

FY 26-27

Project	2017-2021 Collisions*	Fatal	Injury	AADT	Length (mi)	Collision Rate Before <sup>1</sup>	Collision Rate After (CMF = 0.45 <sup>2</sup> )	Design Speed (mph)	Statewide Collision Rate (2022)
Niles St. Complete Streets	69	2	67	12579	0.9	16.7	7.5	40	0.61

$$\text{Collision Rate}^1 = \frac{\text{Fatality Rate} \quad 0.5}{\frac{\text{Number of Collisions} \times 1 \text{ million}}{(\text{Segment Length})(\text{AADT})(365 \text{ Days})}}$$

CMF<sup>2</sup>: Based on CMF for similar improvements (Niles St)  
Analysis performed by Kimley-Horn

\* Doesn't include property damage

### Safety Problem

Bakersfield ranks 7<sup>th</sup> for pedestrian fatalities per capita out of U.S. metropolitan areas.<sup>1</sup> The City's street network prioritizes vehicles at the expense of pedestrians and bicyclists. The residents in this Project area have a higher rate of non-vehicle means of transport to work compared to the City rates. Public transportation commuting to work rates range from 1.2-4.5%, while walking and bicycling to work average 4.87%. In contrast, citywide non-vehicle means of transport fell below 2%.

An analysis of crash data acquired from the Transportation Injury Mapping System (TIMS) between 2017 and 2021 showed there were 73 collisions resulting in injuries along the Niles Street corridor, an average of 14.6 per year. The same analysis reveals that 100 collisions resulting in injuries occurred along Monterey Street during the same period, for an average of 20 collisions per year. Within the five-year period, collisions that occurred at Niles Street resulted in 3 fatal/severe injuries and at Monterey Street 8 fatal/severe injuries. Table 2 provides the collisions categorized by mode and injury type.

*Table 2 - Niles St Collisions and Injuries 2017-2021*

By Mode	Fatal/Severe		Injuries		Property Damage Only		Total	
	Niles	Monterey	Niles	Monterey	Niles	Monterey	Niles	Monterey
Vehicles	2	4	67	88	51	27	<b>120</b>	<b>119</b>
Pedestrian	1	2	1	1	-	-	<b>2</b>	<b>3</b>
Bicyclist	0	2	2	3	-	-	<b>2</b>	<b>5</b>

According to the High-Injury Network analysis of the citywide roadways, the highest occurring collision type involved vehicle/pedestrian collisions (36%)<sup>2</sup> while the highest occurring primary collision factors were automobile right-of-way (23%) and unsafe speed (17%). Within the project area the highest recorded primary causes of collisions during this study period were Traffic Signal and Signs at 45% and Automobile Right-of-Way at 24%. Traffic Signal and Sign violations indicate drivers are not stopping or following traffic signals. Automobile Right of way indicates a driver failed to yield the right of way.

### Safety Impact Assessment

The Project proposes traffic calming measures that are low-cost, high-impact strategies and prioritize pedestrian and bicycle mobility such as curb extensions (bulbouts), a reduction in vehicle travel lanes and addition of dedicated bicycle facilities.

The travel lane widths will be reduced to 11' wide and on-street parking will be maintained providing an additional buffer between bicyclists and vehicles. A two-way cycle track, separated bikeway, will allow bike travel in both directions on one side of the road, as shown in **Figure 2** and **Figure 3**. Bus bulbouts, which are curb extensions aligned with the parking lane, will be installed to enhance travel reliability.

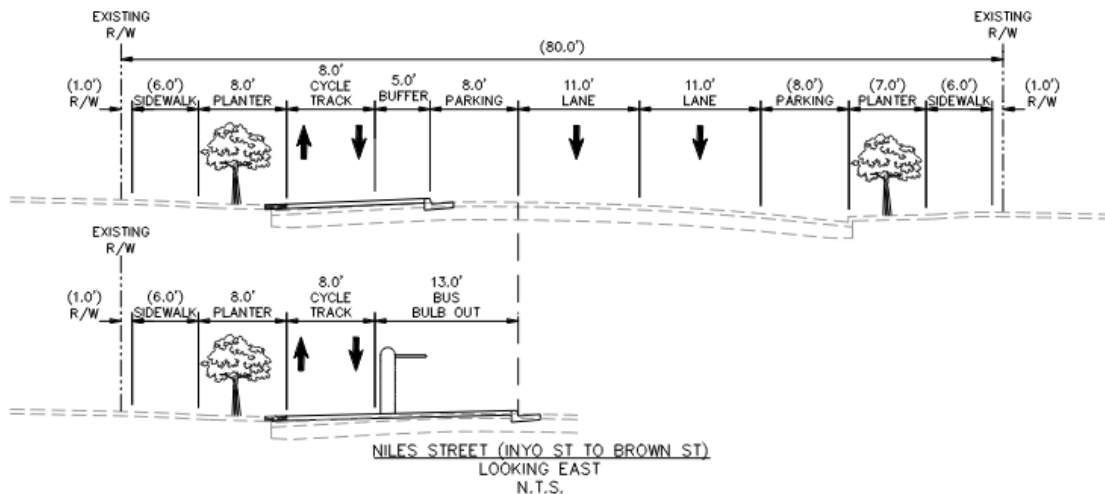


Figure 2 - Proposed Cross Section - Niles Street (Inyo St to Brown St)

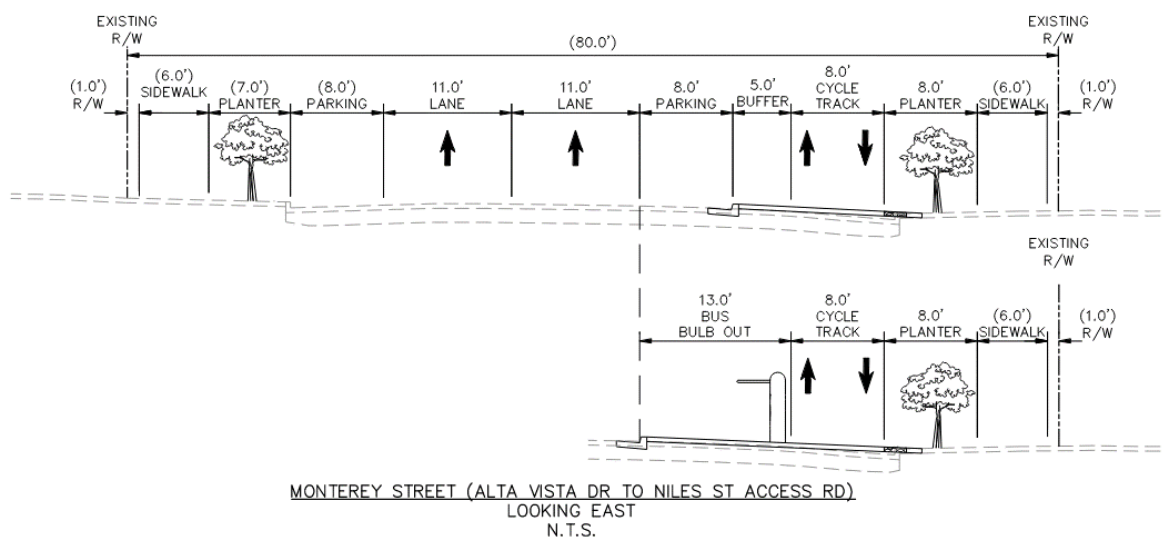


Figure 3 - Proposed Cross Section - Monterey Street (Alta Vista Dr to Niles St Access Rd)

Improvements such as enhanced pedestrian crossings, curb bulbouts, high visibility crosswalks, and green bike lane pavement markings promote a multimodal corridor that increases the visibility of pedestrians and cyclists by raising the awareness of drivers of potential conflicts. **Figure 4** illustrates the proposed improvements at an unsignalized intersection.

LEGEND

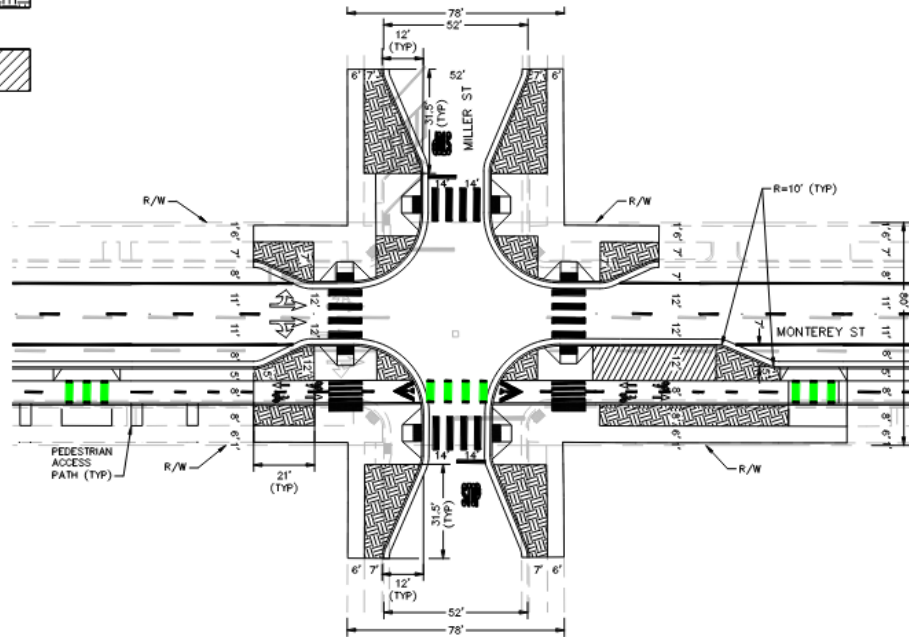
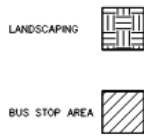


Figure 3 – Diagram of Improvements at Monterey St and Miller St

The proposed Project improvements' impact on roadway safety conditions was measured using the proven safety countermeasures listed in **Table 3**. These Crash Modification Factors (CMF) were selected from the California Department of Transportation's (Caltrans) 2022 Local Safety Roadway Manual<sup>2</sup> (LSRM) and The Crash Modification Factors Clearinghouse<sup>3</sup>.

Table 3 – Proven Safety Countermeasures

ID	Countermeasure Name	Crash Modification Factor (CMF)	Crash Reduction Factor (CRF)	Expected Life Span
R33PB	Install Separated Bike lanes	0.55	45%	20
R01	Add Segment lighting	0.65	35%	20
R34PB	Install Sidewalk/Pathway (to avoid walking along roadway)	0.20	80%	20
R28	Install Edge-lines and Centerlines	0.75	25%	10
258	Installation of Colored Bicycle Lanes	0.61	39%	5
S21PB	Modifying signal phasing to implement a Leading Pedestrian Interval (LPI)	0.75	25%	20
NS22PB	Install Rectangular Rapid Flashing Beacon (RRFB)	0.65	45% <sup>4</sup>	20

<sup>2</sup> [Local Roadway Safety: A Manual for California's Local Road Owners, Version 1.6, April 2022](#)

<sup>3</sup> <https://www.cmfclearinghouse.org/>

<sup>4</sup> Percentage reflects average crash reduction between the LRSRM and the [CMF Clearinghouse](#)

ID	Countermeasure Name	Crash Modification Factor (CMF)	Crash Reduction Factor (CRF)	Expected Life Span
S20PB	Install advance stop bar before crosswalk (Bicycle Box)	0.85	15%	10

The Crash Reduction Factor (CRF) was used to determine the project improvement's effectiveness at reducing collisions at specific locations along the Project corridors. The corridor-wide improvements include the installation of the two-way bicycle track, the installation of green conflict bike lane pavement markings, corridor lighting, separate pedestrian pathway, and retroreflective pavement markings. This resulted in an average 45% reduction in accidents along both corridors, shown in **Table 4**. A full list of Countermeasure reductions per corridor is found in **Table 5**.

*Table 4 - Summary of Corridor-wide Countermeasures*

Corridor	Collisions	Average Crash Reduction Factor (CRF)	Annual Average Collisions	Annual Reduced Collisions
<b>Niles Street</b>	73	45%	14.6	6.5
<b>Monterey Street</b>	100	45%	20	9.0

The safety impact at the project intersections resulted in an average 25% reduction in accidents. These countermeasures focus on prioritizing pedestrian mobility and minimizing the potential of vehicle conflict. The CRF reductions were applied to the following collisions that had collision types that matched a corresponding countermeasure. The collisions used in this analysis were within 250' of the intersection.

*Table 5 - Summary of Intersection Countermeasures*

ID	Countermeasure	Collisions	Crash Reduction Factor (CRF)	Annual Average Collisions	Annual Reduced Collisions	Crash Type
<b>Niles Street &amp; Haley Street</b>						
R28	Install Edge-lines and Centerlines	11	25%	2.20	0.55	ALL
<b>Niles Street &amp; Robinson Street</b>						
R35PB	Install Pedestrian Crossings (with curb extensions)	1	35%	0.20	0.07	Pedestrian & Bicycle
<b>Niles Street &amp; Beale Avenue</b>						
SB18PB	Install Pedestrian Crossings	3	25%	0.60	0.15	Pedestrian & Bicycle
<b>Monterey Street &amp; Baker Street</b>						
SB18PB	Install Pedestrian Crossings	3	25%	0.60	0.15	Pedestrian & Bicycle

ID	Countermeasure	Collisions	Crash Reduction Factor (CRF)	Annual Average Collisions	Annual Reduced Collisions	Crash Type
Monterey Street & Robinson Street						
SB18PB	Install Pedestrian Crossings	1	25%	0.20	0.05	Pedestrian & Bicycle
Monterey Street & Beale Avenue						
SB18PB	Install Pedestrian Crossings	1	25%	0.20	0.05	Pedestrian & Bicycle
S20PB	Install Bicycle Box	1	15%	0.2	0.03	
Monterey Street & Alta Vista Drive						
SB18PB	Install Pedestrian Crossings	2	25%	0.40	0.10	Pedestrian & Bicycle
Niles Street & Baker Street						
S21PB	Modifying signal phasing to implement a Leading Pedestrian Interval (LPI)	1	25%	0.20	0.05	Pedestrian & Bicycle
Niles Street & Beale Avenue						
SB18PB	Install Pedestrian Crossings	1	25%	0.20	0.05	Pedestrian & Bicycle

In addition to the above, the ADA-compliant curb ramps to be installed at each intersection do not have a corresponding CMF/CRT but will nonetheless improve pedestrian access at these locations.

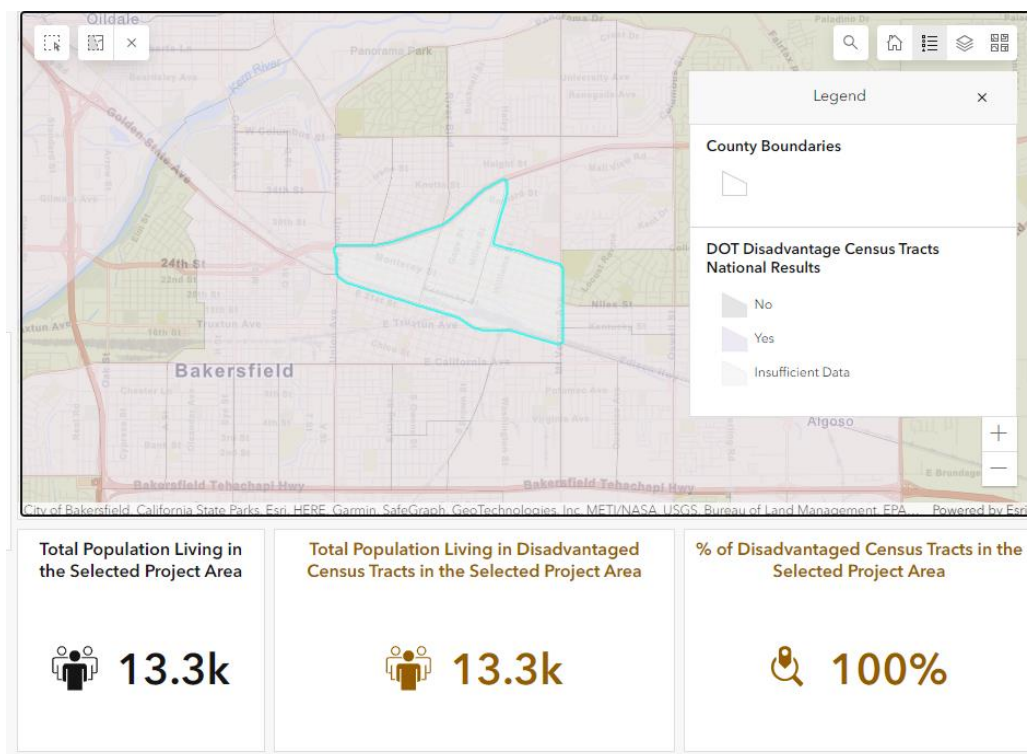


Figure 4 - USDOT Equitable Transportation Community (ETC) Map