2018 Street Safety Plan

Prepared for the City of Fort Bragg

Submitted by
W-Trans

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TRAFFIC ENGINEERING
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Table of Contents

Tables

Appendices

Introduction

Goals of the Project

The City of Fort Bragg completed a *Residential Streets Safety Plan* (RSSP) in 2005. It identified several areas where improvements were needed to residential streets safety, especially for pedestrians and bicyclists. The top five identified areas of concern were addressed primarily through State and Federal Safe Routes to School funding. Some of the recommendations were either completed or will be implemented at a later date.

The City received a grant from the Mendocino Council of Governments (MCOG) to complete this traffic study and conceptual street design work. As part of this same MCOG grant, City staff is completing an update to the 2011 *Residential Streets Safety Plan* that includes an expansion to address commercial street safety. This report will be incorporated into the Plan update. The goal of this project was to evaluate conditions and make recommendations for conceptual street designs incorporating innovative traffic calming measures to improve residential neighborhood and commercial street safety. The City's goals for this 2018 Street Safety Plan are to:

- Create safer neighborhood and commercial streets that encourage walking and bicycling as an alternative to the private automobile;
- Improve pedestrian and bicycle facilities and therefore, safety; and
- Slow automobile traffic as it moves through residential neighborhoods and commercial districts, while still maintaining an efficient flow of vehicles.

Study Area

The following roadways were evaluated for this study:

- Maple Street
- Elm Street
- Pine Street
- Main Street (State Route (SR) 1)
- Fir Street
- Harold Street

Maple, Elm, Pine and Main Streets were examined to determine measures which would meet the City's goals of safer streets, improved pedestrian and bicycle facilities and slower traffic. Fir Street received modifications in 2013including a residential traffic circle, speed humps and a raised intersection.

It should be noted that in addition to the modifications on Fir Street, Harold Street also received recent streetscaping improvements that included high visibility crosswalks, curb extensions, splitter islands, stop bars, and flashing LED stop signs at Oak Street intersection. The modifications specifically on Fir Street were reviewed, and data was collected to determine the impacts of these measures.

In addition, the following three intersections were evaluated to address specific safety issues:

- Laurel Street/Harrison Street
- Redwood Avenue/Main Street
- Oak Street/Franklin Street

Process

As part of this process, input from the public was received at two public workshops, an outreach table at the weekday Farmer's Market, and via an online survey, included in Appendix C. The results of the public input are summarized in the report and reflected in the recommendations for the study area.

City Council Priorities

On February 11, 2019 the (DRAFT) *2018 Street Safety Plan* was presented to City Council at a regularly scheduled meeting. Council Members provided the following comments and priorities:

- Install a 4-way STOP at the intersection of Laurel Street and Harrison Street;
- Install a 4-way STOP at the intersection of Maple Street and Harold Street;
- Remove the traffic circle at the intersection of Fir Street and Harrison Street;
- Initiate dialogue and negotiations with Caltrans regarding pedestrian safety on Main Street. The focus of these efforts should be:
    a) The intersection of Redwood Avenue and N Main Street with the recommendation of an advanced pedestrian timing at signal; and
    b) The intersection of Pine Street and N Main Street with the recommendation of enhanced pedestrian crosswalk.

Fort Bragg City Council expressed support for utilizing painted curb bulb-out markings, while acknowledging community opposition of concrete bulb-outs. Painted curb bulb-out markings are an affordable and creative solution to the high costs associated with constructing concrete bulb-outs and would also be more accepted by the driving public. Council also expressed support for lane narrowing to accommodate bicycle lanes however, stated that lane narrowing should not occur at the expense of parking. Furthermore, although improving bicycle lanes to include the NATCO (National Association of City Transportation Officials) green paint is supported, prior to implementing such improvements, Council and the community should consider the affect such improvements might have on the historic character of the Central Business District. It was also noted that Police presence is an effective way to manage speeding traffic.

Existing Conditions

Transportation Setting

The study area consists of the following streets and intersections, which are shown in Figure 1. These roadways were selected based on discussions with the City. The following roadways were identified as either locations that would benefit from improved traffic calming, pedestrian and bicycle facilities or locations that had recent improvements. For the roadways that had recent improvements, the implemented measures were reviewed, and field surveyed. Some of these locations were also discussed in the community survey and are discussed later in the report.

Study Roadways for Design Recommendations

Maple Street is an east-west street slightly longer than one-half a mile in length with one lane in each direction. The study segments extended from Franklin Street to Lincoln Street. The roadway's alignment is straight, though there are several hills on the western portion. The posted speed limit for the road is 25 mph with a reduction to 15 mph in the school zone when children are present. Maple Street is predominantly uncontrolled except at either end. There are bike lanes for the full length of the study segment between Franklin Street and Lincoln Street and on-street parallel parking on both sides of the street for the full length. There are east-west marked crosswalks at the northern and southern legs of the intersections along the entire length of Maple Street with only one north-south crosswalk between Franklin Street and Lincoln Street, located on the western leg of the intersection with Harold Street. The roadway varies in width between 43 feet and 48 feet with the narrower section located east of Harold Street.

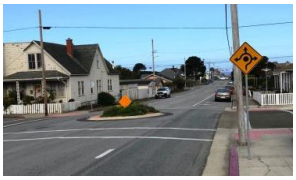
Elm Street is a quarter-mile long roadway that predominantly runs east-west. There is one 10-foot lane in each direction in addition to on-street parking and bicycle lanes for the full length. The street is approximately 44 feet wide and has a posted speed limit of 25 mph.

Pine Street is an east-west street with one travel lane in each direction and a posted speed limit of 25 mph. The straight street has a speed limit of 15 mph near the school when children are present. Parking is permitted on both sides for the full length of the road. There are no marked bicycle facilities. There are marked crosswalks on all four legs of the intersections at Franklin Street, McPherson Street, Harrison Street, Whipple Street, and Corry Street. The latter four intersections are free flow on Pine Street (in the east-west direction) without the benefit of pedestrian crossing signs or other crossing enhancements. The road width is approximately 42 feet.

Main Street (SR 1) is a north-south arterial street with one to two lanes in each direction and a center two-way left-turn lane. There are bicycle facilities for the full length within the study area, the City limits, with bike lanes north of Walnut Street and a bike route to the south. The posted speed limit is 40 mph near the southern limits of the study area, 35 mph in the central area and 25 mph near the northerly limits approaching the downtown area.

Study Roadways with Recent Improvements

Fir Street is a straight east-west street with one travel lane, a bicycle lane, and on-street parking in each direction. The posted speed limit is 25 mph, with a 15-mph school zone when children are present. There are speed humps between McPherson Street and Franklin Street, a residential traffic circle at the intersection with Harrison Street, and a raised intersection at Corry Street-Brandon Way.



Harold Street is a north-south street with one travel lane in each direction between Fir Street and Maple Street. South of Maple Street, Harold Street is a one way, northbound, street. There are bike lanes and on-street parking between Fir Street and Maple Street. The posted speed for the segment is 25 mph with a speed of 15 mph near the school when children are present. Within the limits mentioned before, there are several recent improvements including bulb-outs, splitter islands, speed humps, and raised pedestrian crossings. Also, at the intersection with Oak Street, the existing all-way stop control signs were supplemented with flashing red lights on the perimeter of the signs.

Study Intersections

Laurel Street/Harrison Street is a four-legged intersection with stop controls on east-west Laurel Street. Bike facilities are provided on Harrison Street in the form of "sharrows". There are marked crosswalks on all legs of the intersection.

Redwood Avenue/Main Street is a signalized intersection with permitted left-turn phasing on east-west Redwood Avenue and protected left-turn phasing north-south on Main Street (SR1). There are marked crosswalks on each leg. Pedestrian signal timing is programmed with pedestrian crossing times that run concurrently with the adjacent vehicle through movement.

Oak Street/Franklin Street is a four-legged all-way stop-controlled intersection with bike lanes on east-west Oak Street as well as on Franklin Street to the south. There are striped crosswalks on all legs, with a painted brick-pattern inlay on the north leg serving in lieu of standard crosswalk striping, and there are curb extensions on the northwest and northeast corners which are generally flush with the pavement.

Data Collection

Within the study area, a variety of the traffic data was collected from May 29 to 31, 2018 while local schools were in session. These results are presented below.

Speed Surveys

Radar surveys were collected for several street sections where the traffic speeds, the traffic volumes, the street width, or other significant factors were different from an adjacent section. Each of the radar speed surveys was collected by a person stationed inconspicuously along the street, either from a standing position outside the travel way or from a parked, unmarked vehicle. An effort was made to ensure that the presence of the person or vehicle in no way affected the speed of the traffic being surveyed. Field information was recorded manually and later coded for computer analysis. Part 2 of the CA-MUTCD indicates that it is desirable to have a minimum sample size of 100 vehicles for a speed zone survey; however, for low volume roadways this may result in excessive survey

periods, so a smaller survey is adequate. For each segment surveyed, a minimum of 25 vehicles in each direction was desired with a maximum data collection period of 45 minutes at any single location.

The 85th percentile speed was calculated for each segment. The 85th percentile, or critical, speed is that speed at or below which 85 percent of the observed vehicles were traveling. In setting speed limits as part of Engineering & Traffic Surveys the recommended speed limit is generally based on the surveyed 85th percentile speed. It is a well-recognized fact among traffic engineers that most drivers can drive at reasonable speeds without the benefit of any speed limits, speed signs, or enforcement. The behavior of traffic is a good indication of the appropriate speed zone which should apply on a particular section. It is generally felt that at least 85 percent of the drivers operate at speeds which are reasonable and prudent for the conditions pertaining to each situation. Therefore, the 85th percentile speed of a spot speed survey is the primary indicator of a speed limit which might be imposed subject to the secondary factors of collision experience, traffic volumes, road features or other special situations.

Speed Surveys were collected at the following locations.

- Maple Street between Franklin Street and Harold Street; The 85th percentile speed was determined to 30 mph, 5 mph higher than the posted speed limit.

- Maple Street between Harold Street and Lincoln Street; Based on the speed survey, the 85th percentile speed was 28 mph, 3 mph greater than the posted speed limit.

- Pine Street between Corry Street and Whipple Street; The 85th percentile speed was determined to 30 mph, 5 mph higher than the posted speed limit.

- Pine Street at Harrison Street; Based on the speed survey, the 85th percentile speed was similarly determined to be 29 mph, 4 mph greater than the posted speed limit.

- Fir Street at the Speed Humps; Based on the speed survey, the 85th percentile speed was 22 mph, which is less than the posted speed limit for the road of 25 mph.

- Fir Street at the Traffic Circle; The 85th percentile speed was determined to be 28 mph, 3 mph greater than the 25-mph posted speed limit of the road.

- Fir Street at the raised intersection; Based on the speed survey, the 85th percentile speed was 25 mph, the posted speed limit of the road.

Summary

Of these three streets reviewed, each is an east-west street with varying traffic control. Both Pine Street and Maple Street are stop-controlled only near the western and eastern ends of the segments and uncontrolled through the study segments; both had similar 85th percentile speeds greater than the posted speed limit. Fir Street, however, which has various traffic calming devices installed, experienced 85th percentile speeds at or below the posted speed limit. These results are summarized in Table 1 and data included in Appendix A.

Table 1 – Summary of Speed Surveys			
Study Street ***Segment***	**Critical Speed (85th %-tile)**	**Existing Speed Limit**	**Speed Difference (+/-)**
Maple St			
Between Franklin St and Harold St	30	25	**+5**
Between Harold St and Lincoln St	28	25	**+3**
Pine St			
Between Corry St and Whipple St	30	25	***+5***
At Harrison St	29	25	**+4**
Fir St			
At Speed Humps	22	25	-3
At Traffic Circle	28	25	**+3**
At Raised Intersection	25	25	0

Notes: Speed is shown in miles per hour
Bold = 85th percentile speed higher than the posted speed limit

Sight Distance

At unsignalized intersections a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed. Sight distance should be measured from a 3.5-foot height at the location of the driver on the minor road to a 4.25-foot object height in the center of the approaching lane of the major road. Set-back for the driver on the crossroad shall be a minimum of 15 feet, measured from the edge of the traveled way.

Sight distance along some segments and at cross streets, listed below, were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans.

- Eastbound Maple Street at Lincoln Street
- Laurel Street/Harrison Street
- Franklin Street/Oak Street
- Elm Street between Stewart Street and Glass Beach Drive

The recommended sight distance at intersections of public streets is based on corner sight distances, while recommended sight distances for minor street approaches that are either a private road, alley, or a driveway are based on stopping sight distance. Both use the approach travel speeds as the basis for determining the recommended sight distance.

Of the intersections reviewed, the posted speed is 25 mph, so the recommended corner sight distance is 275 feet while the stopping sight distance is 150 feet.

Eastbound Maple Street at Lincoln Street

The intersection of Maple Street/Lincoln Street is stop-controlled on the eastbound and westbound Maple Street approaches. As such, vehicles on either approach need to have adequate corner sight distance to see an approaching vehicle in the north-south direction since these vehicles do not stop. South of the eastbound approach there is a building that abuts the back of sidewalk and to the north there is low-lying shrubbery. Parking is permitted except within about 25 feet of the intersection.

When vehicles are parked near the intersection, the sight distance to the south is 165 feet and to the north it is 120 feet; which is inadequate for a public street based on Caltrans' standards requiring 275 feet of clear sight distance. Without parked vehicles the sight distance was more than adequate.

Laurel Street at Harrison Street

The intersection of Laurel Street and Harrison Street is stop-controlled in the east-west direction on Laurel Street. Parking is permitted on both intersecting streets starting about 25 from the intersection. On all but the southeast corner of the intersection there are buildings that either abut the back of sidewalk or are close to it.

For the eastbound and westbound directions, where vehicles are required to stop, the required corner sight distance of 275 feet is not available. On the east leg of the intersection, the sight distances to the south and north are 108 feet and 215 feet, respectively. On the west leg, the sight distance to the south is 260 feet and to the north it is 116 feet.

Franklin Street at Oak Street

Franklin Street/Oak Street is an all-way stop-controlled intersection. Since all drivers are required to stop and yield to any other drivers at the intersection who have the right-of-way, the clear line of sight that should be maintained is only in the intersection. This was found to be adequate.

Elm Street between Stewart Street and Glass Beach Drive

Elm Street between Stewart Street and Glass Beach Drive consists of two back-to-back "S" curves. There are currently parking and bicycle lanes on both sides of the street. The sight distances reviewed for the segment included the sight distance for the north leg of the Stewart Street/Elm Street intersection as well as the driveways along the segment.

At Stewart Street/Elm Street the lines of sight towards the curved section of the roadway were reviewed. The south leg, looking to the west, has an adequate line of sight given the location of the parking lot driveways and resulting parking restrictions. The sight distance on the north leg, looking to the west, is limited to about 140 feet due to the existing parking. This is inadequate given the posted speed limit of 25 mph which has a corresponding corner sight distance recommendation of 275 feet.

Traffic Counts

Traffic counts were collected in the study area during the a.m., midday, and/or p.m. peak periods. These periods were reviewed to capture the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute. The midday peak represents the lunch time peak and typically occurs between 11:00 a.m. and 1:00 p.m., while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward-bound commute.

Traffic counts were collected at several intersections in the study area for periods of 15 to 45 minutes. Detailed below are the intersections where counts were collected, the peak period reviewed, the duration of the counts, as well as the projected hourly volumes based on these counts. The traffic count data is included in Appendix B.

Maple Street at Lincoln Street

Counts were collected at the intersection of Maple Street/Lincoln Street during the a.m. and p.m. peak periods for 45 and 30 minutes, respectively. Of the pedestrians counted, most crossed on the south leg with 21 during the a.m. and 10 during the p.m. counts. Projected out to hourly volumes indicates a total of 50 pedestrian crossings

during the a.m. peak hour, five on the west leg, eight on the north leg, 16 on the west, and those 21 on the south leg. During the p.m. peak hour, there would be 20 pedestrian crossings, two on the north leg, four on the east and west leg, and ten (10) on the south leg. As for the vehicles, the a.m. and p.m. traffic patterns differed significantly. The p.m. count projected out to one hour indicates a total of 238 vehicles while the a.m. peak hour had an estimated 538 vehicles. During the p.m., traffic volumes were predominantly eastbound while during the a.m. count period the eastbound right-turn and northbound left-turn movements were the predominant maneuvers.

Pine Street at Harrison Street

Thirty-minute counts at the intersection were collected during the a.m. and midday peak periods. The projected hourly volume for the morning peak hour was 274 vehicles, while the midday peak hour had an estimated 190 vehicles. The eastbound and westbound volumes on Pine Street were about equal during the morning count and represented 85 percent of the volumes at the intersection. During the midday, however, the eastbound and westbound volumes represented about 70 percent of the total traffic at the intersection. A maximum of four pedestrians were counted in any crosswalk during either peak period.

Laurel Street at Harrison Street

A 15-minute midday and 30-minute p.m. count were collected at the intersection. During the midday there were at most eight pedestrians in the north and east crosswalks while during the p.m. period there were 36 pedestrians counted on the north leg and the 16 and 14 on the south and east legs respectively. During the midday 132 vehicles were counted at the intersection with about 45 percent on the east-west stop-controlled Laurel Street approaches. Of the 176 vehicles counted during the p.m. peak period about 62 percent were on the stop-controlled approaches.

Maple Street at Harold Street

During a 30-minute p.m. peak period count at the intersection, 272 vehicles were recorded. Eastbound Maple Street had the highest recorded approach volume with about 40 percent of the volumes at the intersection. Two pedestrians or less were counted in any one crosswalk during the period reviewed.

Stop Control Warrants

Warrants for all-way stop-controlled intersections are based on guidelines contained in the *California Manual on Uniform Traffic Control Devices* (CA-MUTCD). While some these guidelines are more applicable to arterial and collector streets, there are optional criteria that address the needs of residential streets. These guidelines include the following issues in considering need for all-way stop controls.

- The need to control left-turn conflicts;
- The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
- Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
- An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop controls would improve traffic operation.

A conservative use of stop signs and other regulatory signs is recommended as, if used to excess, these signs lose their effectiveness. Excessive use of regulatory signs such as stop signs throughout an area can result in contempt for such restrictions and erosion of obedience to the sign's command. In the specific case of a stop sign, this could result in motorists not obeying stop sign controls at critical intersections. (Also refer to discussion later in this report regarding the use of stop signs with a grid street pattern.)

Two side-street stop-controlled intersections were reviewed and considered for all-way stop-control, Laurel Street/Harrison Street and Maple Street/Lincoln Street. Given the generally low roadway volumes at the intersections, the intersections would not likely warrant all-way stop-control based on the volumes. However, based on the above optional criteria, they are both candidates for all-way stop-control based on their proximity to a pedestrian generator as well as limited visibility.

Parking Occupancy Counts

Parking counts were collected on Elm Street and Stewart Street near their intersection during the morning and midday peak periods. During both periods reviewed there was sufficient off-street parking supply in the area to accommodate the on-street parking demand.

In the morning, there were 19 vehicles counted, as follows:

- Elm Street:
    - North side, west of Stewart Street: 5 vehicles
    - South side, west of Stewart Street: 4 vehicles
    - North side, east of Stewart Street: 0 vehicles
    - South side, east of Stewart Street: 1 vehicle
- Stewart Street:
    - West side, north of Elm Street: 0 vehicles
    - East side, north of Elm Street: 0 vehicles
    - West side, south of Elm Street: 7 vehicles
    - East side, south of Elm Street: 2 vehicles

During the evening counts, a total of 21 vehicles were counted as detailed below:

- Elm Street:
    - North side, west of Stewart Street: 5 vehicles
    - South side, west of Stewart Street: 3 vehicles
    - North side, east of Stewart Street: 0 vehicles
    - South side, east of Stewart Street: 2 vehicles
- Stewart Street:
    - West side, north of Elm Street: 0 vehicles
    - East side, north of Elm Street: 0 vehicles
    - West side, south of Elm Street: 6 vehicles
    - East side, south of Elm Street: 5 vehicles

Summary of Existing Critical Issues

Following is a summary of the critical issues identified through the field investigation and data analysis.

Bicycle Facilities – Throughout the area bicycle facilities are provided through either a dedicated bike lane or a shared space designated for vehicles and bicyclist. Much of the bike lane striping is faded due to age and weathering.

Recommendation: Existing bike lane striping on study corridors should be remarked.

Pedestrian Crossing Facilities – Pedestrian facilities include marked crosswalks and intermittent curb ramps. The "uncontrolled" crosswalks (i.e., crosswalks where conflicting vehicles are not required to stop) generally do not include pedestrian crossing signage or other enhanced measures.

Recommendation: Uncontrolled crosswalks in the study area should be supplemented with Pedestrian Crossing signs (W-11). Additionally, the existing faded crosswalk markings should be restriped.

Travel Speeds – On Maple Street and Pine Street, which both have no east-west stop-controls in the middle of the segments, the 85th percentile speed was 5 miles per higher than the posted speed limit.

Recommendation: Provide traffic calming measures on Maple Street and Pine Street to reduce travel speeds.

All-Way Stop-Control Warrants – The intersections of Maple Street/Lincoln Street as well as Laurel Street/Harrison Street are candidates for all-way stop-control based on the volumes of pedestrians and restricted sight lines due to parked vehicles.

Recommendation: Convert Maple Street/Lincoln Street and the Laurel Street/Harrison Street intersections to all-way stop control.

Toolbox

Since the goal of the project was to develop recommendations for conceptual street designs incorporating innovative **traffic calming** measures, a toolbox was developed which address the following City goals:

- Create safer streets that encourage walking and bicycling.
- Improve pedestrian and bicycle facilities and therefore, safety.
- Slow automobile traffic as it moves through residential neighborhoods and commercial districts, while still maintaining an efficient flow of vehicles.

This plan targets multiple goals within the Circulation Element of the *City of Fort Bragg Inland General Plan:*

- Prioritizing complete street planning to prioritize bicycle and pedestrian safety, especially along roadways where pedestrian and bicyclist activity is most expected to occur.
- Reduce through-traffic on local/residential streets, examples of measures include road narrowing and widening of sidewalks.
- Emphasis on the Central Business District, which is addressed with the project's proposed traffic calming measures to provide improved crossing facilities for pedestrians and bicyclist at various locations on Main Street.

Traffic calming uses physical design and other measures to improve safety for all users, including motorists, pedestrians and cyclists. It aims to encourage safer, more responsible driving and potentially reduce travel speeds and traffic flow. Traffic safety measures and speed reduction generally imply the use of traffic calming devices which could include:

- Bumps, humps, and other raised pavement areas
- Reduced street area where motor traffic is given priority
- Street closures
- Traffic diversion
- Surface texture and visual devices
- Parking treatments

Frequently, a combination of traffic-calming devices is used to obtain the desired effect. Examples of such combinations will be discussed briefly, including:

- Entry treatments across intersections
- Shared surfaces
- Bicycle boulevards
- Slow streets

Fir Street is an example of an attempt to create a "slow street" by utilizing a residential traffic circle, speed humps and a raised intersection. Based on the speed surveys collected on that street, most vehicles are now traveling at or below the posted 25 mph speed limit which would indicate that the modifications have tempered travel speeds to a desirable level. However, the public input regarding these measures were not favorable. This input is described in more detail in the following section.

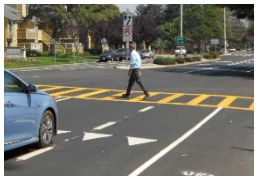
A toolbox was developed to be applied to the study area streets and intersections based on several factors including:

- ✓ Input from the public during this process
- ✓ Fiscal ability of the City to implement the recommendations
- ✓ Maintenance needs and cost of the measures

Since there was significant negative public reaction to some of the Fir Street traffic calming measures, as described in the community input section, it is suggested that speed reduction and traffic calming may be achieved through use of more traditional measures. The community input did indicate that more typical traffic measures that are less intrusive to drivers such as high visibility crosswalks and LED stop signs used on Harold Street are more acceptable.

Pedestrian Crossing Measures

Marked Crosswalks – A marked, often striped, portion of road where pedestrians have the right-of-way to cross. Crosswalks can be at controlled or uncontrolled intersections; uncontrolled meaning that the crossing is not protected by either stop signs or a traffic signal. A high visibility crosswalk is a marked crosswalk, often on an uncontrolled street, that incorporates striping patterns and/or fluorescent green signage to improve the visibility of the crosswalk. High visibility striping is generally used at crosswalks where approaching traffic is uncontrolled, while high visibility signage is only used at crosswalks where traffic is uncontrolled.



Advance Yield Markings – Placed 20 to 50 feet in advance of a crosswalk along multi-lane roadways, yield markings alert drivers that they are approaching a crosswalk. This treatment is often applied at mid-block locations. Yield markings are indicated with a series of triangular markings, also known as "shark's teeth."

Pedestrian Crossing Signage – In conjunction with a striped crosswalk, signage is placed at unprotected crossings to improve visibility of the crossing for drivers.

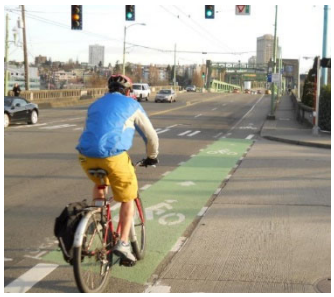
Raised Medians – Median refuge islands are located at the mid-point of a marked crossing and help improve pedestrian safety by allowing pedestrians to cross one direction of traffic at a time. Refuge islands minimize pedestrian exposure by shortening crossing distance and increasing the number of available gaps for crossing.

Bulb-outs/Curb Extensions – Curb extensions reduce pedestrian exposure to vehicle traffic during crossing by shortening crossing distance and giving pedestrians a better chance to see and be seen before committing to crossing. Curb extensions can be used at locations with bus stops to provide a larger waiting area for transit users and enable buses to more easily re-enter traffic.

Bike Facilities

Class II Bike Lanes – On-street bike lanes (also known as Class II bikeways) designate an exclusive space for bicyclists through use of pavement markings and signage. Bike lanes are located between the travel lane and parking lane (or curb) and provide a route in the same direction as motor vehicle traffic.

Buffered Bike Lanes – Buffered bike lanes are conventional bicycle lanes paired with a buffer space designated by pavement markings, separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.

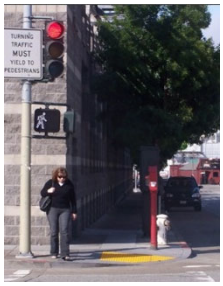


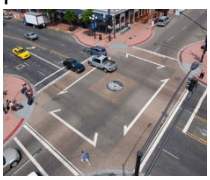
Bike Cross Markings – Bike cross markings indicate the intended path of bicyclists, often through an intersection, driveway, or freeway on- or off-ramp. Additionally, they provide a boundary between the path of the bicyclist and the motor vehicle in the adjacent lane.

Green Bike Lane Legends – Colored pavement within a bicycle lane or backing a bicycle legend may be used to increase the visibility of the bicycle facility or raise awareness of the potential to encounter bicyclists and reinforce priority of bicyclists in conflict areas, such as locations where bike lanes cross the beginning of a turn pocket.

Traffic Signal Timing

Advanced Pedestrian Crossing – Pedestrians are given an advantage through modified signal timing where the designated pedestrian crossing time begins before the corresponding green time for the vehicles. This allows pedestrians to enter the crossing before waiting vehicles get a green indication resulting in improved visibility for the pedestrian.





Pedestrian Exclusive Crossing – Signal timing is modified so that only pedestrians enter the intersection and can cross along any path. No vehicles are allowed to enter the intersection. This is also known as a "Ped Scramble".

Intersection Control

All-Way Stop Control – The intersection is stop-controlled and has a stop sign on every approach.

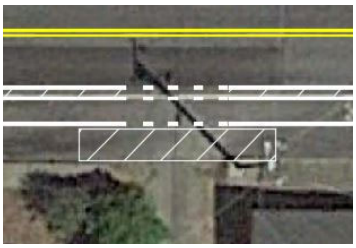
Lane Striping

Double Yellow Centerlines – A double yellow centerline separates opposing directions of vehicles travel and indicates that drivers may not pass but can complete a left turn.

Speed Reduction In-lane Striping – In-lane speed-reduction striping includes lines, perpendicular to the path of travel for the driver, placed on the edges of the travel lane. The lines are spaced at varying distances to give the driver a perception of lane narrowing, resulting in reduced speeds.

Narrow Through Lanes – Narrow lanes, generally of 10 feet, promote slower driving speeds, thereby reducing the likelihood of severe collisions. Narrowing the travel lanes also reduces the crossing distances for pedestrians.

Parking Restrictions – Parking restrictions, specifically within up to 50 feet of an intersection, depending the speed of approaching traffic, improve sight lines for vehicles waiting to enter the intersection. Eliminating parking also allows for the bicycle lane to be moved closer to the curb along with a striped buffer between the bicycle lane and the travel lane.



Striping at Alleys – Striping at the opening to alleys would indicate that parking is not permitted as well as create a visual cue for drivers to identify to the location of the alley.

Traffic Calming Devices

Speed Humps – Speed humps are parabolic vertical traffic calming devices intended to slow traffic speeds on low volume, low speed roads. Speed humps are 3 to 4 inches high and 12 to 14 feet wide, with a ramp length of 3 to 6 feet, depending on the target speed.

Residential Traffic Circles – Traffic circles – with landscaping or art Improves neighborhood traffic flow, replaces stop signs, which may not be warranted.

Grid Streets and Stop Signs

Fort Bragg is served by approximately 14 miles of local streets in a grid pattern. Although not a perfect symmetrical grid, the street pattern allows local street vehicle trips to spread out with no one street carrying the bulk of the traffic. With regards to the use of traffic calming devices, drivers can easily choose the "path of least resistance" and shift to another street if speed reduction measures are installed on one corridor. For example, since the installation of the residential traffic circle, speed humps and raised intersection on Fir Street, traffic volumes are now higher on Pine Street where there are no features to slow traffic down as well as no traffic control.

Most of the intersections in the grid are "unsignalized" intersections with stop controls in either the north-south or east-west direction. In most cases, the stop controls are oriented in the north-south direction leaving several east-west streets with free flow conditions. With a grid pattern of streets, the City could apply the stop signs in a more varied fashion to spread the "stop burden" to all streets rather just in one direction. Varying the use of stop signs would help to spread traffic volumes as well as temper travel speeds.

Community Input

An online survey was created to collect community input on recent street modifications within the City of Fort Bragg as well as streets that may benefit from implementation of one or more of the toolbox items. Most of the community members who responded to the survey live/work within Fort Bragg or come into town to 'shop/eat/play'. While only 14 percent of the community members who participated in the survey marked "walking" as the primary mode of transportation within Fort Bragg (the highest percentage was driving with 91 percent of participants), approximately 38 percent said they walk at least two blocks daily. Walkability, based on existing sidewalk conditions and connectivity within Fort Bragg was rated an average of 64 out of 100, however pedestrian sense of safety based on driver behavior was rated 41 out 100. Most community members stated they never bike along city streets, and rated city bicycle access and safety a 50 out of 100.

In the online survey, participants were asked to provide their opinion for the improvements with either "opposed to", "neutral", or "supportive". The street improvements that had more than half "opposed to" include raised intersections, splitter islands, speed humps, traffic circles, and street narrowing. Some of the other improvements that had high opposition included bulb-outs and raised pedestrian median.

Study Roadways for Design Recommendations

The survey also addressed specific study area roadways that were identified as areas for need of bicyclist and pedestrian access and safety improvements:

Maple Street – The length of Maple Street, east of State Route 1 was identified as needing improvements for pedestrian and bicyclist safety. Participants stated there is a lack of north-south crosswalks along Maple Street between Franklin Street and Harold Street. For the proposed traffic calming measures along Maple Street in the survey, participants were most in favor of a high visibility crosswalk at Franklin Street and at Harold Street with a curb extension, as well as dedicated bicycle lanes on both sides of Maple Street. A proposed speed hump and a crosswalk at the intersection with Harrison Street was highly opposed, whiles there was a split vote of support and opposition for single sided parking on Maple Street between Park Street and Lincoln Street

Elm Street – Given the location of the Coastal Trail and the Glass Beach access, many vehicles drive through the intersection of Elm Street/Stewart Street, and the intersection was identified as having conflict points between vehicles and pedestrians crossing Elm Street. The lack of existing pedestrian facilities and vehicle control at the intersection was identified as a concern. Community response for Elm Street resulted in support of buffer bicycle lanes along the street and a majority opposition to single sided parking as potential design improvements.

Pine Street – From the survey, the intersection of Pine Street/Main Street was identified as a crucial area along the segment for improvements. Participants stated that the intersection is used frequently, with no existing enhanced pedestrian crossings or vehicle controls at the Main Street approaches. Community members were most in favor of the proposed high visibility crosswalks along Pine Street and were opposed to narrowing Pine Street between Franklin Street and Harold Street.

Main Street – Main Street is a part of the popular coastal highway, and as a north-south roadway, it separates the downtown and residential areas from the beach. Traffic calming measures along Main Street is a high priority due to the east-west pedestrian and bicyclist activity, as well as the high volume of vehicles traveling along the highway, with higher speeds at some segments. Community members were in support of pedestrian exclusive traffic signal phasing at the intersection of Main Street/Redwood Avenue. There was also support of the proposed protected or buffered bicycle lanes along both sides of Main Street, and pedestrian islands installed at to be determined locations. While most proposed traffic calming measures were supported, most community members were not in support of curb extensions.

Study Roadways with Recent Improvements

Traffic calming improvements have been implemented on some road segments within the City that had previously been identified as having safety issues for bicyclist and pedestrians. Community opinions were collected on effectiveness of the traffic calming measures installed on:

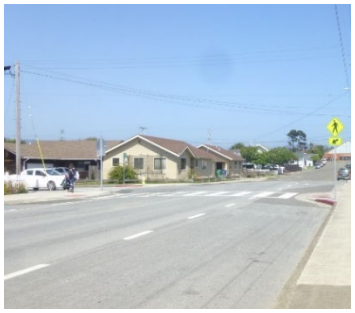
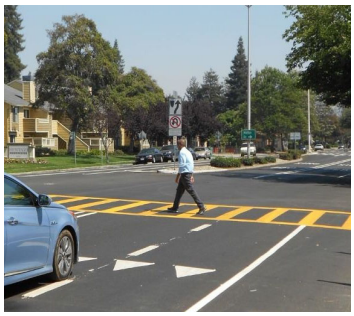
Fir Street – Traffic calming measures were installed due to pedestrian and bicyclist traffic generated from Fort Bragg Middle School as well as concerns of drivers speeding along Fir Street. In general, all the traffic calming measures installed were opposed to by community members, with the most objection to the traffic circle at the intersection with Harrison Street.

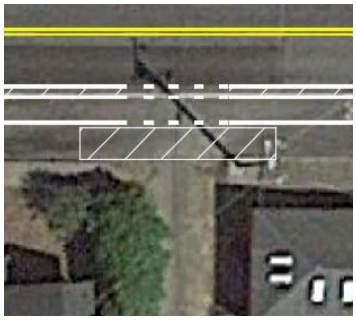
Harold Street – Of the several traffic calming measures implemented along Harold Street, community members were in most support of the high-visibility crosswalks like that at the Fir Street intersection, the painted stop bars at east or west legs at all-way stop-controlled intersections, and the installation of the flashing stop signs at all approaches of the intersection with Oak Street. There was a high response of opposition to the splitter islands installed along Harold Street at Pine Street, Laurel Street, Redwood Avenue, Cedar Street, and Alder Street. Curb extensions at Fir Street, Madrone Street, and at Maple Street resulted in a split response of support or opposition from community members.

The results from the online community survey is included in Appendix C.

The following suggested measures for Maple Street, Elm Street, Pine Street and Main Street including cost, effectiveness and result of the online community survey, were presented at follow-up public workshops.

Maple Street

Maple Street Improvements		Cost	Effectiveness	Community Inputs
	**All-Way Stop-Control** Add east-west stop controls at McPherson Street, Whipple Street, Harold Street, and Lincoln Street.	**$**	**High**	**Stop Signs** - Supportive 79% - Neutral 16% - Oppose 4%
	**Crosswalks** Add north-south marked crosswalks at the proposed all-way stop-controlled intersections at McPherson Street, Whipple Street, Harold Street, and Lincoln Street.	**$**	**Medium**	**Crosswalk** - Supportive 71% - Neutral 22% - Oppose 7%
	**Bulb-outs/Curb Extensions** Add bulbouts on Maple Street at crosswalk locations.	**$$$**	**Medium**	**Bulb-outs** - Supportive 30% - Neutral 29% - Oppose 40%
	**Franklin Street Crossing** Add crosswalk on the north leg of intersection with Franklin Street, including advance yield markings and pedestrian warning signs on both Franklin Street approaches.	**$**	**Medium**	**Crosswalk** - Supportive 71% - Neutral 22% - Oppose 7%

	**Lane Striping** Convert from dashed yellow to double yellow. Add speed-reduction in-lane striping. **Narrow Through Lanes** Narrow lanes to 10 feet and convert 2 feet to buffer for bike lane.	**$$**	**Medium**	**Street-Narrowing** - Supportive 14% - Neutral 27% - Opposed 59%
	**Install Buffered Bike Lane** **Green Bike Lane Legend** Where there is a bike lane symbol, include green striping background.	**$$**	**Medium**	**Dedicated Bike Lane** - Supportive/Neutral 71% - No Opinion 2% - Opposed/Skeptical 27%
	**No Parking Near Intersection** Move bike lane closer to curb frontage and add wider bike buffer.	**$**	**Low**	
	**Striping at Alleys** Add cross-hatched striping in parking area at alley intersections.	**$**	**Low**	

Cost:
$: <$10k
$$: $10k - $50k
$$$: $50k - $100k
$$$$: > $100k

Effectiveness:
Low: CRF <20%
Medium: CRF 20-40%
High: CRF >40%

CRF = Crash Reduction Factor

Elm Street

Elm Street Improvements		Cost	Effectiveness	Community Inputs
	**Bike Buffer and Parking on South Side** Add bike buffer between N. Main Street and Glass Beach Drive; Cross section would be striped (N to S) to include 5' bike lane - 3' buffer - 10' lane - 10' lane - 3' buffer - 5' bike - 8' parking	**$$**	**Medium**	**Buffered Bike Lanes** - Supportive/Neutral 65% - No Opinion 6% - Skeptical/Opposed 29% **Single-Sided Parking** - Supportive/Neutral 48% - No Opinion 6% - Skeptical/Opposed 46%
	**Bike Cross Markings** Add green bike lane crossing markings at the intersections with Stewart Street and Glass Beach Drive.	**$**	**Medium**	**Dedicated Bike Lanes** - Supportive/Neutral 65% - No Opinion 6% - Skeptical/Opposed 29%
	**Crosswalk** Add a crosswalk on the north leg at Glass Beach Drive.	**$**	**Medium**	**Crosswalk** - Supportive 71% - Neutral 22% - Oppose 7%

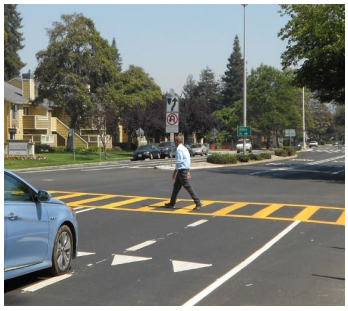
LEGEND

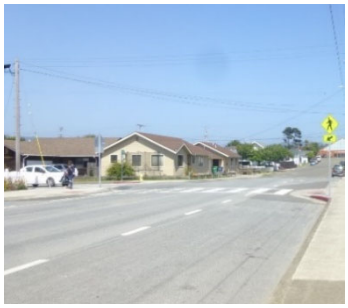
Cost:
$: <$10k
$$: $10k - $50k
$$$: $50k - $100k
$$$$: > $100k

Effectiveness:
Low: CRF <20%
Medium: CRF 20-40%
High: CRF >40%

CRF = Crash Reduction Factor

Pine Street

Pine Street Improvements		Cost	Effectiveness	Community Inputs
	**All-Way Stop-Control** Convert intersections at Cory Street and Harrison Street to all-way stop control.	**$**	**High**	**Stop Signs** - Supportive/Neutral 63% - No Opinion 9% - Opposed/Skeptical 28%
	**Centerline Striping** Convert centerline striping from dashed yellow to double yellow. **Edgeline/Lane Narrowing** Add 6-inch edgeline, providing 10-foot vehicle travel lanes.	**$$**	**Medium**	**Street-Narrowing** - Supportive/Neutral 26% - No Opinion 4% - Opposed/Skeptical 70%
	**Bike Lanes** Create room for a bike lane by narrowing travel lanes.	**$**	**Medium**	**Bike Lanes** - Supportive 67% - Neutral 22% - Opposed 11%
	**Unprotected Crossings** At unprotected pedestrian crossings, provide advance yield markings and Pedestrian Crossing warning signs.	**$**	**Low (existing crosswalk location)**	**High Visibility Crossings** - Supportive/Neutral 82% - No Opinion 4% - Opposed/Skeptical 14%

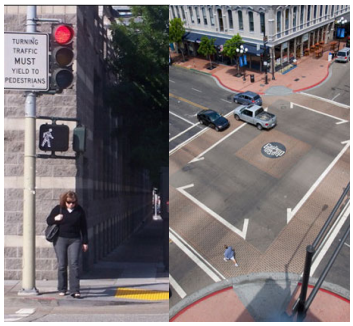
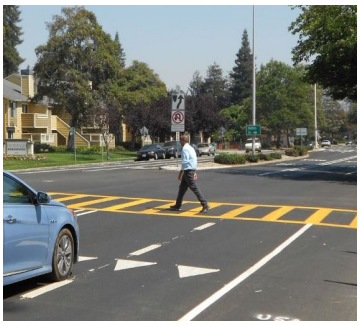
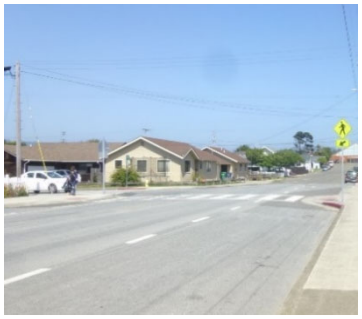
	**Bulb-outs/Curb Extensions** Add bulbouts on Pine Street at all existing and new crosswalk locations.	**$$$**	**Medium**	**Bulb-outs** - Supportive/Neutral 41% - No Opinion 3% - Opposed/Skeptical 55%
	**Speed Humps** Provide speed humps between Cory Street and Whipple Street and between Harrison Street and McPherson Street (if stop signs are not installed).	**$**	**High**	**Speed Humps** - Supportive 20% - Neutral 19% - Opposed 61%

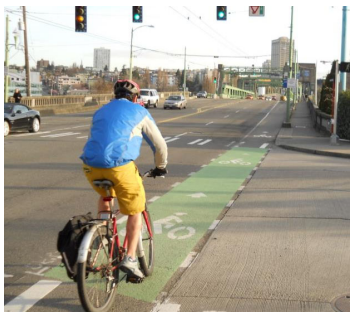
Cost:
$: <$10k
$$: $10k - $50k
$$$: $50k - $100k
$$$$: > $100k

Effectiveness:
Low: CRF <20%
Medium: CRF 20-40%
High: CRF >40%

CRF = Crash Reduction Factor

Main Street

Main Street Improvements		Cost	Effectiveness	Community Inputs
	**Signal Timing Improvements** Modify signal timing at the intersections with Laurel Street and Redwood Avenue to provide either: Advanced Pedestrian Crossing or Pedestrian Exclusive Crossing - "Ped Scramble."	**$**	**High**	**Signal Timing** - Supportive/Neutral 76% - No Opinion 3% - Skeptical/Opposed 21%
	**Unprotected Crossings** Provide advance yield markings and Pedestrian Crossing warning signs at: - Pine Street - Bush Street - Alder Street	**$**	**Medium**	**Crosswalk** - Supportive 71% - Neutral 22% - Opposed 7%
	**Raised Median** At all existing and new crossing locations, provide raised medians in the middle of the road.	**$$$**	**High**	**Raised Median Crossing Island** - Supportive/Neutral 55% - No Opinion 1% - Skeptical/Opposed 44%
	**Bulb-outs/Curb Extensions** At unprotected crossing locations, add bulb-outs.	**$$$**	**Medium**	**Bulb-outs** - Supportive/Neutral 47% - No Opinion 2% - Skeptical/Opposed 51%

	**Bike Cross Markings** Add green bike lane crossing markings through the intersections at Elm Street and Cypress Street.	**$**	**Medium**	**Bike Lanes** - Supportive/Neutral 62% - No Opinion 2% - Skeptical/Opposed 36%
	**Protected or Buffered Bike Lane** Add bike lane with either striping buffer or physical barrier on South Main Street.	**$$**	**Medium**	**Bike Lanes** - Supportive/Neutral 62% - No Opinion 2% - Skeptical/Opposed 36%

LEGEND:

Cost:
$: <$10k
$$: $10k - $50k
$$$: $50k - $100k
$$$$: > $100k

Effectiveness:
Low: CRF <20%
Medium: CRF 20-40%
High: CRF >40%

CRF = Crash Reduction Factor

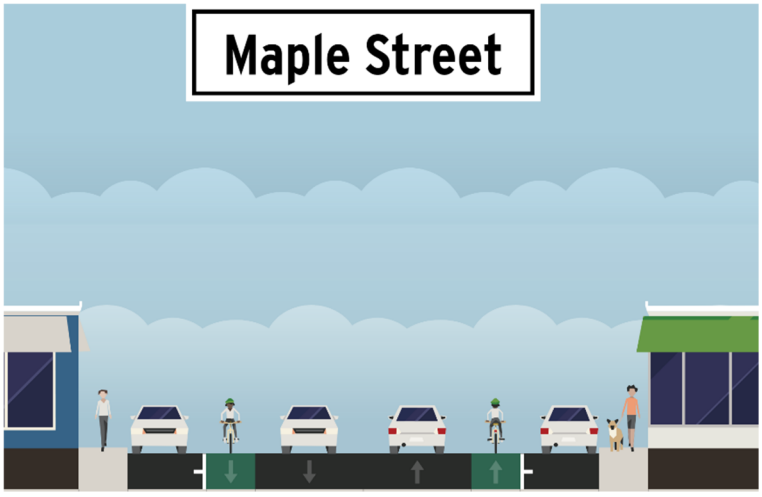
Recommendations

Based on the feedback from the public online surveys and workshops, standard traffic engineering design, as well as further discussion with City staff about the cost of construction and maintenance, recommendations were developed. While several of the recommended improvements include strategies that were not favorable to portions of the public, they were ultimately included to utilize design elements and strategies that were favorable to most of the public. Examples included lane narrowing to provide a dedicated bike lane and a striped bulb-out to extend no parking near the intersection as well as a striped buffer for the bicycle lane. The recommendations do not include speed humps, traffic circles, raised intersections, or raised curb bulbouts since these were generally opposed by most of the public in the survey. Speed reduction and traffic calming are intended to be achieved using more traditional measures such as striped curb extensions, double yellow centerlines and narrowed travel lanes.

A sample cross section of Maple Street, Elm Street and Pine Street are presented below, and the concept plans are included in Appendix D.

Maple Street

The focus of these modification options is to reduce travel speeds on Maple Street, provide additional marked pedestrian crossings, and enhance the facilities for cyclists. Based on the community input, there was strong support for improvements to the pedestrian crossings and dedicated bike lanes.



Lane Striping (Optional) – Convert from dashed yellow to double yellow to emphasize No Passing.

Narrow Through Lanes – Narrow travel lanes from 12 feet to 11 feet as shown in the cross-section. The cross-section would include eight feet dedicated to parking and five feet for bike lanes on both sides together with the 11-foot travel lanes.

Green Bike Lane Legend (Optional) – Where there is a bike lane symbol, install a green background. The green markings would consist of paving materials that would not result in a slippery surface per the Ride-A-Way Colored Coatings Specifications. Ride-A-Way product brochure and specification details are included in Appendix E.

No Parking – Extend parking prohibitions on "block ends" where frontage housing does not have garage access. At these locations, the bike lane would move closer to the curb frontage. A striped buffer would be installed between the bike lane and the travel lane at these locations.

Markings at Alleys – Add cross-hatched striping in the parking lane at alley intersections.

All-Way Stop-Control – Create all-way stop controls at the Maple Street intersections with Whipple Street and Lincoln Street. The City may consider an additional all-way stop control at Harold Street based on a recommended citywide review of stop signs on the grid system (see Next Steps).[1]

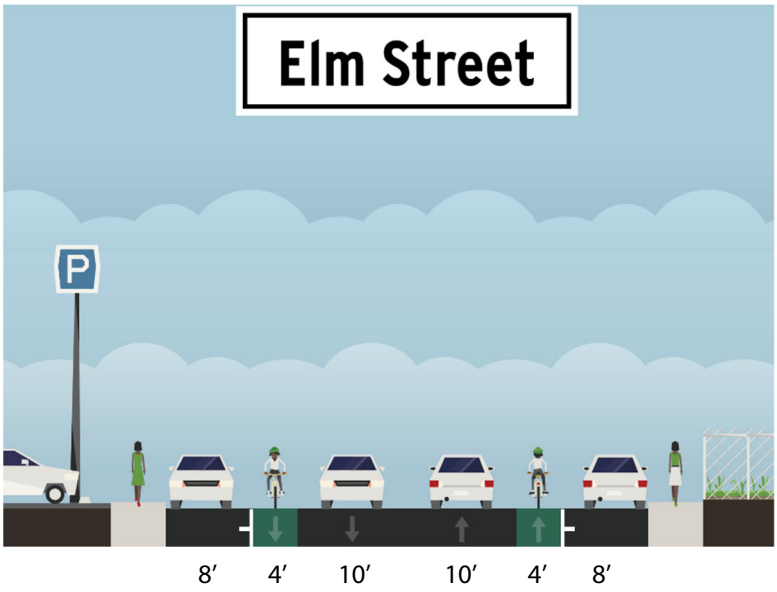
Marked crosswalks – Add north-south marked crosswalks at locations with new all-way stop controls, Whipple Street and Harold Street (there are already marked crosswalks at the intersection of Maple Street/ Lincoln Street).

Bulb-outs/Curb Extensions – Add striped (painted) bulb-outs on Maple Street at the proposed crosswalk locations, except at Harold Street where a physical concrete bulb-out already exists.

Maple Street/Franklin Street – Add high visibility ladder crosswalks on both the north and south legs of the intersection. Add advance yield markings (shark's teeth) and pedestrian warning signs on both Franklin Street approaches.

Elm Street

The focus of these recommended improvements is to provide a buffer for cyclists from the vehicle travel lanes on the route to the Coastal Trail access. Most of the public was not in support of removing parking from one side. As such, that was not recommended, and the buffered bike lanes would no longer be feasible given the roadway constraints. As such, the recommendations to the pedestrian and bicycle facilities are intended to improve the facilities while maintaining parking on each side.



Bike Cross Markings (Optional) – Add green NACTO-type bike lane crossing markings at the intersections with Glass Beach Drive, Stewart Street, and North Main Street.

Green Bike Lane Legend (Optional) – Where there is a bike lane symbol, include a green background. The green markings are detailed in the Ride-A-Way pamphlet included in Appendix E.

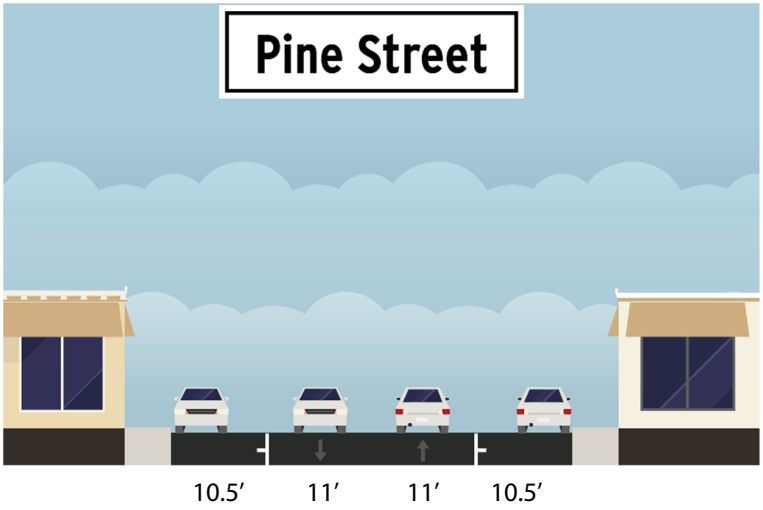
Crosswalk at Glass Beach Drive – Add a marked crosswalk on the north leg of the intersection along with the bike cross markings on both the north and south legs for bike crossing maneuvers from the trailhead parking to Elm Street.

Install Ramp – Install a curb ramp on the northwest corner of the intersection for the proposed crosswalk and bike lane crossing markings.

[1] This differs from the previous recommendation for stop-control at the Maple Street intersections with McPherson Street, Whipple Street, Harold Street, and Lincoln Street. This change to the recommendation is a result of the public input.

Pine Street

The focus of the improvements is to reduce speeds along the corridor as well as improve the existing pedestrian and bicycle facilities. Since narrowing the travel lanes to provide dedicated bicycle facilities was not favorable to the majority, the following recommendations are proposed to improve bicycle facilities along the study segment without narrowing the travel lane. The community input was favorable to enhanced pedestrian facilities.



Stop Signs – Convert intersections with Corry Street and Harrison Street to all-way stop control.

Pedestrian Crossing Enhancements – Add Pedestrian Crossing Signs (W11) on the uncontrolled east and west approaches to McPherson Street and Whipple Street. (Optional – Install advance yield markings (shark's teeth) on the uncontrolled approaches.

(Optional) Centerline Striping – Convert centerline striping from dashed yellow to double yellow.

Edgeline – Add 6-inch edgeline striping, providing an 11-foot travel lane with the remaining space (approximately 10.5 feet each direction) for parking and bicyclists along the curb as shown on the cross section. Install a sharrow along the edge between the travel lane and the parking lane.

Bulb-outs/Curb Extensions – Add striped bulb-outs at crosswalk locations.

Green Bike Lane Legend (Optional) – Where there is a bike lane symbol, include a green background per the Ride-A-Way product brochure and specification details included in Appendix E.

Main Street

While the study area portion of Main Street (SR 1) is within the City of Fort Bragg, it is maintained by Caltrans; therefore, all proposed recommendations would be at the discretion of Caltrans. Caltrans is currently reviewing improvements to upgrade the ADA facilities on the State Route 1 corridor that involve Main Street within city limits as part of a State Transportation Improvement Program (STIP) project. The current STIP projects in the works include pedestrian ramps, median islands for crossing, new sidewalk sections, curb extensions, bike lanes, and focused ADA upgrades from State Route 20 to Pudding Creek Bridge. With these upcoming projects, the City has an opportunity to work with Caltrans to provide input and ensure that the improvements meet the City's interest. Based on discussions and communication with the City and the public, our examination was focused on the following intersections.

- North Main Street/Elm Street (Coastal Trail Access), Signalized
- North Main Street/Bush Street, Unsignalized
- North Main Street/Pine Street, Unsignalized
- North Main Street/Redwood Avenue (Coastal Trail Access), Signalized
- South Main Street/Oak Street (Coastal Trail Access), Signalized
- South Main Street/Cypress Avenue (Coastal Trail Access), Signalized

(Note that although the Coastal Trail will be accessed by the western terminus of Alder Street, it is assumed that bikes and pedestrians should cross at the signalized intersections of Redwood Avenue then gain access to Alder Street via Chief Celeri Drive.)

Signalized Intersections

Most community comments regarding concerns about Main Street involve the signalized intersection at Redwood Avenue. City Council has identified Redwood Avenue as the major connection between downtown and the former Mill Site. The City is currently seeking grant funding to pursue the installation of a vehicular road and multi-use trail via Redwood Avenue to a parking area adjacent to the Coastal Trail (located between Alder Street and Oak Street).

In addition to Redwood Avenue, the signalized intersections that connect to the former Mill Site (currently in planning process for re-use) and popular Coastal Trail would also benefit from improvements. At the Cypress Avenue, Elm Street, and Oak Street intersections with Main Street, the following improvements should be considered by Caltrans.

- *Advance Pedestrian Walk Phase* so that the pedestrians enter the crosswalk before vehicles are permitted into the intersection.
- *NACTO-style Bike Cross Markings* for bicycle lanes/movements in the east-west direction.
- *Bulb-outs* on all corners of the intersection.

At the intersection of Main Street/Redwood Avenue, it was observed that there is a conflict with the pedestrians crossing east-west and the vehicles making an eastbound and westbound left-turn maneuver. With the advanced pedestrian crossing time, the pedestrians would be much further into the crosswalk at a more visible location for drivers to see them. Additionally, at the other locations mentioned above, the bike cross markings would provide bicyclists with the recommended path of travel through the intersection while indicating to motorists that bicycles can be present at and through the intersection. With the installation of bulb-outs the length of conflict between pedestrians and vehicles within the crosswalk would be reduced.

While recommended signal timing change would improve crossing conditions for pedestrians, they could slightly increase the delay and queues for vehicles as the 'pedestrian only' would likely be taken from the vehicle green time. If the intersections are coordinated, timing parameters such as timing offsets should be adjusted accordingly.

Unsignalized Intersections

There are several uncontrolled pedestrian crossings on North and South Main Street that would benefit from pedestrian enhancements appropriate for higher volume, higher speed traffic. In particular, the intersection of North Main Street / Pine Street was identified by the community for further evaluation and priority enhancements. This intersection is situated near a popular attraction and receives a high volume of pedestrian crossings. The on-street parking and merging of two lanes further complicates this intersection. Caltrans may wish to consider the following improvements:

- *Rectangular Rapid Flashing Beacons* (RRFB) for the unprotected east-west crosswalks.
- *High Visibility* markings for the crosswalks on the same leg of the intersection as the RRFBs.
- *Curb Bulb-outs* at these same crosswalks - either on all corners or just extending into SR 1
- *Advance Yield Markings* (Sharks teeth) on each uncontrolled approach to the marked crosswalks.

Coastal Trail Access at Alder Street

No recommendations for crossing enhancements for either pedestrians or bicyclists are recommended at the Alder Street/Main Street intersection. Since this intersection is an unprotected pedestrian crossing of a five-lane

Main Street section, it is recommended that the marked crosswalks on the north and south legs of the intersection be removed and pedestrian barricades installed to reroute pedestrians to the north or south where they can cross at the signalized intersections at Redwood Avenue or Oak Street, respectively. Along with the improvements identified above for those intersections, it is recommended that pedestrians and cyclists be guided to the alley of Chief Celeri Drive via signage. With these improvements, a continuous pedestrian and cyclist network would be provided for those east of Main Street to access the Coastal Trail on the west side of Main Street.

Bike Lanes

No recommendations are presented for bicycle lanes or buffered bicycle lanes as part of this project since they are already part of the STIP project discussed above.

Specific Intersection Locations

The following recommendations are based on community input received via on-line survey, public workshops and outreach at the Farmer's Market, and on findings from observation and field work conducted in late May 2018.

Laurel Street/Harrison Street

Based on the data collected, including traffic counts and sight distances measurements, as well as engineering judgement, it is recommended that the intersection be converted to all-way stop control as opposed to the existing east-west stop control. Based on the survey response, the intersection was had a perceived safety of 51 out of 100. With the installation of all-way stop-control at the intersection, the perceived safety would likely increase.

Oak Street/Franklin Street

As a measure to address current safety issues, white edgeline markings should be painted along the perimeter of the curb ramps to delineate the vehicle travel area from the pedestrian area. Further, advance stop bars should be marked on all approaches. The current use of concrete surfaces and red truncated domes may make it difficult to distinguish between these areas. The crosswalk on the north leg should also be outlined with white crosswalk markings. It should be noted that there was a previously adopted plan for this intersection presented in the *Franklin Street Corridor Traffic Analysis*.

Citywide Use of Stop Signs

Considering the local street grid system, it is recommended that the City consider the use of stop signs and consistent pedestrian crossing measures at unprotected crossings on all City streets within the residential grid. These should be considered on a "holistic" basis so that they are used consistently and do not result in longer street segments without traffic control.

Next Steps

Conclusion

The 2018 Street Safety Plan was prepared with input from the community, City staff and W-Trans. In summary, the 2018 Street Safety Plan includes: 1) an analysis of the effectiveness of the street calming measures implemented on Harold and Fir Street, which occurred as a result of the 2011 Residential Street Safety Plan; 2) recommendations and conceptual designs to address safety concerns along the corridors of Maple, Elm and Pine Street, as well as identified intersections of Oak/Franklin and Laurel/Harrison; and 3) recommendations to Caltrans for several improvements along Main Street, with an emphasis on connectivity to the Coastal Trail access points and pedestrian crossings downtown.

The next steps, for the implementation of the 2018 Street Safety Plan should include:

1. Seek funding for the engineering, design, construction, and installation of improvement recommendations for Maple, Elm, and Pine Street;
2. Schedule a meeting between City staff and Caltrans to discuss potential design improvements along Main Street (SR 1) corridor;
3. Continue rezoning efforts on the Mill Site regarding connectivity of the Coastal Trail through the Central Business District via Redwood Avenue; and
4. Continue to seek grant funds to develop pedestrian and vehicular access to the center section of the Coastal Trail.

As planned, the City of Fort Bragg will repeat the update process and add to the Street Safety Plan every five years with more frequent updates occurring, as needed, concurrent to City updates of the Capital Improvement Program (CIP) and/or City budget.

Future Study Areas of Consideration

Through the community outreach process, input was provided for locations outside the current study area of this Street Safety Plan. This additional community input is recorded in Appendix F. It is recommended that this data be used for future street safety planning and/or improvement projects. The table below outlines the main locations and safety concerns reflected in the responses to the on-line survey, two public workshops, and the staffed outreach table at the Farmer's Market, as well as potential design solutions for future evaluation.

Location of Concern	Potential Cause	Potential Recommendations
Franklin Street Difficult north-south and east-west pedestrian crossings	Crossing Location Visibility	Refresh paint and consider new color scheme at pedestrian crossings in Central Business District.
Oak Street Difficult north-south pedestrian and vehicle crossings	Sight lines and Crossing Location	Increase length of no parking near intersections and refresh paint at crossings – consider high visibility striping.
Chestnut Street Difficultly with improvements along Chestnut Street	To be determined	Further analysis regarding effectiveness of Chestnut Street improvements. Recommend soliciting neighboring residents and community input.
Main Street Difficult pedestrian crossings	Crossing Visibility	Forward comments received and recommendations to Caltrans for further input.

Franklin Street

Most of the comments received from community input regarding Franklin Street referenced intersections and issues within the Central Business District; namely poor pedestrian crosswalk visibility. The intersections with Madrone Street and Maple Street were also identified as intersections needing further evaluation. Community members noted that traffic appears to travel fast and does not always yield to pedestrians as required by law.

Oak Street

In general, comments regarding Oak Street were about the entire length of corridor. Several comments referenced poor visibility for pedestrians and vehicles crossing Oak Street. Intersections of McPherson Street and Harrison Street were identified as priority locations that would benefit from future analysis.

Chestnut Street

In 2017 the Chestnut Street Corridor project was completed. The project limits extended from Franklin Street to Ebbing Way and included:

- The relocation of on-street parking from the south to north side of street;
- Installation of new 8-foot wide multi-use path, new curbs, gutters, traffic calming features, and Americana with Disabilities Act (ADA) ramps and intersections; and
- Relocation of utility poles, street signs and drainage outlets.

Many community members expressed a desire to reevaluate these improvements.

Main Street

Most of the public comments received involved Main Street. The bulk of those comments identified the intersection with Redwood Avenue as a priority intersection for further evaluation. Pine Street was also identified as a priority intersection. Most of the input received expressed concerns regarding pedestrian crossing, especially east-west.

Study Participants and References

Study Participants

Principal in Charge	Steve Weinberger, PE, PTOE
Assistant Engineer	Briana Byrne, EIT
Editing/Formatting	Alex Scrobonia
Report Review	Dalene J. Whitlock, PE, PTOE

References

California Manual on Uniform Traffic Control Devices for Streets and Highways, California Department of Transportation, 2014

City of Fort Bragg Inland General Plan, City of Fort Bragg, 2012

Franklin Street Corridor Traffic Analysis, W-Trans, 2013

Highway Design Manual, 6th Edition, California Department of Transportation, 2017

Residential Streets Safety Plan, Wilbur Smith Associates, 2005

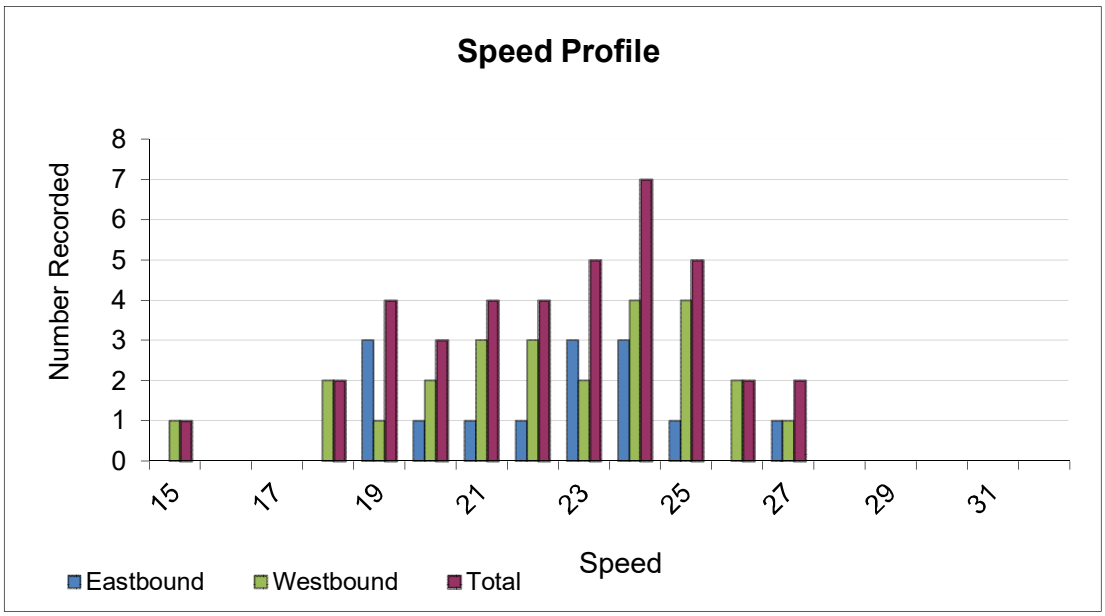
FBR045

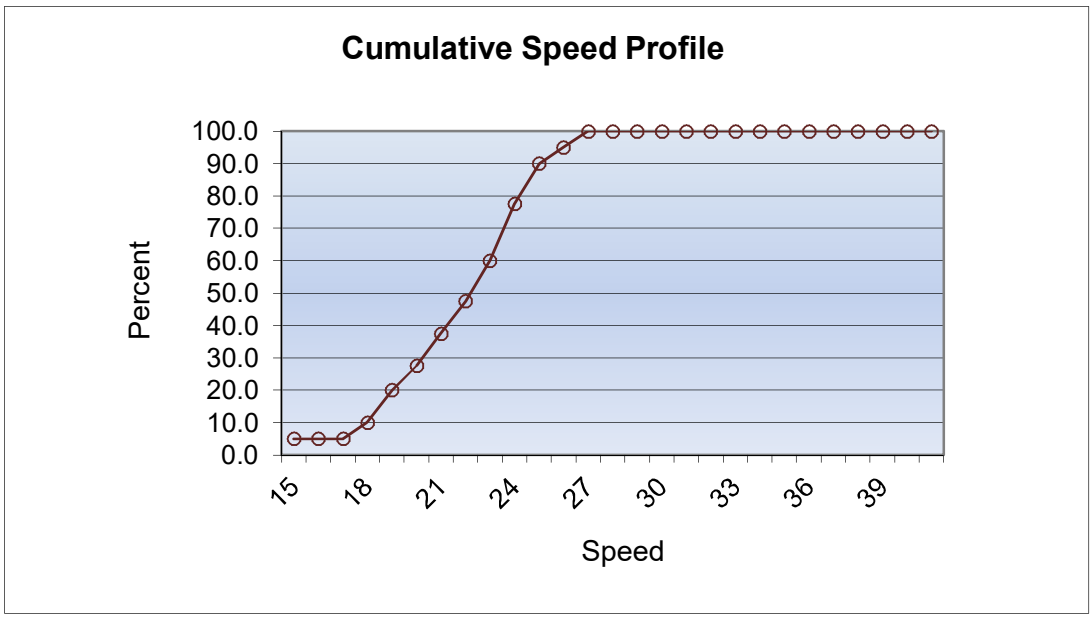
Appendix A

Speed Survey Data

Street: Fir Street at Raised Intersection ***From:*** _____ ***To:*** _____

Vehicles Sampled:	40		
85th Percentile Speed:	25	mph	
Mean (50th Percentile) Speed:	23	mph	
Pace:	17	to	27 mph
Percent in Pace:	95.0%		

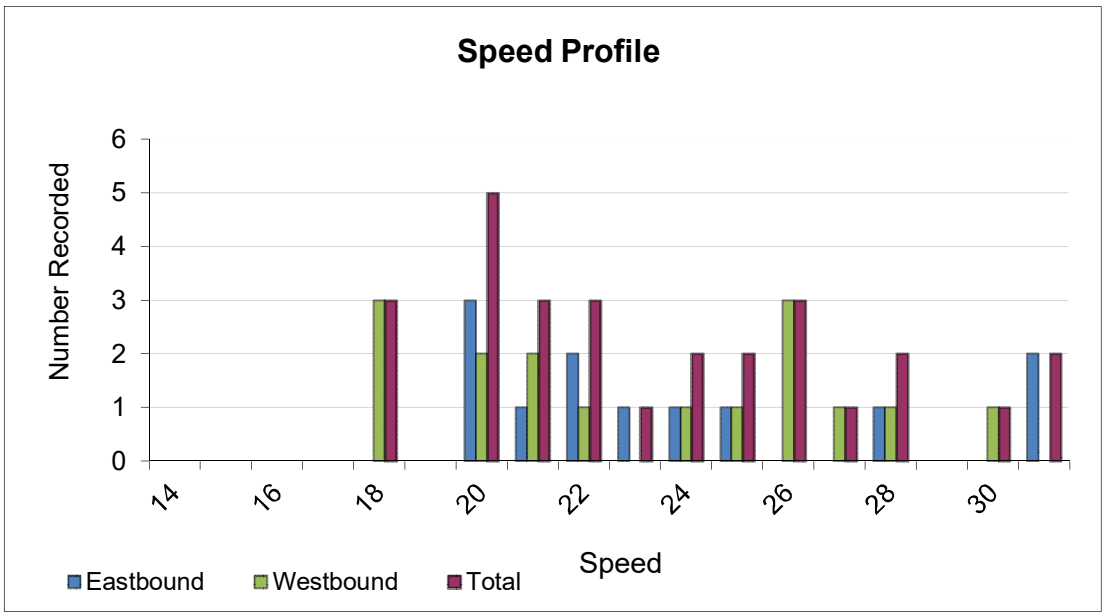


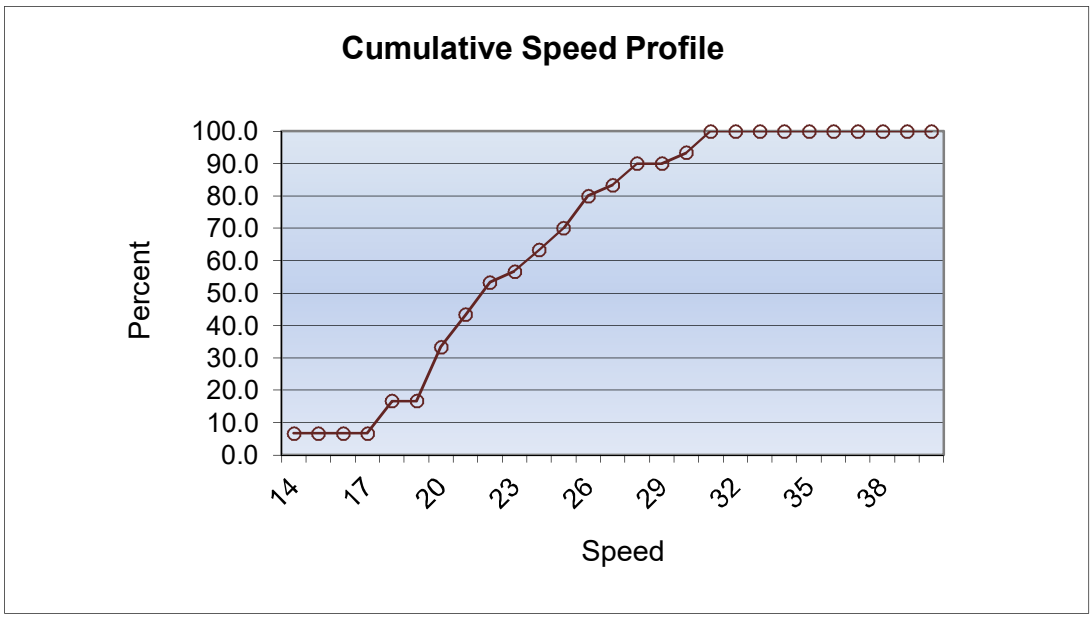


Date Data Collected:	###########	*Start Time:*	10:57 AM	*Weather:*	Sunny
Day of the Week:	Friday	*End Time:*	2:10 PM	*Recorder:*	AB

Street: Fir Street at Traffic Circle ***From:*** _____ ***To:*** _____

Vehicles Sampled:	30		
85th Percentile Speed:	28	mph	
Mean (50th Percentile) Speed:	22	mph	
Pace:	17 to	27	mph
Percent in Pace:	76.7%		

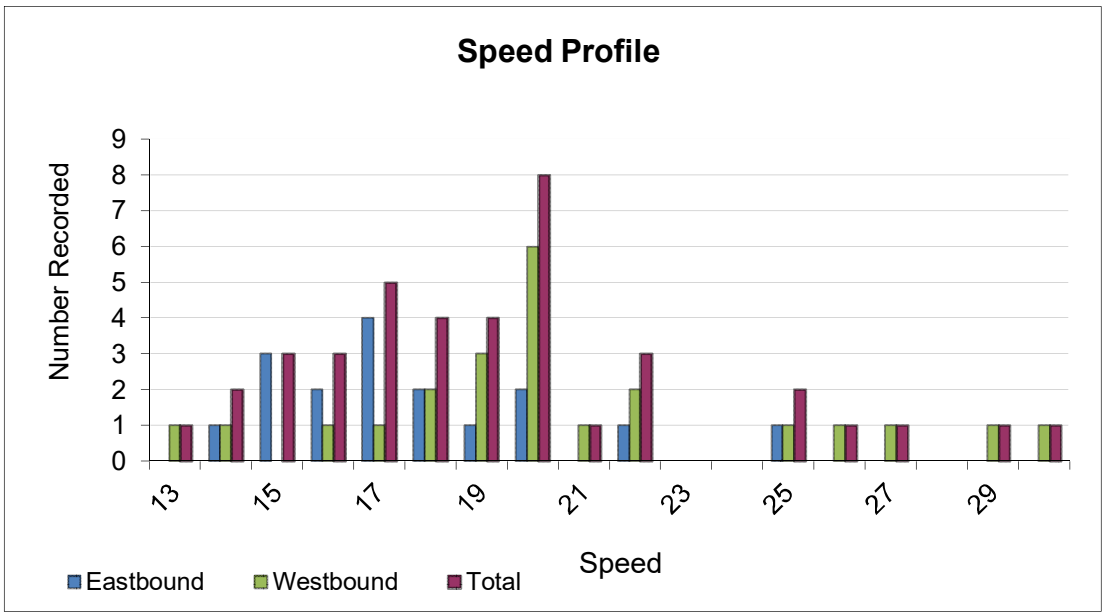


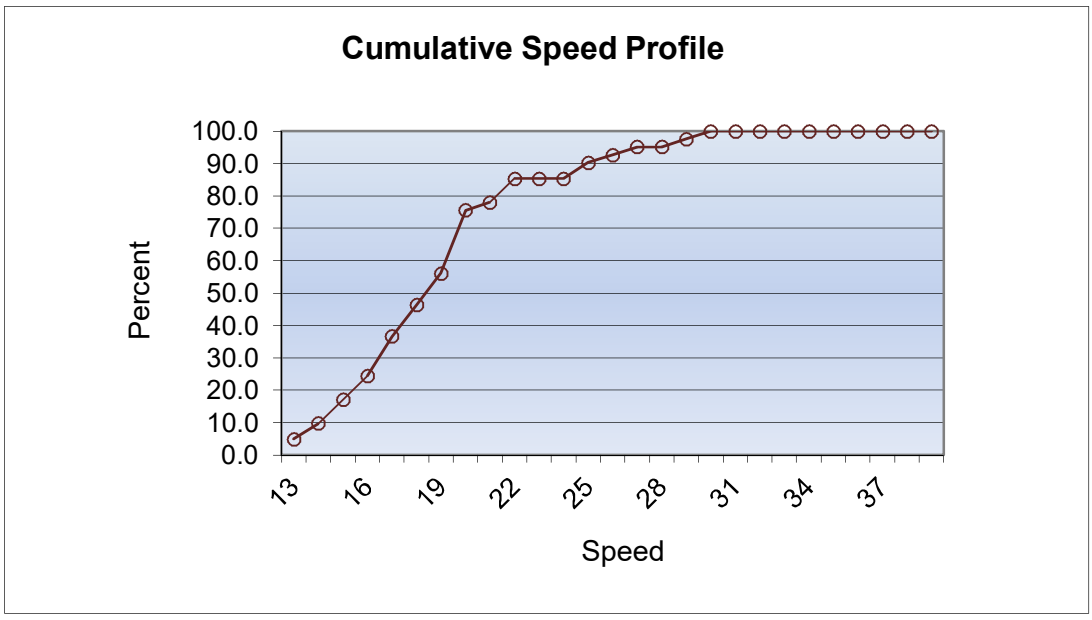


Date Data Collected:	###########	*Start Time:*	10:57 AM	*Weather:*	Sunny
Day of the Week:	Friday	*End Time:*	2:10 PM	*Recorder:*	AB

Street: Fir Street at Speed Bumps ***From:*** _____ ***To:*** _____

Vehicles Sampled:	41		
85th Percentile Speed:	22	mph	
Mean (50th Percentile) Speed:	19	mph	
Pace:	12	to	22 mph
Percent in Pace:	82.9%		

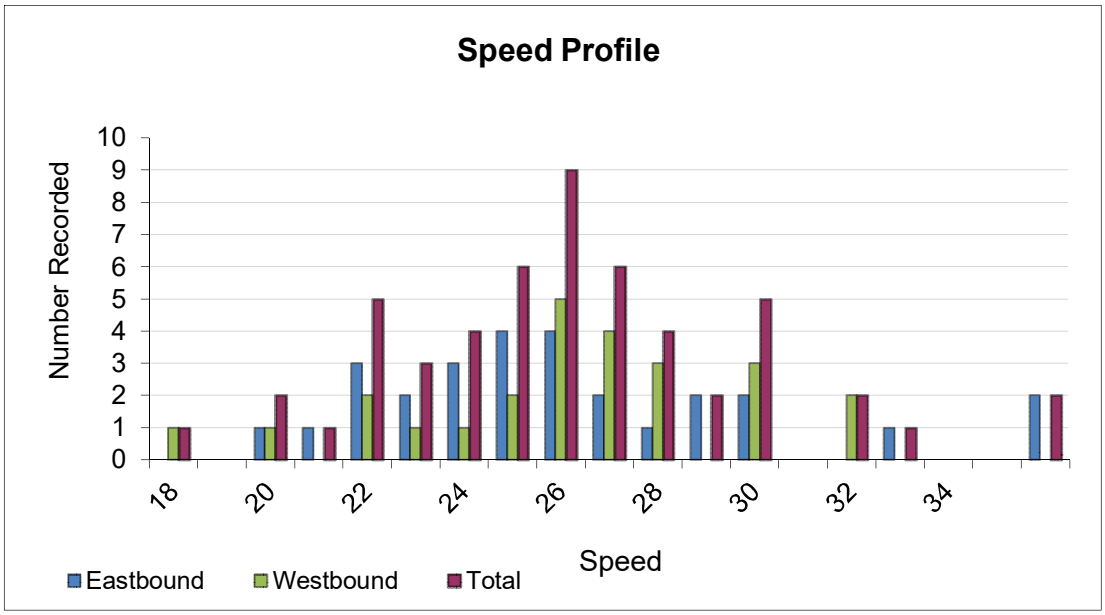


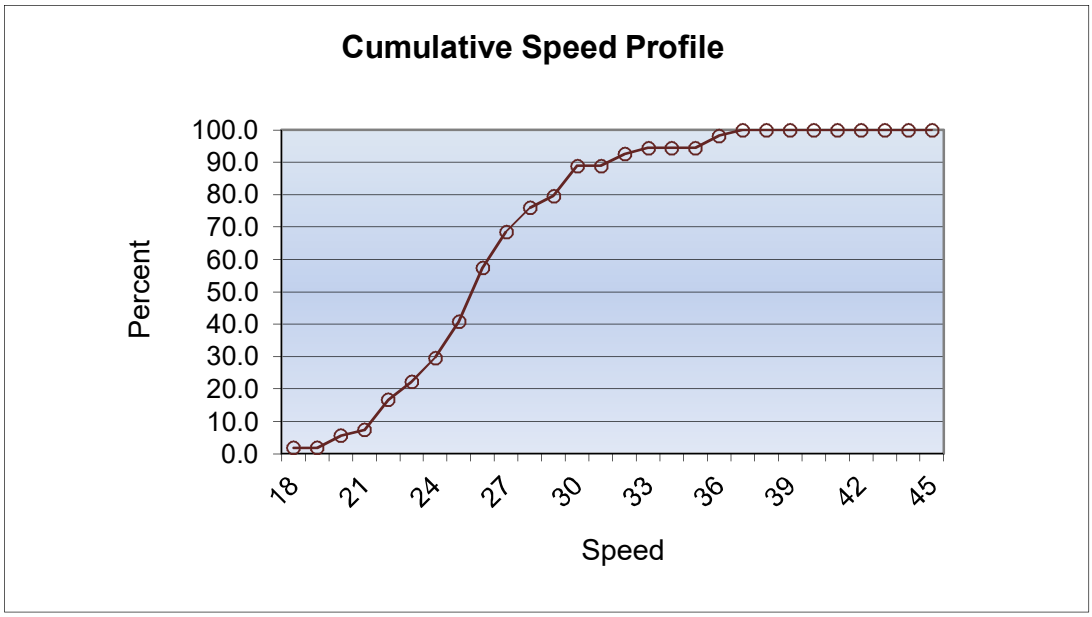


Date Data Collected:	###########	*Start Time:*	10:57 AM	*Weather:*	Sunny
Day of the Week:	Friday	*End Time:*	2:10 PM	*Recorder:*	AB

Street: Pine Steet ***From:*** Corry ***To:*** Whipple

Vehicles Sampled:	54		
85th Percentile Speed:	30	mph	
Mean (50th Percentile) Speed:	26	mph	
Pace:	20 to	30	mph
Percent in Pace:	83.3%		

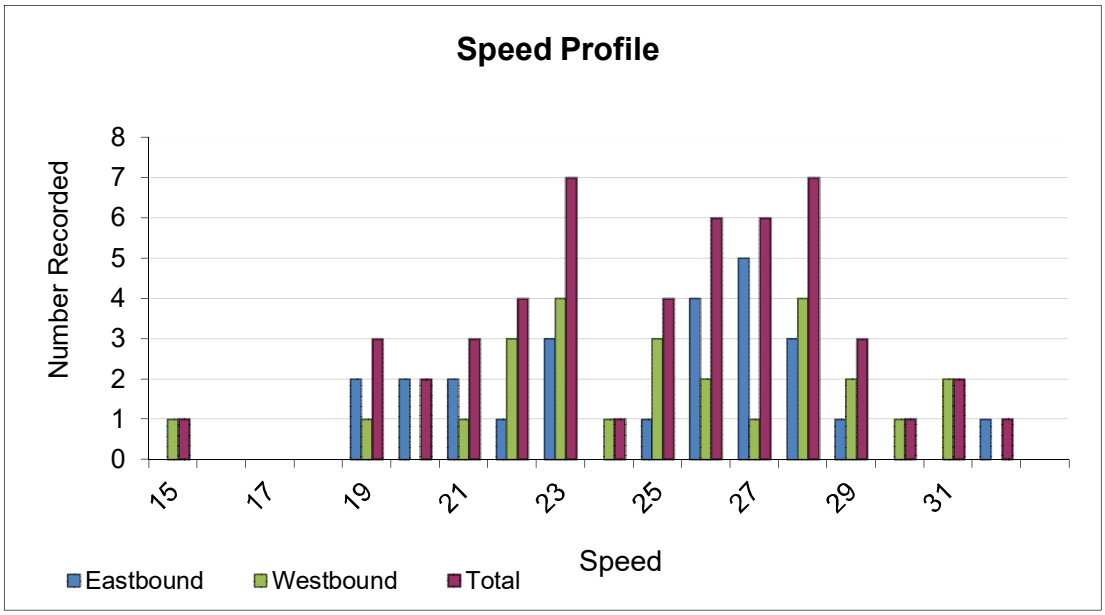


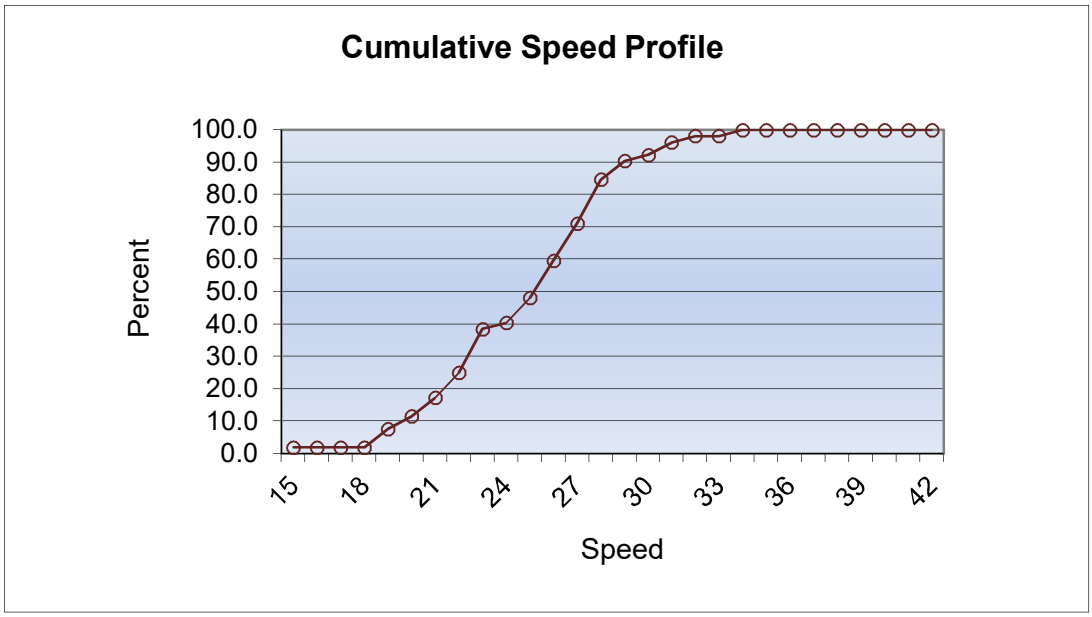


Date Data Collected:	###########	*Start Time:*	10:57 AM	*Weather:*	Sunny
Day of the Week:	Friday	*End Time:*	2:10 PM	*Recorder:*	AB

Street: Pine Street at Harrison ***From:*** _____ ***To:*** _____

Vehicles Sampled:	52		
85th Percentile Speed:	29	mph	
Mean (50th Percentile) Speed:	26	mph	
Pace:	19	to	29 mph
Percent in Pace:	82.7%		

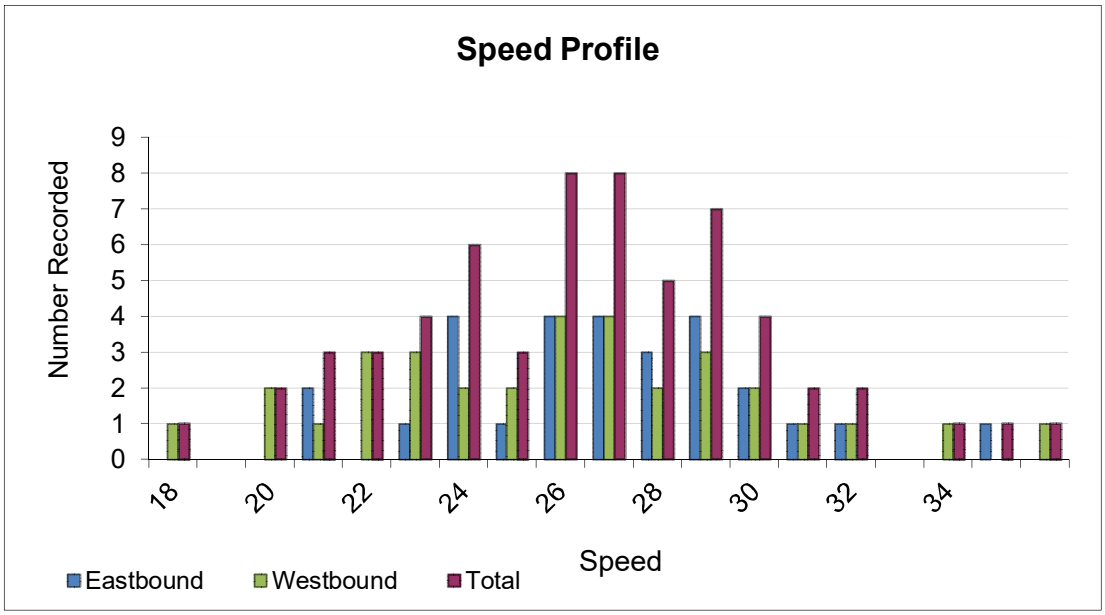


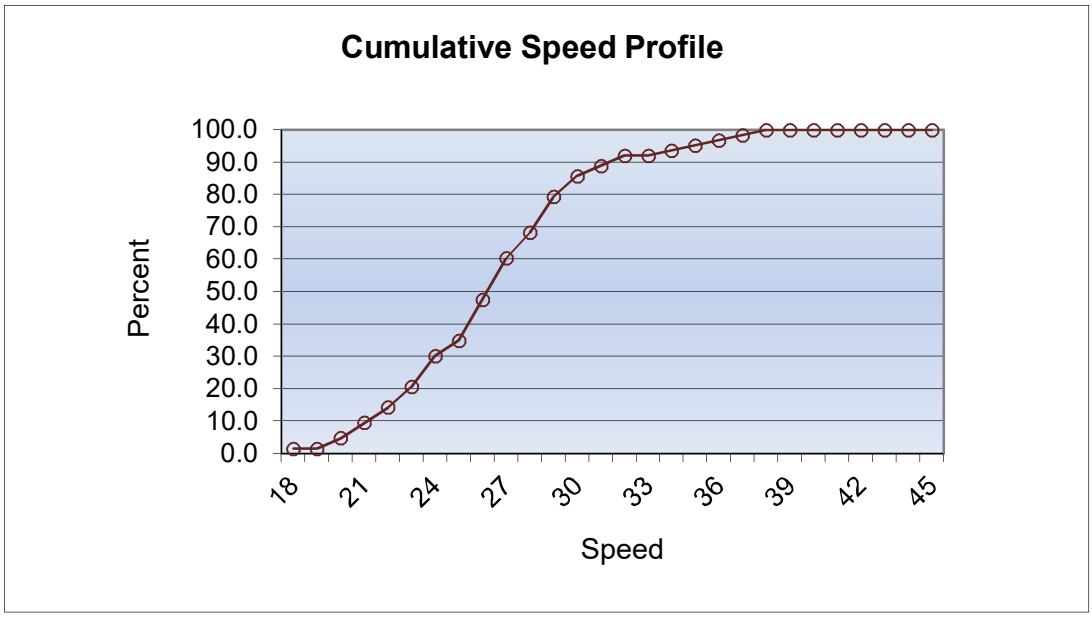


Date Data Collected:	###########	*Start Time:*	10:57 AM	*Weather:*	Sunny
Day of the Week:	Friday	*End Time:*	2:10 PM	*Recorder:*	AB

Street: Maple Street **From:** Franklin **To:** Harold

Vehicles Sampled:	63		
85th Percentile Speed:	30	mph	
Mean (50th Percentile) Speed:	27	mph	
Pace:	20 to	30	mph
Percent in Pace:	81.0%		

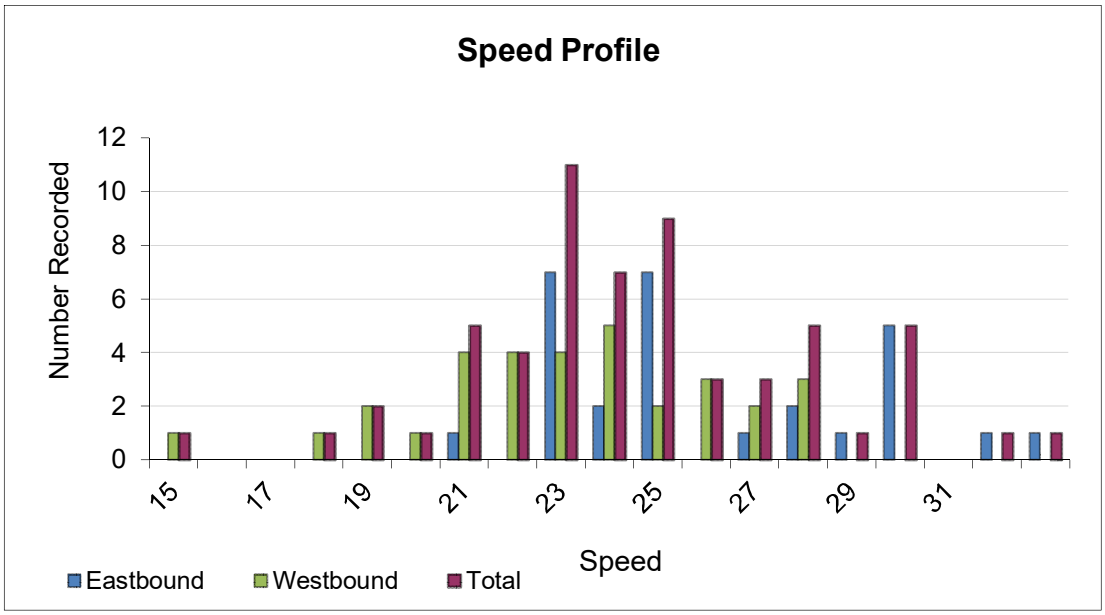


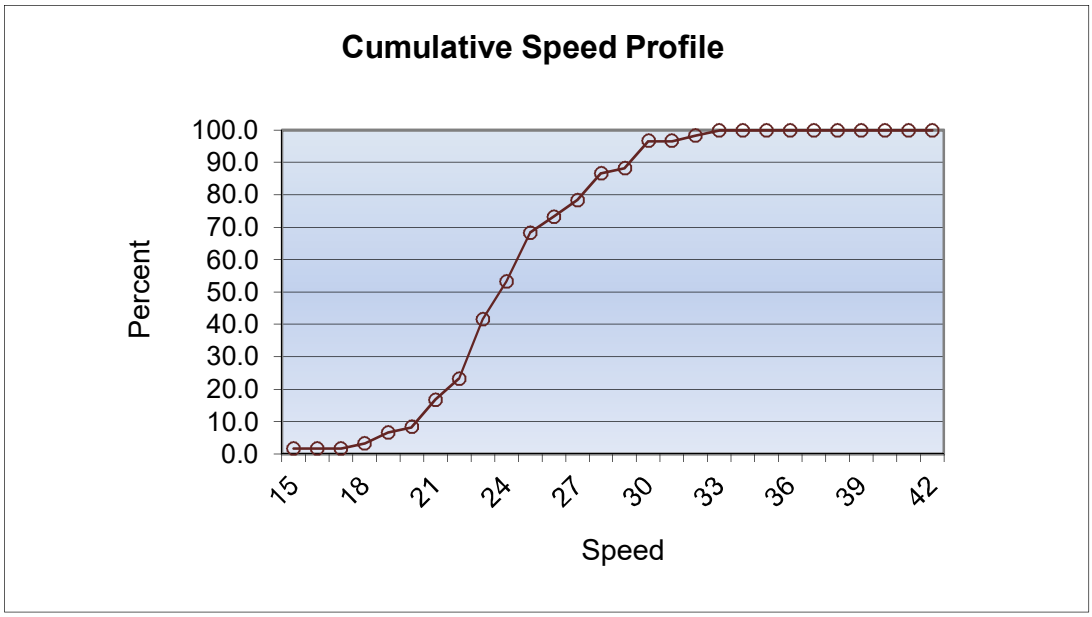


Date Data Collected:	###########	*Start Time:*	10:57 AM	*Weather:*	Sunny
Day of the Week:	Friday	*End Time:*	2:10 PM	*Recorder:*	AB

Street: Maple Street ***From:*** Lincoln ***To:*** Harold

Vehicles Sampled:	60		
85th Percentile Speed:	28	mph	
Mean (50th Percentile) Speed:	24	mph	
Pace:	20 to	30	mph
Percent in Pace:	88.3%		





Date Data Collected:	###########	*Start Time:*	10:57 AM	*Weather:*	Sunny
Day of the Week:	Friday	*End Time:*	2:10 PM	*Recorder:*	AB

Appendix B

Intersection Counts

W-Trans

N. Harrison Street at E. Pine Street
Weekday AM
Fort Bragg
County of Mendocino

File Name : N_Harrison_at_E_Pine_AM
Site Code : FBR045
Start Date : 5/30/2018
Page No : 1

Groups Printed- Unshifted - Bank 1

	N. Harrison Street Southbound					E. Pine Street Westbound					N. Harrison Street Northbound					E. Pine Street Eastbound					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:30 AM	0	2	0	1	3	1	20	0	1	22	0	4	1	1	6	2	30	1	1	34	65
07:45 AM	1	2	0	0	3	3	31	1	1	36	0	6	4	0	10	1	28	0	0	29	78
Total	1	4	0	1	6	4	51	1	2	58	0	10	5	1	16	3	58	1	1	63	143
Grand Total	1	4	0	1	6	4	51	1	2	58	0	10	5	1	16	3	58	1	1	63	143
Apprch %	16.7	66.7	0	16.7		6.9	87.9	1.7	3.4		0	62.5	31.2	6.2		4.8	92.1	1.6	1.6		
Total %	0.7	2.8	0	0.7	4.2	2.8	35.7	0.7	1.4	40.6	0	7	3.5	0.7	11.2	2.1	40.6	0.7	0.7	44.1	
Unshifted	1	4	0	1	6	4	51	1	2	58	0	10	5	1	16	3	58	1	1	63	143
% Unshifted	100	100	0	100	100	100	100	100	100	100	0	100	100	100	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

W-Trans

N. Harrison Street at E. Pine Street
Mid-day
Fort Bragg
County of Mendocino

File Name : N_Harrison_at_E_Pine_Mid-day
Site Code : FBR045
Start Date : 5/29/2018
Page No : 1

Groups Printed- Unshifted - Bank 1

	N. Harrison Street Southbound					E. Pine Street Westbound					N. Harrison Street Northbound					E. Pine Street Eastbound					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
12:00 PM	1	3	0	0	4	1	11	1	0	13	0	4	5	0	9	6	19	1	0	26	52
12:15 PM	1	5	1	0	7	1	16	0	0	17	2	2	3	0	7	3	8	1	2	14	45
Grand Total	2	8	1	0	11	2	27	1	0	30	2	6	8	0	16	9	27	2	2	40	97
Apprch %	18.2	72.7	9.1	0		6.7	90	3.3	0		12.5	37.5	50	0		22.5	67.5	5	5		
Total %	2.1	8.2	1	0	11.3	2.1	27.8	1	0	30.9	2.1	6.2	8.2	0	16.5	9.3	27.8	2.1	2.1	41.2	
Unshifted	2	8	1	0	11	2	27	1	0	30	2	6	8	0	16	9	27	2	2	40	97
% Unshifted	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

W-Trans

N. Harrision Street at E. Laurel Street
Mid-day
Fortbragg
County of Mendocino

File Name : N_Harrison_at_E_Laurel_Mid-day
Site Code : FBR045
Start Date : 5/29/2018
Page No : 1

Groups Printed- Unshifted - Bank 1

	N. Harrison Street Southbound					E. Laurel Street Westbound					N. Harrison Street Northbound					E. Laurel Street Eastbound					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
12:15 PM	0	5	1	2	8	0	3	3	2	8	2	8	2	1	13	0	8	1	0	9	38
Grand Total	0	5	1	2	8	0	3	3	2	8	2	8	2	1	13	0	8	1	0	9	38
Apprch %	0	62.5	12.5	25		0	37.5	37.5	25		15.4	61.5	15.4	7.7		0	88.9	11.1	0		
Total %	0	13.2	2.6	5.3	21.1	0	7.9	7.9	5.3	21.1	5.3	21.1	5.3	2.6	34.2	0	21.1	2.6	0	23.7	
Unshifted	0	5	1	2	8	0	3	3	2	8	2	8	2	1	13	0	8	1	0	9	38
% Unshifted	0	100	100	100	100	0	100	100	100	100	100	100	100	100	100	0	100	100	0	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

W-Trans

N. Harrison Street at E. Laurel Street
Weekday PM
Fort Bragg
County of Mendocino

File Name : N_Harrison_at_E_Laurel_PM
Site Code : FBR045
Start Date : 5/30/2018
Page No : 1

Groups Printed- Unshifted - Bank 1

	N. Harrison Street Southbound					E. Laurel Street Westbound					N. Harrison Street Northbound					E. Laurel Street Eastbound					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
04:00 PM	0	8	0	4	12	1	7	8	1	17	0	5	3	0	8	4	9	5	3	21	58
04:15 PM	1	3	0	14	18	1	3	5	6	15	3	9	1	8	21	2	10	0	0	12	66
Grand Total	1	11	0	18	30	2	10	13	7	32	3	14	4	8	29	6	19	5	3	33	124
Apprch %	3.3	36.7	0	60		6.2	31.2	40.6	21.9		10.3	48.3	13.8	27.6		18.2	57.6	15.2	9.1		
Total %	0.8	8.9	0	14.5	24.2	1.6	8.1	10.5	5.6	25.8	2.4	11.3	3.2	6.5	23.4	4.8	15.3	4	2.4	26.6	
Unshifted	1	11	0	18	30	2	10	13	7	32	3	14	4	8	29	6	19	5	3	33	124
% Unshifted	100	100	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

W-Trans

S.Lincoln Street at Maple Street
Weekday AM
Fort Bragg
County of Mendocino

File Name : S.Lincoln_at_Maple_AM
Site Code : FBR045
Start Date : 5/30/2018
Page No : 1

Groups Printed- Unshifted - Bank 1

	S. Lincoln Street Southbound					Maple Street Westbound					S. Lincoln Street Northbound					Maple Street Eastbound					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:45 AM	8	25	1	1	35	0	2	0	0	2	0	13	29	3	45	31	5	6	0	42	124
Total	8	25	1	1	35	0	2	0	0	2	0	13	29	3	45	31	5	6	0	42	124
08:00 AM	1	31	6	3	41	2	4	0	7	13	2	17	36	7	62	36	9	3	2	50	166
08:15 AM	7	16	2	2	27	1	16	2	6	25	1	24	68	7	100	19	4	1	2	26	178
Grand Total	16	72	9	6	103	3	22	2	13	40	3	54	133	17	207	86	18	10	4	118	468
Apprch %	15.5	69.9	8.7	5.8		7.5	55	5	32.5		1.4	26.1	64.3	8.2		72.9	15.3	8.5	3.4		
Total %	3.4	15.4	1.9	1.3	22	0.6	4.7	0.4	2.8	8.5	0.6	11.5	28.4	3.6	44.2	18.4	3.8	2.1	0.9	25.2	
Unshifted	16	72	9	6	103	3	22	2	13	40	3	54	133	17	207	86	18	10	4	118	468
% Unshifted	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

W-Trans

S.Lincoln Street at Maple Street
Weekday PM
Fort Bragg
County of Mendocino

File Name : S.Lincoln_at_Maple_PM
Site Code : FBR045
Start Date : 5/29/2018
Page No : 1

Groups Printed- Unshifted - Bank 1

	S. Lincoln Street Southbound					Maple Street Westbound					S. Lincoln Street Northbound					Maple Street Eastbound					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
04:00 PM	3	3	1	0	7	0	4	0	1	5	3	6	8	2	19	8	12	6	0	26	57
04:15 PM	3	3	1	1	8	0	3	1	1	5	6	1	10	3	20	8	22	7	2	39	72
Grand Total	6	6	2	1	15	0	7	1	2	10	9	7	18	5	39	16	34	13	2	65	129
Apprch %	40	40	13.3	6.7		0	70	10	20		23.1	17.9	46.2	12.8		24.6	52.3	20	3.1		
Total %	4.7	4.7	1.6	0.8	11.6	0	5.4	0.8	1.6	7.8	7	5.4	14	3.9	30.2	12.4	26.4	10.1	1.6	50.4	
Unshifted	6	6	2	1	15	0	7	1	2	10	9	7	18	5	39	16	34	13	2	65	129
% Unshifted	100	100	100	100	100	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

W-Trans

S. Harold Street at Maple Street
Weekday PM
Fort Bragg
County of Mendocino

File Name : Harold_at_Maple_PM
Site Code : FBR045
Start Date : 5/30/2018
Page No : 1

Groups Printed- Unshifted - Bank 1

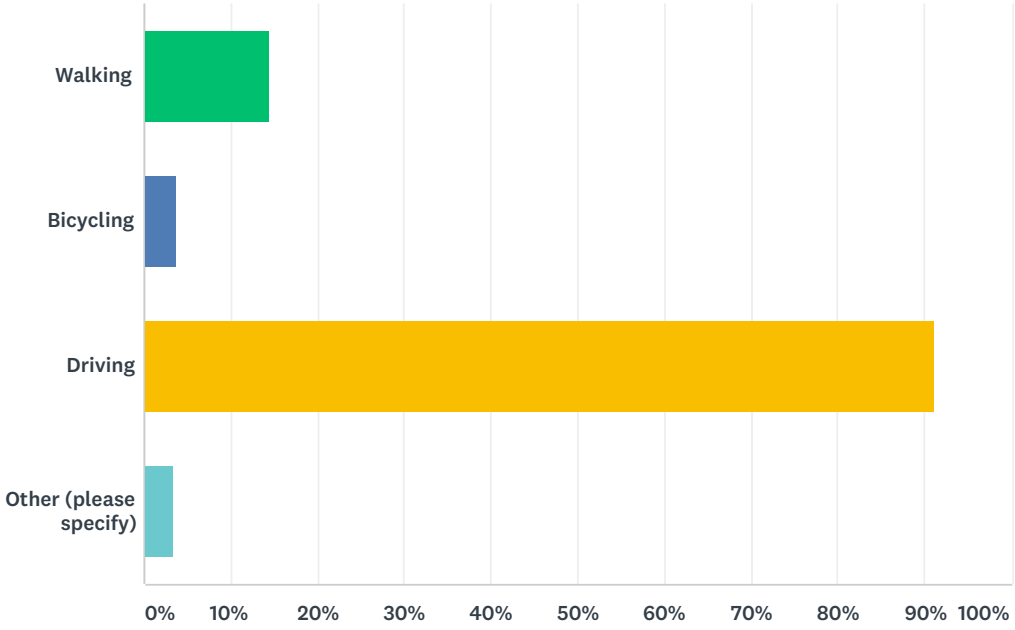
	S.Harold Street Southbound					Maple Street Westbound					S.Harold Street Northbound					Maple Street Eastbound					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
04:00 PM	11	0	10	0	21	4	8	0	0	12	1	4	4	0	9	0	15	14	0	29	71
04:15 PM	8	0	9	0	17	4	12	0	0	16	1	1	3	1	6	0	19	8	0	27	66
Grand Total	19	0	19	0	38	8	20	0	0	28	2	5	7	1	15	0	34	22	0	56	137
Apprch %	50	0	50	0		28.6	71.4	0	0		13.3	33.3	46.7	6.7		0	60.7	39.3	0		
Total %	13.9	0	13.9	0	27.7	5.8	14.6	0	0	20.4	1.5	3.6	5.1	0.7	10.9	0	24.8	16.1	0	40.9	
Unshifted	19	0	19	0	38	8	20	0	0	28	2	5	7	1	15	0	34	22	0	56	137
% Unshifted	100	0	100	0	100	100	100	0	0	100	100	100	100	100	100	0	100	100	0	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix C

Online Survey

Q1 Please describe your primary mode of transportation:

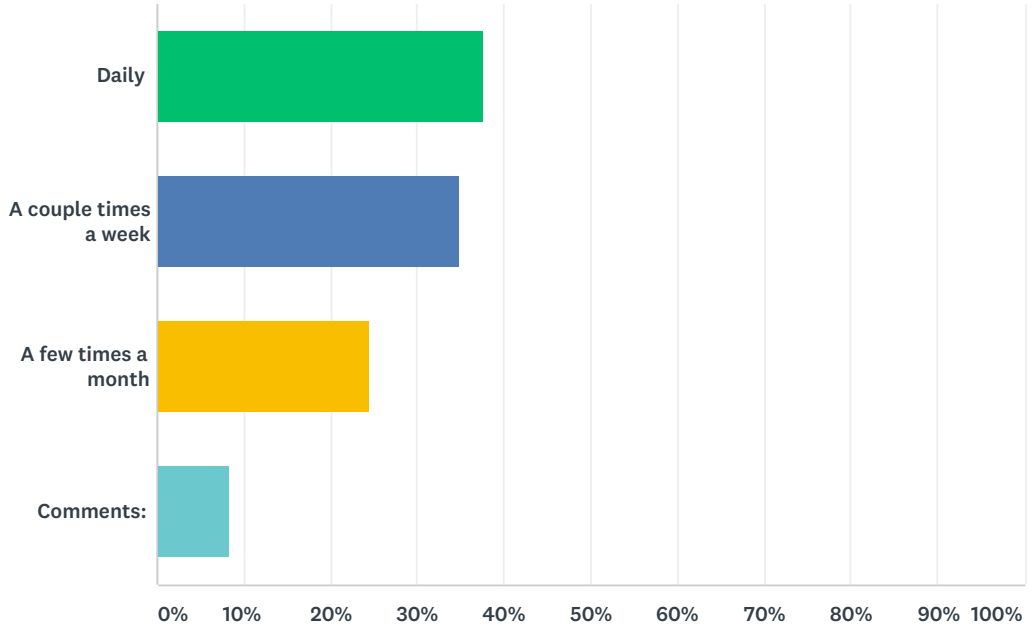
Answered: 272 Skipped: 2



ANSWER CHOICES	RESPONSES	
Walking	14.34%	39
Bicycling	3.68%	10
Driving	91.18%	248
Other (please specify)	3.31%	9
Total Respondents: 272		

Q2 On average, how frequently do you WALK on City sidewalks? (minimum of two blocks)

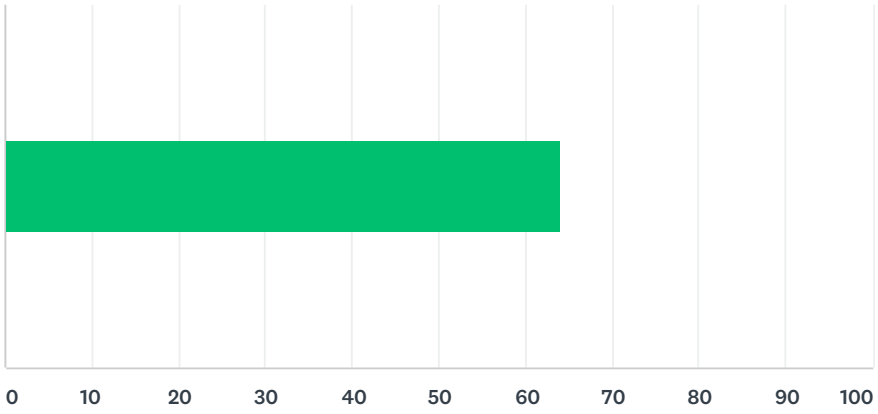
Answered: 274 Skipped: 0



ANSWER CHOICES	RESPONSES	
Daily	37.59%	103
A couple times a week	35.04%	96
A few times a month	24.45%	67
Comments:	8.39%	23
Total Respondents: 274		

Q3 In general, how do you view the "walkability" of Fort Bragg?Is there enough room to walk on the sidewalk? ...are sidewalks clear and unobstructed?

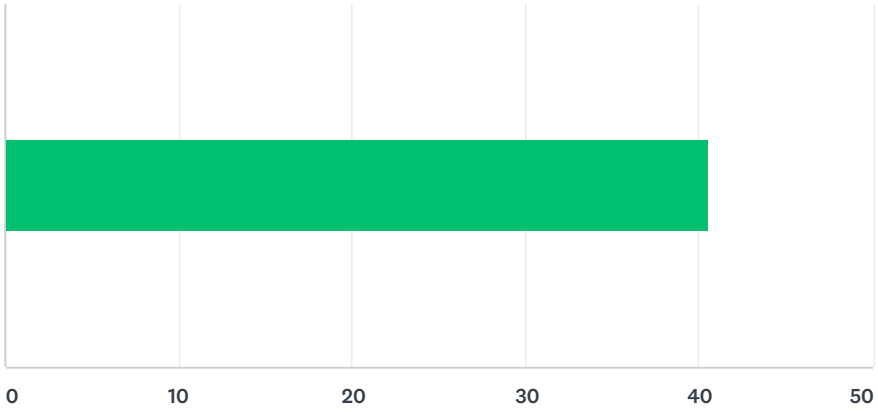
Answered: 272 Skipped: 2



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	64	17,416	272
Total Respondents: 272			

Q4 Do drivers behave well? ...yield to pedestrians, drive a safe speed, look before backing up?

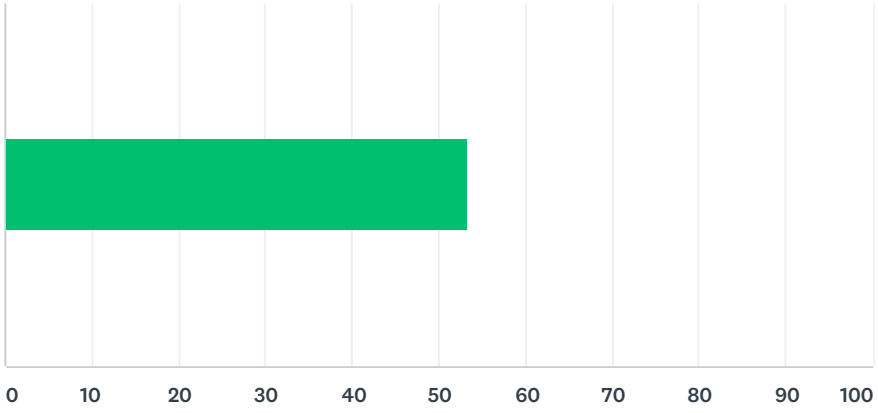
Answered: 268 Skipped: 6



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	41	10,872	268
Total Respondents: 268			

Q5 Is it easy to cross the street? ...are crosswalks available? curb cuts?

Answered: 272 Skipped: 2



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	53	14,488	272
Total Respondents: 272			

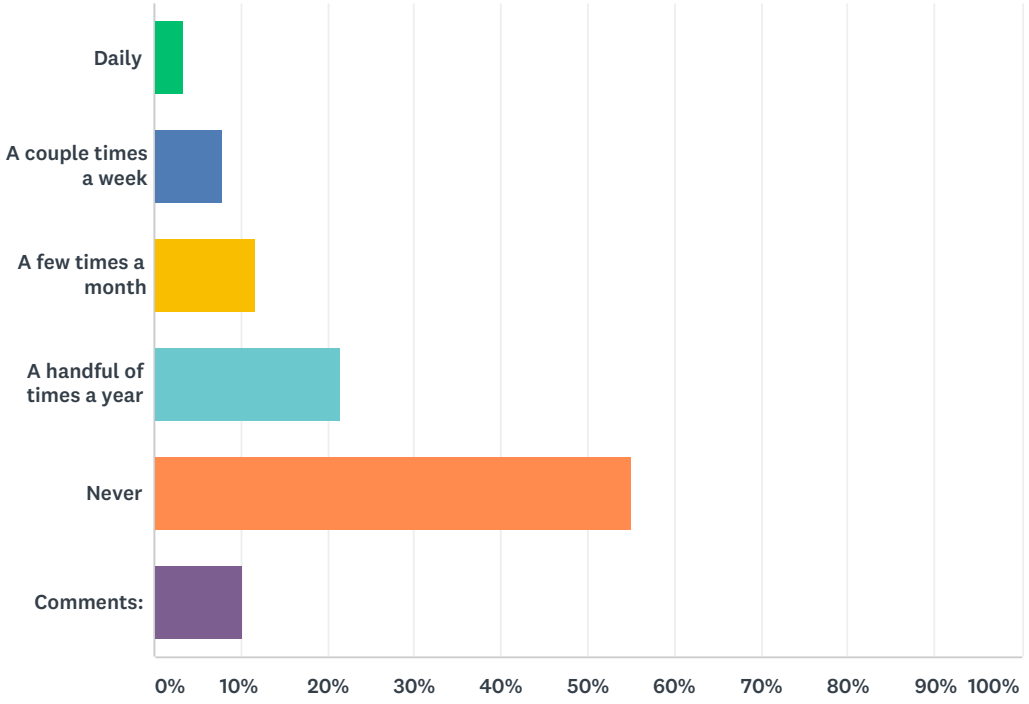
Q6 Is there a particular location that is difficult to cross?

Answered: 203 Skipped: 71

See "Next Steps" chapter for details

Q7 On average, how often do you BICYCLE on City streets?

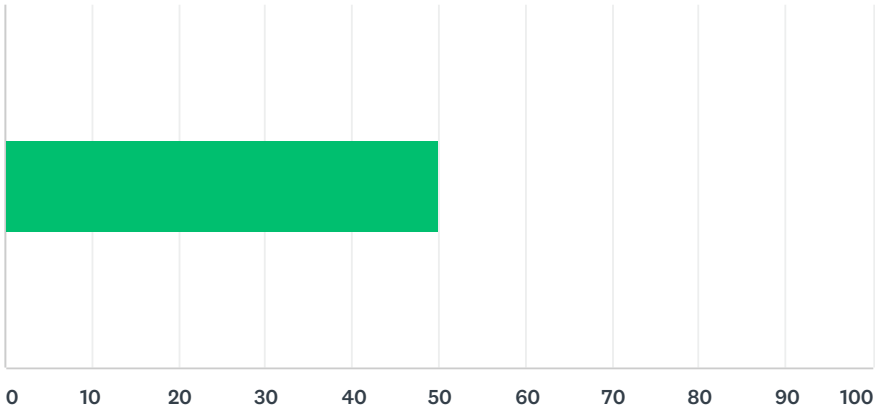
Answered: 274 Skipped: 0



ANSWER CHOICES	RESPONSES	
Daily	3.28%	9
A couple times a week	8.03%	22
A few times a month	11.68%	32
A handful of times a year	21.53%	59
Never	55.11%	151
Comments:	10.22%	28
Total Respondents: 274		

Q8 In your experience, how do you rate bicycle access and safety of Fort Bragg streets?In terms of dedicated bicycle lanes? Motor vehicle driver behavior? etc?

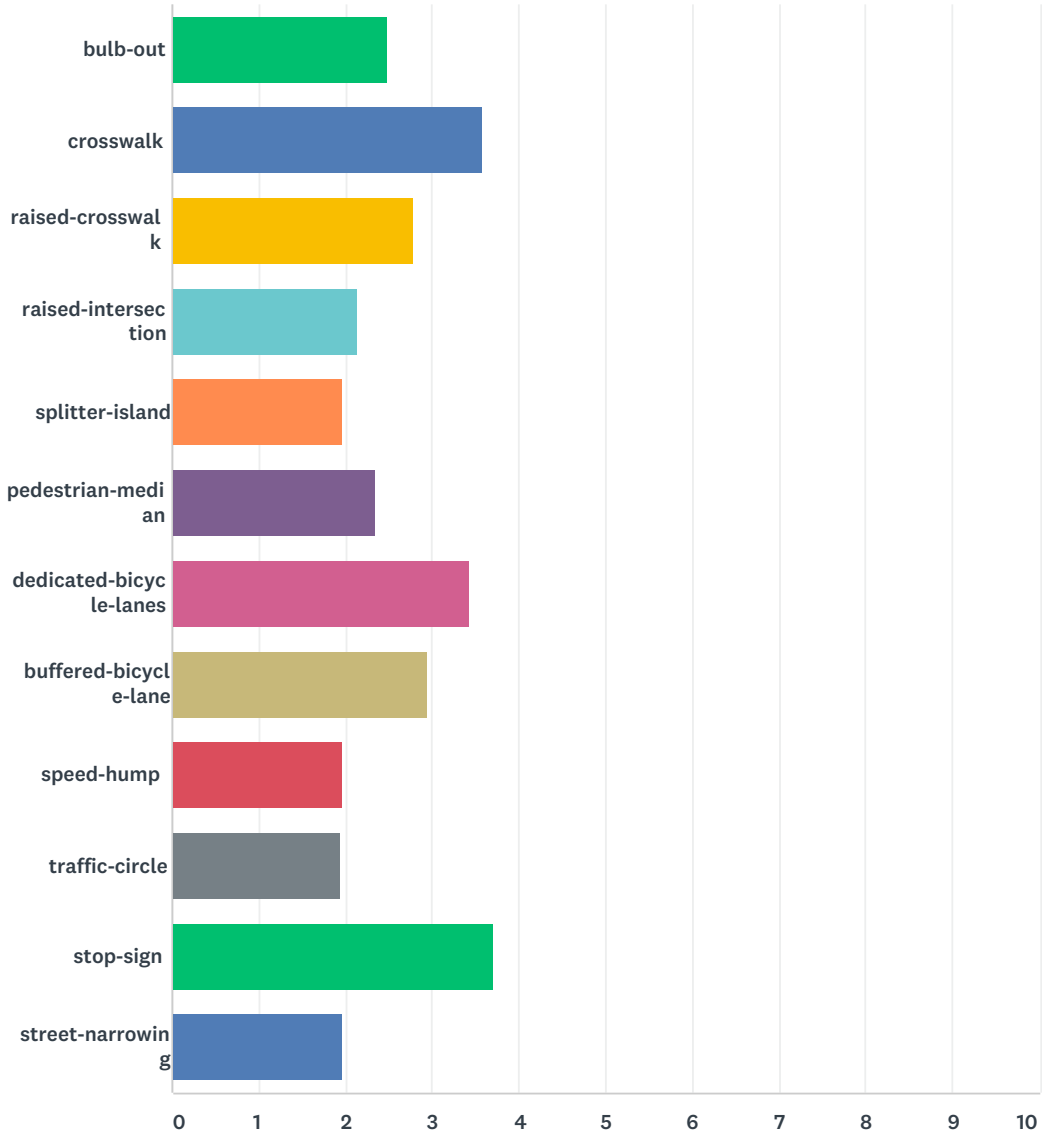
Answered: 261 Skipped: 13



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	50	13,063	261
Total Respondents: 261			

Q9 Street Safety Design Elements There are many design elements used to emphasize safety, mobility, and accessibility for those using a variety of travel modes. Multiple factors are considered when selecting a particular design element, but in general what are your preferences?

Answered: 273 Skipped: 1



	OPPOSED TO	NEUTRAL	SUPPORTIVE	TOTAL	WEIGHTED AVERAGE
	40.89% 110	28.62% 77	30.48% 82	269	2.49
	7.01% 19	22.14% 60	70.85% 192	271	3.57

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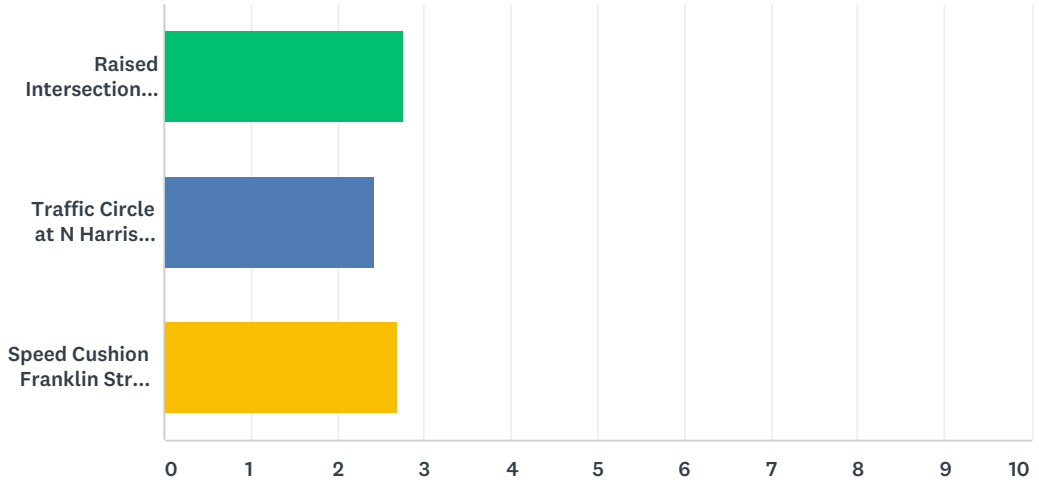
	32.59% 88	22.96% 62	44.44% 120	270	2.79
	53.33% 144	25.93% 70	20.74% 56	270	2.14
	60.07% 161	24.25% 65	15.67% 42	268	1.96
	46.64% 125	26.12% 70	27.24% 73	268	2.34
	11.11% 30	22.22% 60	66.67% 180	270	3.44
	27.57% 75	21.32% 58	51.10% 139	272	2.96
	61.71% 166	18.59% 50	19.70% 53	269	1.96
	62.96% 170	17.04% 46	20.00% 54	270	1.94
	4.06% 11	16.61% 45	79.34% 215	271	3.71
	58.74% 158	27.14% 73	14.13% 38	269	1.97

Q10 Existing Fir Street Traffic Calming and Visibility FeaturesDue to concerns with large numbers of speeding vehicles, traffic near the Middle School and deficient pedestrian crossings, several improvements have been implemented along Fir Street. Please provide feedback:

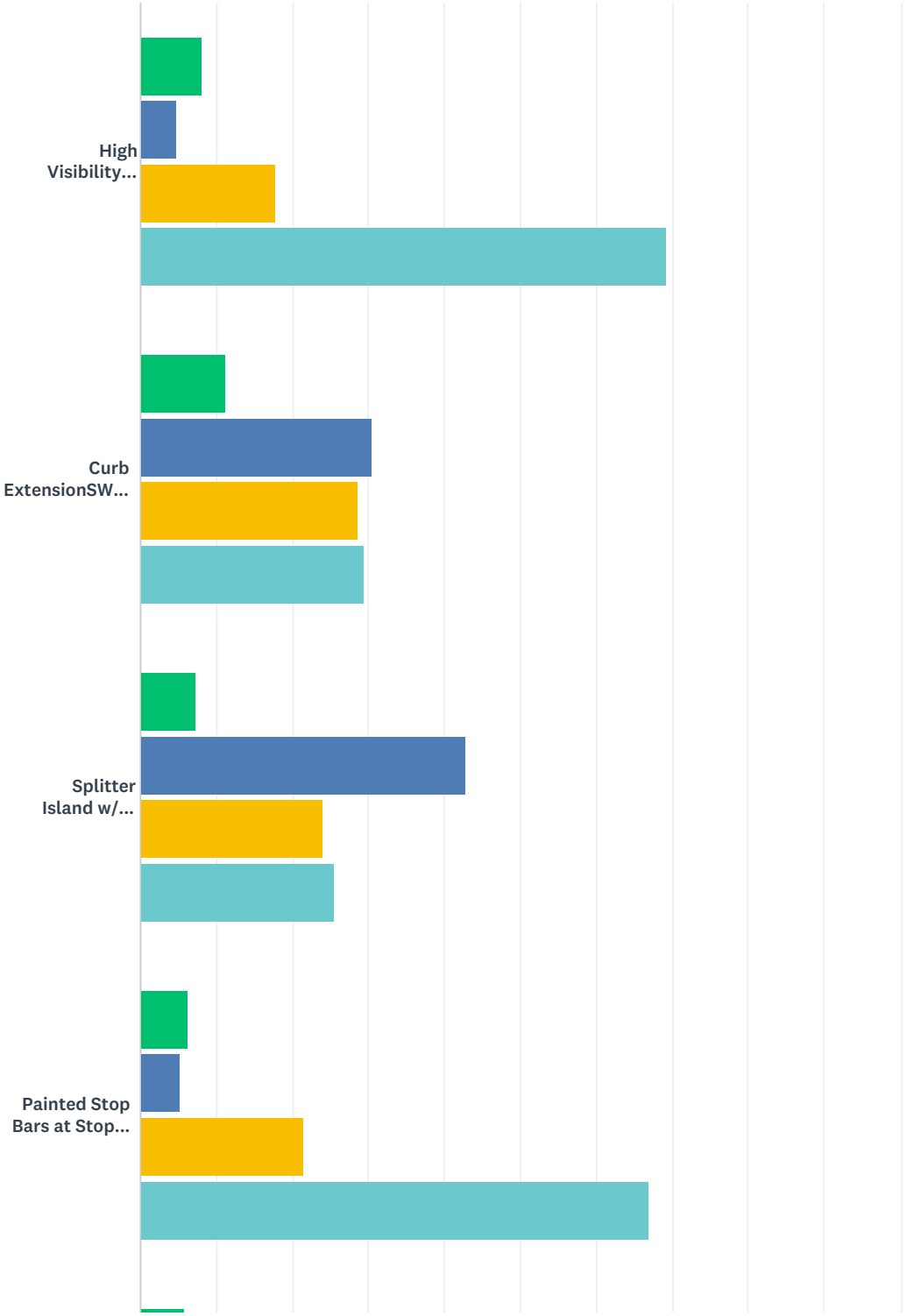
Answered: 270 Skipped: 4



	NO OPINION	OPPOSED TO	NEUTRAL	SUPPORTIVE	TOTAL	WEIGHTED AVERAGE
Raised Intersectionat N Corry Street	7.78% 21	36.30% 98	26.67% 72	29.26% 79	270	2.77
Traffic Circle at N Harrison Street	7.06% 19	60.97% 164	13.38% 36	18.59% 50	269	2.43
Speed Cushion Franklin Street and McPherson Street	7.78% 21	40.74% 110	25.56% 69	25.93% 70	270	2.70

Q11 Existing Harold Street Traffic Calming and Visibility FeaturesDue to concerns with speeding vehicles, frequent pedestrian crossings at mid-block, deficient crosswalks, and a steady flow of traffic as a north/south core connection, several improvements have been implemented along Harold Street. Please provide feedback:

Answered: 271 Skipped: 3



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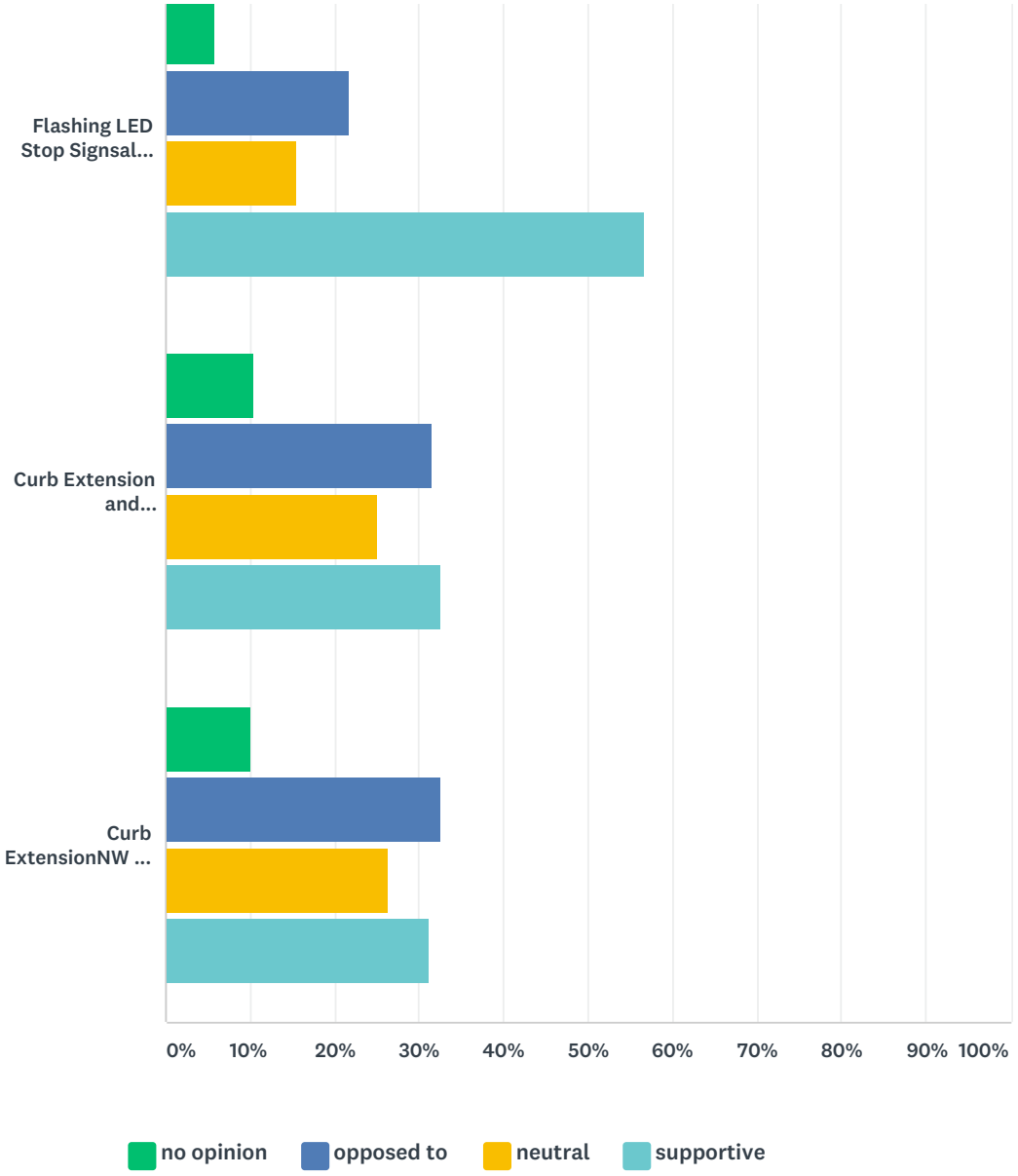
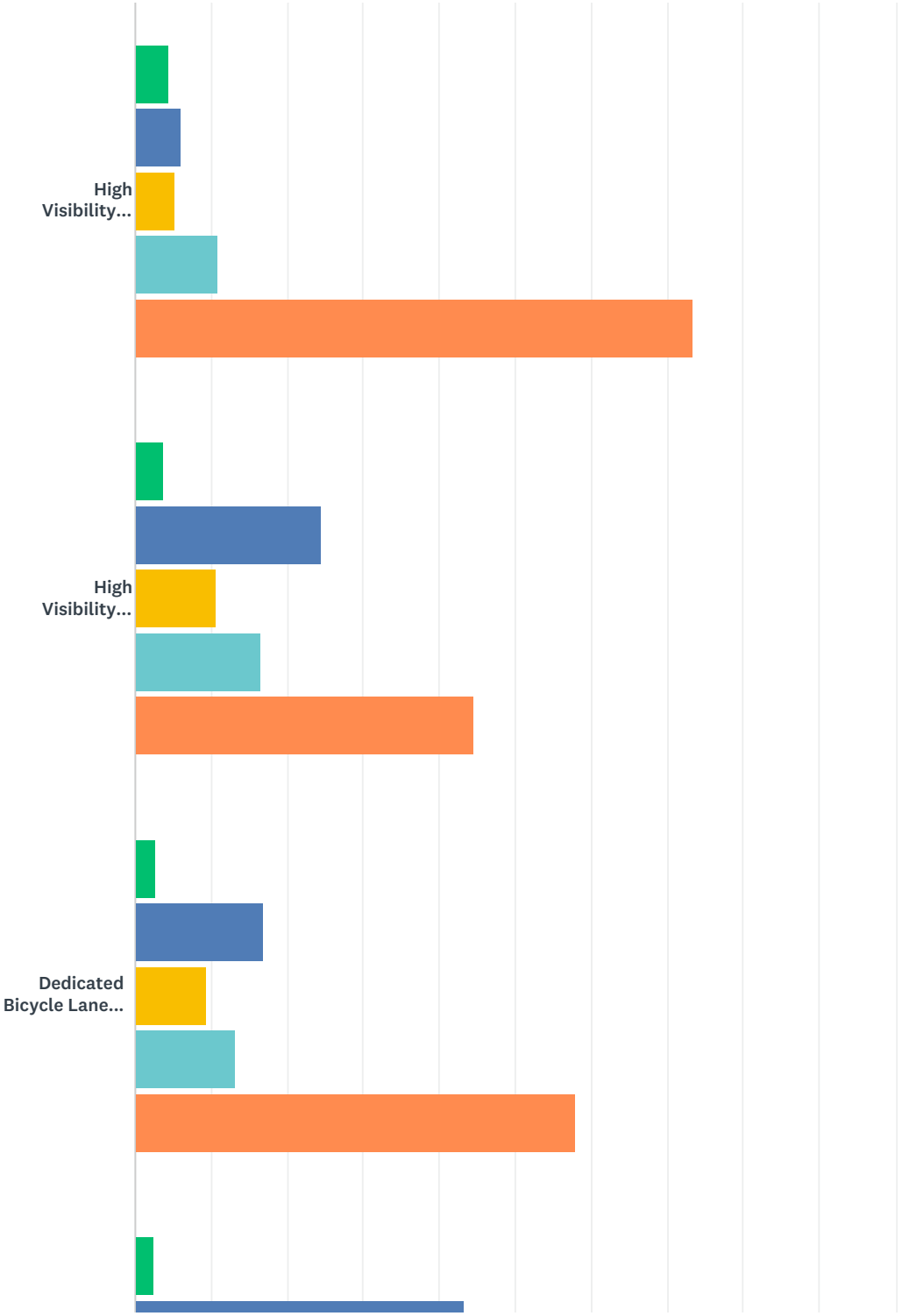


	NO OPINION	OPPOSED TO	NEUTRAL	SUPPORTIVE	TOTAL
High Visibility Crosswalkat Fir Street	8.18% 22	4.83% 13	17.84% 48	69.14% 186	269
Curb ExtensionSW corner at Fir Street	11.19% 30	30.60% 82	28.73% 77	29.48% 79	268
Splitter Island w/ Signageat Pine, Laurel, Redwood, Cedar, Alder streets	7.41% 20	42.96% 116	24.07% 65	25.56% 69	270
Painted Stop Bars at Stop Signsall east/west intersections	6.32% 17	5.20% 14	21.56% 58	66.91% 180	269
Flashing LED Stop Signsall corners at Oak Street	5.93% 16	21.85% 59	15.56% 42	56.67% 153	270
Curb Extension and Crosswalksouth of Madrone Street	10.53% 28	31.58% 84	25.19% 67	32.71% 87	266
Curb ExtensionNW and NE corners of Maple Street	10.00% 27	32.59% 88	26.30% 71	31.11% 84	270

Q12 Proposed Maple Street Improvements Concerns regarding deficient pedestrian crossings and vehicle speeding identified Maple Street as a study area for the development of design solutions to provide safe access for users of all ages and abilities regardless of their mode of transportation. Please rate the following potential design solutions:

Answered: 269 Skipped: 5



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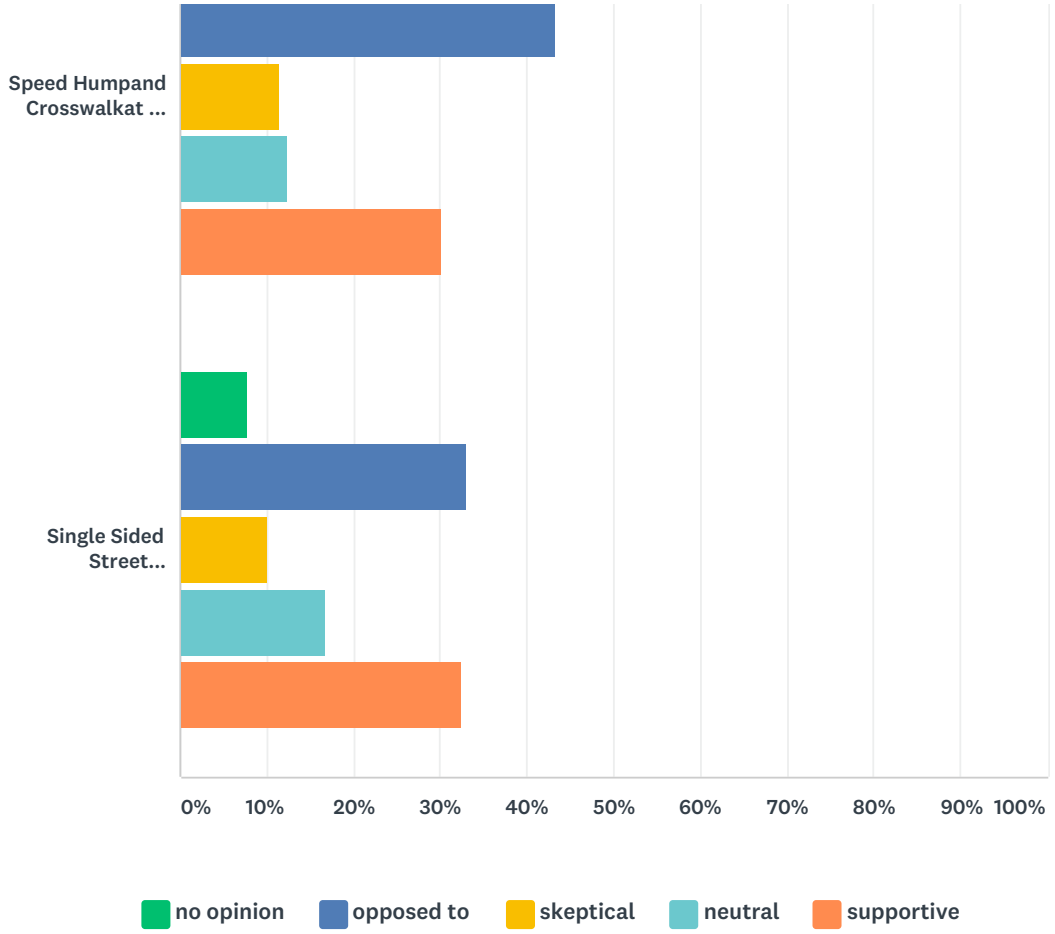
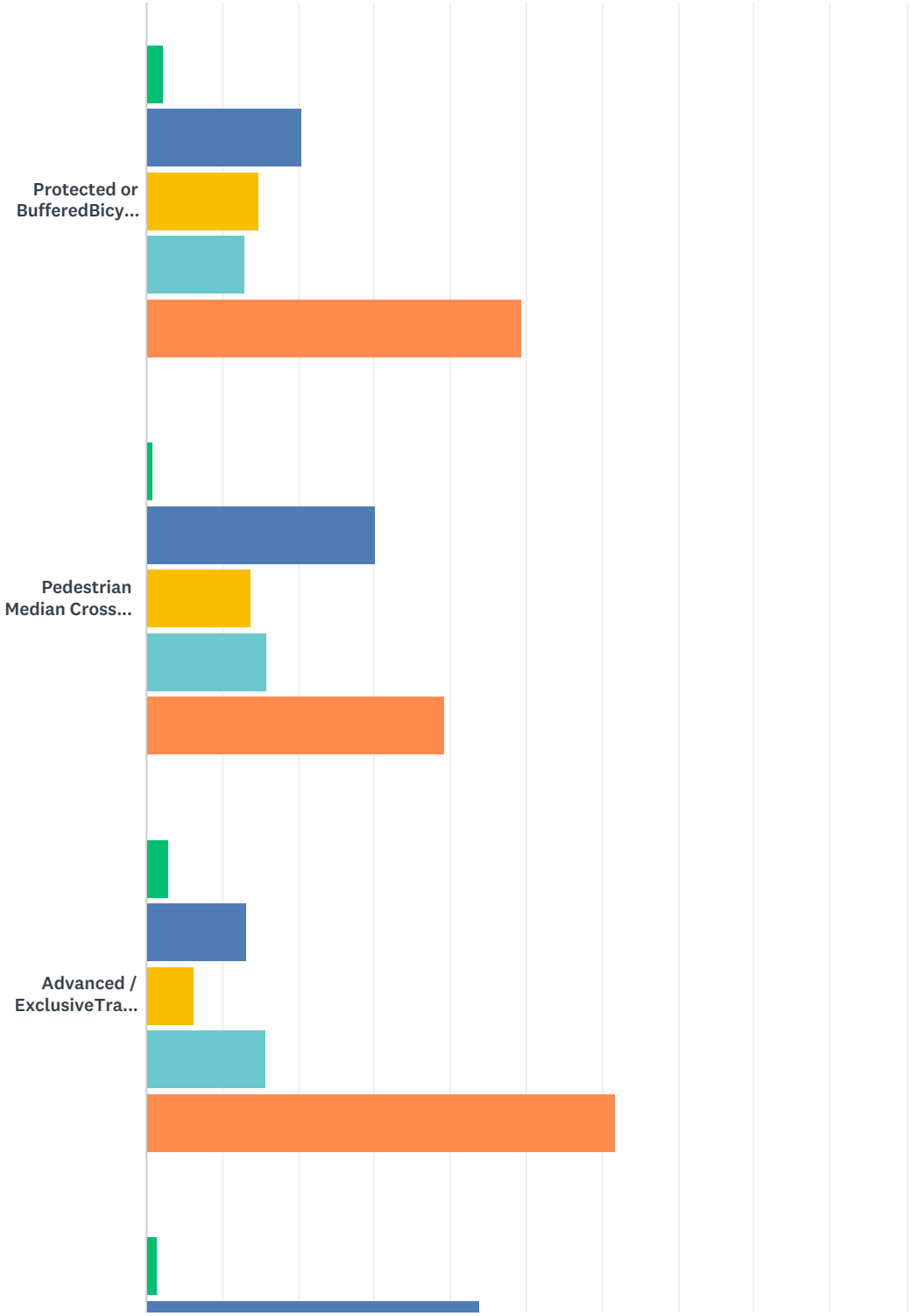


	NO OPINION	OPPOSED TO	SKEPTICAL	NEUTRAL	SUPPORTIVE	TOTAL
High Visibility Crosswalk at Franklin Street	4.48% 12	5.97% 16	5.22% 14	10.82% 29	73.51% 197	268
High Visibility Crosswalk and Curb Extensionsat S Harold Street	3.77% 10	24.53% 65	10.57% 28	16.60% 44	44.53% 118	265
Dedicated Bicycle Laneon both sides of street	2.63% 7	16.92% 45	9.40% 25	13.16% 35	57.89% 154	266
Speed Humpand Crosswalkat S Harrison St	2.61% 7	43.28% 116	11.57% 31	12.31% 33	30.22% 81	268
Single Sided Street Parkingon narrow block between Park and Lincoln streets	7.81% 21	33.09% 89	10.04% 27	16.73% 45	32.34% 87	269

Q13 Proposed S Main Street Improvements Main Street carries heavy, high speed motor vehicle traffic that is not conducive to comfortable walking and cycling. Please rate the following potential design solutions in an effort to create a safer and more pleasant walking/cycling experience:

Answered: 270 Skipped: 4



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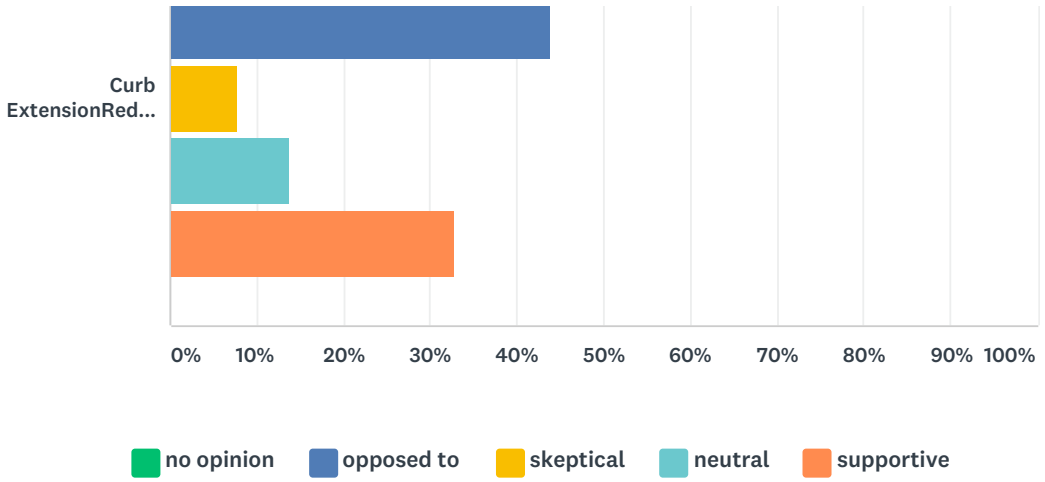
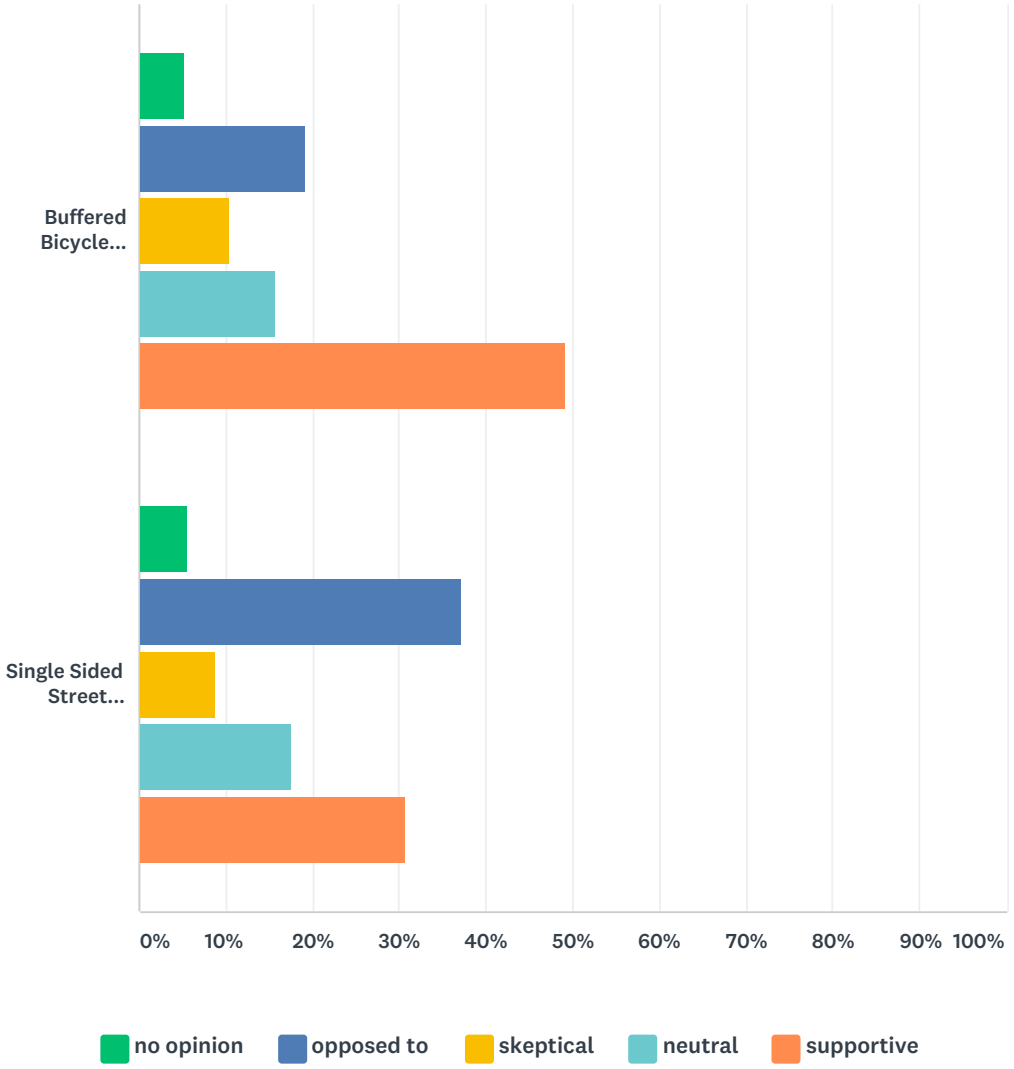


	NO OPINION	OPPOSED TO	SKEPTICAL	NEUTRAL	SUPPORTIVE	TOTAL
Protected or BufferedBicycle Laneon one or both sides of road	2.23% 6	20.45% 55	14.87% 40	13.01% 35	49.44% 133	269
Pedestrian Median Crossing Islandlocations to be decided	0.74% 2	30.11% 81	13.75% 37	15.99% 43	39.41% 106	269
Advanced / ExclusiveTraffic Signal Phasing for PedestriansRedwood Ave andCypress St intersections	3.00% 8	13.11% 35	6.37% 17	15.73% 42	61.80% 165	267
Curb ExtensionRedwood Ave intersection	1.49% 4	44.03% 118	7.84% 21	13.81% 37	32.84% 88	268

Q14 Proposed Elm Street ImprovementsThe popularity of the Coastal Trail and Glass Beach has impacted traffic, parking, pedestrian and cycling safety along W Elm Street. Please consider and rank these potential design solutions:

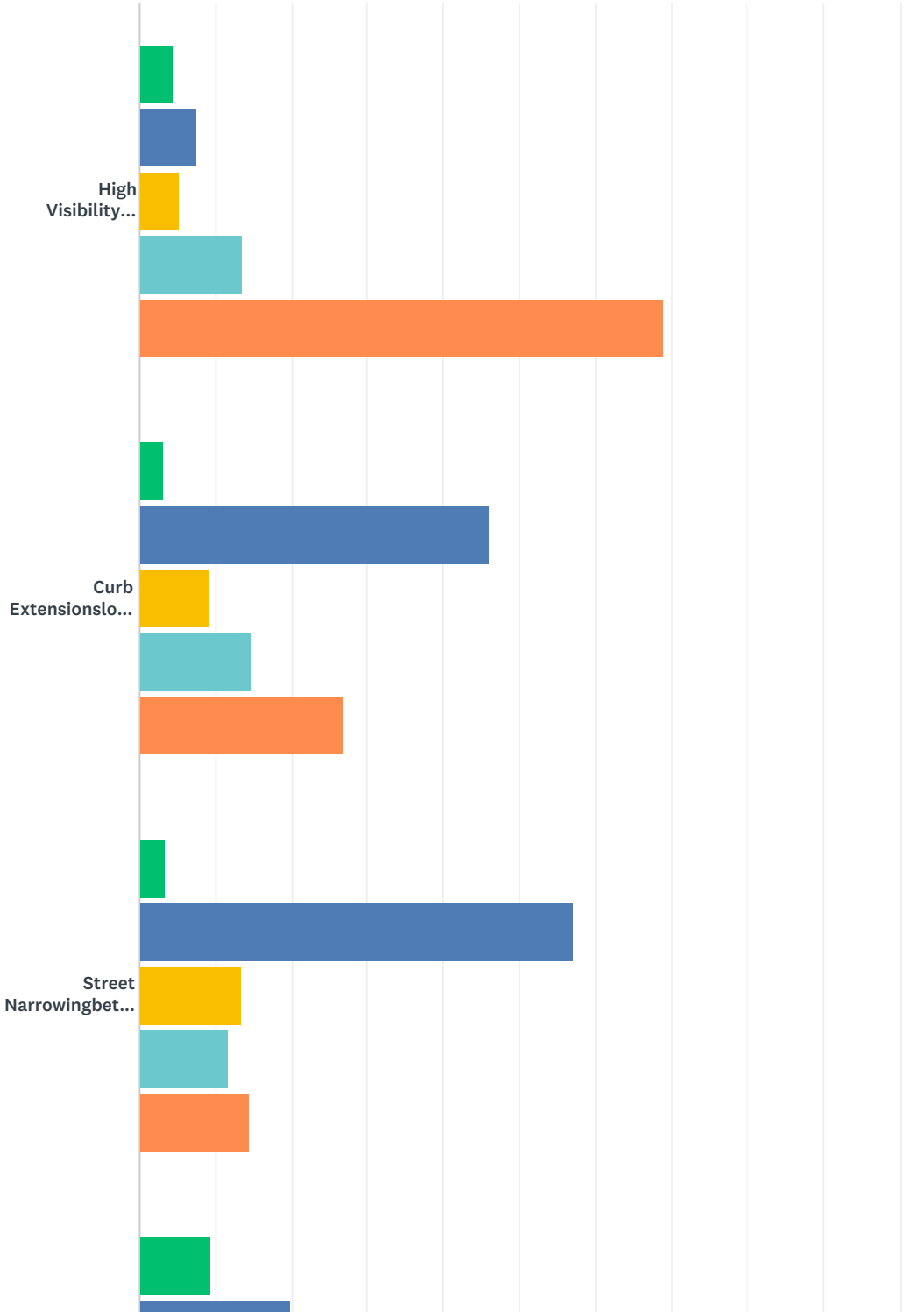
Answered: 266 Skipped: 8



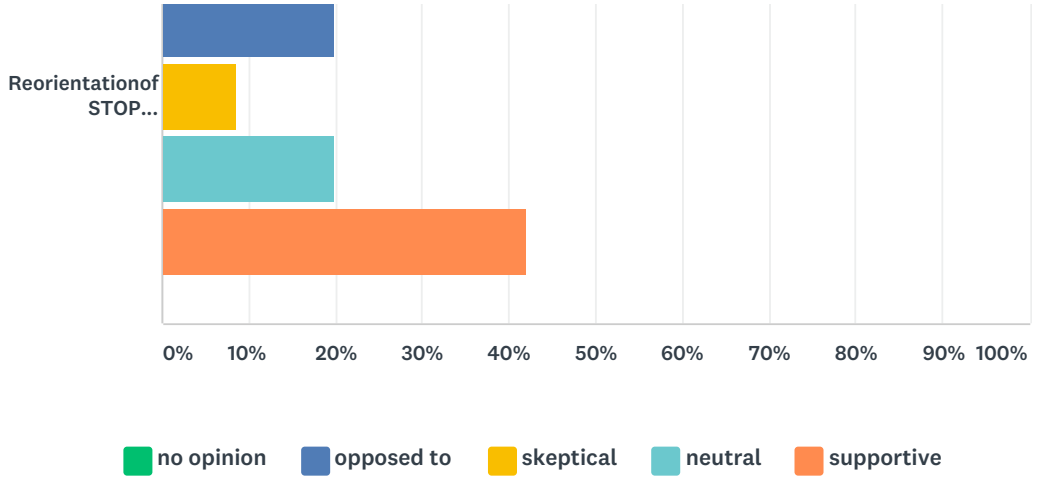
	NO OPINION	OPPOSED TO	SKEPTICAL	NEUTRAL	SUPPORTIVE	TOTAL
Buffered Bicycle Lanealong north side of street	5.26% 14	19.17% 51	10.53% 28	15.79% 42	49.25% 131	266
Single Sided Street Parkingalong south side of street	5.70% 15	37.26% 98	8.75% 23	17.49% 46	30.80% 81	263

Q15 Proposed Pine Street ImprovementsTraffic moves relatively unimpeded, which is conducive to speeding vehicles. This potential safety issue, combined with limited signage and uncontrolled pedestrian crosswalks may indicate the need for safety improvements on Pine Street. Please consider the following design solutions and rank:

Answered: 267 Skipped: 7



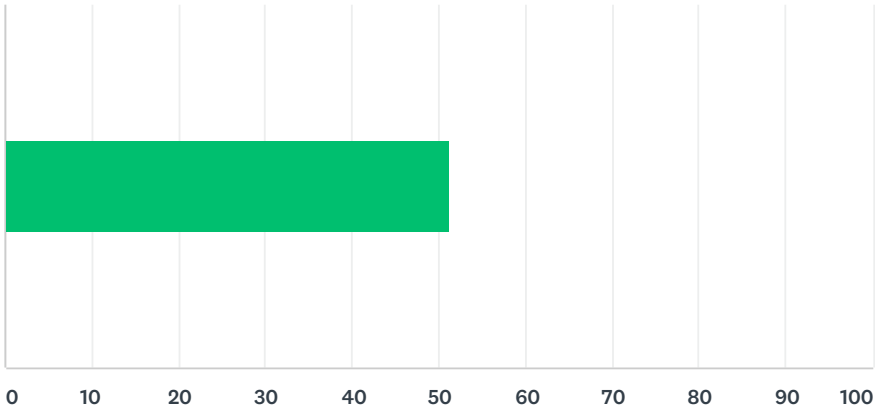
Welcome to the 2018 Street Safety Plan Community Survey



	NO OPINION	OPPOSED TO	SKEPTICAL	NEUTRAL	SUPPORTIVE	TOTAL
High Visibility Crosswalklocations to be decided	4.55% 12	7.58% 20	5.30% 14	13.64% 36	68.94% 182	264
Curb Extensionslocations to be decided	3.04% 8	46.01% 121	9.13% 24	14.83% 39	27.00% 71	263
Street Narrowingbetween N Franklin and N Harold streets	3.42% 9	57.03% 150	13.31% 35	11.79% 31	14.45% 38	263
Reorientationof STOP signslocations to be decided	9.40% 25	19.92% 53	8.65% 23	19.92% 53	42.11% 112	266

Q16 How do you rate the safety of N Harrison Street and E Laurel Street intersection in terms of safety from the following perspective ...as a pedestrian crossing the street?

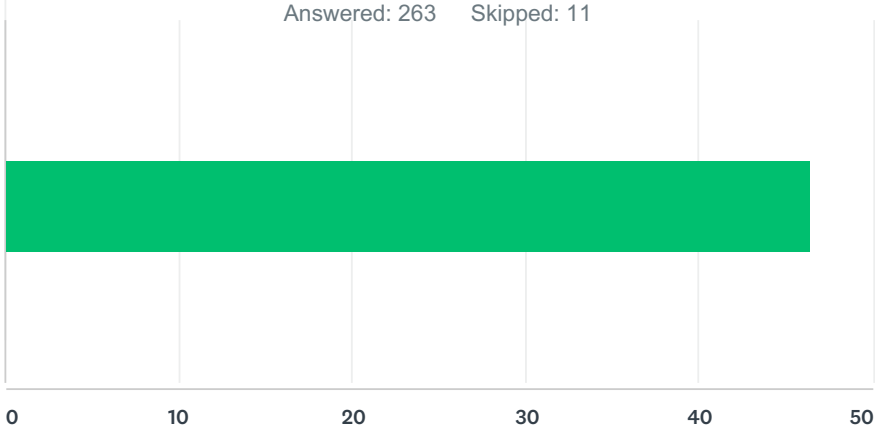
Answered: 269 Skipped: 5



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	51	13,803	269
Total Respondents: 269			

Q17 How do you rate the safety of N Harrison Street and E Laurel Street intersection in terms of safety from the following perspectives ...as a cyclist peddling through the intersection?

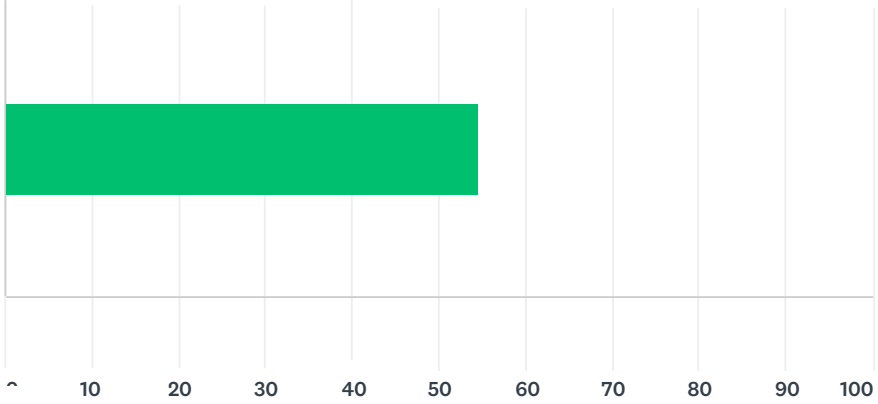
Answered: 263 Skipped: 11



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Total Respondents: 263	46	12,209	263

Q18 How do you rate the safety of N Harrison Street and E Laurel Street intersection in terms of safety from the following perspectives ...as a motorist driving through the intersection?

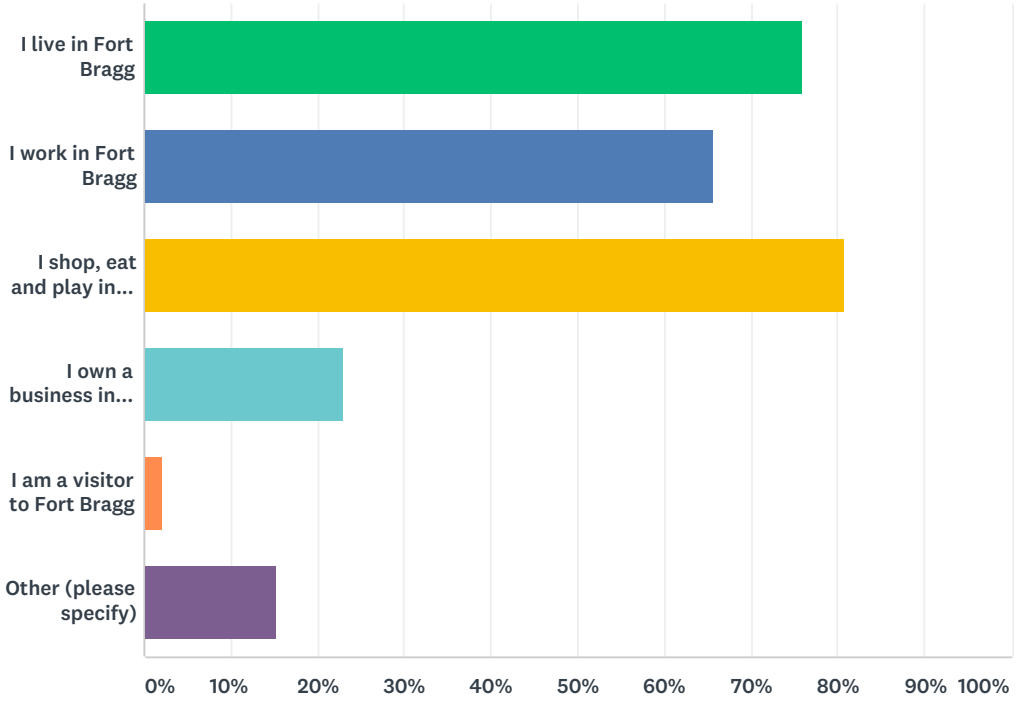
Answered: 269 Skipped: 5



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Total Respondents: 269	55	14,672	269

Q19 Please describe yourself... check all that apply.

Answered: 274 Skipped: 0



ANSWER CHOICES	RESPONSES	
I live in Fort Bragg	75.91%	208
I work in Fort Bragg	65.69%	180
I shop, eat and play in Fort Bragg	80.66%	221
I own a business in Fort Bragg	22.99%	63
I am a visitor to Fort Bragg	2.19%	6
Other (please specify)	15.33%	42
Total Respondents: 274		

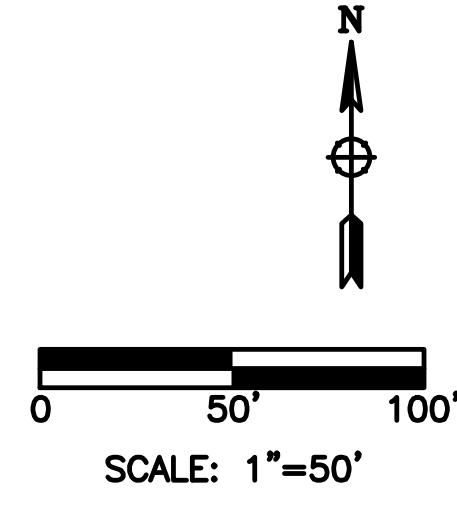
Q20 Please provide any additional input, comments and thoughts about increasing street safety in Fort Bragg. ...is there a particular intersection you have safety concerns about?

Answered: 169 Skipped: 105

See following sheet for sorted input as well as "Next Steps" chapter for details

Appendix D

Maple, Elm, and Pine Street Concept Plans



FORT BRAGG

FBR045

ELM STREET

DECEMBER 2018

N

0 50' 100'

SCALE: 1"=50'

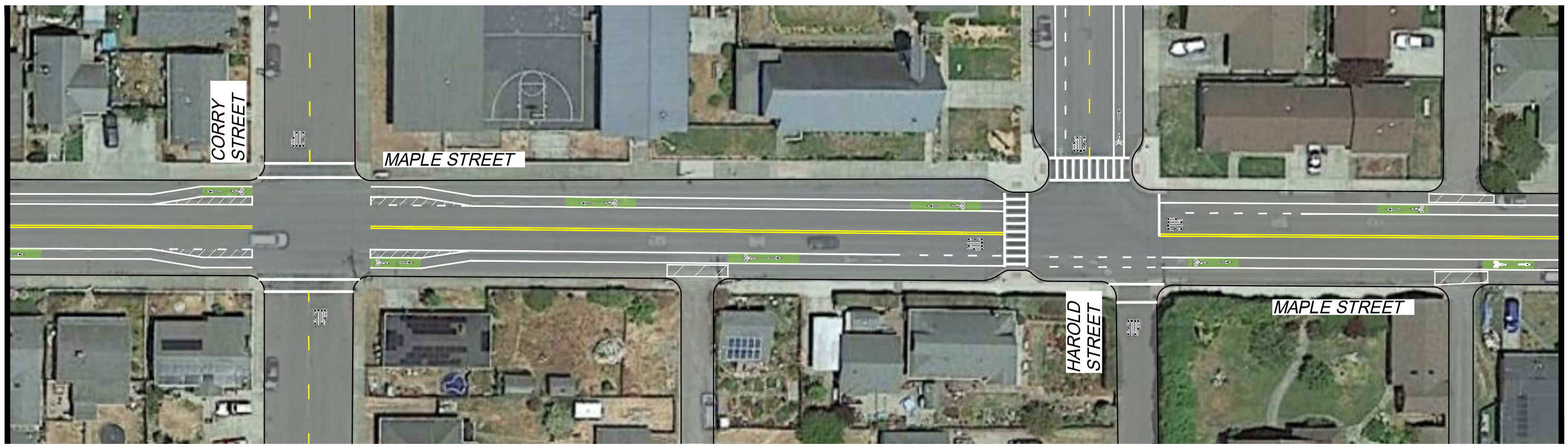
FORT BRAGG

FBR045

MAPLE STREET

DECEMBER 2018

MATCHLINE C SEE PREVIOUS PAGE



MATCHLINE D SEE BELOW

MATCHLINE D SEE ABOVE

N

0 50' 100'

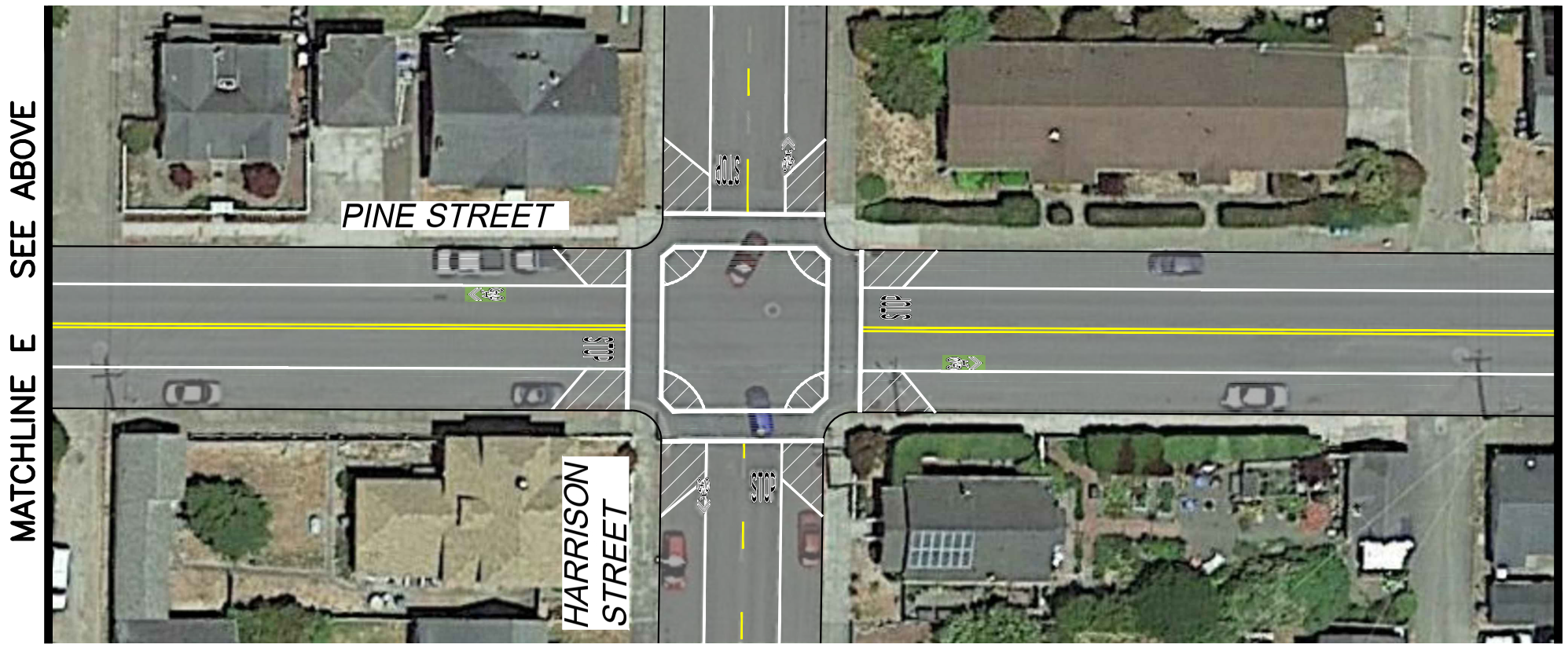
SCALE: 1"=50'

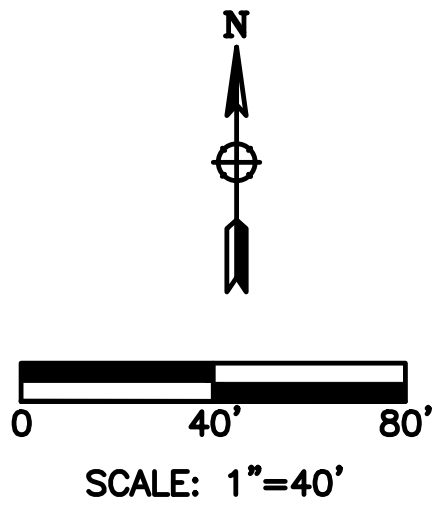
FORT BRAGG

FBR045

MAPLE STREET

DECEMBER 2018



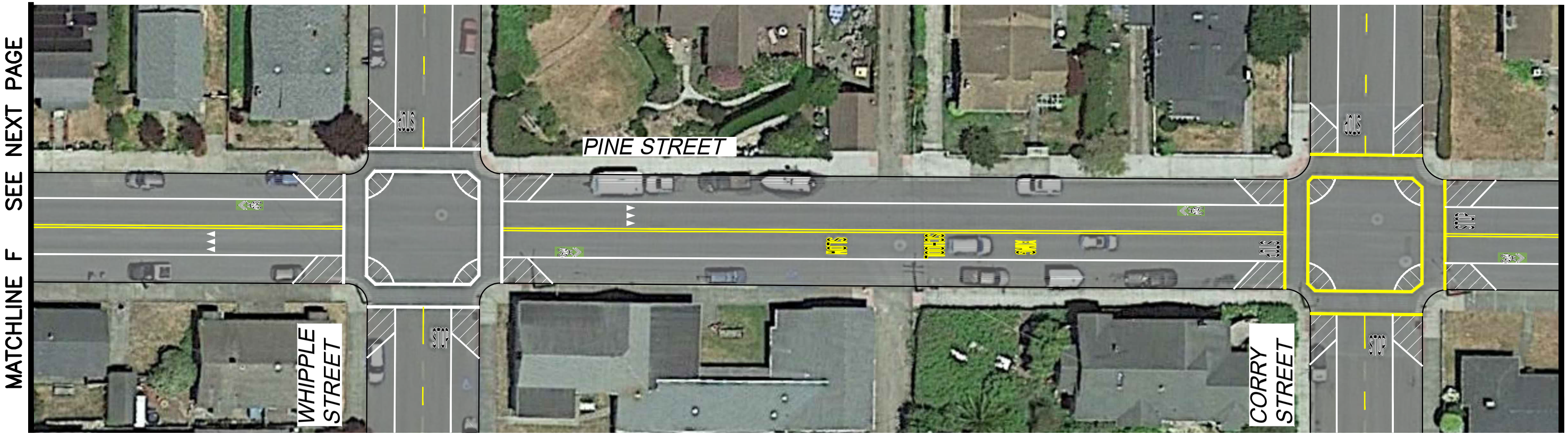


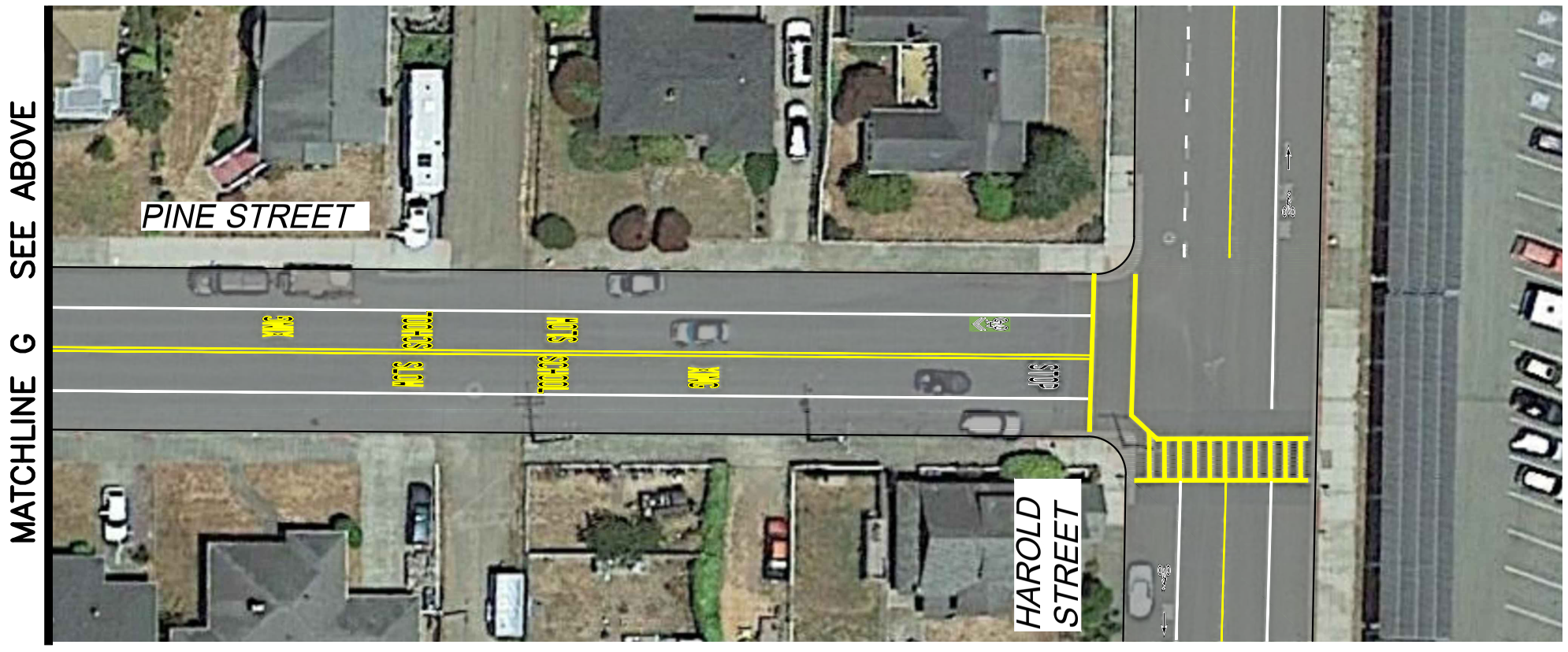
FORT BRAGG

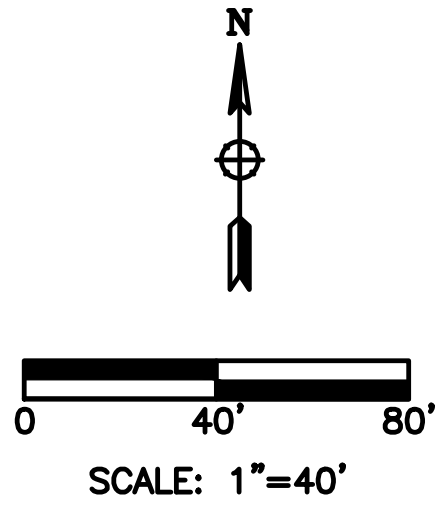
FBR045

PINE STREET

DECEMBER 2018







FORT BRAGG

FBR045

PINE STREET

DECEMBER 2018

Appendix E

Ride-a-Way Brochure

Specialized Coatings for Colorized Preferential Lanes

RIDE-A-WAY™ BY FLINT

Enhance visibility and safety awareness for all shared roadway users...
pedestrians, cyclists, motorists, and transit users.

Ride-A-Way™ is an epoxy-modified, acrylic, waterborne coating specifically designed for the colorization of preferential lanes on streets and highways. It has a balance of properties to ensure adhesion while providing excellent durability and color stability. Skid resistant, environmentally safe, and available in a variety of colors, Ride-A-Way™ coatings are easy to apply on asphalt and concrete pavement surfaces.

Now gaining greater momentum in North America, bike lanes and bus lanes are incorporated into state, regional, and local transportation plans due to the user demand for a balanced, multimodal transportation network that meets the needs of all roadway users with safety as the number one priority.





BIKE LANES • BUS LANES • WALKWAYS • ROUNDABOUTS • STREETSCAPES

Specialized Coatings for Colorized Preferential Lanes

Benefits:

- Increases awareness of shared roadway use among motorists, pedestrians, cyclists, and transit users
- Enhances visibility of preferential lanes
- Provides clear delineation and traffic calming
- Promotes balanced multimodal transportation network

Performance-based features:

Durability: The epoxy-modified formula is specifically designed for long-term use even in harsh climates and wet conditions.

Flexibility: The formulation allows the coating to expand and contract at the same rate as the pavement to avoid cracking.

Friction: Slip and skid resistant aggregates provide greater traction for safe pedestrian and vehicle traffic. Due to the low viscosity of the coating, it has very good static and dynamic friction properties at high and low speeds.

Color Stability: Advanced acrylic polymer technology and superior pigments provide long-lasting color retention, especially against UV rays.

Chemical Resistance: Impervious to gas, oil, engine and de-icing agents that often come into contact with road surfaces.

Environmentally Friendly: Water-based, acrylic formulation contains no harsh solvents and can be recycled along with asphalt. Meets EPA requirements for VOCs.

Application Overview

Refer to the complete set of Ride-A-Way™ Application Instructions for detailed instructions for proper application of coatings. These are available at www.flinttrading.com.

Substrate and ambient air temperature must be 50°F and rising.

Surface Prep: The surface should be completely dry, clean and free of debris, water, and contaminants.

Masking: Use duct tape with plastic or paper to protect areas from overspray as needed.

Mixing:
Combine Parts A and B according to application instructions, mix thoroughly and strain before applying the coating with the Rapid Sprayer II.

Spraying: Apply coating using a circular movement according to the application instructions.

Brooming: Evenly distribute with brooming motions according to application instructions to ensure complete coverage into the surface.

For optimal performance, Ride-A-Way coatings are applied in layers– a spray pass that is allowed to dry before the next pass is applied. Once dry to the touch, the next pass can be sprayed using the same procedure.

Approximate coverage rates:
3 layers (no vehicle traffic) = 225 sq ft. per 5 gallon container
4 layers (with vehicle traffic) = 175 sq ft. per 5 gallon container

Coverage rate is affected by pavement porosity.

Standard Colors:

Light Green | Purple | Blue | Red

For actual color selection, please request a color swatch.

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SPECIFICATION
RIDE-A-WAY™ COLORIZED COATINGS

1. USE: Ride-A-Way™ coatings are advanced waterborne coatings that combine color fast acrylic resins and an advanced epoxy modification to provide long lasting, color stable, lane delineation. Ride-A-Way™ features anti-slip properties, specially designed to add friction for pedestrians and bicyclists without creating trip hazards. It has excellent adhesion and flexibility properties, and will not crack, peel or flake off the substrate. Ride-A-Way™ is extremely chemical resistant as it is impervious to gas, oil and de-icing agents. Ride-A-Way™ is recommended for long lane, no / low traffic delineation areas for preferential use, such as bike lane, bus lane, medians, no stopping areas and pedestrian zones.

2. MATERIAL:

2.1. Ride-A-Way™ Coatings shall be composed of:

2.1.1. Coatings: A two component, epoxy-modified, acrylic, waterborne coating specially formulated to have a balance of properties that will ensure adhesion and movement on a flexible pavement, while providing excellent durability, color stability and friction properties.

2.1.2. Colorant: A highly concentrated, high quality, UV stable pigment blend designed to add the desired color to the Ride-A-Way™ coatings.

2.2. Typical Characteristics of Ride-A-Way™ Coatings material:

Product Characteristic		Test
Solids by volume	55% +/- 2%	ASTM D 2697
Solids by weight	70% +/- 2%	ASTM D 2369
Density	13.3 lb/gal	ASTM D 1475
VOC	<20 g/l	ASTM D 3960-05 (EPA-24)

2.3. Material must be designed for application onto asphalt pavement surfaces but can be applied to non-bituminous concrete surfaces, such as portland cement concrete, with use of a concrete primer.

2.4. Ride-A-Way™ coatings shall be applied in 4 thin layers, allowing each layer to dry to the touch in between, to provide a total dry build thickness of 20-25 mils (0.51-0.635mm).

3. APPLICATION: Ride-A-Way™ shall be applied to the pavement surface using the methods outlined in the Ride-A-Way™ Application Instructions.

3.1. Preconditions:

3.1.1. Surface Prep: The pavement surface shall be completely dry and free from all foreign matter. Concrete surfaces shall require additional surface preparation to remove any laitance from the surface. A waterborne concrete primer, as recommended by Ennis-Flint, shall be applied according to application instructions and shall be allowed to dry to the touch before applying Ride-A-Way™ coatings.

3.1.2. Weather: Optimal installation temperatures are between 70-90F, with low humidity. Minimum air and substrate must be 50F and rising, and shall not drop below 50F within 8 hours of application of the last layer of coating. Increase in drying and curing times shall be expected at lower temperatures, and during high humidity. No precipitation shall be expected within 2 hours after the last layer of Ride-A-Way™ is dry to the touch.

3.1.3. Obstacles: Pavement markings that are to be left in place, utilities, drainage structures, curbs and any other structure within or adjacent to the treatment location shall be masked to protect from application. Existing pavement markings conflicting with the surface treatment should be removed by grinding or water blasting. Extra care should be taken to thoroughly remove the dust and debris caused from grinding.

3.2. Mixing: Part B, Colorant and 1 quart +/- 0.5 water shall be added to Part A and mixed thoroughly, creating a vortex, using a high speed high torque drill and paddle for a minimum of 3 minutes.

3.3. Installation:

3.3.1. Initial Layer:

3.3.1.1. Small projects: Distribute initial layer of coatings to the pavement using a soft bristle broom and / or 1" - 1.5" nap roller. Ensure a thin build with even distribution.

3.3.1.2. Large or small projects: Each layer of coating application shall be spray applied using a double diaphragm spray system with an air atomized textured spray gun. Coatings shall be broomed using a soft bristle broom to work the material into the surface.

3.3.2. Additional Layers: The first layer and each additional layer of Ride-A-Way™ coating shall be allowed to dry to the touch before applying the next layer. The last layer shall be rolled, or spray and rolled, using a 1" – 1.5" nap roller to provide additional friction properties. Environmental factors such as air and substrate temperature, humidity, sun and wind will affect dry times. Conditions that improve ability for moisture to evaporate will have positive effects on dry times.

3.3.3. Coverage: Ride-A-Way™ coatings shall cover approximately 175 sq. ft. (16.3 m^2) per mixed pail, using the recommended 4-layer system. While building the coating in layers, there will be less coverage with the first layer and greater coverage with subsequent layers.

3.4. Open to Traffic: Ride-A-Way™ coatings shall be allowed to cure before being exposed to traffic. The longer they are allowed to cure, the better they will perform. Coatings shall be left for a minimum of 12 hours after the last layer is dry to the touch before traffic is introduced.

3.5. Clean up: Tooling and equipment shall be cleaned only with water while coatings are still wet. Remove masking. Dispose of all materials in accordance with all applicable federal, state and local laws and regulations.

4. PERFORMANCE PROPERTIES OF RIDE-A-WAY™ COATING

4.1. Key properties will include wear and crack resistance, color retention, adhesion, minimal softening from water absorption and anti-slip.

Product Characteristics		Test
Dry Time (to recoat)	~35 min	ASTM D 5895 (23°C; 37% RH)
Taber Wear Abrasion - Dry H-10 wheel	≤ 0.98 g/1000 cycles	ASTM D 4060 (1 day cure)
Taber Wear Abrasion - Wet H-10 wheel	≤ 3.4 g/1000 cycles	ASTM D 4060 (7 day cure)
Hydrophobicity - Water Absorption	~ 8.3%	ASTM D 570
Shore Hardness	60 +/- 3	ASTM D 2240, Type D
Mandrel Bend	1/4 in @ 21° C	ASTM D 522-93A
Permeance	3.45 g/m^2/hr (52 mils)	ASTM D 1653
Adhesion to Asphalt	Substrate Failure	ASTM D 4541
Friction (Wet)	>60 BPN	ASTM E 303

5. TECHNICAL SERVICES: The successful bidder shall provide technical services as required.

Appendix F

Next Steps Community Comments

Next Step Community Comments

The 2018 Street Safety Plan is the culmination of community input and traffic engineer recommendations. Most public input was received in response to an on-line survey, with additional comments gathered at the two community meetings and an outreach table at the Farmer's Market. This appendix identifies potential concerns for streets and intersections outside of the identified study area for the 2018 Street safety Plan.

Most of the comments below were collected as responses to two on-line survey questions:

- Question 6) "Is there a particular location that is difficult to cross"; and
- Question 20) "Please provide any additional input, comments and thoughts about increasing street safety in Fort Bragg. Is there a particular intersection you have safety concerns about?"

This Appendix includes a summary of comments received from the public about areas that are outside of the scope of the 2018 Safety Street Plan, however, none of these concerns have been confirmed by on site fieldwork. Additional research will need to be completed to determine whether the comments (identified by a community member) is a real issue.

Main Street

Most of the public comments received involved Main Street. The bulk of those comments identified the intersection of Redwood Avenue as a priority intersection for further evaluation. Pine Street was also identified as a priority intersection. Most of the input received expressed concerns regarding pedestrian crossing, especially east/west.

# of COMMENTS RECEIVED	INTERSECTION	MAIN STREET PUBLIC COMMENTS
26	**Main Street (in general)**	crossing Main street anywhere is difficult to cross any crossing east to west between Laurel and Elm south of Oak between Oak and Noyo Bridge all uncontrolled crossing are dangerous anywhere without stop lights anywhere without a pedestrian signal speeding cars. Need more police patrol. constant speeding drivers flashing pedestrian walks where no signal needs sidewalk on west side of S Main Street
66	**Redwood Avenue**	crossing is very risky crosswalk that lets only pedestrians walk all directions without traffic no right on red heading northwest dangerous… driver, walkers, families with bicycles on sidewalk very dangerous situation for peds and cars we need to adjust signal timing so walkers can cross without traffic need more police presence on the south side of intersection cars turning westbound to south don't see pedestrians in crosswalk difficult to cross even with a green light worst corner in the City I try to avoid because crossing east to west, cars don't see me in crosswalk. I had several near misses in crosswalk. One time I had to leap out of way people turning from Redwood onto Main don't pay enough attention deadly, drivers don't notice walkers in south crosswalk almost been hit several times in crosswalk

# of COMMENTS RECEIVED	INTERSECTION	MAIN STREET PUBLIC COMMENTS
		drivers don't pay attention and drive too fast crossing is scary. Cars turning left onto Main going south do not see pedestrians always feels sketchy super dangerous even with lights and crosswalk difficult to cross even with green light crossing to east is dangerous many pedestrians have been hit by cars in crosswalk on green light more time for ped crossing flashing pedestrian crossings difficult cross for pedestrians and cyclists, it is the most troubling in my experience I watched a pedestrian almost hit on two occasions I understand pedestrians have issues crossing on south side of intersection green light needs to be separate for walkers and cars. Very dangerous please fix. Pedestrians need own signal for safety difficult to cross even with green light crossing to east is dangerous many pedestrians have been hit by cars in crosswalk on green light more time for ped crossing flashing pedestrian crossings difficult cross for pedestrians and cyclists, it is the most troubling in my experience I watched a pedestrian almost hit on two occasions I understand pedestrians have issues crossing on south side of intersection green light needs to be separate for walkers and cars. Very dangerous please fix. Pedestrians need own signal for safety
51	**Pine Street**	flashing pedestrian crossing dangerous, but prefer not to have another signal a deathtrap it is hard to see people on the west side of road hazardous and get a lot of use need 4-way stop too many tourists take chances crossing to brewery something needs to be done there, maybe flashing lights for crossing
15	**Fir Street**	

# of COMMENTS RECEIVED	INTERSECTION	MAIN STREET PUBLIC COMMENTS
11	**Bush Street**	hazardous and get a lot of use
9	**Alder Street**	
7	**Hazel Street**	
7	**Maple Street**	
7	**Madrone Street**	
6	**Elm Street**	needs left turn light to enter Main
1	**Highway 20**	sidewalk on east side of Main from Hwy 20 to Boatyard

Franklin Street

Most of the comments received from community input regarding Franklin Street referenced intersections and issues within the Central Business District; namely poor pedestrian visibility at crossings. The intersections of Madrone and Maple were also identified as intersections needing further evaluation, as traffic appears to travel fast and not yield to pedestrians.

# of COMMENTS RECEIVED	INTERSECTION	FRANKLIN STREET PUBLIC COMMENTS
5	**Franklin Street (in general)**	
27	**Central Business District (CBD)**	difficult to see crosswalks Harrison and Redwood is especially dangerous more 4-way stops and visible crosswalks Redwood Ave is a very busy intersection bicyclists run stop signs is an all-day occurrence need more police traffic enforcement Oak Street – I have no idea what can be done to improve it, but it is difficult to cross cross Oak every day for work and it is always difficult not safe to cross on foot at Oak Street Alder Street is congested and busy pedestrians are in danger crossing the intersection at Alder in general, only half the drivers yield to pedestrians at Alder should have stop sign or more visible stop sign needs a 4-way stop heavy foot traffic and needs flashing crosswalk lots of pedestrians and auto traffic with dance studio, gym, Parents and Friends, etc.
* 5 comments referenced Redwood and McPherson		
9	**Maple Street**	cars seem to travel fast and do not expect to see walkers needs a 4-way stop I'd like to see a 4-way stop because traffic is moving fast
9	**Madrone Street**	traffic does not yield to pedestrians crosswalk not visible poor visibility due to parked cars
5	**Cypress Street**	drivers seldom yield to pedestrians flashing pedestrian crossing a friend has had many close calls
5	**South Street**	horrible to cross and dangerous with speeders people speed and drive like maniacs 4-way stop please
2	**Walnut Street**	
1	**Hazel Street**	

Oak Street

In general, community input regarding Oak Street took into account the entire corridor. Several comments referenced poor visibility crossing Oak Street north to south, both pedestrians and vehicular traffic. McPherson and Harrison streets were described as particularly complicated.

# of COMMENTS RECEIVED	INTERSECTION	OAK STREET PUBLIC COMMENTS
9	**Oak Street (in general)**	all corners without a stop sign are difficult to cross where there are no stop signs it is difficult to cross very difficult as a passenger and a driver red curbs are too short and cars park too close to the corners, so it is difficult to see more speed bumps very few people stop for pedestrians
6	**Harrison Street**	big trucks deliver at this corner and cars cannot see around people drive fast putting children and animals at risk
5	**McPherson Street**	people park close to corners and block visibility poor visibility just had a serious accident there a few weeks ago… can't see east/west traffic pulling out
2	**Sanderson Way**	
1	**Morrow Street**	
1	**Harold Street**	

Chestnut Street

In 2017 the Chestnut Street Corridor project was completed. This project extended from Franklin Street to Ebbing Way and included: the relocation of on-street parking from the south to north side of street, installation of new 8-foot wide multi-use path, installation of new curbs, gutters and traffic calming features, American with Disabilities Act (ADA) ramps and intersections, and relocation of utility poles, street signs and drainage outlets. Many community members expressed a desire to reevaluate these improvements.

# of COMMENTS RECEIVED	INTERSECTION	CHESTNUT STREET PUBLIC COMMENTS
39	**Chestnut Street (in general)**	turning right anywhere is impossible streets too narrow weaving in and out of bulb-outs and power poles is difficult much more difficult to drive than before the Chestnut Street project way more dangerous than before dangerous near Dana Grey lanes are too narrow stop at Harrison problem. Takes residents 3-4 minutes to cross or enter street no longer drive Chestnut because it's a mess dangerous for bicycles hard to get and down this street, afraid I am hit someone do not repeat buses cannot turn left please call a mistake and fix serious safety concerns difficult to turn from Franklin Street

In addition to the streets and intersections listed above, the following areas were also requested to be evaluated:

- Intersection of Willow and Lincoln streets
- Sanderson Street
- Cypress and Grove streets