Evaluating Success: Complete Streets Before and After

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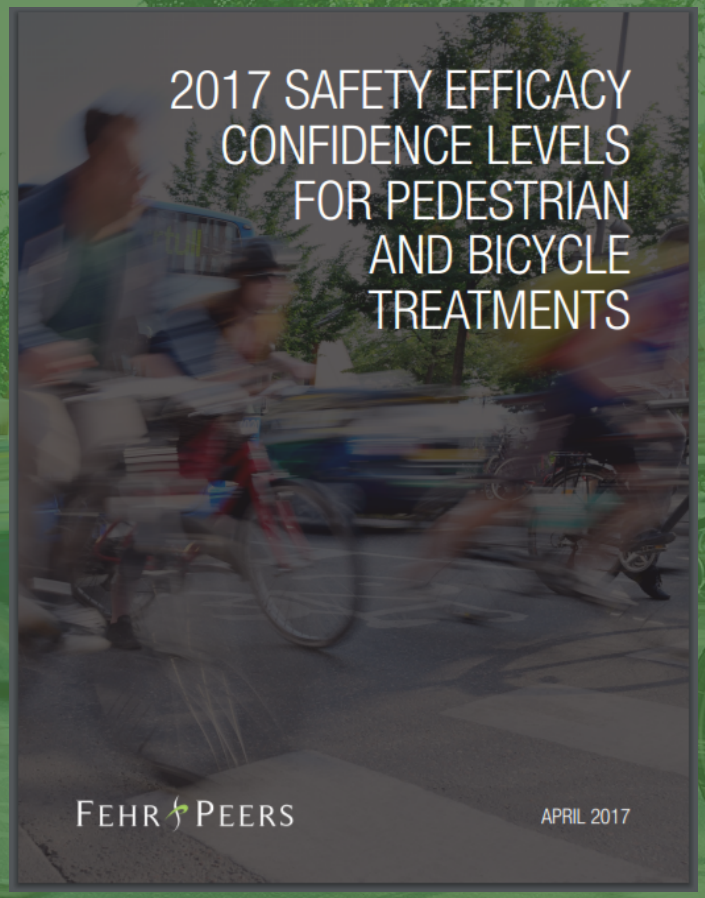
FEHR PEERS

Overview

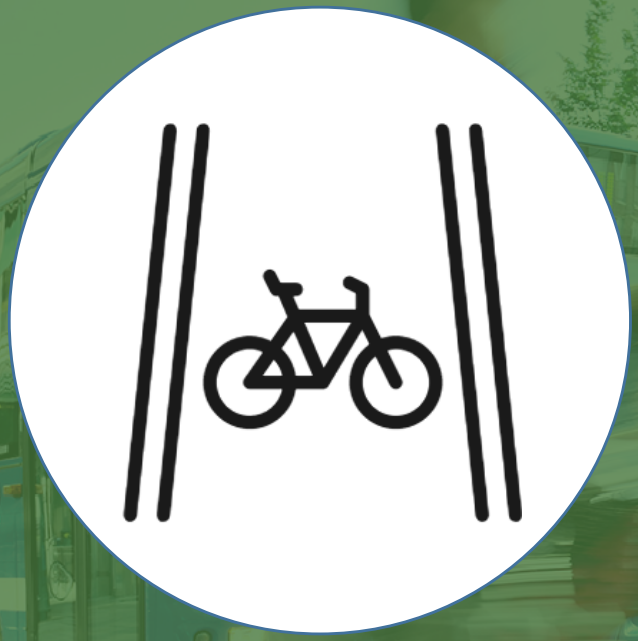
- Why is evaluation important?
- How can it be performed, and what metrics should be used?
  - What unique methods can be used for evaluating safety in the near term?
- How can the results be shared with the community?

WHY.



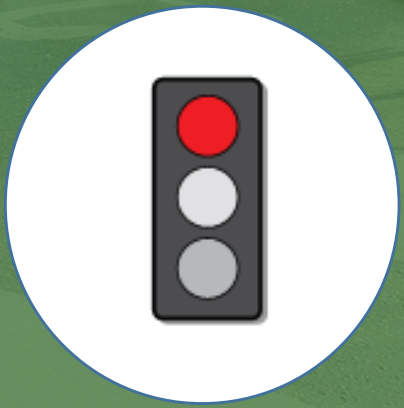
Fehr & Peers, 2017

WHY.



Outputs

Outcomes



HOW.

Quick Build project in Richmond, CA

Quick Build project in Fremont, CA

METRICS.

Vehicle Flow

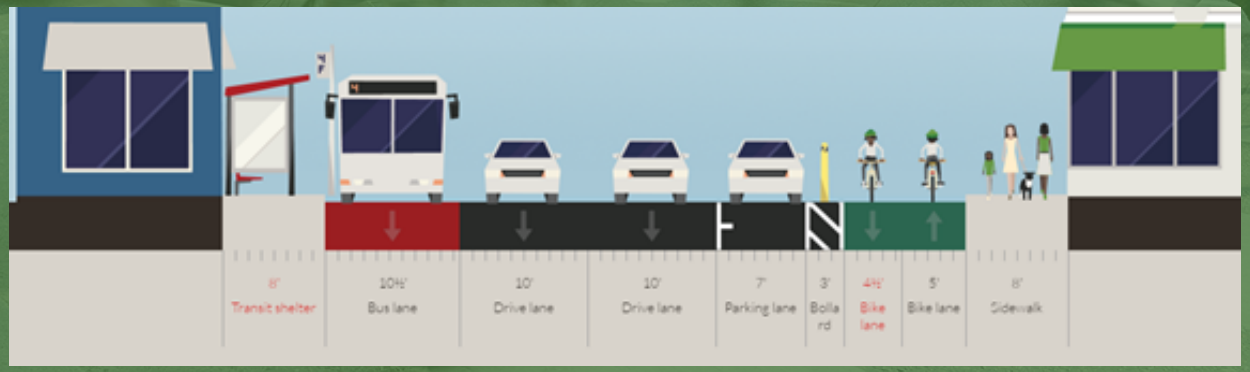
Metrics	When to Use	How to Use
24 Hour Vehicle volumes (ADT)	All projects	To establish volume / roadway context for study (high volume vs. low volume)
Average corridor speeds	Corridor projects that include goal of reducing speed	To evaluate change in vehicle speed
Peak hour vehicle turning movements	Projects that include intersection safety treatments	To establish volume context for intersection (high volume vs. low volume) and thresholds of efficacy
Vehicle queuing during peak periods	Projects that include removal of a vehicle lane	To evaluate / demonstrate changes to vehicle flow
Vehicle turning speeds	Projects that include goal of reducing speeds at intersections	To evaluate effectiveness of reducing vehicle turning speeds
Vehicle travel time	Projects that may reduce roadway vehicle capacity	To determine expected and actual change in travel time through study area

METRICS.

Multimodal Safety

Metrics	When to Use	How to Use
Crosswalk or bikeway blocking at intersections	Projects that include a new bike facility with crossings at intersections	To provide near term evaluation of potential conflicts
User perception / comfort (intercept surveys)	Near-term safety projects whose pilot duration is less than five years	To provide near term evaluation of safety
Vehicle to pedestrian or bicycle to pedestrian yield rates	Projects that include changes at uncontrolled crosswalk locations (such as a road diet or adding a dedicated bike facility) or new intersection treatments at signalized crosswalks with permitted turns (such as new bicycle facilities)	To determine if a project has successfully elevated the pedestrian such that drivers and riders are more aware of their duty to yield or stop
Near-Collision Video Analytics	Projects with a major goal in addressing an existing safety issue	To evaluate safety problems before collisions occur.

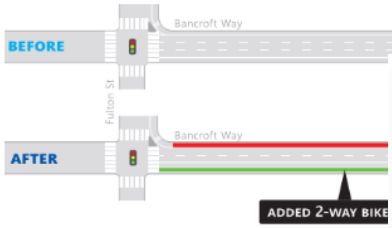
CASE STUDY


8'
Transit shelter
10½'
Bus lane
10'
Drive lane
10'
Drive lane
7'
Parking lane
3'
Bolla
rd
4½'
Bike
lane
5'
Bike lane
8'
Sidewalk

CASE STUDY.

SINCE WE COMPLETED THE

Bancroft Way Complete Street Project



WE FOUND THAT

Vehicle Flow is u

neutral difference in vehicle speeds

30 mph BEFORE — 29 mph AFTER

Data collected over three days on Bancroft between Ellsworth and Dana Street

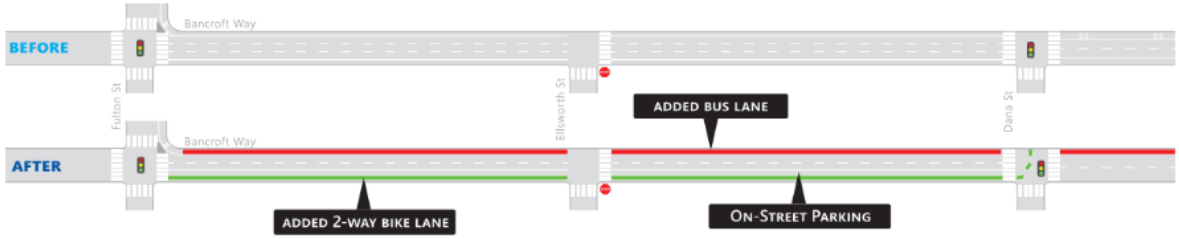
neutral difference in daily vehicles traveling on Bancroft

9,543 BEFORE — 9,815 AFTER

Data collected over two days on Bancroft between Ellsworth and Dana Street

SINCE WE COMPLETED THE

Bancroft Way Complete Street Project



WE FOUND THAT

More People are Riding Bikes, and in a Lower Stress Environment!

more people are riding bikes

617 BEFORE — 957 AFTER

Data collected from 8 AM - 6PM at Fulton-Bancroft intersection

less people are riding bikes on the sidewalk

21 BEFORE — 15 AFTER

Data collected on Bancroft Way between Fulton Street and Ellsworth Street from 8am-6pm

less people are riding bikes the wrong way in the roadway

6 BEFORE — 0 AFTER

Data collected on Bancroft Way between Fulton Street and Ellsworth Street from 8am-6pm

more bikes are protected on Bancroft

0% BEFORE — 68% AFTER

290 — 246 — 225

Data collected from 8 AM - 6PM at westbound approach to the Fulton intersection

84% of vehicles do not block bikeway at Ellsworth St

9 of 10 KEEP BIKEWAY CLEAR

Data collected on Bancroft Way at Ellsworth Street during AM and PM peak periods (4 hours total)

83% wait for the bikes before crossing to access their parked car

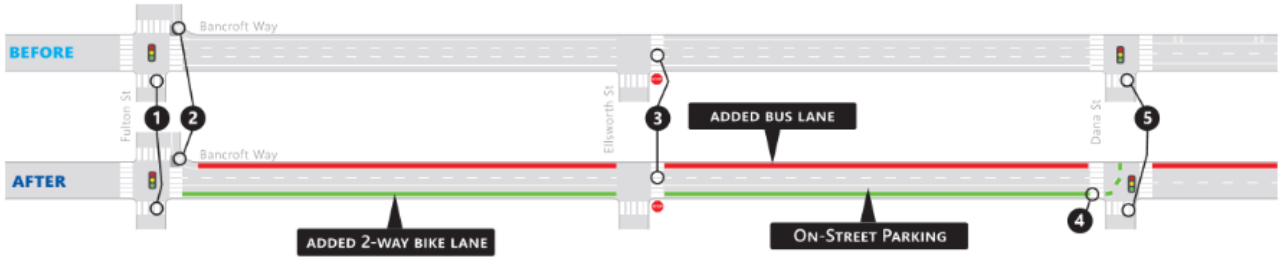
8 of 10 PEOPLE YIELD TO BIKES

Data collected along Bancroft Way between Fulton Street and Dana Street during AM and PM peak periods (4 hours total)

CASE STUDY.

SINCE WE COMPLETED THE

Bancroft Way Complete Street Project



WE FOUND THAT

More vehicles are yielding to pedestrians, with mixed results for bicycling yielding behavior.

fewer bikes yield to pedestrians at Fulton-Bancroft left turn

40% BEFORE
25% AFTER

more vehicles and **fewer** bikes yield to pedestrians at Fulton-Bancroft right turn

78% 37% BEFORE
83% 8% AFTER

more vehicles and bikes yield to pedestrians at Ellsworth-Bancroft crosswalk

50% 0% BEFORE
63% 9% AFTER

11% of bikes yielded to pedestrians after the project at Dana-Bancroft west leg crosswalk

more bikes yield to pedestrians at Dana-Bancroft south leg crosswalk

33% BEFORE
40% AFTER

1 *on map*

Data collected during AM and PM peak periods (4 hours total) at Fulton-Bancroft intersection

2 *on map*

Data collected during AM and PM peak periods (4 hours total) at Fulton-Bancroft intersection

3 *on map*

Data collected during AM and PM peak periods (4 hours total) at Ellsworth-Bancroft intersection

4 *on map*

Data collected during AM and PM peak periods (4 hours total) at Dana-Bancroft intersection

5 *on map*

Data collected during AM and PM peak periods (4 hours total) at Dana-Bancroft intersection

CALL TO ACTION.

Standardized data

Send us your studies!

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FEHR PEERS