2022 High Injury Network Update

November 2022

High Injury Network: 2011-Present

- **2011:** Original *Pedestrian High Injury Corridors* using Statewide Integrated Traffic Records System (SWITRS), 2005-2012

- **2015:** *Pedestrian, Cyclist and Vehicle High Injury Corridors* combined to create the *Vision Zero High Injury Network*

- **2017 - present:** *Vision Zero High Injury Network* updated using DPH's Transportation Injury Surveillance System (TISS) using 2013-2015 severe and fatal crashes

- **Planned update for 2020 using 2016-2019 severe and fatal crashes from TISS was delayed due to COVID-19 pandemic**
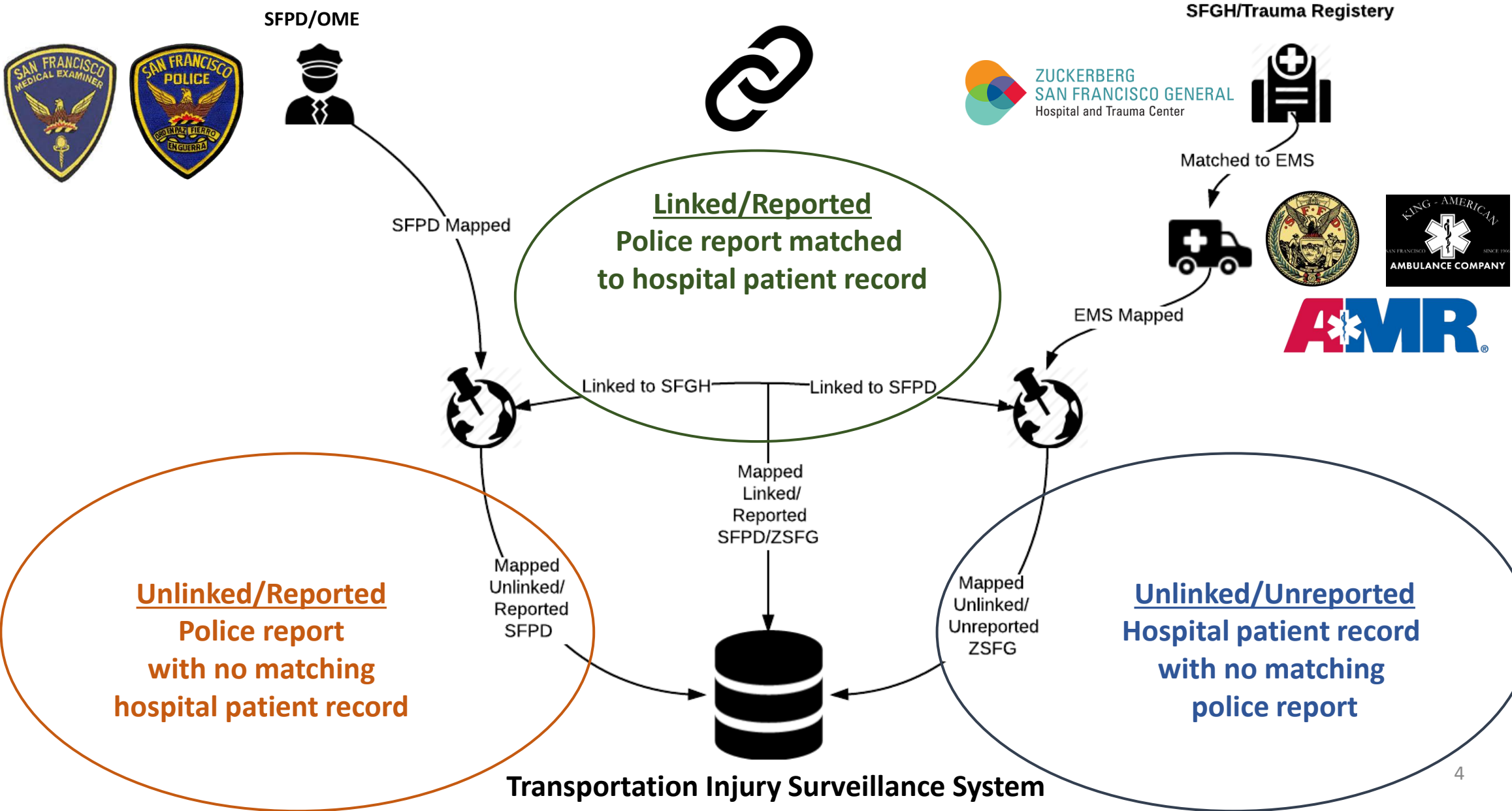
High Injury Network: Uses to Date
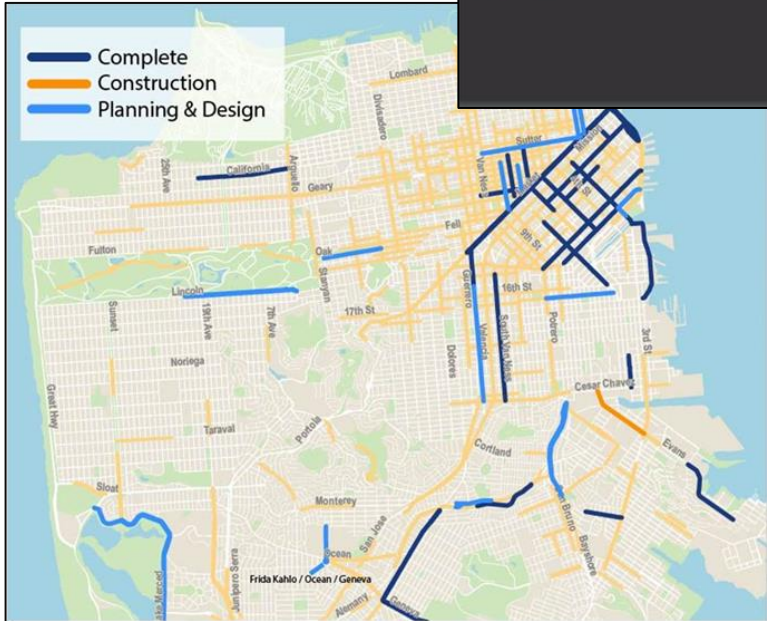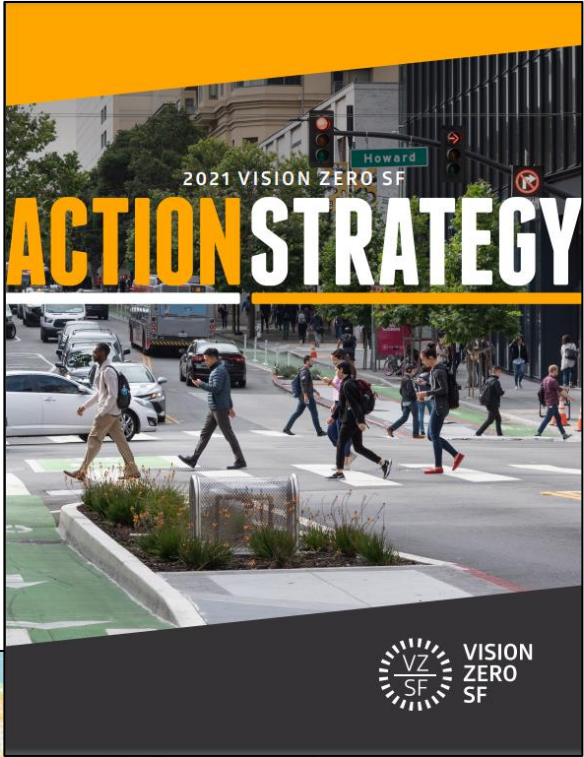
Linking Zuckerberg SF General Hospital and Police Data

Transportation Injury Surveillance System

What is Counted Counts: Findings from 2013-2015 TISS Linkage

"Transportation-injured ZSFG-treated patients lacking police reports were **more often cyclists, male, Hispanic or Black,** and **less often occupants of motor vehicles** compared to those with injuries captured only in police reports."

"Police reports were **significantly less likely to record individuals as Hispanic** (16%, p<0.0001) compared to medical records (20%)."

"Police officers were **significantly more likely to classify injuries as severe** or fatal than hospital staff (p=0.0005)."

"However, **more than three in 10 non-fatal injuries with a critical ISS were missed** (i.e. reported as non-severe) in police crash reports."

"**Disproportionate concentration of severe and fatal injuries in Communities of Concern** (47%); just 31% of San Francisco streets are located in these areas where more vulnerable populations are concentrated."

Reclassifying Injury Severity for Injuries with Linked SFPD-ZSFG Data
2017-2021 TISS Update

Linked/Reported Severe Injuries

Linked/Reported Visible Injuries

Linked/Reported Complaint of Pain

65%
Remain Severe
(also hospital severe)

35%
Reclassified
(not severe per hospital)

21%
Reclassified to Severe per hospital

79%
Remain Visible Injury
(not severe per hospital)

12%
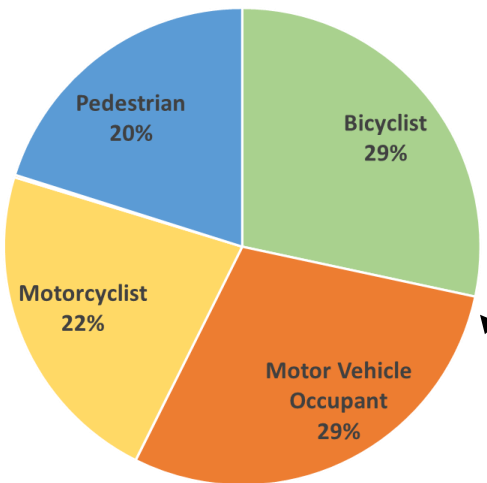**Reclassified to Severe per hospital**

88%
Remain Complaint of Pain
(not severe per hospital)

Net increase in severe injuries in SFPD records based on hospital data.

TISS Breakdown of Severe and Fatal Injuries by Data Source (2017-2021) N= 2,631*

ZSFG/EMS-Only by Transportation Mode

- Pedestrian 20%
- Bicyclist 29%
- Motor Vehicle Occupant 29%
- Motorcyclist 22%

TISS Severe/Fatal Injuries by Data Source

- Fatalities 5%
- SFPD-Only Severe Injury 7%
- ZSFG-Only Severe Injury 22%
- SFPD-ZSFG Linked Severe 66%
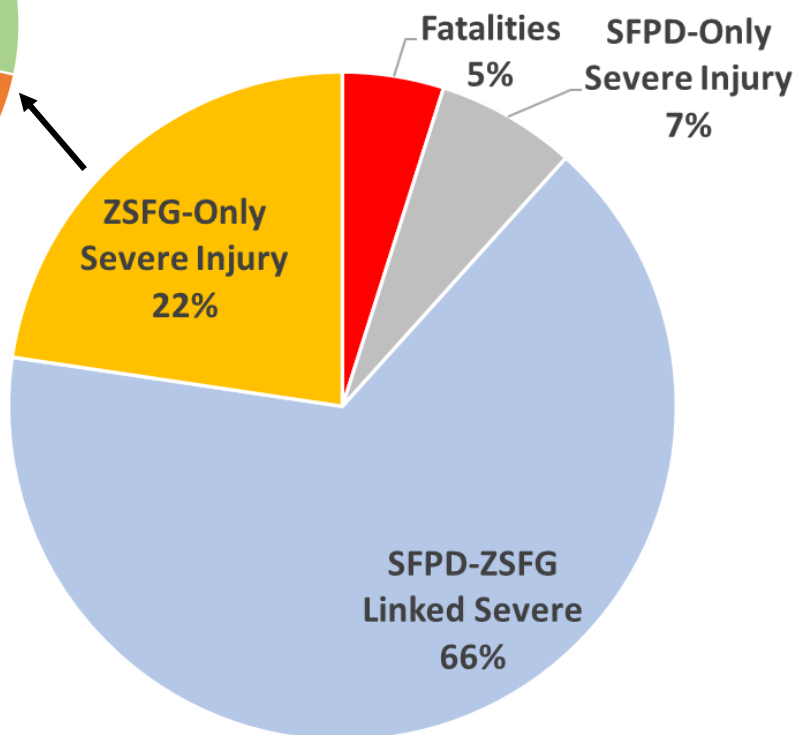
TISS Severe/Fatal Injuries by Transportation Mode

- Bicyclist 18%
- Pedestrian 35%
- Motor Vehicle Occupant 32%
- Motorcyclist 13%
- Other/Unknown 2%
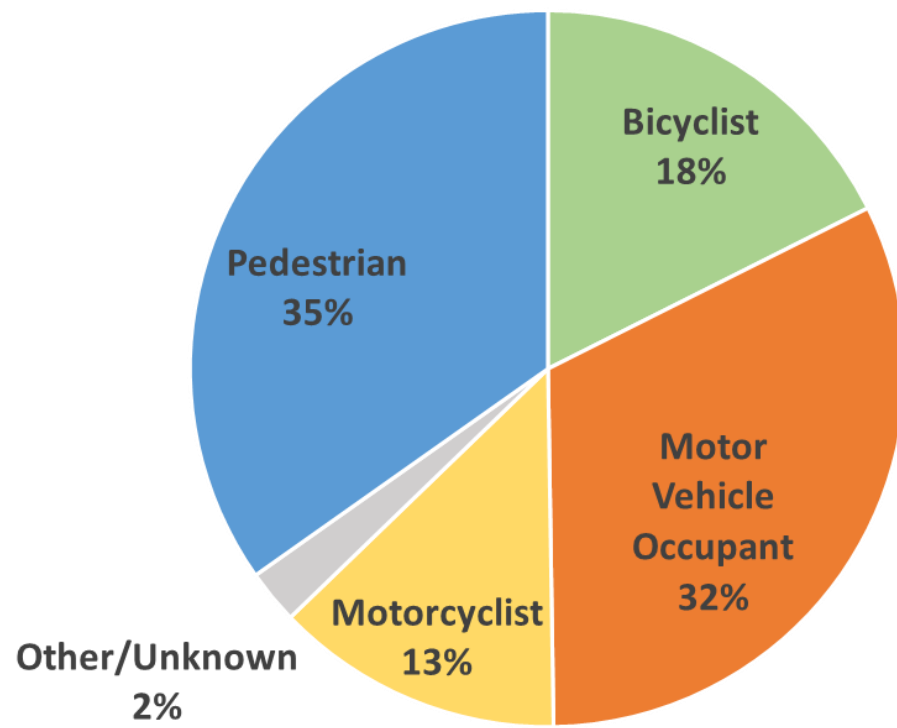
*Excludes the Presidio, intentional assaults, homicides, and suicides.

The Vision Zero High Injury Network Focuses on Severe and Fatal Injuries

NETWORK GOALS

- **Focus on severe injury and death**: More strongly aligned with Vision Zero goals by targeting corridors with the <u>highest concentrations of severe and fatal injuries,</u> regardless of mode.
  - *Vulnerable road users (pedestrians, cyclists, e-mobility devices) make up over half of inputs into the network.*

- **Only one network and map**: Each mode can still be analyzed and prioritized with underlying data to inform specific programs and projects to best match that mode's problems.

- **Establishes a clear, absolute threshold for future network updates**: X severe/fatal injuries per mile to qualify.

3 Alternatives based on 2017-2021 TISS (ZSFG/SFPD) data:

"Pre-Pandemic" Network (identical methodology to 2017 update)

2017-2019 (3 years of data) with 7 killed or severely injured per mile

"Mostly Pandemic" Network (identical methodology to 2017 update)

2019-2021 (3 years of data) with 7 killed or severely injured per mile

"5 Year" Network (modified methodology to account for 5 years of data)

2017-2021 (5 years of data) with 10 killed or severely injured per mile

A minimum of least 3 people killed or severely injured within approximately 3 city blocks of one another along the same street from 2017-2021.
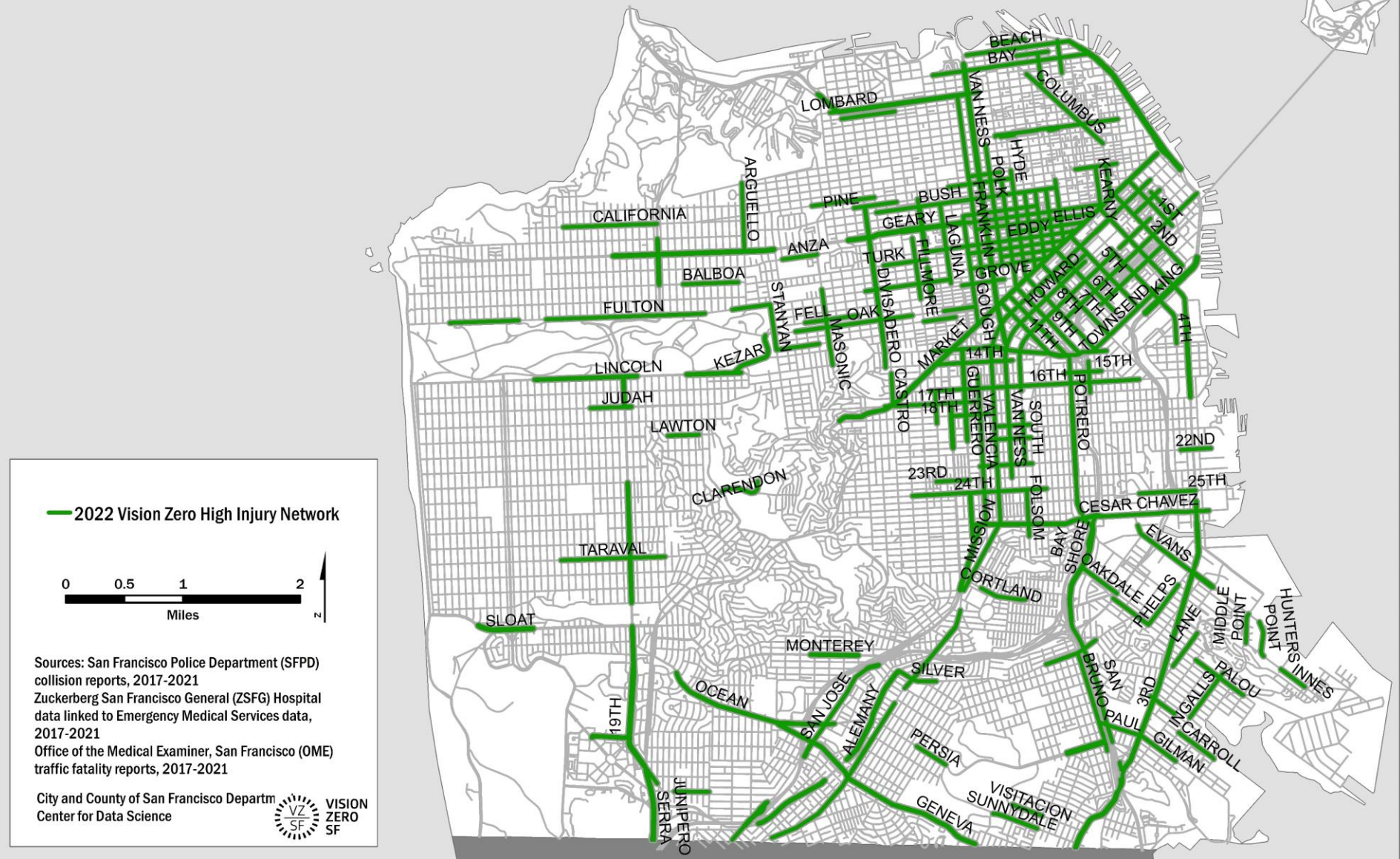
Vision Zero High Injury Network Limitations

- Current network **represents snapshot in time** and **may not reflect current conditions**

- Although prior incidents are often indicative of future incidents, the Vision Zero High Injury Network is **not a prediction (probability) of future risk**

- The network is built on **only the worst injury outcomes** (fatalities and severe injuries) and may not cover locations with high numbers of less severe injury collisions

- **Small changes** in the number of severe and/or fatal injuries can qualify streets

- **Limited amount of information available** about collision factors from only ZSFG/EMS records

- Limitations on what can be shared from **ZSFG/EMS-only crashes due to HIPAA**

Methodology: https://www.visionzerosf.org/wp-content/uploads/2022/11/2022_Vision_Zero_Network_Update_Methodology.pdf
Web Map: https://sfgov.maps.arcgis.com/apps/webappviewer/index.html?id=b2743a3fc0b14dd9814cf6668fc34773

2022 Vision Zero High Injury Network (2017-2021 Fatal and Severe Injuries)
San Francisco, California

— 2022 Vision Zero High Injury Network

0   0.5   1   2
Miles

Sources: San Francisco Police Department (SFPD)
collision reports, 2017-2021
Zuckerberg San Francisco General (ZSFG) Hospital
data linked to Emergency Medical Services data,
2017-2021
Office of the Medical Examiner, San Francisco (OME)
traffic fatality reports, 2017-2021

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2022 Vision Zero High Injury Network (2017-2021 Fatal and Severe Injuries)
San Francisco, California

— 2022 Vision Zero High Injury Network

0   0.125 0.25   0.5
Miles

Sources: San Francisco Police Department (SFPD)
collision reports, 2017-2021
Zuckerberg San Francisco General (ZSFG) Hospital
data linked to Emergency Medical Services data,
2017-2021
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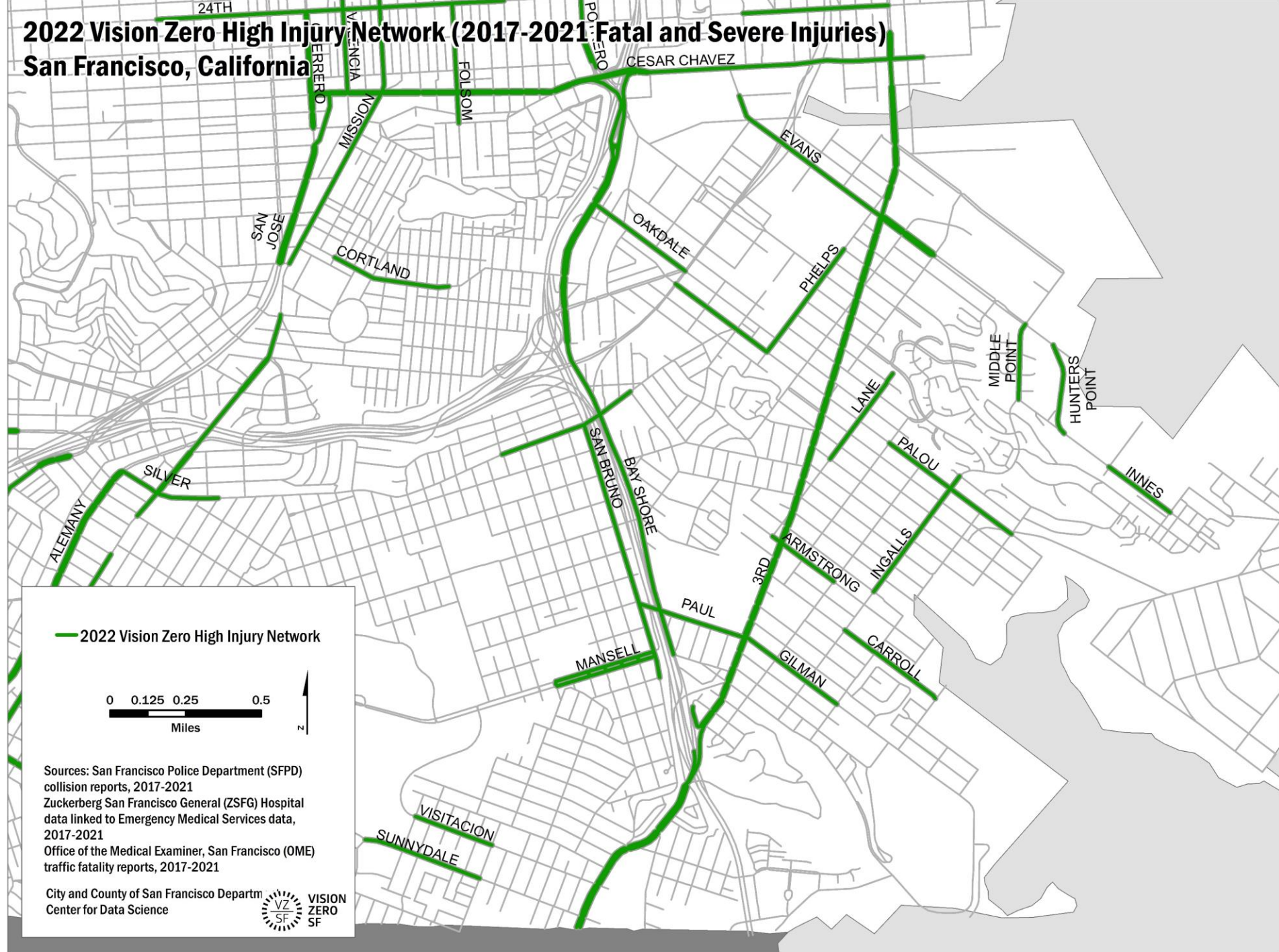Center for Data Science

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11/1/2022

2022 Vision Zero High Injury Network (2017-2021 Fatal and Severe Injuries)
San Francisco, California

2022 Vision Zero High Injury Network

0 0.125 0.25   0.5
Miles

Sources: San Francisco Police Department (SFPD)
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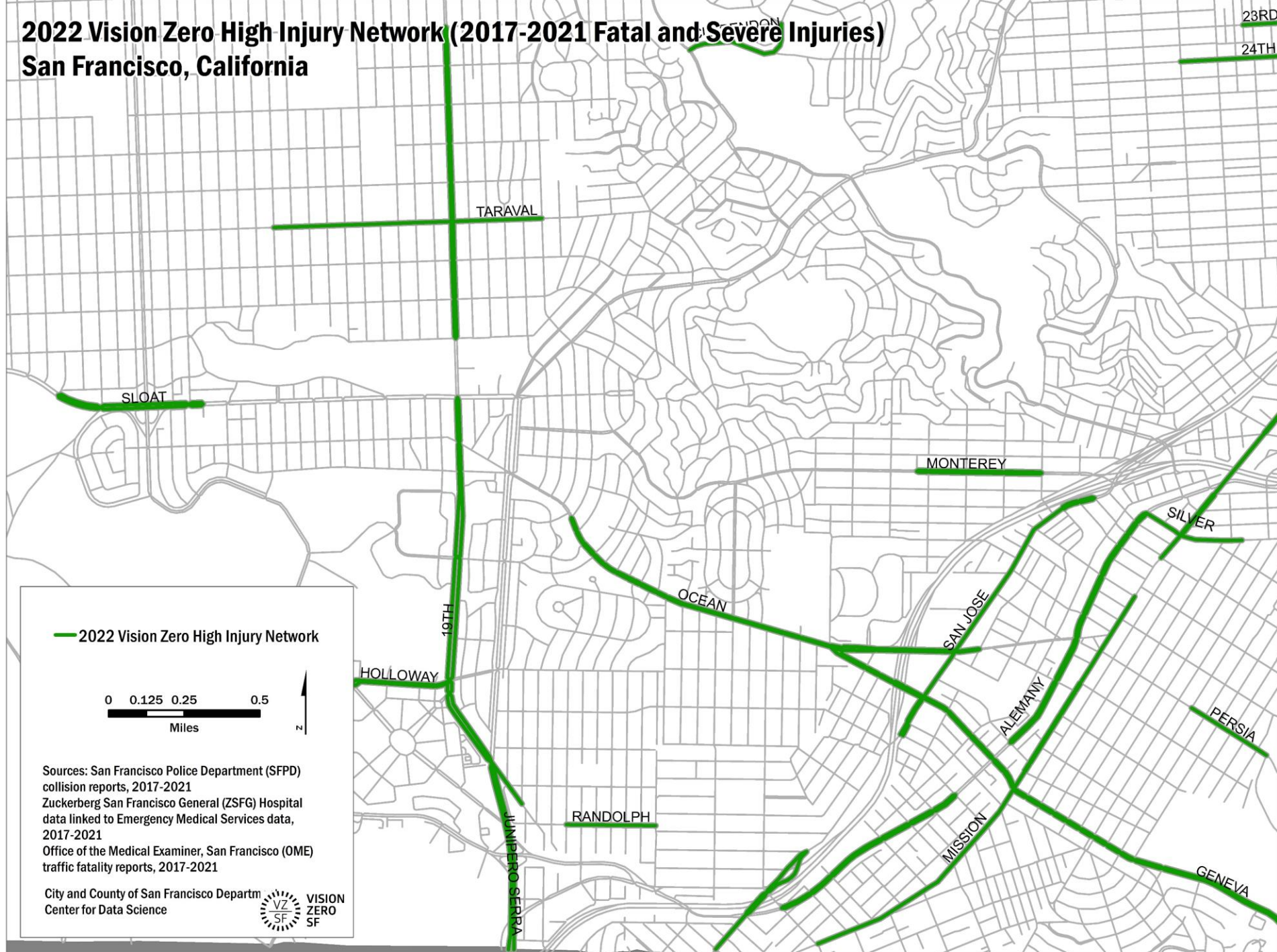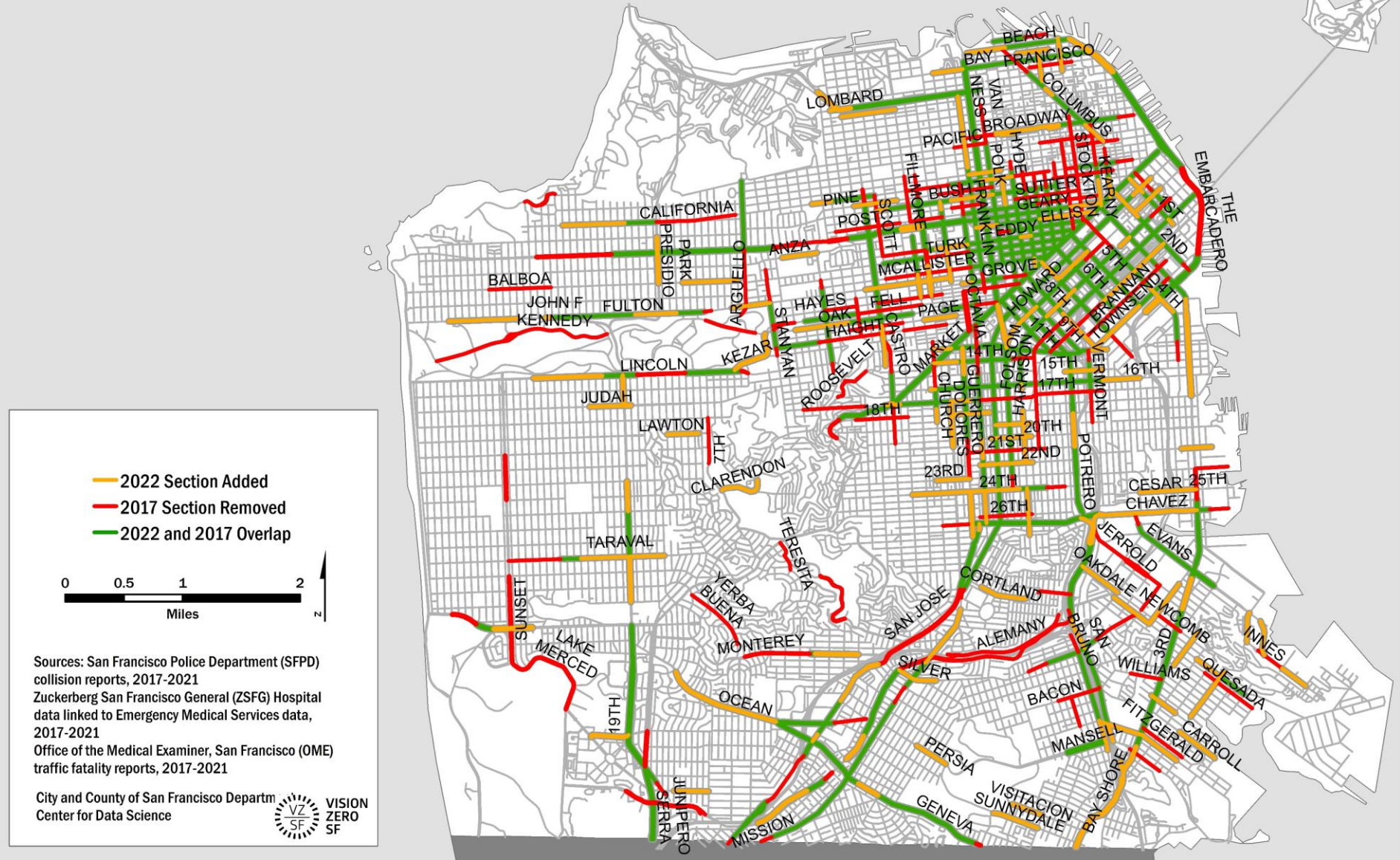Center for Data Science

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2022 Vision Zero High Injury Network (2017-2021 Fatal and Severe Injuries)
San Francisco, California

2022 Vision Zero High Injury Network (2017-2021 Fatal and Severe Injuries) Compared to 2017 Vision Zero High Injury Network (2013-2015 Fatal and Severe Injuries)
San Francisco, California

Legend:
— 2022 Section Added
— 2017 Section Removed
— 2022 and 2017 Overlap

0   0.5   1   2
Miles
N

Sources: San Francisco Police Department (SFPD) collision reports, 2017-2021
Zuckerberg San Francisco General (ZSFG) Hospital data linked to Emergency Medical Services data, 2017-2021
Office of the Medical Examiner, San Francisco (OME) traffic fatality reports, 2017-2021

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Why Might a Corridor Have Been Removed or Added?

METHODOLOGY
- Focus of network is on smaller sample of crashes with worst injury outcomes
  - Streets near threshold for inclusion in 2017 map can drop due to small change in number of severe fatal crashes
  - Streets with any fatality in last 4 years no longer automatically included in network
- 5 years of TISS severe injury/fatality data used with different threshold for inclusion.

CITYWIDE FACTORS
- Vision Zero prevention initiatives:
  - engineering
  - enforcement
  - education
- Changing population growth and transportation patterns
  - COVID-19 pandemic/work from home

Overlap with TISS Killed/Severely Injured and all SFPD Crash Victims

62% of updated 2022 network overlaps 2017 network

2022 network is **12% of city street** miles and captures **68% of severe and fatal injuries** (TISS, 2017-2021)

2022 network captures **61% of all traffic crashes** resulting in an injury (SFPD, 2017-2021) of any severity

2022 network has **captured 74% of fatalities this year** (end of September 2022)

# Overlap with Equity Priority Communities

Equity Priority Communities are census tracts that have a significant concentration of underserved populations, such as households with low incomes and people of color.

29% of city street miles

38% of ZSFG/SFPD (2017-2021) severe injuries and fatalities

44% of 2022 Vision Zero High Injury Network miles

- Compared to 40% of 2017 VZ HIN
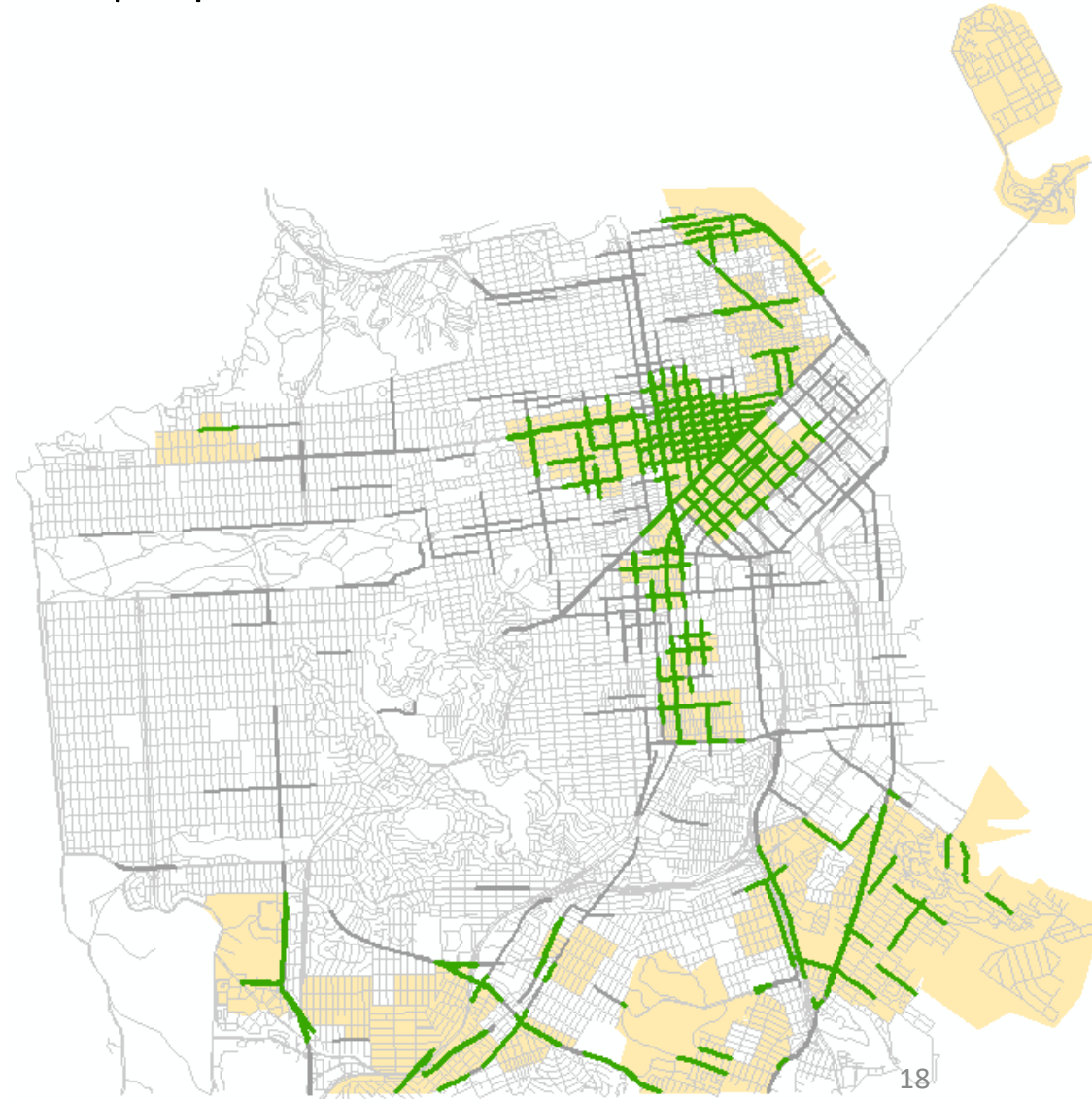
Thank You TAC Members

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