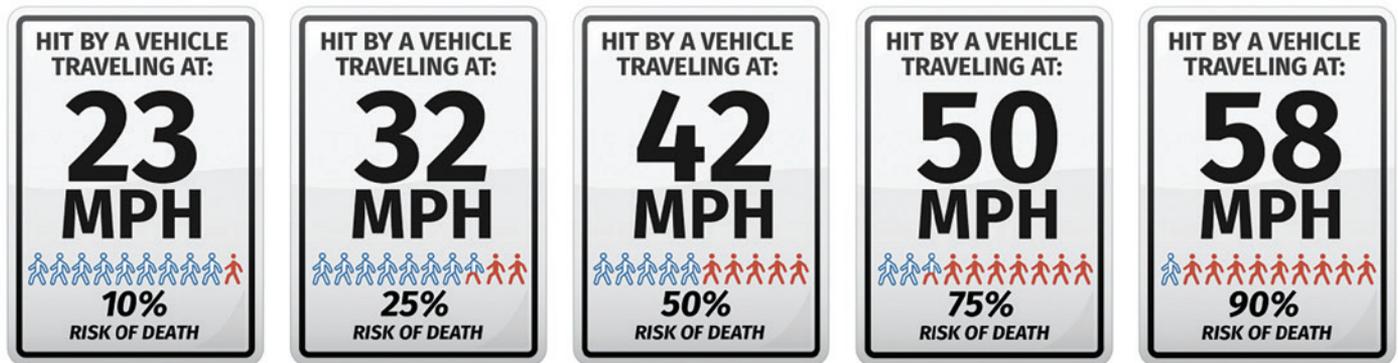
(2020, early estimates)

Total Roadway Fatalities

(2020, early estimates)



SAFER SPEEDS: Promote safer speeds in all roadway environments through a combination of thoughtful, context-appropriate roadway design, targeted education and outreach campaigns, and enforcement.



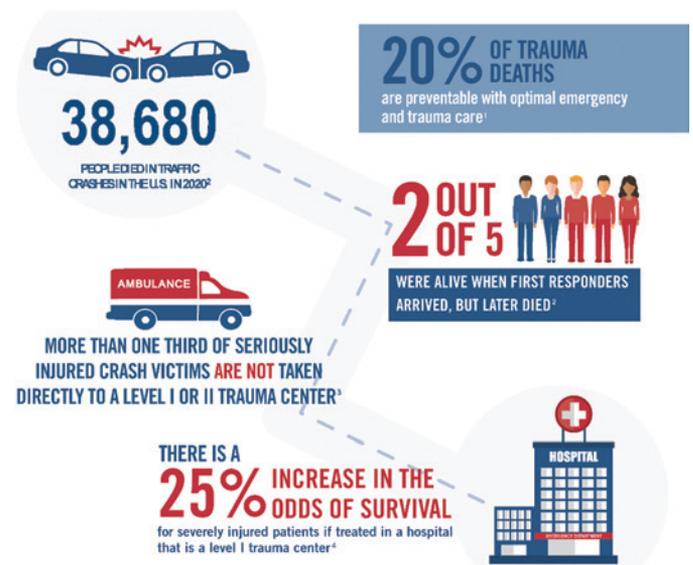
SAFER VEHICLES: Expand the availability of vehicle systems and features that help to prevent crashes and minimize the impact of crashes on both occupants and non-occupants.

Lives Saved by Vehicle Safety Technologies, 1960–2012

FMVSS Number and Topic	Lives Saved, 1960-2012
208/209/2010 Seat belts	329,715
203/204 Energy-absorbing steering assemblies	79,989
208 Frontal air bags	42,856
206 Door locks, latches, and hinges	42,135
201 Occupant protection in interior impact	34,477
214 Side impact protection (incl. side air bags)	32,288
105/135 Dual master cylinders/front disc brakes	18,350
213 Child safety seats	9,891
212 Adhesive windshield bonding	9,853
126 Electronic Stability Control	6,169
216 Roof crush resistance	4,913
108 Trailer conspicuity tape	2,660
226 Rollover curtains	178
301 Fuel system integrity	26
Total	613,500

Source: Kahane, C.J. (2015, January). Lives saved by vehicle safety technologies and associated Federal Motor Vehicle Safety Standards, 1960 to 2012 – Passenger cars and LTVs – With reviews of 26 FMVSS and the effectiveness of their associated safety technologies in reducing fatalities, injuries, and crashes. (Report No. DOT HS 812 069). Washington, DC: National Highway Traffic Safety Administration.

POST-CRASH CARE: Promote safer speeds in all roadway environments through a combination of thoughtful, context-appropriate roadway design, targeted education and outreach campaigns, and enforcement.



ITE and the Safe System Approach

ITE applauds USDOT on its announcement of the NRSS, and has been a strong and consistent champion for Vision Zero and a national leader in the advancement of the Safe System Approach. The principles of this approach represent a shift in how transportation professionals think about road-related crashes, injuries, and fatalities. A Safe System Approach can help us get to zero fatalities through the aggressive use of roadway design and operational changes, shared responsibility for transportation safety, and protecting all users (pedestrians, bicyclists, older, younger, disabled, etc.) of the transportation system.

ITE was a founding member of the Road to Zero Coalition (RTZ), established in 2016 through the leadership of USDOT and the National Safety Council (NSC). The RTZ Coalition's purpose is to bring together a broad coalition of organizations in support of the goal of achieving zero roadway deaths in the United States by 2050. The Coalition is managed by the NSC and is made up of more than 1,500 professional associations, business and industry associations, safety groups, government agencies, and nonprofit organizations. ITE is also a member of the RTZ Steering Committee.

Prioritizing Safety

ITE has guided Coalition efforts to prioritize safety and advanced the Safe System Approach. Under ITE's leadership, a Prioritizing Safety Steering Committee and two working groups were formed—one on Safety Culture and a second on the Safe System Approach. More than two dozen leading national transportation and safety organizations and technical experts, including the Federal Highway Administration and the National Highway Traffic Safety Administration are participating in this effort. ITE is coordinating the overall effort. The efforts focus on supporting implementation by increasing the understanding and application of Safe System and Safety Culture concepts and practices in North America, identifying key tools and references, creating case studies from leading jurisdictions, and finding ways to integrate knowledge into practice.

Safe System Technical Resource Page

The Safe System working group conducted a literature review in 2019 that led to the release of a Safe System Technical Resource page, available at www.ite.org/technical-resources/topics/safe-systems. This page provides resources with initial guidance for implementing the Safe System Approach in the United States. Many of the resources are international documents that have guided success towards reducing serious injury and fatalities on roads in other countries.

Speed Management Resources

In collaboration with the Vision Zero Network, ITE received a RTZ Coalition grant in 2018 to advance speed management within the context of a Safe System Approach in the United States. Through this grant, ITE developed a variety of tools and resources to support a Safe System Approach to focusing on speed as a safety problem, setting appropriate speed limits, measures for managing speed, and developing a speed management program. The resource hub is available online at www.ite.org/technical-resources/topics/speed-management-for-safety. The project included development of a workshop covering these topics that was offered in Austin, TX and Durham, NC during the grant, and in three communities in California in 2021.

Safe System Strategic Plan

ITE partnered with FHWA in developing the *Safe System Strategic Plan*, which provides a roadmap for the advancement of the Safe System Approach in the United States. It describes the Safe System Approach, discusses the process involved in building the plan, outlines how to advance a Safe System mindset, and describes steps necessary to implement Safe System practices within the nation's transportation community. ITE is currently working with FHWA on two follow-up activities focused on Speed Management and the Safe System Approach for the Urban Core.

Recommendations of the Safe System Consortium

In 2021, ITE worked with the Center for Injury Research and Policy at Johns Hopkins University, with support from the FIA Foundation, to make recommendations to Congress and the Biden Administration that can move the United States towards achieving Vision Zero, while supporting a more equitable transportation system. Consortium members identified three areas for change: safety across the system, equity by investment, and progress by design. The results were published in the *Recommendations of the Safe System Consortium* report, which can be accessed at <http://bit.ly/SafeSystemConsortium>.

Conclusion

Together, we must all strive for zero roadway fatalities. Zero is the only acceptable number of deaths on our highways, roads, and streets. Both USDOT and ITE are committed to taking substantial, comprehensive action to significantly reduce serious and fatal injuries on the nation's roadways. However, no one will reach this goal acting alone. Reaching zero will require all transportation professionals to work with all roadway transportation stakeholders—including the American people—to lead a significant cultural shift that treats roadway deaths as unacceptable and preventable. **itej**



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Vision Zero and Results-Based Financing of Safe System Action Worldwide

BY ROB MCINERNEY

GLOBAL PLAN

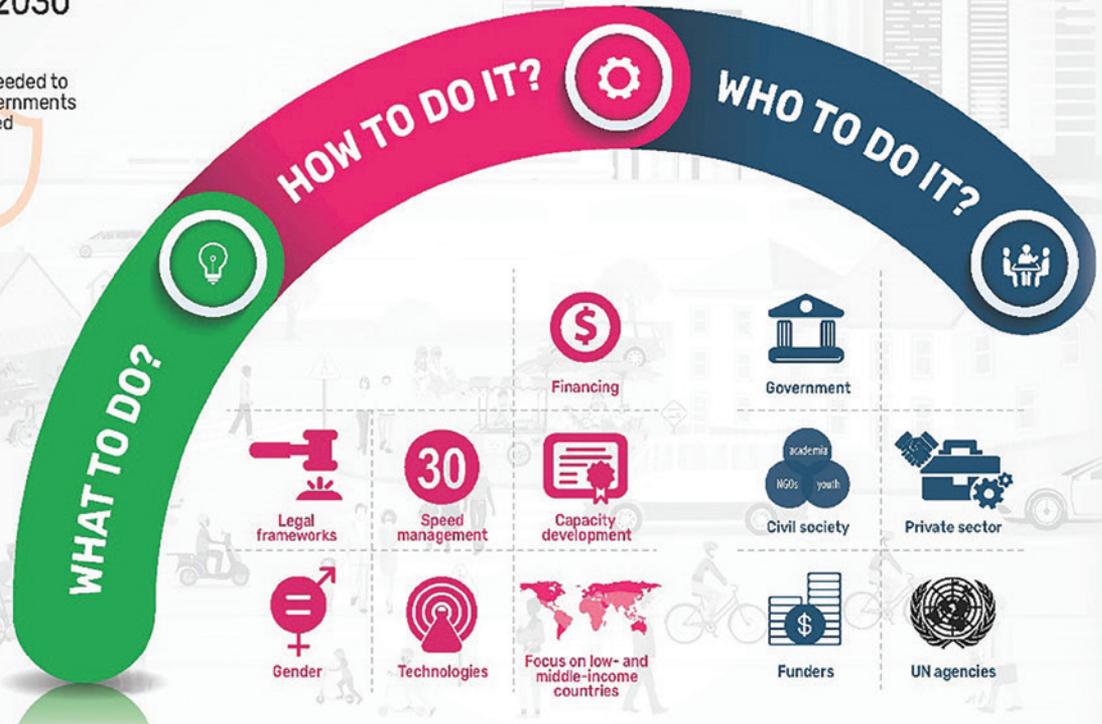
DECADE OF ACTION FOR ROAD SAFETY
2021-2030

UN General Assembly Resolution 74/299 declared a **Decade of Action for Road Safety 2021-2030**, with the target to reduce road traffic deaths & injuries

BY AT LEAST 50% during that period

The **Global Plan** describes what is needed to achieve that target, and calls on governments & partners to implement an integrated

SAFE SYSTEM APPROACH



For further information, visit:
DECADE OF ACTION FOR ROAD SAFETY 2021-2030



Figure 1. Global Plan – Decade of Action for Road Safety 2021-2030 infographic.²

The United Nations (UN) will hold the first ever global high-level meeting on Global Road Safety at the UN Headquarters in New York, NY, USA on June 30-July 1 this year.¹ Why? Sadly, road crashes are the largest killer of young people worldwide. An estimated 1.3 million people are killed each year on the world's roads and an additional 50 million people suffer life-altering injuries.² The injuries include severe brain injury, quadriplegia, limb fractures, amputations, and degloving that add an estimated \$6 billion USD of new lifetime costs to families, as well as to the health, welfare, and insurance sectors every day.³

The individuals and families impacted cannot afford the cost of road trauma. Companies cannot afford the impact on their staff, their businesses, and their reputations. Governments cannot afford to let the road safety crisis continue to bleed an estimated 2-7 percent of GDP from their economies.³ For this reason, global leaders will gather in New York to discuss how mobilizing a Decade of Action and Delivery will ensure that UN Sustainable Development Goal 3.6 to halve road deaths and serious injuries will be met alongside Goal 11.2 to ensure safe and sustainable cities.⁴

The Global Plan for the Decade of Action 2021-2030

The UN General Assembly resolution 74/299 "Improving global road safety" designated 2021-2030 as the second Decade of Action for Road Safety with the target to reduce road traffic deaths and serious injuries by at least 50 percent by 2030. The World Health Organization and the UN Regional Commissions, in cooperation with the UN Road Safety Collaboration, have developed *A Global Plan for the Decade of Action* that recognizes business as usual is not sufficient and new, bold, and decisive action is needed (refer to Figure 1).²

The Global Plan calls on all governments and road industry stakeholders to prioritize and implement a Safe System Approach that makes safety a core value and safe mobility a human right. Similar to the recent USDOT National Roadway Safety Strategy, the Safe System Approach defined in the Global Plan is one that:

- "Anticipates and accommodates human errors;
- Incorporates road and vehicle designs that limit crash forces to levels that are within human tolerance to prevent death or serious injury;
- Motivates those who design and maintain the roads, manufacture vehicles, and administer safety programs to share responsibility for safety with road users, so that when a crash occurs, remedies are sought throughout the system, rather than solely blaming the driver or other road users;
- Pursues a commitment to proactive and continuous improvement of roads and vehicles so that the entire system

is made safe rather than just locations or situations where crashes last occurred; and

- Adheres to the underlying premise that the transport system should produce zero deaths or serious injuries and that safety should not be compromised for the sake of other factors such as cost or the desire for faster transport times."^{6, 2}

As highlighted in the Global Plan, there must be a fundamental shift from designing to standards to designing for desired outcomes. The Safe System Approach and Vision Zero challenge our historical and current thinking, asking us to work across all elements of the system to ensure that no one is killed or injured on our streets, roads, and highways. No child, no worker, no mother, no father. No one from your family, and no one from mine.⁷

The Global Plan recommends actions across a range of transportation elements, including multimodal transport and land-use planning, safe road infrastructure, vehicle safety, safe road use, and post-crash response. The plan also outlines critical areas for implementing safer roadways, including financing, legal frameworks, speed management, ensuring a gender perspective in transport planning, adapting technologies, and a specific focus on low- and middle-income countries. A shared responsibility is recognized, as is the essential need for constant monitoring and evaluation for the plan to be successful.

The Global Road Safety Performance Targets

The Global Plan also outlines 12 Global Road Safety Performance Targets adopted by Member States in 2017. The reference to star ratings below are based on road inspection data and provide a simple and objective measure of the level of safety which is "built-in" to the road for vehicle occupants, motorcyclists, bicyclists, and pedestrians. Five-star roads are the safest, while one-star roads are the least safe.

From the Global Plan, of particular interest to transportation professionals engaged in the road sector are:

- Target 3: By 2030, all new roads achieve technical standards for all road users that account for road safety, or meet a three-star rating or better.

- Target 4: By 2030, more than 75 percent of travel on existing roads is on roads that meet technical standards for all road users that take into account road safety.
- Target 5: By 2030, 100 percent of new (defined as produced, sold, or imported) and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognized national performance requirements.

Vision Zero and Global Safe System Action

Vision Zero and the Safe System Approach ultimately extend beyond these 2030 targets and call for more ambitious action that ultimately delivers zero road death and injury. Many countries have now officially set Vision Zero targets for 2050 or similar timeframes (i.e., Australia, European Union), and Safe System stakeholders are increasingly working together to design a system where no one is killed.⁸⁻¹⁰

The International Transport Forum of the OECD (ITF) has a long history in leading the call for adoption of a Safe System Approach by all countries. The *Towards Zero: Ambitious Road Safety Targets and the Safe System Approach* report set the scene for global action in 2008, with the 2016 follow-up report *Zero Road Deaths and Serious Injuries* outlining a fundamental rethink of the governance and implementation of road safety.¹¹ A new ITF Safe System report will be released in 2022 that provides experience-based guidance on implementing the Safe System Approach, particularly in low- and middle-income countries where most road deaths and serious injuries occur. The report will include an analysis of 17 case studies and proposes a framework for defining and assessing Safe System interventions.

Belin, et.al, 2022 provided a valuable summary of Safe System implementation across the world, drawing on examples from Sweden, Australia, and Norway alongside U.S.-based examples of Safe System implementation and opportunities.^{12, 13} The study highlighted innovative approaches that included the implementation of 2+1 rural road cross-sections; physical separation of road users and speed controlling treatments in urban areas; new approaches to understanding and managing kinetic energy in the system; and the ultimate showcase of the Norwegian capital of Oslo, achieving zero pedestrian, cyclist, and motorcyclist deaths in 2019.

The Business Case for Safer Roads

In relation to road infrastructure safety, the relationship between the Star Rating of road infrastructure and crash costs per mile traveled were highlighted in the ITF 2016 report, demonstrating that crash costs are approximately halved for each incremental improvement in Star Rating. The related economic analysis and optimization of investment to maximize lives lived undertaken by governments as part of their national Road Assessment Programmes has demonstrated that achieving a 3-star or better standard is viable and

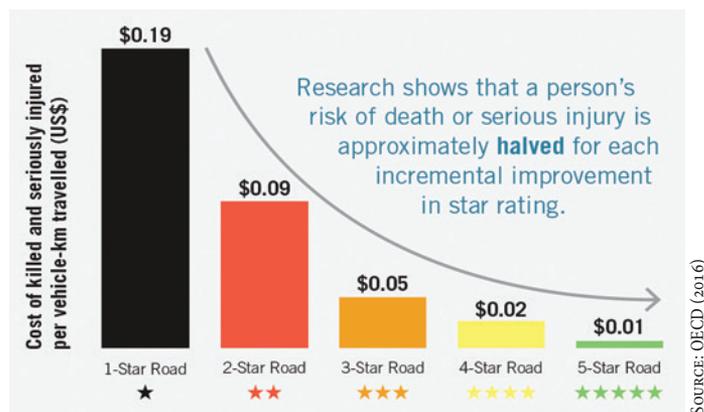


Figure 2. The relationship between infrastructure Star Ratings and crash costs.¹

cost-effective in most cases. Where infrastructure upgrades are not financially viable, speed management solutions can be deployed.

At a global level, the Business Case for Safer Roads analysis investigated the return on investment possible if all countries achieved Global Target 4 for more than 75 percent of travel for each road user to be on the equivalent of 3-star or better roads and found more than \$8 of benefits for every \$1 invested.³ Achieving this outcome with public and private results-based financing will result in an estimated 450,000 lives saved a year and 100 million deaths and serious injuries saved over the life of the engineering treatments.¹⁴ But that is still not enough to reach zero.

Safe Systems and 5-Star Performance

To progress beyond a halving of road deaths and injuries and truly achieve Vision Zero, the Safe System Approach must move beyond an acceptable level of deaths and strive for a system where no one dies. As demonstrated in the ITF *Zero Road Deaths* report as road infrastructure approaches 5-star performance, the risk of fatality and the associated costs of road trauma per mile traveled approaches zero.¹¹ Safety performance and rating systems continue to improve safety—the National Highway Traffic Safety Association (NHTSA) and the Global New Car Assessment Program (Global NCAP) are dedicated toward promoting the universal adoption of the most important motor vehicles safety standards in the United States and worldwide.¹⁵ ¹⁶ These new car rating systems demonstrate the reduction in fatality risk associated with 5-star cars. Road user behavior also remains a priority. Through education, enforcement, and new technology, the driver, rider, and road user behavior issues of speeding, impaired driving, fatigue, distraction and mobile phone use, lack of restraint use, lack of helmet wearing, and safe crossing compliance can increasingly be managed as we strive for 5-star road users. Central to all the Safe System elements are the safe speeds to deliver Vision Zero.

The Safe System Approach and Vision Zero may ultimately be achieved when we take a holistic view to the individual crash types that kill and injure road users. Safe System partners, working

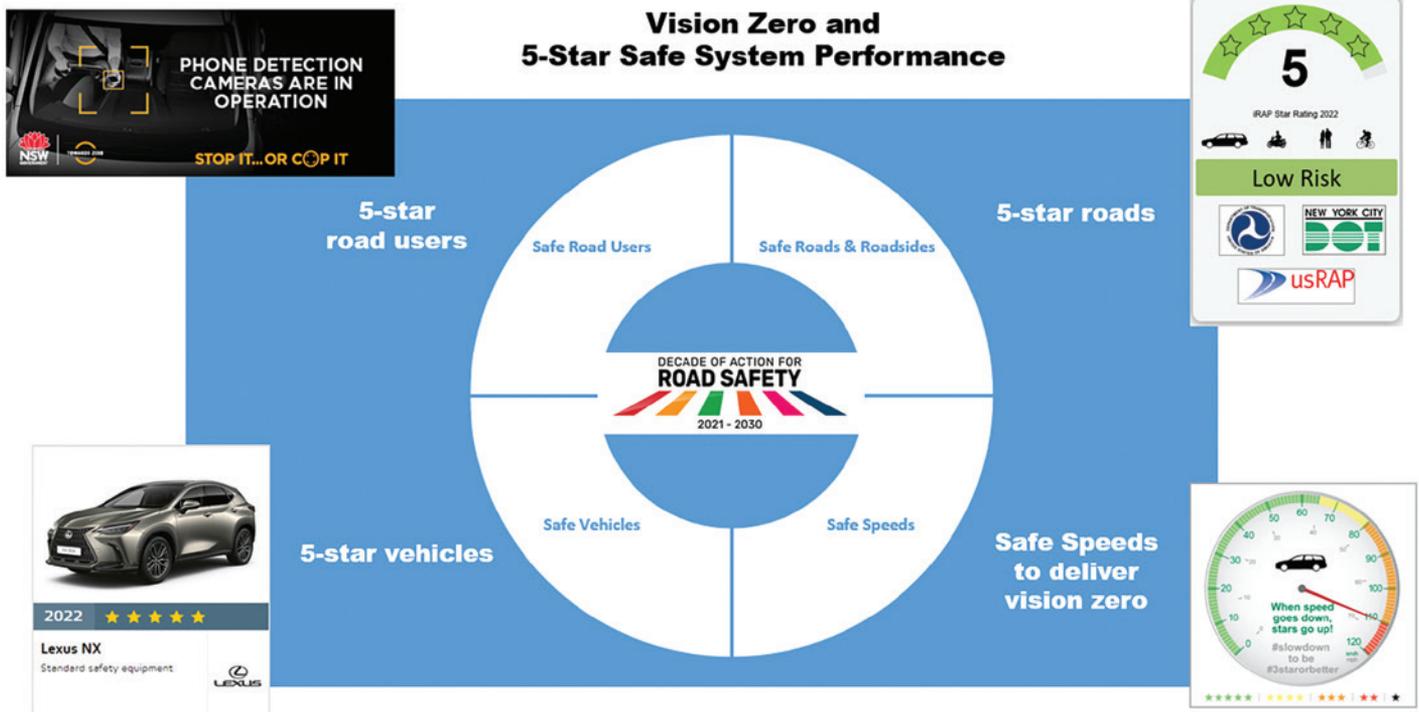


Figure 3. Vision Zero and 5-Star Safe System Performance.

together, can study how the components of the system will ensure the energy in each crash type can be effectively managed for all road users today and in the future. In some cases, one part of the system may do the heavy lifting of fatality prevention up to a certain point, and then another part of the system must take over. Managing these edge-cases is a critical part of Safe System thinking.

- For head-on crashes, undivided roads may suffice at low speeds for similar mass vehicles. As speeds increase, separation and barrier systems may be sufficient to manage fatality risk up to a certain point. At what speeds are vehicle safety features insufficient to minimize harm for vehicle occupants that strike the barrier? What is the impact of different mass vehicles and vehicles with different star-rating performance?
- For pedestrians crossing the road, what vehicle speeds are ultimately needed to ensure fatality risk is zero? What road features are needed when speeds or mass of vehicles exceed tolerable limits for pedestrians? What separation can be introduced? What vehicle pedestrian detection systems are effective and in what circumstances (rain, fog, nighttime)?
- What transport planning provisions can be made to create 5-star journeys for all road users from the beginning? How can both livable and survivable communities become the foundation on which land use is managed?

Outlook

As we work together to define Safe System performance, we must not lose sight of the easy and quick wins for global road safety.

Rapid deployment of safe speeds across the system: 20 miles per hour (mph) (32 kilometers per hour [km/hr]) in urban areas where pedestrians and cyclists are active and <50 mph (80.5 km/hr) undivided roads; protection of road-side hazards; installation of roundabouts; banning the sale of vehicles that are not 5-star standard; introducing technology to ensure mobile phones cannot be used by a driver or rider; and the other proven interventions we know already but have not yet implemented on a scale that matters.

This is the bold and decisive action the UN is calling for at the high-level meeting to ensure we do indeed have a Decade of Action and Delivery. This action will ultimately help us reach the 2030 targets to halve road deaths and serious injuries, laying the foundation to ultimately deliver on the moral and financial necessity to reach Vision Zero by 2050 or before. Lives depend on it. Your life may depend on it. [itej](#)

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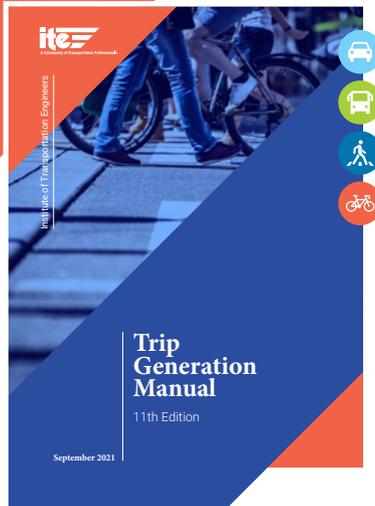


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Fremont Vision Zero Program:

5 Years of Traffic Safety Progress and a Renewed Effort for Getting to Zero

BY HANS LARSEN, P.ENG. (M) AND MATTHEW BOMBERG, P.ENG. (M)



For the past five-plus years, the City of Fremont, CA, USA has achieved a remarkable 45 percent reduction in fatalities and severe injuries caused by traffic crashes. This significant safety accomplishment was facilitated through hard work, leadership, and diligent investment in safety infrastructure and programs. Fremont’s intense organizational focus on traffic safety was initiated by the Fremont city council with adoption of a Vision Zero policy in September 2015, and preparation by city staff of a *Vision Zero Action Plan* approved in March 2016.

The City of Fremont has reflected on its past 5 years of traffic safety improvement and prepared a renewed plan for “getting to zero.” The new Fremont *Vision Zero report and Action Plan* from May 2021 (Figure 1) includes a “playbook” on past efforts to serve as a resource for transportation professionals. Fremont has also been active in sharing its “safety story” through participation with ITE,

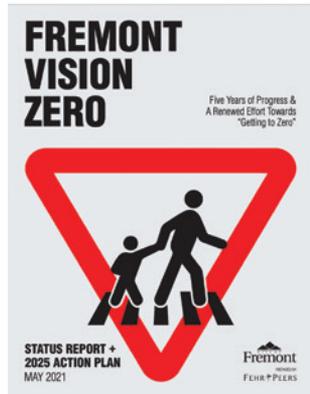


Figure 1. Cover for the Fremont Vision Zero Status Report and 2025 Action Plan. Access the plan at <https://bit.ly/FremontVision0>.

the Federal Highway Administration (FHWA), the Vision Zero Network, and others.

The City of Fremont is a mid-sized city, population 240,000, located in the Silicon Valley area of Northern California. During the 3 years from 2013 to 2105, Fremont experienced a concerning rise in traffic fatalities and severe injury crashes, particularly involving pedestrians, youth, and seniors. The attention on Vision Zero as a traffic safety program in the United States—starting in 2014 by cities like New York, NY; Seattle,

WA; and the nearby cities of San Francisco and San Jose, CA—led Fremont officials to consider adopting a Vision Zero program as well. Fremont already had a focus on traffic safety as an organizational priority and in 2015 was considered better than average with a per capita traffic fatality rate of 4 (per 100,000 population), well below the national and California rates of 11 and 9, respectively. Even so, the Vision Zero approach was a paradigm shift for the city’s transportation, police, and public works staff. Rather than accepting that major traffic crashes were inevitable, or the result of mistakes and reckless behavior, the city embraced the “Safe System” approach. The newly embraced perspective was that major traffic crashes were preventable, and that one fatality was one too many.

In the 3 years prior to adopting Vision Zero, from 2013 through 2105, Fremont had 105 major traffic crashes with 22 fatalities and 83 severe injuries. In the most recent 3-year period, from 2018 through 2020, Fremont had 58 major traffic crashes (a 45 percent reduction), with 15 fatalities (down 32 percent) and 43 severe injuries (down 48 percent). This reduction was accomplished during a period when traffic fatalities at a national level have been increasing.

Organizational Collaboration Led by Enlightened and Engaged Engineers

Fremont’s Vision Zero success starts with an organization that prioritizes safety and enables quick and coordinated action. The city is guided by a General Plan that establishes a goal of creating Complete Streets and encouraging non-auto modes of travel. The

city’s transportation engineers, pavement maintenance managers, project design staff, and street maintenance crews are all organized within the public works department, which reduces barriers to collaboration. City staff in public works have achieved a tremendous output of safety projects by leveraging the pavement maintenance program for roadway restriping and by partnering with street maintenance crews to install quick-build projects.

Fremont has also benefited from a supportive environment of planning and funding which has helped to fill in the details of the higher-level Vision Zero Action Plan. The city’s staff is empowered to use cutting-edge tools and best practices. The city prioritizes staff training through both external opportunities such as conference attendance and internal peer learning. Transportation engineers make use of the latest design standards including NACTO guidance, examples from peer cities, and even lessons observed abroad.

Timely Data, Deep Analytics, and Police Partnership

The city’s police and public works departments have a very close working relationship which supports Vision Zero. Traffic enforcement officers and transportation engineers meet monthly to share information about major crashes with information about where, when, how, and why they occurred, and to discuss perspectives on what can be done to continually improve traffic safety in the community.

Traffic crash report information is combined into a dataset that is used both reactively to address “hot spots” and proactively to address systemic issues. Location data is mapped and monitored to identify a high injury network of streets for focused engineering and enforcement/education countermeasures. It is noted that the Fremont police department largely conducts high-visibility traffic stops to provide warnings and education, rather than issue tickets and fines.

Systemic Implementation of Safe and Complete Streets on Major Arterials

Over the past 5 years, since adopting Vision Zero, Fremont has worked to systematically re-engineer its streets to be “safe and complete,” promoting safer speeds for motorists and create safe



Figure 2. Complete Street conversions incorporated into annual pavement maintenance program.

and comfortable streets for people walking, biking, and taking transit. Fremont uses a variety of design tools to create safer streets, including narrowed travel lanes and intersections.

Historically many Fremont streets were built with wide 12 to 14-foot (ft.) (4.3 meters [m]) travel lanes, which is a design standard that promotes speeding and is more appropriate for large trucks traveling at freeway speeds.

Since 2016, Fremont has adopted a 10-ft. (3-m) travel lane standard, which encourages slower speeds by creating a feeling of greater enclosure and friction for drivers. Narrower lanes also free up roadway width for enhanced bike facilities, including buffered and protected lanes. Largely through pavement maintenance projects, Fremont has restriped buffered bike lanes on 50 miles of arterial streets and 13 miles include physical separation posts within the buffer area. Also, road diet projects are implemented to remove lanes considered to be unnecessary or to improve safety.

At intersections, street designs have focused on tighter radii which shorten crossing distances for bicyclists and pedestrians and force drivers to take turns at slower speeds. Fremont has implemented protected intersections, which eliminate weaving maneuvers between bicyclists and vehicles, improve sight lines, and further reduce crossing distances for pedestrians. Intersection improvements have been implemented as both quick-build projects and as full reconstruction with modified and upgraded traffic signal systems as part of major capital and grant-funded projects. Through 2020, Fremont has reconstructed five major intersections as protected intersections, and by the end of last year, a total of 12 protected intersections were completed.

The Walnut Avenue Bikeway project was selected by People-ForBikes as among the top 10 of “America’s Best New Bikeways of 2020.” The project includes a 1.2-mile (1.9-kilometer) raised cycle track and four protected intersections.

Safe Routes to Schools and Quick-Build Delivery

As part of a comprehensive Safe Routes to Schools program, implemented with the Fremont Unified School District, school access safety audits were conducted at all 42 Fremont schools. Subsequently, 400 safety improvement actions were implemented consisting of crosswalk enhancements, intersection narrowing, stop controls, and parking restrictions, with most improvements installed quickly by public works street maintenance crews.

Tragically, from 2013-2015, Fremont saw nine major crashes involving youth 15 years of age or younger. This number dropped to just one in the period from 2018-2020. The city’s efforts related to planning, project delivery, and positive safety outcomes earned Fremont national recognition in early 2020 as the third ever recipient of the “Vision Zero for Youth” Leadership Award, presented by the National Center for Safe Routes to Schools.



Figure 3. In 2019, Fremont completed its first protected intersection, and 12 were completed by 2021.

Safer Pedestrian Crossings

Fremont’s early Vision Zero data analysis showed that crashes involving pedestrians accounted for more than 30 percent of major crashes, with most crashes happening while the pedestrian was crossing a street.

The city’s efforts to improve safety of crossings have included installing pedestrian countdown signals at all 220 signalized intersections citywide and installing a suite of short-term and long-term treatments at uncontrolled crossings of major streets.

Fremont has approximately 40 crosswalks on multi-lane, higher speed roadways that are uncontrolled, meaning that there is no signal or stop sign but that motorists must yield to pedestrians. Fremont has sought to enhance these crosswalks with both short- and long-term measures to improve yielding compliance. Short-term measures have included high-visibility crosswalk striping, advance yield signage and markings, and striping and channelizers between travel lanes to prohibit “multiple threat crashes.” Multiple threat crashes involve one vehicle attempting to pass another vehicle that has yielded to a pedestrian, and then hitting the pedestrian because the first vehicle has obstructed a sight line. Long-term measures to enhance crossings have included installing rectangular rapid flashing beacons, pedestrian signals, median refuge islands, and bulbouts. Fifteen of the 40 crossings in Fremont have since been upgraded with flashing beacons or pedestrian signals.

Brighter Street Lights

The 2016 Fremont Vision Zero Action Plan identified that approximately 50 percent of the city’s fatal and severe injury collisions occurred in the early or late evening period between 6:00 p.m. and 10:00 p.m. In response to this data, the city accelerated an environmental sustainability initiative to upgrade street lighting to achieve immediate safety benefits. The city converted all 16,000 streetlights from “yellow” sodium vapor lights to brighter “white” LED lights. The new streetlight fixtures use half as much energy

and are twice as bright. Before-and-after studies identified a 23 percent reduction in fatal and serious injury crashes occurring in nighttime conditions.



Figure 4. Before (top) and After (bottom): All Fremont streetlights were fully converted to brighter LED lights (16,000 lights).

Speed Management

There are clear relationships between excessive speed, reduced reaction time, and increased crash severity. In Fremont, 70 percent of crashes happen on streets with a speed limit of 40 miles per hour (mph) (64 kilometers per hour [km/hr]) or higher. Because of this, speed management has been an overarching theme of Fremont's Vision Zero work. After engineering streets for safe speeds, the City of Fremont re-surveys streets to see if changed designs have led to lower operating speeds. After speed surveys, Fremont has lowered the posted speed limit on more than 50 street segments since 2015. Fremont has also worked with its police department on targeted speeding enforcement and has installed 45 speed feedback signs. Crashes involving unsafe speed dropped by 44 percent compared to the years before Vision Zero adoption.

While much of the city's efforts around Vision Zero have been focused on higher speed roadways, the city has also undertaken measures to ensure safe speeds in neighborhoods, as part of a balanced program. These efforts have included increasing the number of neighborhood speed humps from 200 to 250 citywide. During the beginning of the coronavirus pandemic in 2020, the city launched a citywide "Drive Slowly, Be Healthy" slow streets program, with a yard sign campaign to promote a 20-mph (32 km/hr) advisory speed on all residential streets.

Community Engagement and Partnerships

Fremont's Vision Zero program also promotes community engagement and partnerships to help create a positive citywide traffic safety culture. This has included staffing booths at community events, creating educational videos, city newsletter articles, and participating as guest speakers for community

group meetings. Each year, youth volunteers repaint "LOOK" safety messages at street crosswalks. In 2019, Kaiser Permanente provided a grant to the city to place 130 street banners with traffic safety education messages and to build community support for the goal of "no more traffic deaths."

Commitment to Advancing the Transportation Profession

While the city is working boldly to improve traffic safety in Fremont, there is an equal commitment to share "lessons learned" with other communities and the transportation profession. In this regard, city staff regularly participates in peer exchange opportunities with local organizations that have included the Silicon Valley Bicycle Coalition, Alameda County Transportation Commission, and the Metropolitan Transportation Commission. At a national level, Fremont's Vision Zero program has been featured in publications and at conferences hosted by ITE, the Transportation Research Board, FHWA, National Safe Routes to School Coalition, and Vision Zero Network. [itej](#)

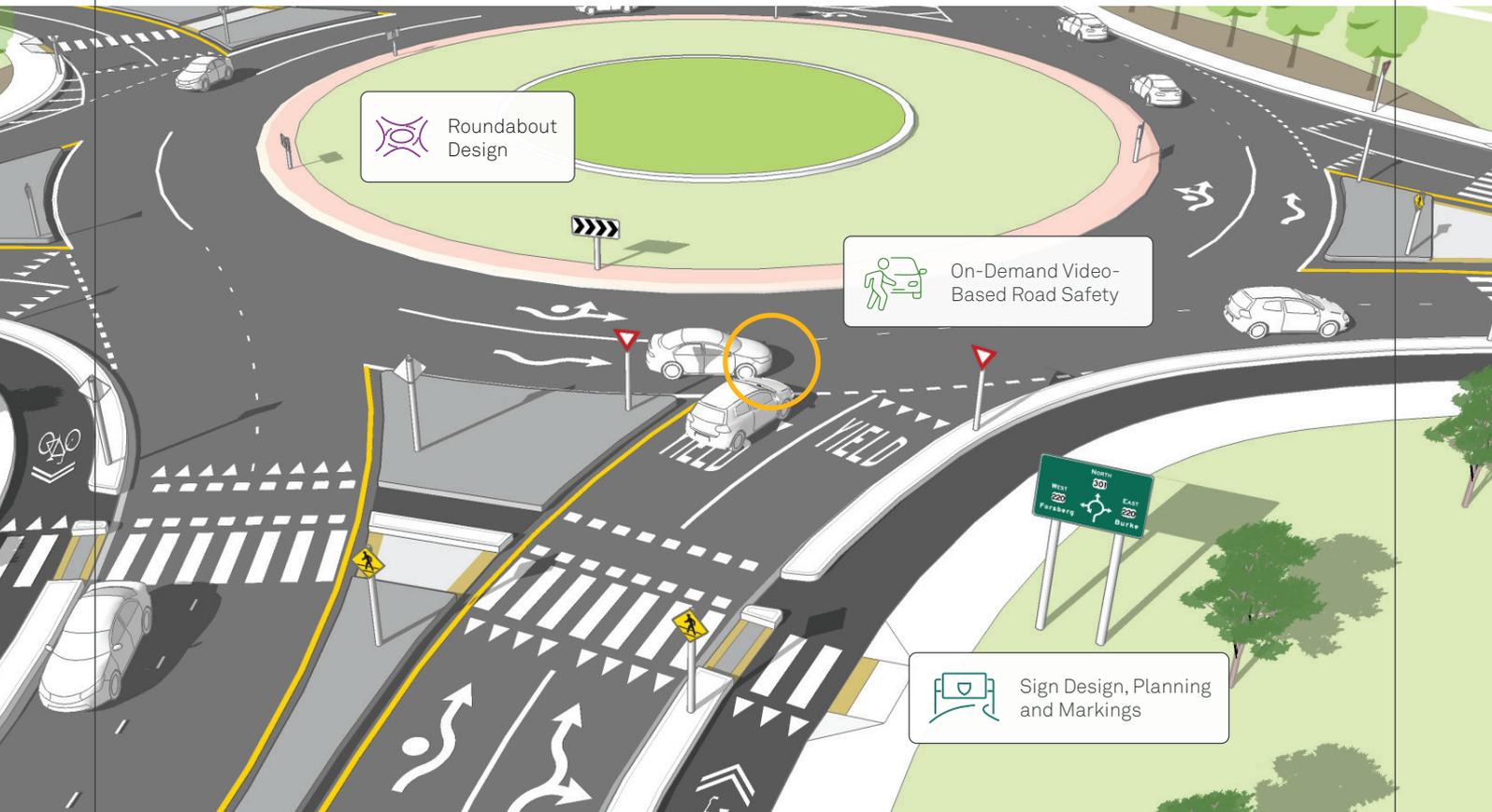


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Analysis of Expanded No Turn on Red Applications in Washington, DC, USA

BY JOSHUA WOLFGRAM, P.E., PTOE, RSP₁ (M), ROBIN FISH, P.E., PTOE, RSP₁, WASIM RAJA, P.E. (M), AND RAHUL JAIN, P.E., PTOE (M)

The Vision Zero program in the District of Columbia, USA (the District), aims to eliminate traffic fatalities and serious injuries by 2024 through solutions focused on engineering, education, and enforcement programs. No Turn on Red (NTOR) is one of several engineering solutions identified in the program for rapid design and implementation. Currently, limited federal or local guidance is available to aid in the selection, implementation, and evaluation of right-turn-on-red restrictions on a large scale. Rather, NTOR prohibitions are traditionally evaluated on a case-by-case basis.

In late 2018, the District Department of Transportation (DDOT) selected 100 pilot locations for NTOR implementation to protect non-motorized roadway users such as pedestrians, schoolchildren, and cyclists. The selection process was based on the level of pedestrian activity, proximity to pedestrian generators (such as schools or metro stations), crash history, and geometric or operational characteristics. The project team completed a before-and-after study to quantify and assess the impact of these new restrictions to determine if future expansion of the restrictions was feasible.

NTOR restrictions have previously been implemented in the District based on prior studies and analysis. Therefore, some of the pilot locations had a partial (time of day) or full-time NTOR restriction on one or more approaches in the before condition. However, the partial restrictions were changed into full-time restrictions and the new signs were installed at consistent, highly visible locations at each intersection.

Observations and Analysis

1. Data Collection.

The AM and PM peak hours for the study intersections occurred between 7:00 a.m. and 9:00 a.m. and 4:15 p.m. to 6:15 p.m., respectively. Off-peak hours were defined as 11:00 a.m. to 1:00 p.m. and 7:00 p.m. to 8:00 p.m. for the afternoon and evening periods, respectively. The “before” or pre-evaluation was conducted from February 2019 to March 2019. The “after” or post-evaluation was conducted from April 2019 to May 2019 after an adjustment period of at least 4 weeks following installation of the new NTOR signs. Data was available for both the before and after periods at 74 locations, which were the focus of this study.

Each intersection was surveyed during a peak hour and off-peak hour. Intersections were assigned to either an AM Peak or PM Peak based on the whichever peak had the higher total right turning volumes. Afternoon off-peaks were assigned to AM locations and evening off-peaks were assigned to PM locations.

2. Field Observations and Measurements

The following data were collected for each intersection:

- **Vehicle and Pedestrian Conflicts.** Events where a vehicle failed to yield to the pedestrians crossing were recorded during green intervals and red intervals at parallel and perpendicular crosswalks, respectively. Unsafe turning maneuvers were recorded in both crosswalks to determine if more conflicts will occur during the green interval since vehicles are not permitted to turn right on red.
- **Vehicle to Vehicle Conflicts.** This type of conflict results from a right-turn-on-red maneuver where a vehicle accepts an inadequate gap when turning right. The event was

recorded only if this maneuver caused the conflicting through vehicle to brake or take other evasive actions.

- **Crosswalk Encroachment.** Encroachment occurs when right-turning vehicles pull past the stop bar to wait in the crosswalk for an acceptable turning gap during the red interval. This is undesirable as vehicles can interfere with crossing pedestrians and/or cyclists. This event was recorded each time the front tires of a vehicle obstructed the crosswalk pavement markings of a perpendicular crosswalk, regardless of whether there was a pedestrian in the crosswalk. To be counted as an encroachment, the observer had to note the vehicle pausing in the crosswalk for any length of time. Continuous right-turn-on-red movements were not counted as they did not create an obstruction for pedestrians.
- **Compliance with NTOR Signs.** Drivers turning right on red despite NTOR signage were recorded as NTOR violations. This action may or may not have resulted in a conflict with pedestrians or vehicles as described in the sections above.
- **Queue Measurements.** Observers recorded the maximum queue (total stopped vehicles) in the rightmost lane at the end of the red interval of each cycle. At the end of the green interval, the observer recorded the number of vehicles in queue that successfully cleared the intersection.
- **Cycle Failures.** Observers recorded any residual queue that had arrived during the previous red interval and did not clear during the following green interval. Residual queues were labeled cycle failures.

3. Design Approach

The new regulatory R10-11 signs implemented at the 100 pilot intersections followed the *Manual on Uniform Traffic Control Devices* (MUTCD) standards. All existing signs were replaced by standard R10-11 signs with retroreflective white color backgrounds and a diagrammatic “Red Ball” graphic. The new signs were attached to mast arms (if present) or to the pole directly below/above the rightmost signal head to provide maximum visibility. In addition, supplemental near-side NTOR signs were placed on all approaches where the stop bar was greater than 120 feet (ft.) (36.6 meters) from the far-side sign.

Figure 1 illustrates some examples of the existing signs (on the left) that were replaced with new R10-11 “Red Ball” NTOR signs (on the right).

Current DC law prohibits right turn against a red arrow signal display. One of the objectives of this study was to determine if the installation of R10-11(1) “NO TURN ON RED ARROW” signs improved compliance with this law.

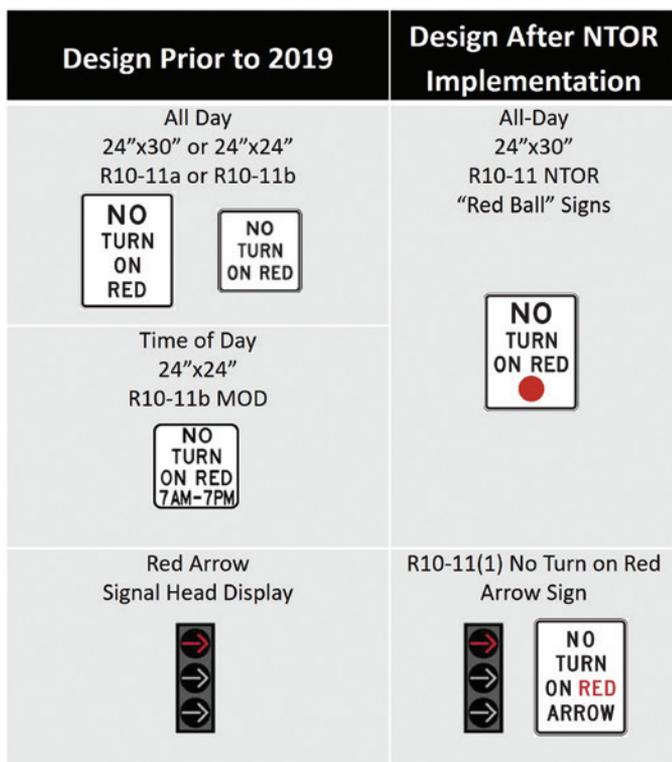


Figure 1. Changes in No Turn on Red Regulatory Signage.

4. Summarized Results

Following the before and after observation periods, the safety, compliance and operational data was evaluated to determine the impacts of NTOR implementation. Safety data for the three undesirable driving behaviors (i.e., failure to yield to pedestrians, crosswalk encroachment, and vehicle-vehicle conflicts) was compared in the before and after conditions. Driver compliance after implementing NTOR was compared to compliance in the before condition at locations with previous time of day or All-Day restrictions, as well as at locations where only a red arrow signal display was present. In addition, maximum queue lengths and residual queues were compared to identify any operational impacts as a result of NTOR implementation. In total, the 74 observed intersections yielded evaluations of 252 unique approaches.

5. Pedestrian and Vehicle Safety

This study evaluated the safety impacts of implementing NTOR restrictions at all times and all applicable approaches of the 74 study intersections based on the performance measures shown in Table 1. These results are aggregated across all approaches and observation periods.

Reductions in failure to yield behaviors were observed during both the green and red intervals. These reductions indicate that NTOR implementation did not increase aggressive turning behavior during the green interval. Instead, the data suggests that since drivers are at a complete stop when the green interval begins,

Table 1. Safety Compliance Measures.

Performance Measure	Observations Before	Observations After	Percent Change
Vehicle-Vehicle Conflict (Red Interval)	124	4	-97%
Failure to Yield to Pedestrians (Green Interval)	322	132	-59%
Failure to Yield to Pedestrians (Red Interval)	166	13	-92%
Crosswalk Encroachment	604	787	+30%

they may yield completely to pedestrians before completing legal right turn maneuvers on green. In addition, Vehicle to Vehicle conflicts were nearly eliminated, showing a 97 percent reduction following NTOR implementation.

While the failure to yield behavior metrics showed improvements when aggregated across all 252 approaches, four approaches experienced increases in failure to yield during green behaviors. This suggests that while overall there is a safety benefit to NTOR implementation, there are locations where NTOR implementation may in fact increase conflicts between turning vehicles and pedestrians. Further analysis should be conducted to determine the site-specific characteristics that would lead to these outcomes. A cursory evaluation shows that the locations with increased conflicts are capacity-constrained intersections, suggesting that as drivers become impatient, they will be less likely to yield to pedestrians, even with NTOR.

As shown in Table 1, crosswalk encroachment behavior increased by 30 percent after implementing NTOR restrictions. The combination of this increase with the reduction in failure to yield behavior suggests that many vehicles were accustomed to turning right on red in the “before” condition and began to encroach into the crosswalk. However, upon detecting the new NTOR signs, drivers did not complete the illegal right-turn-on-red movement and therefore remained in the crosswalk. This was confirmed by the field observations. It is possible that subsequent study of these locations could reveal a reduction in the crosswalk encroachment behavior as drivers become more familiar with the new NTOR restrictions.

6. Compliance

The compliance with new NTOR restrictions was evaluated based on the type of restriction in place in the before condition. Table 2 shows this comparison by observation period. Where no restriction previously existed, the percent change is not reported.

The field data shows a reduction in NTOR violations in the three remaining scenarios (i.e., at locations with an existing NTOR restriction in the before condition) when evaluated by observation period. Increased compliance is likely due to better

Table 2. NTOR Compliance.

Pre-Implementation Restriction	Number of Approaches	Violations Before	Violations After	Percent Change	Violations per Hour
AM Peak (7:00 a.m. – 9:00 a.m.)					
None	75	N/A	60	N/A	1.6
Time of Day (7 a.m. to 7 p.m.)	14	10	6	-40%	0.86
All-Day	13	15	8	-47%	1.2
Red Arrow Signal Display	0	N/A	N/A	N/A	N/A
Afternoon Off-Peak (11:00 a.m. – 1:00 p.m.)					
None	75	N/A	43	N/A	1.1
Time of Day (7 a.m. to 7 p.m.)	14	11	5	-55%	0.71
All-Day	13	18	5	-72%	0.76
Red Arrow Signal Display	0	N/A	N/A	N/A	N/A
PM Peak (4:15 p.m. – 6:00 p.m.)					
None	99	N/A	93	N/A	1.9
Time of Day (7 a.m. to 7 p.m.)	32	37	26	-30%	1.6
All-Day	17	16	11	-31%	1.3
Red Arrow Signal Display	2	80	29	-64%	29
Evening Off-Peak (7:00 p.m. – 8:00 p.m.)					
None	99	N/A	70	N/A	1.4
Time of Day (7 a.m. to 7 p.m.)	32	N/A	14	N/A	0.88
All-Day	17	23	8	-65%	0.94
Red Arrow Signal Display	2	41	10	-76%	10

signage visibility when converting to signs with better reflectivity, uniform placement, and consistent messaging. The study recognizes that the minimum adjustment period lasted only 4 weeks and may have contributed to a higher compliance with new regulatory signs, especially where new restrictions were implemented. Also, the sample size for the red arrow signal display category is only two locations. Additional locations should be observed with Red Arrow Signal Displays and supplementary R10-11(1) signs to test the transferability of these results.

7. Queues

Maximum right turn queue lengths were recorded as a measurement for operational performance. Queue lengths in the after condition were compared against the queues recorded in the before condition to identify locations that were adversely impacted due to new NTOR restrictions. The average and maximum number of right turn vehicles queued can be found in **Table 3**.

Table 3. Before-After Comparison of Right Turn Queues (# of vehicles).

Observation Period	Avg. Queue Before	Avg. Queue After	Max Queue Before	Max Queue After
AM Peak	2.78	3.22	20	22
Mid-Day Off-Peak	1.87	2.08	16	20
PM Peak	3.68	3.89	29	36
Evening Off-Peak	1.84	2.37	15	19

No observation period saw an average queue increase greater than one; however, maximum queues increased for all peaks. This suggests that while the magnitude of queueing did not increase considerably, there is potential for greater variation from cycle to cycle and higher maximum queues. The PM peak observation period contained the locations with the highest magnitude of queue increases, with locations ranging from two additional vehicles up to 23 additional vehicles. However, most locations did not see substantial increases in queueing, with 121 approaches (81 percent) having less than two additional vehicles queued in the PM peak.

These minimal impacts to traffic operations were expected, given that the pilot locations were prescreened to identify potential impacts to traffic operations. Similar results showing minimal impacts to traffic operations should not be assumed at future NTOR implementations without conducting similar traffic operations analysis.

8. Cycle Failures (Residual Queues)

Queue increases alone do not necessarily indicate a traffic operations concern if the intersection can still serve the additional queued vehicles during the following green interval. Therefore, in addition to queueing data, discharge rates were recorded to calculate increases in cycle failures (or residual queueing). Of the 504 approaches observed (252 unique approaches observed for two observation periods), 17 unique approaches (3 percent) were found to have additional cycle failures following NTOR implementation. The overall low number of approaches with cycle failures indicates that even where queues increased as a result of NTOR implementation, the majority of intersections had enough capacity to accommodate these queued vehicles. In response to the locations that did experience additional residual queues, the project team used the citywide traffic signal optimization program to evaluate signal timing changes to mitigate residual queue increases.

Conclusions and Findings

Currently, limited federal or local guidance is available to practitioners seeking to expand applications of NTOR. This pilot program and study sought to document the safety, compliance,

and operational impacts of new NTOR installations in an urban environment.

The outcomes of this study indicate potentially positive effects of NTOR restrictions that can serve as a basis for developing a standardized methodology that considers both peak and off-peak vehicle and pedestrian demands. The placement of new NTOR signs decreased overall right turn conflicts between pedestrians and vehicles across the study intersections. In addition, NTOR restriction compliance improved under the new R10-11 signs and uniform standards for installation across all intersections. These improvements came at overall minor impacts to traffic operations. These findings have helped the District identify a low-cost safety tool that will help in its pursuit of Vision Zero.



Figure 2. No Turn on Red Installation at 15th Street and Independence Avenue, SW.

The following recommendations were made:

- Maintain new NTOR restrictions at the 100 pilot locations, with further analysis to be conducted at the 17 approaches that experienced additional cycles failures and the five approaches that experienced increases in vehicle-pedestrian conflicts.
- Evaluate future locations for NTOR implementation using site-specific geometric and operations analysis. The operational prescreening ensured low impacts to traffic operations were observed; similar prescreening will benefit future implementations.
- Future signal designs should incorporate the R10-11 and R10-11(1) signs as a standard where applicable to improve compliance. Future signal designs should also incorporate the sign placement standards used in the designs for the pilot NTOR locations (i.e., installation of NTOR signs on

mast arms where feasible, and installation of supplemental near-side signs when the far-side sign is greater than 120 ft. from the stop bar). **itej**



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Wasim Raja, P.E. (M) leads DDOT's Traffic Engineering and Safety Division (TESD) which focuses on improving District's multimodal transportation system by designing and constructing traffic safety projects. Over the last 12 years, Wasim and his team have implemented more than 500 intersection modification projects to improve safety and mobility of multimodal traffic in DC. Prior to joining DDOT, he oversaw public and private sector projects involving design, construction, maintenance, and operation of multimodal traffic systems; traffic engineering and safety studies; traffic signal optimization; transportation management planning; and transit signal prioritization.



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Achieving Vision Zero – One Location at a Time

BY SAMUEL C. TIGNOR, PH.D., P.E. (M), JANE WILLIAMS, MPA (M),
AND RONALD W. ECK, PH.D., P.E. (M)

Vision Zero (VZ) and infrastructure-user errors (IUE) have been discussed in the United States for years, but we still have more than 35,000 fatalities per year.^{1,2} In implementing both VZ and IUE, the United States has used a top-down approach where federal, state, and local governments have joined with private organizations like American Association of State Highway and Transportation Officials (AASHTO), National Safety Council (NSC), and others to promote highway transportation safety with a goal of zero fatalities within by 2050.² Unfortunately, neither the VZ nor IUE goals have ever been successively pursued and the improved safety levels keep slipping further into the future. So what is the problem? Will we ever be able to achieve a significant decrease in road fatalities? Apparently, we need to modify our approach.

The objective of this paper is to present 10 examples of VZ and IUE problems appropriate for a bottom-up type of project selection. We are not addressing the merits of how funds and projects are approved, but instead present examples of potential small, relatively inexpensive VZ and IUE projects that are often overlooked but are nevertheless part of the safety problem.

Bottom-up Decision Making for VZ

In the United States there are thousands of transportation professionals— i.e., highway designers, planners, traffic engineers, maintenance staff, and others. Some are in leadership positions and others are in support positions whether they be at the federal, state, county, or city level. In total, there are likely 100,000 to 150,000 engineers in the daily support group.³ An incentive should be created for this pool of educated professionals to become involved in identifying infrastructure-user problems as opposed to waiting for top-down identified projects.

The issue is not that large projects are not justified, but instead the process prevents smaller, less expensive projects from being considered. All functional classes of roads will have VZ and IUE problems, it is just a matter of identifying them. This is especially true for rural two-lane roads which have the largest functional class of United States roads, but they also have the highest fatality rate of all road classes.

There seems to be no incentive or recognition of VZ or IUE problems being identified or eliminated. Small projects, even if inexpensive, will be ignored or have an uphill battle to be approved. The driving public knows where VZ and IUE are prominent, but when not corrected they conclude such conditions must be considered acceptable by the officials. These projects can exist for years and never be approved even after experiencing fatalities. They also represent a significant tort liability exposure for road agencies. Specific examples will be presented later.

As a national objective, neither VZ nor IUE have been given a fair chance of succeeding. Their success needles are stuck and will remain stuck until the process permits more infrastructure-user problems to be identified and eliminated from the highway system.

The focus of this article is to give examples of small projects that can be completed quickly at a low cost. Some infrastructure conditions are conducive to user misunderstanding or unawareness of design and/or traffic control treatments and thus users are led into unintended decisions resulting in fatalities. These IUE are often classical human factors error-induced situations that end in user fatalities, representing a fundamental system failure. As engineers, our challenge is to eliminate VZ and IUE, and they do occur on small projects. Our goal is to present examples of smaller opportunities that should not be overlooked whether they be VZ or IUE projects.

Examples of Opportunities

This section presents various examples of relatively inexpensive types of VZ and/or IUE issues that are good candidates for corrections.

1. **Hidden Traffic Control Devices:** Traffic control devices (TCD) supplement road design with signs, signals, pavement markings, channelizing devices, etc. as needed to inform, guide, and aid all road users. They are only effective if they are visible to road users. For example, a community group's neighborhood beautification project planted a tree in an island blocking the view of a STOP sign (see red arrow). Vegetation blocking of TCD is a continuing challenge to VZ and road user safety, whether in daylight or at night.



PICTURE BY S. TIGNOR

2. **Misleading Signal and Pavement Markings:** Users constantly make microsecond decisions where geometrics, signals, and pavement markings must be coordinated to prevent system errors. In this example where one intersection approach does not permit through traffic, the pavement marking and signal signing are not coordinated. The right signal/sign combination permits left turns from the right lane but the right lane pavement marking only permits right turns. The inconsistency induces IUE by those in the right lane wanting to turn left, creating potential VZ implications. The cross street is a major arterial with speeds at or above 35 miles per hour (mph) [56 kilometers per hour (km/hr)].



PICTURE BY S. TIGNOR

- Inadequate Interstate Off-Ramp Advance Warning:** This example is a low-cost infrastructure-user human factors type problem. The off-ramp is just beyond an upstream bridge blocking the visibility of the start of the off-ramp deceleration lane (white 1). Traffic in the median lane that wants to exit must find a safe, useable gap within 8 seconds in the right lane and then maneuver to the deceleration lane when traveling at 55 mph (88.5 km/hr). Eight seconds is difficult in daylight and impossible during heavy, night traffic. The gore guardrail (white 2) has been struck and destroyed repeatedly thus a challenging VZ. This problem has existed for many years and the department of transportation (DOT) has taken no action to remedy the problem.



GOOGLE MAPS PICTURES. SKETCH BY RAID TIRH CITY OF BELLEVUE, WA, USA

- Bus Driver Dilemma with Bus Off-tracking into Right Lane:** A transit agency reported a history of numerous sideswipe collisions while turning right from a two-lane eastbound approach into a three-lane southbound arterial.⁴ See sketch below. Southbound vehicles (except buses) on the approach lane 2 (curb) were required to turn only into lane 3 of the southbound receiving lane. Buses were initially free to select lane 2 or 3 of the receiving southbound flow lanes. Some bus drivers had a human factors dilemma of which lane on the southbound arterial to select. Some bus operators selected the middle southbound receiving lane 2, resulting in the side of the bus sideswiping vehicles in the side street curb lane from bus off-tracking, as shown in the right picture.

Consultation between the transit safety officer and the local traffic engineer suggested the installation of chevron pavement marking (PM) to delineate for bus operators to turn into arterial lane 1. The PM eliminated the problem until the bus training officer retired and the bus off-tracking problem slightly resumed and continued until the new bus training office was educated by the traffic engineer.

The issue was from insufficient coordination between the bus drivers, geometrics, signing, and PM. The problem was eliminated when the traffic engineer and bus training official jointly decided to again reinstate the off-tracking bus issue into the bus driver training course.

Some engineers may not think this is a legitimate VZ problem. However, it is an excellent example illustrating drivers' dilemma in making short-term decisions. Sometimes injuries occur when what appears initially to be small, near insignificant crashes but somehow a fatality or serious injury occurs. One could imagine a passenger standing on the bus or walking to/from their seat and, after sideswiping a car, the bus operator brakes suddenly and hard, pitching the unsuspecting passenger (who's not holding onto anything) forward such that his/her head strikes the hard back of a seat, causing fatal head or spinal cord injuries. If the example is not a VZ problem, it is most definitely an IUE issue.

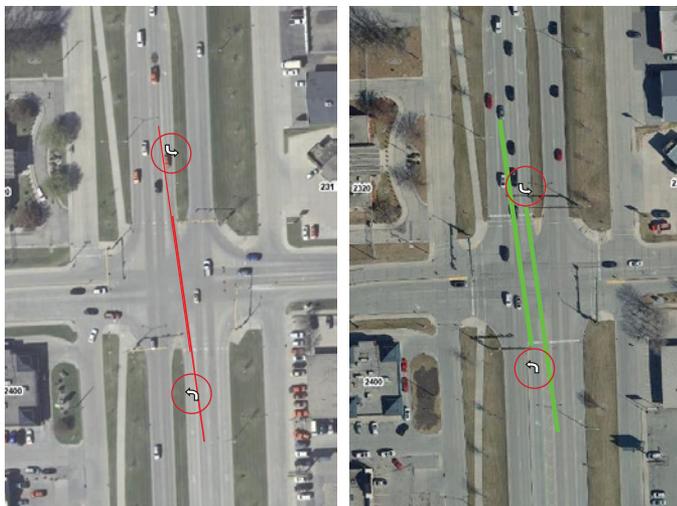
- Edge of Pavement Drop-Off:** In 2004, there was a fatality on a four-lane divided urban road when the right wheels of the car operated by a young woman were caught in a 150-200 ft. long 4-6 inch rut at the pavement-shoulder edge.⁵ In trying to regain the pavement, she overcorrected and lost control of the car, crossed the median, and was fatally struck by a vehicle traveling in the opposite direction. The 4-ft. shoulder material was loose gravel.

Subsequent visits to the location found similar length ruts with one being 8-9 inches deep. Repeated requests to the DOT to install a surface treated shoulder have been unsuccessful. Once it was found, the guardrail near the shoulder edge had been penetrated and damaged. This is an IUE with VZ issue being totally ignored for 17 years. Edge of pavement drop-offs are one of the leading causes of tort claims filed against state and local road agencies, since the resulting crashes are usually fatal or serious or permanent injury crashes.



PICTURE BY S. TIGNOR

6. **“Negative” Left Turn Offset:** Four intersections experienced 50 crashes and some fatalities in a 3-year period on a major arterial. Previous crashes were from left turning vehicles in both northbound and southbound directions not yielding to oncoming traffic because of the view obstruction caused by the ‘negative offset.’ The redesigned intersection eliminated the negative offset by removing the median, taking one lane from the northbound direction, and converting it to the left-turn lane. Here VZ was recognized. The red lines illustrate the before left turns and the green lines illustrate the improved left turn sight visibility.



PICTURE BY J. WILLIAMS

Before

Both showing 250' line of sight

After

7. **Intersection Bulbout Extension:** In this intersection example, the crosswalk is used by school children. After school ends for the day, parents illegally park and block the crosswalk, creating a pedestrian safety hazard. Bulbouts improve safety for pedestrians and motorists at intersections; increases pedestrian crossing visibility and reduces speed of turning vehicles.⁶ The VZ solution used a 6-foot (ft.) bulbout, curb extension at the corner free of vegetation and/or street furniture that can prevent drivers from seeing pedestrians on the sidewalk.



PICTURES BY J. WILLIAMS

Vehicle blocking pedestrians with bulbout installed.

8. **Modification of Signal Timing Plans:** Engineers and technicians can implement in 5-minutes computer control for different VZ traffic signal timing plans from any city location. This efficiency is a great advantage during extreme cold weather events for daily operations. Applications are for special park events, holidays, inclement weather, school operations and crossings, change in heavy truck demand during beet and potato harvests, exclusive pedestrian phases, trails, public pools, and pedestrian crossings. Each of the following three modifications promote VZ.

a) **Harvest times:** During beet and potato harvest times there is a large increase of trucks using major streets. To keep trucks safely moving through town during

harvest time the timing plan has a longer cycle, longer yellow, and all red times.

- b) **School plans:** On school days at 3:00 p.m. when school gets out, two intersections have extended time on the minor street. One to get high school students out of the parking lot, and a second for parents to pick up elementary school students.
 - c) **Exclusive pedestrian phases (EPP):** EPP are used at an intersection near an elementary school twice during the cycle: for N/S, pedestrians and E/W pedestrians. EPP is especially appreciated when the temperature is sub-freezing. Pedestrian timings are preempted by train arrivals.
9. **Trail, School, and Pedestrian Crossings:** Trail crossings can be hazardous when only controlled by signs and crosswalks. Use of solar rectangular rapid flashing beacon (RRFB) on classified two-lane streets is a VZ enhancement to only-used signs and pavement markings. By installing fiber to all school beacons and incorporating them with the signal plans they can be operated remotely all day long. At schools, VZ enhancements were obtained by consolidating cross walks, beacon poles, updated lights and signage, adding illumination, and pedestrian activation. Flashing-times can be changed quickly for school delays, early dismissals, or other needs.
10. **Infrastructure-User Human Factor Deception Example:** Sometimes the visual interpretation of the infrastructure misleads approaching users. This example illustrates that the infrastructure misleads approaching users to make a false decision and lead them unintentionally off the roadway. The left view was taken at ground level with a slight crest prior to the hidden curve which approaching drivers cannot see.⁷ The view shows what an approaching driver would experience before determining the straight

road alignment was not what they thought. The right picture is a later Google Maps Earth view of the site with arrow signs and vegetation planted on the left side of the road to better illustrate the road alignment turns right. Unfortunately, a motor cycle operator had a night, fatal crash when he lost control trying to follow the road curvature while exceeding the 25 mph (40 km/hr) speed limit.

Summary

Road safety has been a concern for years in the United States relative to a rise in highway fatalities.² According to Treat et al., 27 percent of fatalities are a result of the inconsistent or poor communication between the road infrastructure-user errors (IUE) often called human factor errors (HFE).⁸ One-half million fatalities from 1975 to 2017, using Treat's 27-percent infrastructure-user fatalities, could have been prevented. In the United States, ITE and others have been instrumental in promoting and explaining the virtue and safety goals of VZ starting about 20 years ago. To eliminate all highway crashes is a huge goal, but eliminating the IUE is more easily achieved than deliberate user behavioral decisions and habits, i.e. driving while intoxicated, cell phone distractions, etc. In 2020 the highway fatalities are estimated to be 42,000 in United States making the problem even worse.⁹

The goal of this article was to put together examples of VZ and IUE issues that can be easily and quickly eliminated at a minimum expense. Addressing such problems also reduces agency liability exposure. Our examples, are not exhaustive but hopefully they will encourage engineers and support staff, regardless of their professional position, to identify similar safety issues and to have them removed so the path to zero fatalities can be obtained. The authors suggest ITE promote VZ and the elimination of HFE by offering annual recognition awards for the best, inexpensive safety projects. [itej](#)

PICTURE BY R. ECK



GOOGLE MAPS PHOTO.

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The first professional assignment for **Samuel C. Tignor, P.E., Ph.D. (M)** was with the Bureau of Public Roads in Yosemite National Park surveying on the Toga Pass. He retired from the Federal Highway Administration after a long career at the Turner-Fairbank Highway Research Facility in McLean, VA, USA. He was instrumental in the development of the Human Factors Guideline for Road Systems and was the first to use it and the human factor matrix in student studies. He is an adjunct professor at Virginia Tech.



Jane Williams, MPA (M) is the city traffic engineer in the City of Grand Forks, ND, USA and has been an ITE member for 24 years. For the past 15 years she has been responsible for all traffic engineering services for the city including the design, operation, and traffic control of all roads, streets, and pedestrian facilities. She is a graduate of the University of North Dakota.



Ronald W. Eck, Ph.D., P.E. (M) is professor emeritus of Civil Engineering at West Virginia University and director of the West Virginia Local Technical Assistance Program (LTAP). His 45-year career has focused on roadway safety and pedestrians. He currently practices as a public works trainer and as a forensic engineer.



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Answer to "Where in the World" on page 13: Meteor Crater Road off I-40 in Northern Arizona, USA. Photo submitted by Kohinoor Kar, Ph.D., P.E., PTOE (M).



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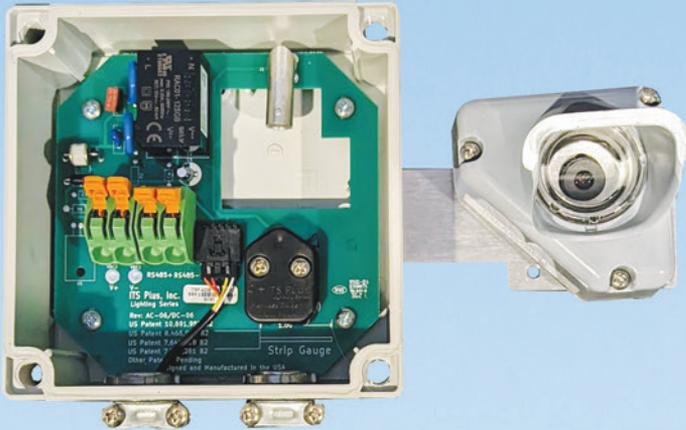
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The New ITS Plus RS Camera Series Lets You Take Control on the Ground or in the Air



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Now: 2022 - Staci Ingram, President of ITS Plus adds a Cirrus SR22 Turbo to provide even more amazing factory direct support.

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Introduction Form

(by a Member of the Board of Supervisors or the Mayor)



I hereby submit the following item for introduction (select only one):

- 1. For reference to Committee (Ordinance, Resolution, Motion or Charter Amendment)
- 2. Request for next printed agenda (For Adoption Without Committee Reference)
(Routine, non-controversial and/or commendatory matters only)
- 3. Request for Hearing on a subject matter at Committee
- 4. Request for Letter beginning with "Supervisor inquires..."
- 5. City Attorney Request
- 6. Call File No. from Committee.
- 7. Budget and Legislative Analyst Request (attached written Motion)
- 8. Substitute Legislation File No.
- 9. Reactivate File No.
- 10. Topic submitted for Mayoral Appearance before the Board on

The proposed legislation should be forwarded to the following (please check all appropriate boxes):

- Small Business Commission Youth Commission Ethics Commission
- Planning Commission Building Inspection Commission Human Resources Department

General Plan Referral sent to the Planning Department (proposed legislation subject to Charter 4.105 & Admin 2A.53):

- Yes No

(Note: For Imperative Agenda items (a Resolution not on the printed agenda), use the Imperative Agenda Form.)

Sponsor(s):

Subject:

Long Title or text listed:

Signature of Sponsoring Supervisor: