Farm Hill Boulevard Pilot Improvement Project

Description:
The “Farm Hill Boulevard Pilot Project” is focused on the stretch of Jefferson Avenue and Farm Hill Boulevard between Alameda de las Pulgas and Woodhill Drive. Figure 1, below, depicts this stretch of roadway, which serves both local and regional trips for all roadway users (people driving, walking and riding bicycles).

Figure 1: Project Area

Prior to the pilot, this stretch of Jefferson Avenue and Farm Hill Boulevard had two lanes of traffic in each direction. Unfortunately, the hilly, curvy terrain and the design of the street makes it easy for drivers to speed and there has been a history of speed-related collisions in this same area. Speed-related collisions resulted in severe injuries, as well as damage to nearby property.
With a resurfacing project planned for the corridor and ongoing safety concerns from neighborhood residents, staff collaborated with residents to design a pilot project. The City Council first considered the pilot improvements in 2012, and at that time opted to first make minor safety improvements. As part of the street resurfacing project in 2013, the following modifications were added to increase safety:

- Yield markings at unsignalized, high-visibility crosswalks to increase driver awareness of people walking across the street,
- Shared roadway markings (“sharrows”) along the corridor to indicate where bicyclists should ride outside of the “door zone” of parked vehicles,
- Outside edge lines, which narrowed the travel lanes and provided more space for parked vehicles, and
- A high friction surface around the Jefferson Avenue curve to reduce the likelihood of vehicles losing control there.

Unfortunately, speed-related collisions continued in 2014. The Council then reconsidered the pilot project in January 2015 and opted to proceed on a trial basis. The pilot project reconfigured the travel lanes on Jefferson Avenue and Farm Hill Boulevard from Alameda de las Pulgas to Woodhill Drive (see Figure 1). Prior to the pilot, there were two lanes of traffic in each direction. For most segments of the corridor, the pilot configuration has one lane of traffic in each direction, a two-way left-turn lane and bicycle lanes. The pilot reconfiguration officially went into effect in September 2015, and was scheduled for a 1-year timeframe. Following extensive feedback from a community meeting in November 2015 and City Council guidance in January 2016, the pilot design was modified in April 2016. The most notable changes were to the westbound lane merges after Alameda de las Pulgas and after Emerald Hill Road.

**Project Goals**

The primary goal of the project is to increase the safety of all roadway users. This roadway design was selected with several traffic-engineering principles in mind that support a safer roadway. Three key principles are noted below, and others are examined in the attached report:

- **Slower Speeds**: With one through lane in each direction, the speed of traffic is set by the prudent driver rather than allowing speeding drivers to pass in an adjacent lane. Narrowing the travel lanes also discourages speeding as drivers feel like they have less space to maneuver. Slower speeds give drivers more time to react to potential collisions and result in fewer and less severe crashes.

- **Conflict Points**: When there are multiple lanes of traffic on a long stretch of roadway, there are a high number of “conflict points” that increase the odds of a collision. For example, a driver may change lanes frequently, in an attempt to get to his/her destination faster. Alternatively, a queue of drivers may get stuck behind a driver attempting to make a left turn, and quickly pull into the right lane to pass where traffic is also moving quickly, causing a collision. Fewer vehicle lanes also reduces exposure for people walking across the street. By reducing the number of conflict points, the chances of a collision are reduced.

- **Buffer Room**: Farm Hill is somewhat unique in that it is a residential neighborhood and a commute corridor. As is the case with any residential neighborhood, people park in front of their homes. People also use street parking when visiting Stalsaft Park. If drivers attempt to exit their parked vehicles adjacent to speeding traffic, it could create an unsafe situation. The new roadway design also includes a bicycle lane between the parking strip and traffic lanes. The bicycle lane provides more room for drivers to exit their vehicles and provides space for cars to legally pass bicyclists by the required three feet.
Project Concerns

The most challenging part of this pilot project is balancing the primary project goal of increasing safety with other quality of life concerns, such as the potential for a longer commute, cut through traffic and increased traffic on alternate routes. This is particularly challenging because Farm Hill Boulevard is both a residential neighborhood and commute corridor. Furthermore, the streets that surround Farm Hill Boulevard serve as school commute routes – making safety critical, but it also exacerbates traffic. Going into the pilot, the following were key concerns noted by residents, staff and councilmembers:

**Farm Hill Boulevard Travel Time:** The primary concern heard was increases to travel time. Given long Bay Area commutes, many were concerned that the pilot would add a significant amount time to get to and from Highway 280.

**Cut-Through Traffic:** Residents were concerned that many drivers would simply avoid Farm Hill Boulevard and use side streets instead. A related concern was that the amount of time to get onto Farm Hill Boulevard from side streets because there would be less room for cars to queue on Farm Hill Boulevard, leading to back-ups on nearby residential streets.

**Parallel Route Traffic Increases:** There are three primary ways to get to Highway 280 in Redwood City: Edgewood Road, Farm Hill Boulevard and Woodside Road. There was a general concern that drivers would choose these parallel routes over Farm Hill Boulevard, leading to reduced traffic on Farm Hill, and increased traffic on Edgewood and Woodside roads.

Evaluation Criteria

As a way to measure project safety goals and the quality of life concerns, an evaluation plan was created. The evaluation plan includes criteria that measure the effectiveness of the pilot project in delivering on safety goals and other quality of life measures. The attached report summarizes the results of the pilot as measured by the established criteria. Kimley-Horn and Associates, a traffic-engineering firm evaluated the project and their memo goes into more detail and analysis. In their evaluation, Kimley-Horn used traffic data collected by a third party, traffic data collection firm (Quality Traffic Data), travel time data from another consulting firm (TJKM Traffic Consultants), collision data from the Redwood City Police Department, and transit ridership data from SamTrans.

Analysis:

Kimley-Horn’s complete evaluation of the pilot is attached to this report. Based on the consultant’s analysis of the twelve performance measures, during the pilot:

- Performance improved in eight areas,
- Results were inconclusive in one area, and
- Performance declined in three areas.

Table 1 summarizes the results below.

When surveyed about priorities for the Farm Hill Boulevard/Jefferson Avenue corridor before the pilot started, community members identified their top three priorities as:

1. Improving safety
2. Improving the ease of crossing the street, and
3. Decreasing congestion.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Goal</th>
<th>Observed Result</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality (Amount of Vehicle Emissions)</td>
<td></td>
<td></td>
<td>The vehicle emissions increased due to the increase in vehicle demand.</td>
</tr>
<tr>
<td>Congestion</td>
<td></td>
<td></td>
<td>• Intersection delay increased due to increase in vehicle demand.</td>
</tr>
<tr>
<td>• Intersection delay</td>
<td></td>
<td></td>
<td>• Travel times went down.</td>
</tr>
<tr>
<td>• Corridor travel times</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of crossing the street</td>
<td></td>
<td></td>
<td>The % of vehicles yielding to pedestrians went up. The average wait time went down.</td>
</tr>
<tr>
<td>Ease of entering traffic (avg delay for side-street vehicles)</td>
<td></td>
<td></td>
<td>Average delay for vehicles making a left turn decreased.</td>
</tr>
<tr>
<td>Complete streets</td>
<td></td>
<td></td>
<td>• Transit boardings and alightings has decreased.</td>
</tr>
<tr>
<td>• Number of passengers getting on and off SamTrans buses</td>
<td></td>
<td></td>
<td>• # of people riding bicycles increased</td>
</tr>
<tr>
<td>• Number of people riding bikes</td>
<td></td>
<td></td>
<td>• # of pedestrians increased walking along the street</td>
</tr>
<tr>
<td>• Number of people walking along the street</td>
<td></td>
<td></td>
<td>• # of pedestrians increased crossing the main roadway</td>
</tr>
<tr>
<td>• Number of people crossing the street</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety (# of Crashes)</td>
<td></td>
<td></td>
<td>The number of average monthly crashes went down after project began.</td>
</tr>
<tr>
<td>Speeding</td>
<td></td>
<td></td>
<td>The 85\textsuperscript{th} and 50\textsuperscript{th} percentile speed, vehicles exceeding the speed limit and the speed limit by 10 mph all decreased.</td>
</tr>
<tr>
<td>Traffic Diversion</td>
<td></td>
<td></td>
<td>Inconclusive because vehicle traffic increased on the project corridor and on all other routes.</td>
</tr>
</tbody>
</table>

Source: Kimley-Horn (2016)
As shown in the detailed evaluation, the pilot configuration increased safety by:

- Reducing vehicle speeds (average speeds, among the highest speeders, and at all times of day),
- Reducing exposure to vehicle lanes for people crossing the street, and
- Reducing the number of collisions.

The pilot configuration has made it easier to cross the street by:

- Reducing the number of vehicular lanes that people have to cross, and
- Increasing the percentage of drivers yielding to people in the crosswalk.

Due to the relatively small numbers of people observed crossing the street the yielding data is not statistically significant even though the results are positive.

The pilot configuration has had mixed results with regard to congestion:

- Average intersection delays increased due to the growth in traffic volumes and changes to the lane configurations,
- Travel times along the length of the corridor went down at all times of day except in the morning peak due to improved signal timing and the adequacy of roadway capacity at other times of day.
- During the morning peak:
  - maximum travel times increased going toward downtown, and
  - average and maximum travel times increased going toward I-280.

Although the evaluation did include average intersection delay, which reflects the signal delay experienced by drivers on side streets, it did not include a measure of travel time delay on other corridors. For example, we have heard concerns from residents about the delays on McGarvey Avenue during the morning commute. If the pilot were to be made permanent, the signal timing at McGarvey and Farm Hill could be adjusted to reduce the queuing on McGarvey.

As mentioned above, the positive change in some performance measures were small (increase in people walking and biking) and due to the short duration of the pilot, it is still early to make definitive conclusions about the downward trend in vehicle collisions. The areas where performance worsened (increase in intersection delay, emissions, and morning travel times) reflect the reduction in travel lanes and the growth in traffic volumes on the corridor. Especially in the peak of morning traffic, typically between 8:00 and 8:30a, there is a steady stream of vehicles heading towards I-280. Outside of this peak, traffic generally flows freely in both directions.

As of this writing, staff has received 50 emails from members of the community, weighing in on the project. Of those communications, nine suggest modifications to the design, twenty support returning the street to its previous configuration, and twenty-one support making the pilot permanent. Representative comments from those who oppose making the pilot permanent include:

- More congestion and backup than before
- Frustrated drivers are being unsafe (unsafe passing/merging, rolling through stop signs, etc.)
- Priority should be for cars, not the few people riding bikes
- Don’t make this change until the impacts of downtown construction are known
- Makes it harder for people living in the neighborhood

While representative comments from those who support making the pilot permanent include:

- Not as bad as expected
- Easier and safer to turn with the center turn lane
- Additional delay/inconvenience during the morning and evening commute is worth the
increase in safety

- Seeing more people walking and biking, which is building community
- Feel safer riding a bike

The results of the pilot evaluation affirm concerns that we have heard from the community about increases in congestion during the morning peak hour and they established that the pilot has increased safety by reducing speeding and its negative side effects. Staff can continue to work on adjusting the signal timing to reduce backups on McGarvey, but with the community and City Council having identified safety as the top priority for the project, staff recommends making the pilot configuration permanent. Because the roadway configuration is largely accomplished with striping (no changes to curb lines), it can be modified in the future should it become necessary.

**Staff Recommendation:**
Staff recommends that the Farm Hill Boulevard Pilot Improvement Project be made permanent with adjustments to specific design elements to improve traffic operations.

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(650)780-7372

**Attachments:**
1. Final Project Evaluation memo
2. Speed Summary graphic
3. Reading file: community feedback received to date
Introduction

The Farm Hill Boulevard Street Improvement Pilot Project started in September 2015. The pilot project reconfigured the travel lanes on Jefferson Avenue and Farm Hill Boulevard from Alameda de las Pulgas to Woodhill Drive. Figure 1 shows the project limits and vicinity map. The overall goal of this pilot project is to increase safety for all roadway users by increasing driver compliance with the speed limit and by reducing exposure to multiple lanes of traffic. Prior to the pilot, there were two lanes of traffic in each direction. For most segments of the corridor, the pilot configuration has one lane of traffic in each direction and a two-way left-turn lane (TWLTL). As part of the pilot project, the City of Redwood City (City) committed to monitoring and reporting project results to the community and City Council specific to vehicle traffic, vehicle speed, and usage by people walking, riding bikes, and riding transit. Kimley-Horn was tasked to provide an independent review of the data and provide a summary of the results. Although the format of this report may be similar to the format of the Interim report, the data analysis and results were conducted independently.

An evaluation plan was created to assess the effectiveness of the pilot project. The evaluation plan was developed with input from the community and was adopted by the City Council, as discussed later. City staff collected input on the evaluation plan from a variety of sources, including comments from the January 2015 City Council meeting, emails and letters to City staff, feedback from the City’s informal bicycle and pedestrian working group, and input via an online survey. The online survey determined that the top three priorities of the respondents were: improve safety, improve ease of crossing the street, and decrease traffic congestion. It should be noted that decreasing speeding was a close number four priority.
Figure 1 – Project Vicinity Map
Data Collection

Baseline conditions for the project were collected prior to the initiation of the pilot project. All baseline traffic data, except travel times, were collected in May 2015 while Cañada College, Redwood City School District and Sequoia Union High School District schools were in session. Vehicular travel times conducted by TJKM Traffic Consultants, were collected in July 2015. Following the start of the pilot project, City staff monitored collisions and traffic operations on a regular basis through observations, data collected and provided by residents, and traffic counts and travel time runs. Per the direction of the City Council at its September 21, 2015 meeting, an extensive data set was collected at various time points throughout the pilot, including in May 2016 to assess Post-Pilot performance. May 2016 was selected because it is exactly one year following the Pre-Pilot data collection effort which should limit the influence of monthly variation. Travel times were conducted by TJKM in July 2016, one year after the Pre-Pilot data. Supplemental travel time surveys were collected in September 2016, when local schools were in session. It should be noted that the roadway improvements still remain in place subsequent to the Post-Pilot data collection in May and July 2016.

The City primarily used consultant firms to collect the data used in the evaluation. The exceptions to this were:

- **Transit ridership.** Data was provided directly from SamTrans, which uses automated passenger counters to count people as they get on and off their buses.
- **Collision data.** Data was provided by the Redwood City Police Department. City staff has received reports of near misses and unreported collisions before and during the pilot period. However, for consistency and verification, only reported collisions are reflected in this analysis.
- **Perception survey.** The in-person surveys at Stulsaft Park were conducted/collected by City staff.

In reviewing these data, it is important to note that traffic volumes and patterns vary by time of year and are influenced by broader regional characteristics. Recent economic growth has resulted in increased traffic throughout the Bay Area. The evaluation plan collects data on other roadways in an attempt to control for this – but it is impossible to completely separate the impacts of the project and broader economic growth.

The remainder of this memorandum outlines the pilot project objectives, the reason for each objective, the method of measurement, and the results.

**Evaluation Criteria**

The evaluation criteria used for this project was determined by the City. **Table 1** lists the criteria set forth by the City to be evaluated using Pre-Pilot data and Post-Pilot data.
Table 1: Evaluation Criteria

<table>
<thead>
<tr>
<th>Attribute and Performance Measures</th>
<th>Data Collection Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Quality</strong></td>
<td>Calculated vehicle emissions along length of corridor</td>
</tr>
<tr>
<td><strong>Congestion</strong></td>
<td></td>
</tr>
<tr>
<td>- Average peak period travel time</td>
<td>Woodhill Drive to Alameda de las Pulgas</td>
</tr>
<tr>
<td>- Average off-peak travel time</td>
<td>Woodhill Drive to Alameda de las Pulgas</td>
</tr>
<tr>
<td>- Peak hour traffic volume</td>
<td>Between Eden Bower Ln and Lonesome Pine Rd</td>
</tr>
<tr>
<td>- Average intersection vehicle delay</td>
<td>Between McGarvey Ave and Jefferson Ave</td>
</tr>
<tr>
<td>-</td>
<td>Between Highland Rd and Alameda de las Pulgas</td>
</tr>
<tr>
<td><strong>Ease of crossing the street</strong></td>
<td></td>
</tr>
<tr>
<td>- Percent of vehicles yielding to people crossing the street</td>
<td>Farm Hill Blvd at Emerald Hill Road</td>
</tr>
<tr>
<td>- How long people have to wait to cross the street</td>
<td>Farm Hill Blvd at Glennan Dr</td>
</tr>
<tr>
<td>-</td>
<td>Farm Hill Blvd at Jefferson Ave</td>
</tr>
<tr>
<td>-</td>
<td>Farm Hill Blvd at McGarvey Ave</td>
</tr>
<tr>
<td><strong>Ease of entering traffic</strong></td>
<td></td>
</tr>
<tr>
<td>- Average vehicle delay for vehicles trying to make a left-turn from side street during the AM peak</td>
<td>Lonesome Pine Road</td>
</tr>
<tr>
<td>-</td>
<td>Highland Ave</td>
</tr>
<tr>
<td><strong>Complete streets</strong></td>
<td></td>
</tr>
<tr>
<td>- Number of passengers getting on and off SamTrans buses</td>
<td>All bus stops along the corridor</td>
</tr>
<tr>
<td>- Number of people riding bikes</td>
<td>(same locations for all measures)</td>
</tr>
<tr>
<td>- Number of people walking along the street</td>
<td>Farm Hill Blvd at Glennan Dr</td>
</tr>
<tr>
<td>- Number of people crossing the street</td>
<td>Farm Hill Blvd at Jefferson Ave</td>
</tr>
<tr>
<td>- Percent of people arriving without driving</td>
<td>Farm Hill Blvd at McGarvey Ave</td>
</tr>
<tr>
<td>-</td>
<td>Stulsaft Park</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td></td>
</tr>
<tr>
<td>- Number of conflict points at intersection and midblock locations</td>
<td>Jefferson Ave at Altamont Way</td>
</tr>
<tr>
<td>- Average number of monthly crashes</td>
<td>Between Emerald Hill Rd and Brandy Rock Way</td>
</tr>
<tr>
<td>-</td>
<td>Woodhill Drive to Alameda de las Pulgas</td>
</tr>
</tbody>
</table>
### Attribute and Performance Measures

<table>
<thead>
<tr>
<th>Speeding</th>
<th>Data Collection Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 85th Percentile Speed</td>
<td>• Between Eden Bower Ln and Lonesome Pine Rd</td>
</tr>
<tr>
<td>• 50th Percentile Speed</td>
<td>• Between McGarvey Rd and Jefferson Ave</td>
</tr>
<tr>
<td>• Percent of vehicles traveling above speed limit</td>
<td>• Between Highland Ave and Alameda de las Pulgas</td>
</tr>
<tr>
<td>• Percent of vehicles traveling 10 mph over speed limit</td>
<td></td>
</tr>
</tbody>
</table>

### Traffic Diversion

<table>
<thead>
<tr>
<th>Traffic Diversion</th>
<th>Data Collection Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Average daily traffic volume</td>
<td>• Along corridor:</td>
</tr>
<tr>
<td>• Traffic volume during peak hours (8 AM to 9 AM and 5 PM to 6 PM)</td>
<td>• Between Eden Bower Ln and Lonesome Pine Rd</td>
</tr>
<tr>
<td></td>
<td>• Between McGarvey Rd and Jefferson Ave</td>
</tr>
<tr>
<td></td>
<td>• Between Highland Rd and Alameda de las Pulgas</td>
</tr>
<tr>
<td></td>
<td>• Woodside Rd btw I-280 and Alameda de las Pulgas</td>
</tr>
<tr>
<td></td>
<td>• Woodside Rd between Alameda de las Pulgas and El Camino Real</td>
</tr>
<tr>
<td></td>
<td>• Edgewood Rd btw I-280 and Alameda de las Pulgas</td>
</tr>
<tr>
<td></td>
<td>• Highland Rd between Laurel Way and Jefferson Ave</td>
</tr>
<tr>
<td></td>
<td>• Jefferson Ave between Utah Way and Farm Hill Blvd</td>
</tr>
<tr>
<td></td>
<td>• Dover Rd btw Lancaster Way and Alameda de las Pulgas</td>
</tr>
<tr>
<td></td>
<td>• McGarvey Ave btw Farm Hill Blvd and Fernside St</td>
</tr>
<tr>
<td></td>
<td>• Lancaster Way btw Jefferson Ave and Harding Ave</td>
</tr>
<tr>
<td></td>
<td>• Bret Harte Dr btw Emerald Hill Rd and Glennan Dr</td>
</tr>
</tbody>
</table>

### OBJECTIVE 1:
Reduce the vehicle crash rate by reducing the number of “conflict points”. A “conflict point” is a location at which traffic paths routinely cross, merge, or diverge and are generally more prone to near-misses or collisions between vehicles than other locations on the roadway network.

**Why:** Historically, there have been a relatively high number of vehicle collisions along the corridor. By reducing the number of conflict points, the number of vehicles collisions should be reduced. Figure 2 shows a comparison of crossing and through conflict points for a four-lane undivided roadway and a three-lane roadway with a TWLTL. As shown, the three-lane roadway significantly reduces the number of conflict points. It should be noted that this diagram does not show turning movement conflict points. Figure 3 shows a comparison of mid-block conflict points for a four-lane undivided roadway and a three-lane roadway with a TWLTL. As shown, the three-lane roadway significantly reduces the number of conflict points. It should be noted that this diagram only shows the movements from the roadway onto a driveway, but not vice versa.
Figure 2: Crossing and Through Conflict Points at Intersection for a 4-lane Undivided Roadway & 3-lane Roadway

Figure 3: Mid-Block Conflict Points for a 4-lane Undivided Roadway & 3-lane Roadway
Table 2 shows the number of potential conflict points at an example intersection (Altamont Way and Jefferson Avenue) and an example mid-block segment (Farm Hill Boulevard between Emerald Hill Road and Brandy Rock Way), before and during the pilot project. In both cases, the number of potential conflict points is reduced with the pilot project design. A similar reduction in conflict points happened throughout the corridor.

<table>
<thead>
<tr>
<th>Number of intersections conflict points</th>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jefferson Avenue at Altamont Way</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of midblock conflict points</th>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hill Boulevard between Emerald Hill Road and Brandy Rock Way</td>
<td>12</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 2: Number of Vehicle Conflict Points

Source: Redwood City

Measurement: Reported collisions were documented and summarized to determine if there was a reduction in the number of crashes along the study corridor (Alameda de las Pulgas to Woodhill Drive).

Outcome: The average number of Pre-Pilot crashes per month was based on total collisions during the five-year period from 2010 through 2014. Post-pilot crash data was collected from October 2015 through August 2016, since the majority of the roadway improvements were implemented in September 2015. Table 3 provides a comparison of the Pre-Pilot and Post-Pilot crashes. It should be noted that this is a small sample size with 11 reported collisions during the Post-Pilot months from October 2015 through August 2016.

<table>
<thead>
<tr>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
<th>Absolute Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.28</td>
<td>1.00</td>
<td>-0.28</td>
<td>-22%</td>
</tr>
</tbody>
</table>

Table 3: Monthly Average Number of Crashes

Source: Redwood City Police Department Collision Reports (Pre-Pilot: January 2010 – December 2014; Post-Pilot: October 2015 - August 2016)

OBJECTIVE 2:
Make it safer and easier for people to walk across the street

Why: For people walking, crossing Farm Hill Boulevard can be challenging due to the width of the street and the volume and speed of vehicular traffic. The ability to cross the street is affected by the number of travel lanes, gaps in traffic, and the rate at which drivers yield. By reducing the number of travel lanes and speed of vehicular traffic, drivers should more easily identify pedestrians and yield to crossing pedestrians at a higher rate. This should also reduce the number of multiple-threat collisions, or collisions involving a driver stopped in one lane of a multi-lane approach yielding to a pedestrian crossing the roadway and an oncoming vehicle in the same direction striking the pedestrian because the driver failed to see the pedestrian due to the first vehicle obstructing the view.
**Improvement:** At the intersection of Farm Hill Boulevard and Eden Bower Lane, the travel lanes were narrowed along Farm Hill Boulevard. At the intersection of Jefferson Avenue and Dover Road, the number of travel lanes was reduced and the travel lanes were narrowed along Jefferson Avenue.

**Measurement:** Data was collected on the number of cars that yielded to people walking across the street at two locations along Farm Hill Boulevard/Jefferson Avenue. To evaluate this, the traffic consultants videotaped the intersection of Eden Bower Lane and Farm Hill Boulevard from 4:00 PM to 6:00 PM and the intersection of Dover Road and Jefferson Avenue from 8:00 AM to 6:00 PM. The video footage was analyzed to determine the percentage of drivers yielding to people trying to walk across Farm Hill Boulevard/Jefferson Avenue. The yielding rate was calculated by taking the number of drivers who yielded and dividing by the total number of drivers.

**Outcome:** Table 4 shows the results of the data collection and analysis. It should be noted that this performance measure has a small sample size as noted by the number of people crossing the street (n).

<table>
<thead>
<tr>
<th>Location and Time of Day</th>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hill Boulevard at Eden Bower Lane (4:00 PM – 6:00 PM)</td>
<td>4% (n=9)</td>
<td>10% (n=15)</td>
</tr>
<tr>
<td>Jefferson Avenue at Dover Road (8:00 AM – 6:00 PM)</td>
<td>19% (n=30)</td>
<td>25% (n=18)</td>
</tr>
</tbody>
</table>

Source: Quality Traffic Data (May 27, 2015 and May 31 - June 1, 2016). n= number of people crossing the street when vehicles present

After the pilot project, drivers yielded more often to people crossing the main street at both Eden Bower Lane and Dover Road. Although not part of the project evaluation metrics, the number of people crossing the street when vehicles were present increased at Eden Bower Lane.

The length of time a pedestrian waited to cross the main street at the same two intersections was measured and is summarized in Table 5. It should be noted that this performance measure has a small sample size as noted by the number of people crossing the street (n). Wait times went down at both Eden Bower Lane and Dover Road. These data were again based on analysis of the video footage.

<table>
<thead>
<tr>
<th>Location and Time of Day</th>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hill Boulevard at Eden Bower Lane (4:00 PM – 6:00 PM)</td>
<td>6.0 s (n=9)</td>
<td>1.3 s (n=15)</td>
</tr>
<tr>
<td>Jefferson Avenue at Dover Road (8:00 AM – 6:00 PM)</td>
<td>1.0 s (n=30)</td>
<td>0.5 s (n=18)</td>
</tr>
</tbody>
</table>

Source: Quality Traffic Data (May 27, 2015 and May 31 - June 1, 2016) n= number of people crossing the street when vehicles present
OBJECTIVE 3:
Ensure there are not substantial increases to vehicle corridor travel times and/or significant
intersection delays

Why: Although increasing safety for everyone is the overarching goal, the Council was concerned that
the vehicle travel times could increase substantially as a result of the pilot. Analysis before the pilot
predicted that the longest average delays would occur during peak commute times, and could result in
an increase in average delay of 1-2 minutes.

Measurement: Multiple criteria were used to assess delays along the corridor: average peak period
travel time, average off-peak travel time, and average intersection vehicle delay.

Travel Times
TJKM Traffic Consultants conducted travel time surveys for the corridor, before, during and after the
pilot project. The purpose of a travel time study is to evaluate the quality of traffic movement along a
route and to determine the locations, types, and extent of traffic delays by using a moving test vehicle
(a travel time “run”). This study method can be used to compare operational conditions before and after
roadway or intersection changes. Travel time runs were performed on Farm Hill Boulevard/Jefferson
Avenue between Woodhill Drive and Alameda de las Pulgas during the morning, midday and evening
periods. TJKM used the Tru-Traffic software system with a GPS unit to collect the travel times. Travel
times were initially collected for the Post-Pilot in July 2016, exactly one year after the Pre-Pilot data,
but supplemental travel time surveys were collected in September 2016 to determine if the travel times
increased once local schools were back in session.

Travel time data was collected from 7:00 AM - 9:00 AM, 1:00PM - 3:00 PM, and 5:00 PM - 7:00 PM for
the AM, midday, and PM peak periods, respectively. It should be noted that a small sample size was
collected with approximately 20 runs total (10 in each direction) being completed during each period
and then averaged. Table 6 summarizes the findings of the travel time study.

Outcome: The largest change in travel time from July 2015 to July 2016 was in the midday period,
heading towards downtown, where the average run was 33 seconds less after the pilot. Generally, the
average travel times decreased for all time periods in both directions, which was unexpected. The pilot
project reduced the number of lanes along Farm Hill Boulevard/Jefferson Avenue which was anticipated
to increase the travel time. However, the travel time surveys showed a decrease in the intersection
delay, which is the main reason for the decrease in average travel time. This decrease in intersection
delay was due to improvements in the signal timing operations at the signalized intersections.

Supplemental travel time surveys were collected in September 2016 to determine if travel times
decreased once local schools were back in session. As shown in Table 6, the average travel time
decreased for a majority of the time periods in both directions, with exception to the westbound direction
in the AM peak. The average travel time increased by 42 seconds, which was due to the increased
signal delay.
Table 6: Average Travel Times during Peak & Off-Peak Periods

<table>
<thead>
<tr>
<th>Direction of Travel</th>
<th>Time Period</th>
<th>Pre-Pilot(^1) (n=10)</th>
<th>Post-Pilot(^2) (n=12)</th>
<th>Change from Pre-Pilot</th>
<th>Post-Pilot(^3) (n=11)</th>
<th>Change from Pre-Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastbound (towards downtown)</td>
<td>AM</td>
<td>4:42</td>
<td>4:11</td>
<td>-0:31</td>
<td>4:38</td>
<td>-0:04</td>
</tr>
<tr>
<td></td>
<td>MID</td>
<td>4:39</td>
<td>4:06</td>
<td>-0:33</td>
<td>3:59</td>
<td>-0:40</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>4:43</td>
<td>4:32</td>
<td>-0:11</td>
<td>4:25</td>
<td>-0:18</td>
</tr>
<tr>
<td>Westbound (towards I-280)</td>
<td>AM</td>
<td>4:48</td>
<td>4:43</td>
<td>-0:05</td>
<td>5:30</td>
<td>+0:42</td>
</tr>
<tr>
<td></td>
<td>MID</td>
<td>4:22</td>
<td>4:17</td>
<td>-0:05</td>
<td>4:07</td>
<td>-0:15</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>4:51</td>
<td>4:19</td>
<td>-0:32</td>
<td>4:39</td>
<td>-0:12</td>
</tr>
</tbody>
</table>

\(^1\) Source: TJKM. Data collected July 15-16, 2015.  
\(^2\) Source: TJKM. Data collected July 13, 2016.  
\(^3\) Source: TJKM. Data collected September 20, 2016.

Although average travel time was the adopted performance measure in the evaluation plan, maximum travel times were also evaluated during the travel time surveys, as shown in Table 7. The maximum travel time reflects the worst conditions that drivers are likely to experience on a typical day. In the morning commute, for example, this typically occurs in the 15 minutes when school-related traffic overlaps with commute traffic. The maximum travel time increased during the AM peak for both directions and during the midday peak heading towards I-280.

Table 7: Maximum Travel Times during Peak & Off-Peak Periods

<table>
<thead>
<tr>
<th>Direction of Travel</th>
<th>Time Period</th>
<th>Maximum Travel Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-Pilot(^1)</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Eastbound (towards downtown)</td>
<td>AM</td>
<td>5:13</td>
</tr>
<tr>
<td></td>
<td>MID</td>
<td>5:23</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>5:52</td>
</tr>
<tr>
<td>Westbound (towards I-280)</td>
<td>AM</td>
<td>5:30</td>
</tr>
<tr>
<td></td>
<td>MID</td>
<td>4:46</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>5:26</td>
</tr>
</tbody>
</table>

\(^1\) Source: TJKM. Data collected July 15-16, 2015.  
\(^2\) Source: TJKM. Data collected July 13, 2016.  
\(^3\) Source: TJKM. Data collected September 20, 2016.
Average Vehicle Delay

Average vehicle delay was collected at four key intersections along the project corridor. The majority of the vehicle delay typically occurs at controlled intersections. Therefore, the average vehicle delay provides another way to represent travel time changes as a result of the pilot project and incorporates delays experienced by drivers entering the corridor. Average vehicle delay is the average time it takes vehicles on all intersection approaches (including cross-streets) to pass through the intersection. The morning peak hour was selected for the analysis because volumes are highest during the morning period and the results illustrate the highest anticipated levels of delay.

Average vehicle delay is a standard output from Synchro, a traffic analysis and modeling software program. Traffic volumes, lane configurations, and signal timing parameters before and after the pilot were inputs into Synchro.

Outcome: The calculated delays are summarized in Table 8.

Table 8: Average Intersection Vehicle Delay during Morning Peak Hour

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Average Vehicle Delay (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Pilot</td>
</tr>
<tr>
<td>Farm Hill Boulevard at Emerald Hill Road¹</td>
<td>36.6</td>
</tr>
<tr>
<td>Farm Hill Boulevard at Glennan Drive</td>
<td>7.2</td>
</tr>
<tr>
<td>Farm Hill Boulevard at McGarvey Avenue</td>
<td>9.0</td>
</tr>
<tr>
<td>Farm Hill Boulevard at Jefferson Avenue</td>
<td>8.5</td>
</tr>
</tbody>
</table>

¹The intersection of Farm Hill Boulevard and Emerald Hill road is an unsignalized intersection.
Sources: City of Redwood City, Synchro model (December 2015) Quality Traffic Data (May 27-28, 2015 and July 13, 2016).

Average vehicle delay increased for the three signalized intersections after the pilot project in May 2016 as compared to the Pre-Pilot in May 2015. Delay increases ranged from 0.3 to 16.6 seconds, with the largest increase at the intersection of Farm Hill Boulevard and McGarvey Avenue. Although the average intersection delay increased by 16.6 seconds, the intersection still averages only 25.6 seconds of delay, which is an acceptable level based on City guidelines.

Note that these results are different than the travel time results because average vehicle delay is: 1) only capturing intersection delays (as opposed to delay experienced between intersections), and 2) it accounts for delays to vehicles on side streets while the travel times studies only reflect conditions for vehicles traveling on the pilot corridor. It should also be noted that the volumes used in the intersection delay analysis were collected in May 2015 for the Pre-Pilot and in May 2016 for the Post-Pilot, while the travel time surveys by TJKM Traffic Consultants were collected in July 2015 for the Pre-Pilot and July and September 2016 for the Post-Pilot.
OBJECTIVE 4:
Monitor the number of vehicles traveling along the pilot corridor during the peak hour to determine if drivers are shifting their travel patterns

Why: Drivers may change the time of their travel or travel route to avoid congestion. There is concern that overall vehicle volumes would simply drop as drivers opted for alternative routes to avoid congestion. There is also concern within the community that the project would not accommodate traffic growth associated with downtown development.

Measurement: Traffic volumes were collected on three midweek days in May 2015 and in May 2016 at three locations within the pilot project corridor by a traffic data consultant using standard tube counters installed across the roadway. Data was collected at the following locations:

- Farm Hill Boulevard, between Eden Bower Lane and Lonesome Pine Road
- Farm Hill Boulevard, between McGarvey Avenue and Jefferson Avenue
- Jefferson Avenue, between Highland Avenue and Alameda de las Pulgas

The morning peak hour was identified as 8:00 AM – 9:00 AM and the afternoon peak hour was 5:00 PM – 6:00 PM.

Outcome: The three days of data were averaged and the results are summarized in Table 9. Volumes increased along the corridor by 4 to 17 percent during the morning and afternoon peak hour.

Table 9: Average Peak Hour Traffic Volumes (Number of Vehicles)

<table>
<thead>
<tr>
<th>Location along Farm Hill Boulevard/ Jefferson Avenue</th>
<th>Morning Peak Hour (8:00 AM - 9:00 AM)</th>
<th>Afternoon Peak Hour (5:00 PM - 6:00 PM)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Pilot</td>
<td>Post-Pilot</td>
</tr>
<tr>
<td>Eden Bower Lane to Lonesome Pine Road</td>
<td>1,277</td>
<td>1,327</td>
</tr>
<tr>
<td>McGarvey Avenue to Jefferson Avenue</td>
<td>1,027</td>
<td>1,159</td>
</tr>
<tr>
<td>Highland Avenue to Alameda de las Pulgas</td>
<td>1,208</td>
<td>1,405</td>
</tr>
</tbody>
</table>

OBJECTIVE 5:
Ensure that it is not more difficult to turn onto Farm Hill Boulevard from side streets.

Why: One concern expressed about the pilot project was that it would be more difficult to turn onto Farm Hill Boulevard from side streets, due to vehicles being funneled down from two lanes into a single lane. The single lane of vehicles would have less frequent gaps for side street vehicles to turn into.

Measurement: To evaluate how long drivers have to wait to turn left, the traffic consultants videotaped the side streets of Lonesome Pine Road and Highland Avenue during the morning peak period (7:00 AM – 9:00 AM). The number of vehicles waiting to turn left was counted at five-minute intervals and divided by 12 to estimate their wait times.

Outcome: Table 10 summarizes the results. It should be noted that there was a small sample size for this performance measure, as denoted by the number of vehicles counted (n). At both locations there was a 48 to 67 percent reduction in the wait time for vehicles to make a left turn from the side street during the morning peak hour. At Lonesome Pine Road, the typical wait times were less than a minute and the overall reduction was small as an absolute number. At Highland Avenue, the wait times were estimated at 4 minutes before the pilot and reduced to 2.1 minutes after the pilot. The decrease in average delay for vehicles on the side-street making a left turn can be attributed to the decrease in the number of lanes crossed to make the left turn, the storage space in the two-way left-turn lane, and the reduction in travel speed along the main street.

Table 10: Average Delay for Vehicles Making a Left Turn, AM Peak Period (Seconds)

<table>
<thead>
<tr>
<th>Location</th>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
<th>Absolute Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lonesome Pine Road</td>
<td>54 (n=11)</td>
<td>20 (n=5)</td>
<td>-34</td>
<td>-63%</td>
</tr>
<tr>
<td>Highland Avenue</td>
<td>240 (n=48)</td>
<td>125 (n=40)</td>
<td>-115</td>
<td>-48%</td>
</tr>
</tbody>
</table>

Source: Quality Traffic Data (May 27, 2015 and June 2, 2016).
n = number of vehicles trying to turn left, counted at five-minute intervals
OBJECTIVE 6:
Make it safer for all roadway users by reducing vehicle speeds.

Why: Reducing vehicle speeds provides several safety benefits. For example, reduced vehicle speeds provide more reaction time for drivers to avoid potential collisions. Furthermore, reducing speeds can substantially reduce the severity of collisions that may occur. Top-end speeders pose some of the greatest threats to pedestrians. A pedestrian hit at 30 miles per hour has an approximately 60 percent chance of survival. At 40 miles per hour, the chance of survival is only 20 percent. ¹ Figure 4 shows a comparison of the vehicle impact speed to pedestrian injury severity.

http://www.nhtsa.gov/About+NHTSA/Traffic+Techs/current/Literature+Reviewed+On+Vehicle+Travel+Speeds+And+Pedestrian+Injuries

Figure 4: Vehicle Impact Speed and Pedestrian Injury Severity

Source: U.S. Department of Transportation, National Highway Traffic Safety Administration

Measurement: Traffic speed data was collected by a traffic data consultant in May 2015 before the pilot began, and then again in May 2016 during the pilot using standard tube counters over three consecutive midweek days. The collected data was analyzed to identify the following:

- 85th percentile speed, which is defined as the speed 85 percent of drivers are moving at or below,
- 50th percentile speed is the median speed – 50 percent of drivers are driving at or below that speed, and 50 percent of drivers are driving above that speed,
- Percent of vehicles traveling above the posted speed limit, and
- Percent of vehicles traveling 10 mph or more over the posted speed limit.

Outcomes:

85th Percentile Speed

Table 11 shows the 85th percentile speeds on three segments of Farm Hill Boulevard, by direction. The data shows reductions in speed at each location and in both directions, with the reductions ranging from 7 percent to 12 percent. It should be noted that given the large sample size for each segment (over 15,000 samples) that the results are statistically significant. The data shows more than a 99.97 percent probability that the reduction in speeds is due to the improvements.

Farm Hill Boulevard between Eden Bower Lane and Lonesome Pine Road had the highest speeds with a pre-pilot 85th percentile speed of 45.9 mph in the westbound direction (going uphill towards I-280) and 47.5 mph in the eastbound direction (going downhill towards downtown). After the pilot, these speeds decreased by seven percent – but are still well above the posted speed limit of 35 mph. Between McGarvey Avenue and Jefferson Avenue, 85th percentile speeds are either at the speed limit or slightly below the speed limit – at 35 mph going towards I-280 and 32.4 mph going towards downtown. On Jefferson Avenue, between Highland Avenue and Alameda de las Pulgas, the reductions were eight percent going towards I-280 and nine percent going towards downtown but speeds continued to be above the posted speed limit of 30 mph.

Table 11: 85th Percentile Speed (in miles per hour)

<table>
<thead>
<tr>
<th>Segment</th>
<th>Speed Limit (mph)</th>
<th>85th Percentile Speed</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Towards I-280</td>
<td>Towards Downtown</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre-Pilot</td>
<td>Post-Pilot</td>
<td>Absolute Change</td>
<td>Percent Change</td>
<td>Pre-Pilot</td>
</tr>
<tr>
<td>Farm Hill Boulevard: Eden Bower Ln-Lonesome Pine Rd</td>
<td>35</td>
<td>45.9</td>
<td>42.7</td>
<td>-3.2</td>
<td>-7%</td>
<td>47.5</td>
</tr>
<tr>
<td>Farm Hill Boulevard: McGarvey Ave-Jefferson Ave</td>
<td>35</td>
<td>38.7</td>
<td>35</td>
<td>-3.7</td>
<td>-10%</td>
<td>37</td>
</tr>
<tr>
<td>Jefferson: Highland Ave to Alameda de las Pulgas</td>
<td>30</td>
<td>36.2</td>
<td>33.3</td>
<td>-2.8</td>
<td>-8%</td>
<td>36.4</td>
</tr>
</tbody>
</table>

Source: Quality Traffic Data (May 26-28, 2015 and May 31-June 2, 2016). Speeds are based on data over the course of three full days (24-hour data).
50th Percentile Speed

As shown in Table 12, 50th percentile speeds decreased at all locations in each direction. Farm Hill Boulevard between Eden Bower Lane and Lonesome Pine Road had the highest 50th percentile speeds – 39.9 mph pre-pilot in the westbound direction (going uphill towards I-280) and 41.9 mph in the eastbound direction (going downhill towards downtown). After the pilot, these speeds went down by seven percent and five percent, respectively, but are roughly 5 mph above the posted speed limit of 35 mph. Between McGarvey Avenue and Jefferson Avenue, 50th percentile speeds for Post-Pilot are almost five to ten miles per hour below the speed limit – at 30.8 mph going towards I-280 and 26.9 mph going towards downtown. On Jefferson Avenue, between Highland Avenue and Alameda de las Pulgas, the reductions were 10 percent going towards I-280 and eight percent going towards downtown, with speeds close to the posted speed limit of 30 mph.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Speed Limit (mph)</th>
<th>Medium Speed (50th) Towards I-280</th>
<th>Towards Downtown</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Pilot</td>
<td>Post-Pilot</td>
<td>Absolute Change</td>
<td>Percent Change</td>
</tr>
<tr>
<td>Farm Hill Boulevard: Eden Bower Ln-Lonesome Pine Rd</td>
<td>35</td>
<td>39.9</td>
<td>37.2</td>
<td>-2.7</td>
</tr>
<tr>
<td>Farm Hill Boulevard: McGarvey Ave-Jefferson Ave</td>
<td>35</td>
<td>33.9</td>
<td>30.8</td>
<td>-3.1</td>
</tr>
<tr>
<td>Jefferson: Highland Ave to Alameda de las Pulgas</td>
<td>30</td>
<td>31.3</td>
<td>28.1</td>
<td>-3.2</td>
</tr>
</tbody>
</table>

Source: Quality Traffic Data (May 26-28, 2015 and May 31-June 2, 2016). Speeds are based on data over the course of three full days (24-hour data).

Percent of Vehicles Traveling above the Posted Speed Limit

As shown in Table 13, Farm Hill Boulevard between Eden Bower Lane and Lonesome Pine Road had over 88 percent of vehicles traveling over the speed limit in the westbound direction and 96 percent in the eastbound direction prior to the start of the pilot. After the pilot, the percentage of vehicles traveling over the speed limit in this section decreased by 11 percent in the westbound direction (going uphill towards I-280) and by three percent in the eastbound direction (going downhill towards downtown).
Table 13: Percent of Vehicles Traveling Over the Speed Limit

<table>
<thead>
<tr>
<th>Segment</th>
<th>Speed Limit (mph)</th>
<th>% of vehicles traveling over speed limit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Towards I-280</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre-Pilot</td>
</tr>
<tr>
<td>Farm Hill Boulevard: Eden Bower Ln-Lonesome Pine Rd</td>
<td>35</td>
<td>88%</td>
</tr>
<tr>
<td>Farm Hill Boulevard: McGarvey Ave-Jefferson Ave</td>
<td>35</td>
<td>49%</td>
</tr>
<tr>
<td>Jefferson Ave: Highland Ave to Alameda de las Pulgas</td>
<td>30</td>
<td>72%</td>
</tr>
</tbody>
</table>


Farm Hill Boulevard, between McGarvey Avenue to Jefferson Avenue saw the largest reductions in the percentage of vehicles exceeding the speed limit. Going towards I-280, the percent of vehicles exceeding the speed limit decreased from 49 percent to 18 percent. There was a similar trend going towards downtown, with the percent of vehicles exceeding the speed limit decreasing from 32 percent to 7 percent.

On Jefferson Avenue, between Highland Avenue to Alameda de las Pulgas, high percentages of vehicles traveled above the speed limit before the start of the pilot – 72 percent towards I-280 and 68 percent towards downtown. After the pilot, the percentage of speeding decreased by 29 percent going towards I-280 and 22 percent going towards downtown.

These results are consistent with the roadway improvements implemented. Vehicle speeds in a single lane are set by the speed of the prudent driver. Narrower lanes force drivers to reduce travel speeds to stay within the lane markings, thereby reducing travel speeds.

Percent of Vehicles Traveling more than 10 mph over the Speed Limit

Top-end speeding is the percent of drivers traveling more than 10 miles per hour over the posted speed limit. The speed limit on Jefferson Avenue is 30 miles per hour and on Farm Hill Boulevard it is 35 miles per hour.

Table 14 shows the comparison of the percent of vehicles traveling 10 or more miles per hour between the Pre-Pilot and Post-Pilot. Prior to the pilot project, between Eden Bower Lane and Lonesome Pine Road, 21 percent of drivers in the westbound (going uphill towards I-280) direction and 32 percent in the eastbound (going downhill towards downtown) direction exceeded the speed limit by at least 10 mph. After the pilot, these numbers decreased by 13 percent in the westbound direction and by 17 percent in the eastbound direction. The other segments of Farm Hill Boulevard slightly decreased in the share of vehicles exceeding the speed limit by greater than 10 mph.
Table 14: Percent of Vehicles Exceeding the Speed Limit by 10 mph

<table>
<thead>
<tr>
<th>Segment</th>
<th>Speed Limit (mph)</th>
<th>% of vehicles traveling 10+ mph over the speed limit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Towards I-280</td>
<td>Towards Downtown</td>
</tr>
<tr>
<td></td>
<td>Pre-Pilot</td>
<td>Post-Pilot</td>
</tr>
<tr>
<td>Farm Hill Boulevard: Eden Bower Ln- Lonesome Pine Rd</td>
<td>35</td>
<td>21%</td>
</tr>
<tr>
<td>Farm Hill Boulevard: McGarvey Ave- Jefferson Ave</td>
<td>35</td>
<td>2%</td>
</tr>
<tr>
<td>Jefferson Ave: Highland Ave to Alameda de las Pulgas</td>
<td>30</td>
<td>4%</td>
</tr>
</tbody>
</table>


ADDITIONAL OBJECTIVE 6A: Reduce travel speeds during off-peak hours.

Why: In addition to the travel speed analysis for the entire day, travel speeds were reviewed during the off-peak hours because the off-peak hours would not include a reduction in speed due to congestion. Therefore, speeds were evaluated during the middle of the day (MID) from 10:00 AM to 2:00 PM and during the nighttime (NIGHT) from 7:00 PM to 7:00 AM.

Measurement: The same traffic speed data from Objective 6 was used, except the data was trimmed to only include the MID (10:00 AM to 2:00 PM) and NIGHT (7:00 PM to 7:00 AM) hours. The Pre-Pilot data was collected in May 2015 and the Post-Pilot data was collected in May 2016.

The collected data was analyzed to identify the following:

- 85th percentile speed, which is defined as the speed 85 percent of drivers are moving at or below,
- 50th percentile speed is the median speed – 50 percent of drivers are driving at or below that speed, and 50 percent of drivers are driving above that speed,
- Percent of vehicles traveling above the posted speed limit, and
- Percent of vehicles traveling 10 mph or more over the posted speed limit.

Outcomes:

85th Percentile Speed

Table 15 shows the comparison of daily versus off-peak 85th percentile speeds on Jefferson Avenue between Highland Avenue and Alameda de la Pulgas, by direction. The data shows that the reductions of 85th percentile speed are similar between the daily period and the off-peak hours. The decreases all
range from 8 to 10 percent, showing that the travel speed reductions are not solely a result of congestion during the peak period.

Table 15: Daily versus Off-Peak 85th Percentile Speed on Jefferson Avenue (in miles per hour)

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Speed Limit (mph)</th>
<th>85th Percentile Speed Towards I-280</th>
<th>85th Percentile Speed Towards Downtown</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-Pilot</td>
<td>Post-Pilot</td>
</tr>
<tr>
<td>DAILY</td>
<td>30</td>
<td>36.2</td>
<td>33.3</td>
</tr>
<tr>
<td>MID (10 AM – 2 PM)</td>
<td>30</td>
<td>36.3</td>
<td>33.4</td>
</tr>
<tr>
<td>NIGHT (7 PM – 7 AM)</td>
<td>30</td>
<td>36.4</td>
<td>33.3</td>
</tr>
</tbody>
</table>

Source: Quality Traffic Data (May 26-28, 2015 and May 31-June 2, 2016). Speeds are based on data over the course of three full days.

50th Percentile Speed

Table 16 shows the comparison of daily versus off-peak 50th percentile speeds on Jefferson Avenue between Highland Avenue and Alameda de la Pulgas, by direction. The data shows that the reductions of 50th percentile speed are similar between the daily period and the off-peak hours. The decreases all range from 7 to 10 percent, showing that the travel speed reductions are not solely a result of congestion during the peak period.

Table 16: Daily versus Off-Peak 50th Percentile Speed on Jefferson Avenue (in miles per hour)

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Speed Limit (mph)</th>
<th>50th Percentile Speed Towards I-280</th>
<th>50th Percentile Speed Towards Downtown</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-Pilot</td>
<td>Post-Pilot</td>
</tr>
<tr>
<td>DAILY</td>
<td>30</td>
<td>31.3</td>
<td>28.1</td>
</tr>
<tr>
<td>MID (10 AM – 2 PM)</td>
<td>30</td>
<td>31.4</td>
<td>28.4</td>
</tr>
<tr>
<td>NIGHT (7 PM – 7 AM)</td>
<td>30</td>
<td>31.2</td>
<td>28.0</td>
</tr>
</tbody>
</table>

Source: Quality Traffic Data (May 26-28, 2015 and May 31-June 2, 2016). Speeds are based on data over the course of three full days.
Percent of Vehicles Traveling above the Posted Speed Limit

Table 17 compares daily versus off-peak percent of vehicles traveling over the speed limit on Jefferson Avenue between Highland Avenue and Alameda de la Pulgas, by direction. The data shows that the reductions of the percent of vehicles traveling over the speed limit are similar between the daily period and the off-peak hours. The decreases towards I-280 all range from 28 to 29 percent and the decreases towards downtown all range from 20 to 23 percent, showing that the percent of vehicles traveling over the speed limit are not solely a result of congestion during the peak period.

Table 17: Daily versus Off-Peak Percent of Vehicles Traveling Over the Speed Limit on Jefferson Avenue

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Speed Limit (mph)</th>
<th>% of vehicles traveling over speed limit</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Towards I-280</td>
<td>Pre-Pilot</td>
<td>Post-Pilot</td>
<td>Change</td>
<td>Pre-Pilot</td>
</tr>
<tr>
<td>DAILY</td>
<td>30</td>
<td>72%</td>
<td>43%</td>
<td>-29%</td>
<td>68%</td>
<td>46%</td>
</tr>
<tr>
<td>MID</td>
<td>10 AM – 2 PM</td>
<td>74%</td>
<td>45%</td>
<td>-29%</td>
<td>72%</td>
<td>49%</td>
</tr>
<tr>
<td>NIGHT</td>
<td>7 PM – 7 AM</td>
<td>71%</td>
<td>42%</td>
<td>-28%</td>
<td>77%</td>
<td>57%</td>
</tr>
</tbody>
</table>


Percent of Vehicles Traveling more than 10 mph over the Speed Limit

Table 18 compares the daily versus off-peak percent of vehicles traveling 10+ mph over the speed limit on Jefferson Avenue between Highland Avenue and Alameda de la Pulgas, by direction. The data shows that the reductions of the percent of vehicles traveling 10+ mph over the speed limit are similar between the daily period and the off-peak hours. The decreases towards I-280 all range from 2 to 3 percent and the decreases towards downtown all range from 4 to 6 percent, showing that the percent of vehicles traveling 10+ mph over the speed limit are not solely a result of congestion during the peak period.

Table 18: Daily versus Off-Peak Percent of Vehicles Exceeding the Speed Limit by 10 mph on Jefferson Avenue

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Speed Limit (mph)</th>
<th>% of vehicles traveling 10+ mph over speed limit</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Towards I-280</td>
<td>Pre-Pilot</td>
<td>Post-Pilot</td>
<td>Change</td>
<td>Pre-Pilot</td>
</tr>
<tr>
<td>DAILY</td>
<td>30</td>
<td>4%</td>
<td>2%</td>
<td>-2%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>MID</td>
<td>10 AM – 2 PM</td>
<td>4%</td>
<td>2%</td>
<td>-2%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>NIGHT</td>
<td>7 PM – 7 AM</td>
<td>5%</td>
<td>2%</td>
<td>-3%</td>
<td>7%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**OBJECTIVE 7:**
Monitor the number of vehicles traveling on alternate routes to determine if drivers are diverting trips from the Farm Hill Boulevard corridor to alternate routes.

*Why:* The purpose of the project was to modify the roadway design to increase safety and improve driver compliance with the speed limit, not to shift vehicles to other routes.

*Measurement:* Traffic volumes were collected on the corridor and on parallel routes to help evaluate whether drivers have shifted driving patterns in response to the pilot project. Locations for data collection were proposed by City staff and then refined by community input during development of the evaluation plan. The two metrics used to assess diversion are average daily traffic volumes (the number of vehicles travelled on a road over 24 hours) and peak hour traffic volumes (the number of vehicles travelled during the busiest hour in the morning and evening).

Peak hours typically occur between 7:00 AM and 9:00 AM in the morning and between 4:00 PM and 7:00 PM in the afternoon/evening. Each peak hour for the Farm Hill Boulevard/Jefferson Avenue corridor was identified by selecting the hour in which the traffic volumes for the three project count locations were highest. Peak hour volumes for all other streets are reported for the same hour to capture how traffic might have shifted routes.

Traffic volumes were collected by traffic data consultants using tube counters installed across each roadway for a period of three midweek days. The reported data is the average of those three days.

*Outcomes:*

**Average Daily Traffic Volume**

Table 19 shows the average daily traffic volumes on selected roadways in the study area. For trips to and from I-280, Edgewood Road and Woodside Road are the closest and most direct alternatives to driving on Farm Hill Boulevard. Traffic volumes along the pilot project corridor increased between May 2015 and May 2016 – ranging from 1 to 11 percent. Traffic on Woodside Road and Edgewood Road also increased, by 12 percent and 20 percent, respectively.

Other streets that were identified as potential cut-through routes saw increases in volume of 15 to 29 percent. The volume increases to all roadways, on the pilot project route and on potential diversion routes, is typical of the increase in traffic volumes observed along I-280. Volumes along I-280 at the SR-92 interchange in both directions, as reported from Caltrans Performance Measurement System (PeMS), showed an annual increase in volumes by approximately 20 percent over the past four years. More specifically, between May 2015 and May 2016, the volumes along I-280 increased by six percent, but it should be noted that between April 2015 and April 2016 the volumes increased by approximately 25 percent. This highlights the increase in volumes in the region, not necessarily due to the changes on Farm Hill Boulevard.
Table 19: Average Daily Traffic Volumes on Selected Streets

<table>
<thead>
<tr>
<th>Segment</th>
<th>Average Daily Traffic Volume</th>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
<th>Absolute Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Locations Within Pilot Corridor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm Hill Blvd: Eden Bower Ln - Lonesome Pine Rd</td>
<td>12,609</td>
<td>12,788</td>
<td>179</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Farm Hill Blvd: McGarvey Ave - Jefferson Ave</td>
<td>10,334</td>
<td>11,288</td>
<td>954</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Jefferson Ave: Highland Ave to Alameda de las Pulgas</td>
<td>15,371</td>
<td>17,052</td>
<td>1,682</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td><strong>Parallel Routes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodside Road: I-280 to Alameda de las Pulgas</td>
<td>34,248</td>
<td>38,300</td>
<td>4,052</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Edgewood Road: I-280 to Alameda de las Pulgas</td>
<td>15,772</td>
<td>18,888</td>
<td>3,116</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td><strong>Other Potential Diversion Routes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodside Rd: Alameda de las Pulgas to El Camino Real</td>
<td>33,211</td>
<td>40,664</td>
<td>7,453</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>Highland Ave: Laurel Way to Jefferson Avenue</td>
<td>755</td>
<td>892</td>
<td>137</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Jefferson Ave: Utah Way and Farm Hill Boulevard</td>
<td>4,447</td>
<td>5,731</td>
<td>1,284</td>
<td>29%</td>
<td></td>
</tr>
<tr>
<td>Dover Rd: Lancaster Way and Alameda de las Pulgas</td>
<td>432</td>
<td>497</td>
<td>65</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>McGarvey Ave: Farm Hill Blvd and Fernside St</td>
<td>5240</td>
<td>6423</td>
<td>1,183</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>Lancaster Way: Jefferson Ave and Harding Ave</td>
<td>288</td>
<td>348</td>
<td>60</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>Bret Harte Dr: Emerald Hill Rd and Glennan Dr</td>
<td>518</td>
<td>595</td>
<td>77</td>
<td>15%</td>
<td></td>
</tr>
</tbody>
</table>


Average Peak Hour Traffic Volumes

Average peak hour volumes focus on the two hours of the day in which the traffic volumes are highest and when drivers would most likely experience congestion that might encourage a shift to their route – the morning peak hour and the evening peak hour. The same peak hours were used before and after the pilot – 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM. Table 20 shows the average morning peak hour traffic volumes on selected roadways in the study area. Table 21 shows the average evening peak hour traffic volumes on selected roadways in the study area.

Morning peak hour traffic volumes generally increased more than the increases in daily traffic volumes. Trips made on the pilot corridor increased by up to 197 vehicles or 16 percent in the morning peak hour (Jefferson Avenue between Highland Avenue and Alameda de las Pulgas). The largest increase on an alternate route was on Woodside Road, between Alameda de las Pulgas and El Camino Real (923 additional vehicles, a 42 percent increase). The largest increase on a parallel route was on Edgewood Road, between I-280 and Alameda de las Pulgas (690 additional vehicles, a 56 percent increase).

Evening peak hour traffic volumes generally increased more than the daily volumes increased. Trips made on the corridor increased by up to 154 vehicles or 16 percent in the evening peak hour (Farm Hill Boulevard between McGarvey Avenue and Jefferson Avenue). The largest increase on an alternate route was on Woodside Road between Alameda de las Pulgas to El Camino Real (468 additional vehicles, an 18 percent increase).
Table 20: Average Morning Peak Hour (8:00 to 9:00 AM) Traffic Volumes on Selected Streets

<table>
<thead>
<tr>
<th>Segment</th>
<th>Average Peak Hour Traffic Volume</th>
<th>Pre-Pilot</th>
<th>Post Pilot</th>
<th>Absolute Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Locations Within Pilot Corridor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm Hill Blvd: Eden Bower Ln - Lonesome Pine Rd</td>
<td></td>
<td>1,277</td>
<td>1,327</td>
<td>50</td>
<td>4%</td>
</tr>
<tr>
<td>Farm Hill Blvd: McGarvey Ave - Jefferson Ave</td>
<td></td>
<td>1,027</td>
<td>1,159</td>
<td>132</td>
<td>13%</td>
</tr>
<tr>
<td>Jefferson Ave: Highland Ave to Alameda de las Pulgas</td>
<td></td>
<td>1,208</td>
<td>1,405</td>
<td>197</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Parallel Routes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodside Road: I-280 to Alameda de las Pulgas</td>
<td></td>
<td>2,821</td>
<td>3,122</td>
<td>301</td>
<td>11%</td>
</tr>
<tr>
<td>Edgewood Road: I-280 to Alameda de las Pulgas</td>
<td></td>
<td>1,227</td>
<td>1,917</td>
<td>690</td>
<td>56%</td>
</tr>
<tr>
<td><strong>Other Potential Diversion Routes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodside Rd: Alameda de las Pulgas to El Camino Real</td>
<td></td>
<td>2,180</td>
<td>3,103</td>
<td>923</td>
<td>42%</td>
</tr>
<tr>
<td>Highland Ave: Laurel Way to Jefferson Avenue</td>
<td></td>
<td>94</td>
<td>107</td>
<td>13</td>
<td>14%</td>
</tr>
<tr>
<td>Jefferson Ave: Utah Way and Farm Hill Boulevard</td>
<td></td>
<td>433</td>
<td>514</td>
<td>81</td>
<td>19%</td>
</tr>
<tr>
<td>Dover Rd: Lancaster Way and Alameda de las Pulgas</td>
<td></td>
<td>43</td>
<td>54</td>
<td>11</td>
<td>26%</td>
</tr>
<tr>
<td>McGarvey Ave: Farm Hill Blvd and Fernside St</td>
<td></td>
<td>460</td>
<td>573</td>
<td>113</td>
<td>25%</td>
</tr>
<tr>
<td>Lancaster Way: Jefferson Ave and Harding Ave</td>
<td></td>
<td>30</td>
<td>39</td>
<td>9</td>
<td>30%</td>
</tr>
<tr>
<td>Bret Harte Dr: Emerald Hill Rd and Glennan Dr</td>
<td></td>
<td>95</td>
<td>96</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>


Table 21: Average Evening Peak Hour (5:00 to 6:00 PM) Traffic Volumes on Selected Streets

<table>
<thead>
<tr>
<th>Segment</th>
<th>Average Peak Hour Traffic Volume</th>
<th>Pre-Pilot</th>
<th>Post Pilot</th>
<th>Absolute Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Locations Within pilot corridor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm Hill Blvd: Eden Bower Ln - Lonesome Pine Rd</td>
<td></td>
<td>1,149</td>
<td>1,248</td>
<td>99</td>
<td>9%</td>
</tr>
<tr>
<td>Farm Hill Blvd: McGarvey Ave - Jefferson Ave</td>
<td></td>
<td>935</td>
<td>1,089</td>
<td>154</td>
<td>16%</td>
</tr>
<tr>
<td>Jefferson Ave: Highland Ave to Alameda de las Pulgas</td>
<td></td>
<td>1,325</td>
<td>1,476</td>
<td>151</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Parallel Routes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodside Road: I-280 to Alameda de las Pulgas</td>
<td></td>
<td>3,080</td>
<td>3,207</td>
<td>127</td>
<td>4%</td>
</tr>
<tr>
<td>Edgewood Road: I-280 to Alameda de las Pulgas</td>
<td></td>
<td>1,864</td>
<td>1,855</td>
<td>-9</td>
<td>-1%</td>
</tr>
<tr>
<td><strong>Other Potential Diversion Routes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodside Rd: Alameda de las Pulgas to El Camino Real</td>
<td></td>
<td>2,543</td>
<td>3,011</td>
<td>468</td>
<td>18%</td>
</tr>
<tr>
<td>Highland Ave: Laurel Way to Jefferson Avenue</td>
<td></td>
<td>61</td>
<td>84</td>
<td>23</td>
<td>38%</td>
</tr>
<tr>
<td>Jefferson Ave: Utah Way and Farm Hill Boulevard</td>
<td></td>
<td>365</td>
<td>468</td>
<td>103</td>
<td>28%</td>
</tr>
<tr>
<td>Dover Rd: Lancaster Way and Alameda de las Pulgas</td>
<td></td>
<td>45</td>
<td>46</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>McGarvey Ave: Farm Hill Blvd and Fernside St</td>
<td></td>
<td>461</td>
<td>681</td>
<td>220</td>
<td>48%</td>
</tr>
<tr>
<td>Lancaster Way: Jefferson Ave and Harding Ave</td>
<td></td>
<td>30</td>
<td>24</td>
<td>-6</td>
<td>-20%</td>
</tr>
<tr>
<td>Bret Harte Dr: Emerald Hill Rd and Glennan Dr</td>
<td></td>
<td>42</td>
<td>40</td>
<td>-2</td>
<td>-5%</td>
</tr>
</tbody>
</table>

The change in traffic volumes between May 2015 and May 2016 suggest that there has been some growth in traffic to and from the I-280 corridor in Redwood City. As shown previously with the volumes along I-280, there has been an increase in volumes in the area, not necessarily due to the changes on Farm Hill Boulevard.

**OBJECTIVE 8:**
Ensure that the project does not create air quality impacts.

*Why:* Increased stopping and starting by vehicles can increase vehicle emissions and negatively impact air quality.

*Measurement:* Air quality changes were estimated by modeling vehicle emissions at the controlled intersections within the project limits. Data on traffic volumes, lane configurations, and signal timing before construction and after the pilot were input into Synchro, a traffic analysis and modeling software program. Emissions estimates are standard measures of effectiveness “MOE”s reported by the program. The morning peak hour was picked for the analysis because the volumes are highest in the morning for the corridor and it will result in a more conservative estimate of the air quality changes.

*Outcome:* The change in emissions during the morning peak hour (8 AM to 9 AM) is shown below in Table 22 for carbon monoxide (CO), Table 23 for nitrous oxides (NOX) and Table 24 for volatile organic compounds (VOC). Emerald Hill Road had no changes in estimated emissions, while the other intersections experienced increases. The volume of emissions as a whole is very small, and does not exceed the Bay Area Air Quality Management District (BAAQMD) thresholds of significant impacts for air quality. These thresholds are shown in Table 25.

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Pre-Pilot</th>
<th>Post Pilot</th>
<th>Absolute Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hill Blvd/ Emerald Hill Road</td>
<td>2.69</td>
<td>2.69</td>
<td>0.00</td>
<td>0%</td>
</tr>
<tr>
<td>Farm Hill Blvd/ Glennan Drive</td>
<td>1.67</td>
<td>1.92</td>
<td>0.25</td>
<td>15%</td>
</tr>
<tr>
<td>Farm Hill Blvd/ McGarvey Avenue</td>
<td>1.65</td>
<td>2.47</td>
<td>0.82</td>
<td>50%</td>
</tr>
<tr>
<td>Farm Hill Blvd/ Jefferson Avenue</td>
<td>2.03</td>
<td>2.99</td>
<td>0.96</td>
<td>47%</td>
</tr>
</tbody>
</table>
### Table 23: Change in NOx Emissions (kg) in AM Peak Hour

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Pre-Pilot</th>
<th>Post Pilot</th>
<th>Absolute Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hill Blvd/ Emerald Hill Road</td>
<td>0.52</td>
<td>0.52</td>
<td>0.00</td>
<td>0%</td>
</tr>
<tr>
<td>Farm Hill Blvd/ Glennan Drive</td>
<td>0.32</td>
<td>0.37</td>
<td>0.05</td>
<td>16%</td>
</tr>
<tr>
<td>Farm Hill Blvd/ McGarvey Avenue</td>
<td>0.32</td>
<td>0.48</td>
<td>0.16</td>
<td>50%</td>
</tr>
<tr>
<td>Farm Hill Blvd/ Jefferson Avenue</td>
<td>0.39</td>
<td>0.58</td>
<td>0.19</td>
<td>49%</td>
</tr>
</tbody>
</table>

### Table 24: Change in VOC Emissions (kg) in AM Peak Hour

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Pre-Pilot</th>
<th>Post Pilot</th>
<th>Absolute Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hill Blvd/ Emerald Hill Road</td>
<td>0.62</td>
<td>0.62</td>
<td>0.00</td>
<td>0%</td>
</tr>
<tr>
<td>Farm Hill Blvd/ Glennan Drive</td>
<td>0.39</td>
<td>0.45</td>
<td>0.06</td>
<td>15%</td>
</tr>
<tr>
<td>Farm Hill Blvd/ McGarvey Avenue</td>
<td>0.38</td>
<td>0.57</td>
<td>0.19</td>
<td>50%</td>
</tr>
<tr>
<td>Farm Hill Blvd/ Jefferson Avenue</td>
<td>0.47</td>
<td>0.69</td>
<td>0.22</td>
<td>47%</td>
</tr>
</tbody>
</table>

### Table 25: BAAQMD Thresholds of Significance for Operational-Related Projects

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Tons/year</th>
<th>Pounds/day</th>
<th>Kilograms/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO(^2)</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>25</td>
<td>137</td>
<td>62</td>
</tr>
<tr>
<td>PM(_{10})^3</td>
<td>15</td>
<td>82</td>
<td>37</td>
</tr>
</tbody>
</table>

\(^1\) Source: BAAQMD CEQA Guidelines Assessing the Air Quality Impacts of Projects and Plans, May 2011

\(^2\) CO: Carbon monoxide only has a threshold of 9.0 parts per million (8-hr average) and 20.0 parts per million (1-hr average)

\(^3\) VOC: Volatile Organic Compounds

\(^4\) PM\(_{10}\): Particulate Matter with diameter of 10 mm or less

### OBJECTIVE 9:
Design the street for all roadway users and increase the number of people using active forms of transportation.

**Why:** A complete street design provides facilities for users of all ages and abilities – people walking (with strollers, wheelchairs, etc.), riding the bus, riding a bike, or driving a car. In the General Plan and Climate Action Plan, Redwood City has committed to making it safe and convenient to travel in Redwood City without driving.

**Measurement:** This objective is measured qualitatively by documenting the facilities provided for various roadway users and quantitatively by measuring whether the number of people walking, riding bikes, and riding transit has increased.
Data was also collected on the number of people riding bikes, walking along the street, and crossing the street during the morning (7:00 AM – 9:00 AM) and evening (4:00 PM – 6:00 PM) peak periods. One of the City’s traffic data consultants videotaped the intersections of Farm Hill Boulevard with Emerald Hill Road, Glennan Drive, Jefferson Avenue, and McGarvey Avenue and then reviewed the footage to count the number of people walking and biking at the study intersections.

SamTrans’ buses are equipped with automated passenger counters that track how many people get on or off a bus at each stop along the bus’s route. SamTrans provided on/off data for stops within the pilot corridor to the City for the months of May 2015 and May 2016.

Outcomes:

**Complete Street Design**

Table 26 describes the facilities for different modes of transportation on Farm Hill Boulevard between Jefferson Avenue and McGarvey Avenue before and during the pilot. This location is representative of the corridor.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>• Continuous sidewalks</td>
<td>• Continuous sidewalks</td>
</tr>
<tr>
<td></td>
<td>• Buffer between moving traffic and sidewalk provided by parking and/or bicycle lanes</td>
<td>• Buffer between moving traffic and sidewalk provided by parking and/or bicycle lanes</td>
</tr>
<tr>
<td></td>
<td>• Crossing the street requires crossing four lanes of vehicle traffic</td>
<td>• Reduced the number of lanes crossing from four lanes to three lanes of vehicle travel way</td>
</tr>
<tr>
<td></td>
<td>• Yield symbols (“shark teeth”) in advance of uncontrolled crosswalks</td>
<td>• Yield symbols (“shark teeth”) in advance of uncontrolled crosswalks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Painted pedestrian refuge island</td>
</tr>
<tr>
<td>Transit</td>
<td>• Combination of red zones and pole stops</td>
<td>• Combination of red zones and pole stops</td>
</tr>
<tr>
<td></td>
<td>• Passengers going to a bus stop across the street requires crossing four lanes of vehicle traffic</td>
<td>• Reduced the number of lanes crossed for passengers going to a bus stop across the street from four lanes to three lanes of vehicle traffic</td>
</tr>
<tr>
<td>Bicycling</td>
<td>• Shared travel lane with “sharrow” roadway markings</td>
<td>• Bicycle lane added throughout pilot project corridor</td>
</tr>
<tr>
<td></td>
<td>• Striped shoulder used as de facto bike lane when vehicles aren’t parked on-street</td>
<td></td>
</tr>
<tr>
<td>Driving</td>
<td>• Two lanes in each direction</td>
<td>• One lane in each direction and a center two-way left-turn lane</td>
</tr>
<tr>
<td></td>
<td>• Left-turns made from through-left lane</td>
<td>• Left turns made from left turn pocket or center two-way left-turn lane</td>
</tr>
<tr>
<td></td>
<td>• Painted edge-line provided a small buffer between parked cars and moving traffic</td>
<td>• Bicycle lane provides buffer between parked cars and moving traffic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Eastbound right-turn pocket added at Farm Hill Blvd &amp; McGarvey Ave intersection</td>
</tr>
</tbody>
</table>

Note: Additions/changes are **bolded**
Transit Ridership

In Table 27, average daily ridership data for SamTrans buses at all the stop locations along Farm Hill Boulevard and Jefferson Avenue (from Alameda de las Pulgas to Cañada College) is summarized. Over the evaluation period, ridership decreased by 15 percent. It should be noted that overall transit ridership for SamTrans in May 2016 has decreased (three percent) as well.

<table>
<thead>
<tr>
<th>Route</th>
<th>Average Daily Boardings and Alightings</th>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
<th>Absolute Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>274 (weekday service)</td>
<td></td>
<td>392</td>
<td>335</td>
<td>-57</td>
<td>-15%</td>
</tr>
<tr>
<td>278 (Saturday service)</td>
<td></td>
<td>41</td>
<td>35</td>
<td>-6</td>
<td>-15%</td>
</tr>
</tbody>
</table>

Source: SamTrans (May 2015 and May 2016, stops between and including Cañada College and Jefferson Ave/Alameda de las Pulgas)

Bicycle Use

In Table 28, the number of bicycle riders is compared between the Pre-Pilot and Post-Pilot conditions. The number of people riding bicycles through the study intersections increased during the pilot, from four to seven additional people depending on the intersection, during the peak periods when the data was collected.

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of People Riding Bikes</th>
<th>Pre-Pilot</th>
<th>Post-Pilot</th>
<th>Absolute Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hill Blvd at Glennan Drive</td>
<td></td>
<td>3</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Farm Hill Blvd at Jefferson Ave</td>
<td></td>
<td>5</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Farm Hill Blvd at McGarvey Ave</td>
<td></td>
<td>10</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Farm Hill Blvd at Emerald Hill Road</td>
<td></td>
<td>2</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Quality Traffic Data, Turning Movement Counts (May 27-28, 2015 and May 31, 2016; 7-9 AM and 4-6 PM)

People Walking

In Table 29, the number of people walking through the study intersections increased or stayed the same in the Post-Pilot at all but one location. The exception to this was at Farm Hill Boulevard and Emerald Hill Road, where one less person walked along the street.
Table 29: People Walking Along the Street during Peak Periods

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of People Walking Along the Street</th>
<th>Pre-Pilot</th>
<th>Post Pilot</th>
<th>Absolute Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hill at Glennan</td>
<td></td>
<td>10</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Farm Hill at Jefferson</td>
<td></td>
<td>9</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Farm Hill at McGarvey</td>
<td></td>
<td>0</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Farm Hill Blvd at Emerald Hill Road</td>
<td></td>
<td>30</td>
<td>29</td>
<td>-1</td>
</tr>
</tbody>
</table>


In Table 30, the number of people crossing the study intersections increased or stayed the same in the Post-Pilot data collection at all but one location. The exception to this was at Farm Hill Boulevard and Glennan Drive, where one less person crossed the street. The biggest changes occurred at the intersection with McGarvey Avenue where the number of people walking along the street increased by 14 people and the number of people crossing increased by 10 people.

Table 30: People Crossing the Street during Peak Periods

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of People Walking Along the Street</th>
<th>Pre-Pilot</th>
<th>Post Pilot</th>
<th>Absolute Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hill at Glennan</td>
<td></td>
<td>9</td>
<td>8</td>
<td>-1</td>
</tr>
<tr>
<td>Farm Hill at Jefferson</td>
<td></td>
<td>2</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Farm Hill at McGarvey</td>
<td></td>
<td>2</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Farm Hill Blvd at Emerald Hill Road</td>
<td></td>
<td>12</td>
<td>12</td>
<td>0</td>
</tr>
</tbody>
</table>


OBJECTIVE 10:
Increase the share of people choosing active forms of transportation to access Stulsaft Park

Why: Stulsaft Park is a unique feature of the neighborhood that attracts all types of visitors from various locations. Having more people access Stulsaft Park by walking, riding bikes, and taking the bus increases physical activity and increases access to the park by reducing the demand for the limited parking supply.

Measurement: An intercept survey was performed in July 2015 and July 2016 to collect information on how people got to Stulsaft Park and on their perceptions of comfort and safety using Farm Hill Boulevard. Intercept surveys are surveys that are conducted in-person, in a public setting.

Since the respondents in the Post-Pilot surveys were potentially different respondents than the Pre-Pilot, this data was not used for the evaluation, but it is provided in Appendix A for reference. In general, it is difficult to get an accurate representation of the public’s opinion on the Pre-Pilot and Post-Pilot changes given the different sample size of respondents, limited sample size of respondents, and
inability to capture respondents for each of the different transportation modes (i.e. pedestrians, bicyclists, transit users, and drivers).

**OBJECTIVE 11:**
Increase feelings of comfort and safety for all roadway users

*Why:* Farm Hill Boulevard and Jefferson Avenue serve important roles within the community and neighborhood – both connecting people to regional destinations (jobs outside the city, airports, etc.) and to local ones (park, places of worship, neighbors, etc.) – and people should feel safe using it.

*Measurement:* The intercept survey described above collected data on perceptions of comfort and safety of people using Farm Hill Boulevard and Jefferson Avenue.

Similar to Objective 11, an intercept survey was performed in July 2016 after the pilot to collect information on the change in feelings of comfort and safety for all roadway users. However, since the respondents in the Post-Pilot surveys were different respondents than the Pre-Pilot, this data was not used for the evaluation, but is provided in Appendix A for reference.

**Summary of Evaluation**

Multiple performance measures set forth by the City were evaluated. Table 31 summarizes the measures and key findings for each. Generally, the pilot project achieved the desired goals of the project, excluding the increase in emissions and congestion, as well as the reduction in transit ridership. It should be noted that the emissions and congestion are two measures that are correlated since the congestion and the emissions increased due to the increase in vehicle demand. The reduction in transit ridership is not necessarily due to the project itself since there is no direct correlation and the overall transit system ridership also decreased from May 2015 to May 2016.

It should also be noted that the amount of diversion of traffic to alternate routes is inconclusive because the number of vehicles on each corridor, including the project corridor increased. This increase in vehicle demand is typical of the increase in vehicle demand and traffic congestion in the general area, as shown by the increase in volumes along I-280.
Table 31: Summary of Evaluation Measures and Findings

<table>
<thead>
<tr>
<th>Measure</th>
<th>Goal</th>
<th>Observed Result</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality (Amount of Vehicle Emissions)</td>
<td>↓</td>
<td>↑</td>
<td>The vehicle emissions increased due to the increase in vehicle demand.</td>
</tr>
<tr>
<td>Congestion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Intersection delay</td>
<td>↔</td>
<td>↑</td>
<td>• Intersection delay increased due to increase in vehicle demand.</td>
</tr>
<tr>
<td>• Corridor travel times</td>
<td>↔</td>
<td>↓</td>
<td>• Travel times went down.</td>
</tr>
<tr>
<td>Ease of crossing the street</td>
<td>↑</td>
<td>↑</td>
<td>The % of vehicles yielding to pedestrians went up. The average wait time went down.</td>
</tr>
<tr>
<td>Ease of entering traffic (avg delay for side-street vehicles)</td>
<td>↓</td>
<td>↓</td>
<td>Average delay for vehicles making a left turn decreased.</td>
</tr>
<tr>
<td>Complete streets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Number of passengers getting on and off SamTrans buses</td>
<td>↑</td>
<td>↑</td>
<td>• Transit boardings and alightings has decreased.</td>
</tr>
<tr>
<td>• Number of people riding bikes</td>
<td>↑</td>
<td>↑</td>
<td>• # of people riding bicycles increased</td>
</tr>
<tr>
<td>• Number of people walking along the street</td>
<td>↑</td>
<td>↑</td>
<td>• # of pedestrians increased walking along the street</td>
</tr>
<tr>
<td>• Number of people crossing the street</td>
<td>↑</td>
<td>↑</td>
<td>• # of pedestrians increased crossing the main roadway</td>
</tr>
<tr>
<td>Safety (# of Crashes)</td>
<td>↓</td>
<td>↓</td>
<td>The number of average monthly crashes went down after project began.</td>
</tr>
<tr>
<td>Speeding</td>
<td>↓</td>
<td>↓</td>
<td>The 85th and 50th percentile speed, vehicles exceeding the speed limit and the speed limit by 10 mph all decreased.</td>
</tr>
<tr>
<td>Traffic Diversion</td>
<td>↔</td>
<td>?</td>
<td>Inconclusive because vehicle traffic increased on the project corridor and on all other routes.</td>
</tr>
</tbody>
</table>

Improvement: ↑↓ Worsened: ↑↓ Inconclusive: ?
Appendix A – Survey Results (Physical Appeal and Comfort of Use)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Very Comfortable</th>
<th>Comfortable</th>
<th>Neutral</th>
<th>Not Comfortable</th>
<th>Very Uncomfortable</th>
</tr>
</thead>
<tbody>
<tr>
<td>How comfortable to you feel traveling along Farm Hill and/or Jefferson?</td>
<td>13%</td>
<td>35%</td>
<td>40%</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>How safe do you feel traveling along Farm Hill and/or Jefferson?</td>
<td>27%</td>
<td>31%</td>
<td>26%</td>
<td>14%</td>
<td>2%</td>
</tr>
<tr>
<td>How safe do you feel crossing Farm Hill and/or Jefferson?</td>
<td>14%</td>
<td>30%</td>
<td>35%</td>
<td>13%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Number of respondents: 85

Sources:
Intercept Surveys 7/18/15 and 7/23/15
Intercept Surveys 7/1/2016

<table>
<thead>
<tr>
<th>Questions</th>
<th>Very Comfortable</th>
<th>Comfortable</th>
<th>Neutral</th>
<th>Not Comfortable</th>
<th>Very Uncomfortable</th>
</tr>
</thead>
<tbody>
<tr>
<td>How comfortable to you feel traveling along Farm Hill and/or Jefferson?</td>
<td>17%</td>
<td>37%</td>
<td>29%</td>
<td>15%</td>
<td>2%</td>
</tr>
<tr>
<td>How safe do you feel traveling along Farm Hill and/or Jefferson?</td>
<td>18%</td>
<td>39%</td>
<td>34%</td>
<td>9%</td>
<td>0%</td>
</tr>
<tr>
<td>How safe do you feel crossing Farm Hill and/or Jefferson?</td>
<td>4%</td>
<td>35%</td>
<td>47%</td>
<td>14%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Number of respondents: 44
Speed Comparison
Aggregate of all three locations, both directions, all times of day

Before (May 2015)
- Within Speed Limit: 31%
- 0-5 MPH Over Limit: 36%
- 5-10 MPH: 23%
- 10+ MPH: 11%

After (May 2016)
- Within Speed Limit: 51%
- 0-5 MPH Over Limit: 30%
- 5-10 MPH: 14%
- 10+ MPH: 4%
Hi:

I've generally been satisfied with the results of the modified pilot project on Farm Hill Boulevard, partly in that some aspects I doubted have not turned out so bad, but also in the utility of the central turn lane. And I appreciate the elimination of the merge as Jefferson heads south toward Highland. But I do have a few comments.

1) The update on your web page states that the number of accidents has decreased compared to the previous five-year average. This change is NOT statistically significant, something you ought to know. While it is okay to give the numbers, the conclusion must be removed from the report; it is basically a fraudulent statement, but easily fixed.

2) On the other hand, the reduction in speeding does seem valid (and accords with my own daytime observations), although I very strongly doubt there has been any effect on late-night speeding, when there is very little traffic.

3) There is an entirely-unused lane (and marked no-access) in the downhill direction between Eden Bower and Lonesome Pine. (It cannot be used for turns, since there are no roads or driveways on the west side of Farm Hill in that stretch.) Is there a reason why you don't provide a second downhill traffic lane in that stretch?

4) The transition from one to two lanes (and the bike lane location) as Jefferson approaches Alameda de las Pulgas remains confusingly marked.

5) One long-term observation, unrelated to the project, is that the right turn from McGarvey onto Farm Hill seems largely blind (given the typical speed of traffic on Farm Hill). You might want to take a look at that, but I don't know if other residents would agree.

Thanks for considering comments.

Best regards, Al Eisner, Redwood City
I'd like to suggest an improvement to the striping of Jefferson Avenue. My area of concern is westbound Jefferson where it makes a left turn at Highland Avenue. I frequently see cars in the right lane, which are supposed to continue straight on to Highland, follow the left turn and continue on Jefferson. Not only does this cause problems for cars in the left lane correctly continuing on Jefferson, but is dangerous for anyone in the bike lane - which is where the cars continuing in the right lane end up. Many other "complicated" lane conversions between cars and bicycles have started using green paint (either solid, striped, or both) to delineate bike traffic versus car traffic. I think adding this to the left turn will help protect bike riders, but will also help reinforce that the right lane of Jefferson is supposed to exit on to Highland. I'm driving through this section of Jefferson multiple times per day and have observed many near misses where cars are not negotiating this turn correctly. I suspect it's only a matter of time before there's an accident, if there hasn't been one already.

Thank you.

Tracy Rogers
Hello RWC,

I am a 13 year resident of the Emerald Hills neighborhood of Redwood City and a frequent bike commuter on Farm Hill Blvd (several days / week) . I am writing to endorse the current pilot configuration of traffic on Farm Hill. The changes made as part of the Farm Hill pilot project have my commute much safer. The reconfigured lanes make it much easier to cross lanes and make left turns. Cars do seem to go a bit slower (not as much racing), so it is easier for bikes to interact with car traffic when needed. The new lanes also put more lateral distance between bikes and cars, making it much easier for cars to comply with the 3 foot passing law. Please count me in as in favor of the trial setup, and I encourage you to adopt it permanently.

Cheers,

Thomas (Tom) Greene
From: Mary Askins
To: GRP-Farm Hill Feedback
Subject: Farm Hill Blvd Lane Configuration - I vote keep it.
Date: Friday, September 16, 2016 9:34:14 AM

I must go up and down Farm Hill 3 times a day. After having personally witnessed a drag race when it was a two lane blvd that resulted in the near death of one of the drivers, I can say without a doubt that the little inconvenience we're experiencing now is well worth the added safety we're getting. I applaud the City for this change and hope it will be adopted as a permanent lane configuration.

Thank you,

--

Mary E. Askins
I'm aware that your year pilot scheme if up shortly.

As a resident on that road, please leave it as it is. It is massively safer than it was.

It is still a race track, as people seem to think it is a 50mph road, but way better than it was.

Congestion is limited to two 1hr windows in the morning and evening and gives kids and cyclists a sporting chance.

The only request I would have is resurface the road and restripe it to make it clear. Especially at the turn off towards Canyon Inn, the striping and restriping has made that section a mess.

Regards
Robbie

Sent from a mobile location
Hello,

Driving this road many times a day, my opinion is 2 lanes all the way up especially to a major freeway and one down.

I am not going to be able to attend the meeting. I grew up in farm hills and have bought my parents' house.

In the mornings the traffic when school is in goes all the way down almost to the Alameda. A main road leading to a major freeway 280 should be 2 lanes all the way up. People are using the middle lane to pass buses and trucks and it is scary.

I am in agreement with the one lane from coming down Farm Hill Blvd but really feel there needs to be 2 going up especially with all of the growth from the apts downtown. Trying to get onto Farm Hill from PCC is awful anytime.

Donna McLaren
I have spent my whole life living on farm hill blvd. and I support every aspect of the pilot. I feel that the road has become much safe for cars, bikes, walkers, and the community. The cars seem to travel slower and I am able to park on the street without having to fear for my life when exiting from the drivers side door. I bike up and down the street using both bike lanes, which provide ample lane for safe travel during commute times. I appreciate the courage that this pilot took, changing Farm Hill Blvd. to a neighborhood street from freeway was the right decision.

Thank you,

Kyle Hart
Hello—As you conclude your study, we have one comment to share. We believe the merge lane at Emerald Hill and Cambridge going toward 280 is problematic given the shortness of the opportunity to merge. As we live on the corner of Cambridge and Farm Hill, the merge appears to us to have resulted in an increased level of traffic noise as cars rapidly accelerate to get in front of merging cars. We don’t know what solution there would be to this problem. Would a traffic light at Emerald Hill & Farm Hill be better than the current 3-way stop so that it would be configured as it is at Glennan with two lanes instead of four at the intersection (in other words, a single lane in each direction)? This would continue a single lane going up toward 280 until the houses on Farm Hill end and it then opens up to two lanes westbound. Thanks for your efforts.

David Rolandelli & Mildred Alvarez
Hi,

I would like to see the pilot lane change configuration be made permanent.

Thanks,

Michael Burdette
Can't attend the meeting but please count me in on the side of making the pilot configuration permanent.
R. Wade
Please discontinue the pilot (return to original lane configuration).

Sent from my handheld super computer
I drive down Farm Hill Road and Jefferson to Caltrain at Sequoia Station every weekday. The (failed) project has led to a significant increase in traffic congestion in the afternoon, and several near accidents, particularly at the left hand curve after the Alameda as people do not realize until it almost too late that lanes converge into one, forcing dangerous last minute merging. I never see riders in the bike lane.

In the early morning, bike riders without sufficient safety lighting or reflective gear are risking their lives by riding in the right lane "bike path" (really?!) 15-20 mph slower than the pace of traffic. This too forces dangerous last minute merging into the one congested lane heading towards El Camino.

The "project" was ill conceived, a disaster in effect and needs to be reversed. The waste of tax payer funds should also be the topic of discussion with the original decision makers held to account.
Dear Advisory Committee,

Thank you for the opportunity to provide comments on the Farm Hill pilot lane reconfiguration. Following the adjustments made in response to earlier feedback (e.g. right-turn-only lane between Alameda and Highland) it seems to be working quite well. I drive it almost every weekday morning and afternoon between Highland and 280. The only trouble I've observed is right around 8am when sometimes cars stack up all the way from the light at Jefferson, blocking the entrance and left-hand turn to Highland.

Sincerely,
Susan Vargas
Redwood City
The changes are jumping the gun. These changes should be delayed until all the apartments, and condos are completed. The traffic studies would reflect a closer outcome of what is actually needed. I do find restricting the flow of traffic to not be beneficial to our community. Why isn't the section of Jefferson between El Camino and Alameda not being studied. Personally I feel that section to be the most dangerous compared to Farmhill.

Sent from my iPad
I would like to say I cant stand the Test Farmhill !!!
I used to live right on Farmhill and now about 1/4 mile away.

The traffic backs up really bad at commute times. Also, having 2 lanes then 4 lanes weaving in and out on FarmHill, is an accident waiting to happen.

I still see people driving in the lanes that are not there anymore!! So you think you are in one lane and could easily side swipe someone who is driving in a lane that is marked off now!

You are increasing housing and business’ in Redwood City, so this was one of the MOST RIDICULOUS decisions I have seen Redwood City make. I have been living here for over 40 years.

FarmHill is a Freeway exit, so 4 lanes are needed!! Dumb decision to make a 280 ON Ramp/Off Ramp smaller. No sense at all.
Roads are crowded now and making a major street smaller just doesnt work!!

PLEASE PLEASE PLEASE put Farmhill back to 4 lanes !!! ASAP !!!

Thankyou,
Renee Faucher
Everyone agrees that traffic has become a huge annoyance in the Bay Area. It's not an exaggeration to say it's life altering. Traffic is woven into our daily plans. Traffic matters. This arrangement on Farmhill does not help. It makes matters worse. Why on earth would we want to make things worse for people instead of better. This arrangement clogs the street and keeps traffic thick and slow and even stopped during the morning commute time. Please change it back.
I'm a resident in Alameda De Pulgas. I use farm hill blvd daily on weekday. I've observed that people don't slow down by reducing the farm hill blvd to one lane. Instead, I've seen some drivers and speeders launching their cars on stop signs and making illegal passes to beat whomever going 35mph legal limit. Uphill and downhill. I've been tailgated multiple times because I'm going only 35mph on downhill and drivers made unsafe actions, including passing on shoulders.

The interaction I'm taking about: Farm Hill blvd and Emerald Hill Rd.

Diverting one lane road to two lanes for short period of length doesn't help people from speeding. People are more edgy when they're on the stop sign intersection, because some drivers are so frustrated tailgating a car for 35mph, try to skip the car ahead of them by making 'California stop' on stop signs and going 45mph afterwards.

If you truly plan to make drivers slower and safer, make only one lane with no branching out at stop sign intersections, and install some speed humps from people going over 40mph periodically.

One lane each way, every car stops, no passing, no chances, no confusions.

1.5 lane is really worse way to deal with drivers who don't keep rules.

I'm open to your suggestions. Due to my busy schedule I'm unlikely to attend the hearing.

Hiroshi Horii

Sent from my iPhone
Dear Sir or Madam,

     We live off of Eden Bower in Alverno Ct. near the top of Farm Hill Blvd. We were concerned that drivers particularly coming West up Farm Hill would speed once they freed themselves from a single lane as it becomes two lanes a bit beyond Emerald Hill Rd. Well there is some of that speeding that makes turning left for us down Farm Hill into town dangerous particularly during morning rush hour. Nevertheless, it has not been as bad as we thought it may be and there has been no crashes yet. There will be one eventually I fear. Besides this concern up in the Western part of Farm Hill, my family thinks the change is best for the whole extent of Farm Hill Blvd. Traffic is generally slower through this dense neighborhood. My family hopes the single lane is kept in place. Thank you.

________________________

Tim Rea
Turn Farmhill back to a boulevard as it was before. This road needs to be 4 lanes each direction. It creates too much congestion and problems choking it down to single lanes. Change it Back!

GB
Subject: Re: Farm Hill Pilot Project Update

Jessica - I like the Farm Hill changes very much and would like to have the pilot become permanent. I believe the changes are much safer - for drivers, bikers and pedestrians. One small request is to please narrow the two double yellow lines at Glennan (and Farm Hill). The City's in the process of repaving and re-striping Glennan right now, so if it's possible to incorporate that change as part of the re-striping, that would be great. It would be nice for a car to be able to turn right onto Farm Hill, even if another car is waiting to turn left at the light. I like having 2 double yellows, but less space between them would be appreciated. Also, I like the dedicated left turn lane to turn left onto Glennan from Farm Hill. Would it be possible to make that dedicated turn lane a little longer? One other item is where the lanes merge on Jefferson right after the light at Alameda (before the hill). It's sometimes difficult for the right hand lane to merge left. I'm not sure what the fix is, but I'm sure others have some suggestions. Thanks,

Kathryn Barnard

On Thu, Sep 15, 2016 at 4:24 PM, CD-Jessica Manzi <jmanzi@redwoodcity.org> wrote:

As you are aware, the 1-year Farm Hill pilot is coming to a close. The City hired a traffic data collection firm to collect the "post pilot" data which has been provided to Kimley-Horn & Associates to evaluate the project. These data have been posted on the project website (www.redwoodcity.org/farmhill) and are available for anyone who is interested. When it is complete, the evaluation and a summary of the findings will be posted on the website as well.

The results of the evaluation will be presented to the Complete Streets Advisory Committee at a special meeting on October 5, 2016 at 6:30 pm at the Council Chambers in City Hall (1017 Middlefield Road). Interested parties are encouraged to attend the meeting to hear a presentation on the pilot evaluation and to provide feedback. At the meeting, the Committee will decide on its recommendation to the City Council:
discontinue the pilot (return to original lane configuration) or to make the pilot configuration permanent.

If you are unable to attend the meeting, you may continue to provide feedback to the project’s email address: farmhillfeedback@redwoodcity.org. Due to the volume of emails that we expect to receive, please understand if we aren’t able to respond to individual comments. All feedback will be collected and shared with the Complete Streets Advisory Committee and the City Council.

We look forward to seeing you on October 5th!

Jessica Manzi, PE
Senior Transportation Coordinator, Community Development Department
Phone: (650)780-7372
E-mail: jmanzi@redwoodcity.org
www.redwoodcity.org
Dear Jessica Manzi,

I thought I’d let you know what I think of the Farm Hill study. I like the new street configuration. I like seeing bicyclists in bike lanes instead of occupying narrow street lanes. It is also easier for me to back into my driveway (at Emerald Hill Rd and Farm Hill) because the lane going east is wider (two lanes merging into one). I do sometimes see a long line of cars going west in the morning, but I go east. Based on my commute and commute time I am not affected by the lane restrictions. I also like the single wider lane better than the original two narrow lanes on Jefferson west of Alameda de las Pulgas.

Tom Pressburger
From: Eric Weiss  
Sent: Wednesday, September 28, 2016 9:31 PM  
To: GRP-Farm Hill Feedback  
Subject: Farm Hill  

I think farmhill should go back to being 4 lanes. The merging and unmerging and then merging again in my opinion is dysfunctional.

Thank you.

Eric
Hello City Council,
I am unable to make the October 5th meeting due to prior arrangements. I regularly walk up and down Farm Hill multiple times a week and the lane striping has had absolutely no impact on slowing down traffic during non commute hours. I have nearly been hit trying to cross the street at Farm Hill and McGarvy on more than one occasion in the past few months.

I also drive Farm Hill on a regular basis (M-F) during commute hours. The lane striping has slowed traffic to an absolute crawl which has cased cars to pass in the center lane to get around slower traffic and create drag races where the lanes merge.

The folks who think this has made Farm Hill safer are delusional. I have witness all this personally. Please put the lanes back the way they were before this pilot.

--

Thanks
Cris
From: Michelle Beatty  Sent: Wednesday, September 28, 2016 3:05 PM  To: GRP-Farm Hill Feedback  Subject: The bike lane on FarmHill Blvd. is important

I want to give my feedback on the changes to Farm Hill Blvd. I am a Redwood City resident and I have been riding my bike on Farm Hill between McGarvey and Canada College about 3 times a week for many months now. I have seen preteens and teens riding this stretch many many times while I am out riding. It is imperative that we keep a safe bike lane for these youngsters. I can't believe that people are putting the 1 or 2 minute difference in travel time before keeping our kids safe! Keep the change. Michelle Beatty RWC
From: CD-Jessica Manzi
To: CD-Stacy Nicol
Subject: Fw: This was a terrible idea, the traffic is ridiculous compared to previous traffic flow, please change it back to the way it was previously.
Date: Thursday, September 29, 2016 7:17:40 AM

From: Pam Boyle <>
Sent: Wednesday, September 28, 2016 10:33 AM
To: GRP-Farm Hill Feedback
Subject: This was a terrible idea, the traffic is ridiculous compared to previous traffic flow, please change it back to the way it was previously.
From: carolynf
Date: September 29, 2016 at 11:19:07 AM PDT
To: "farmhillfeedback@redwoodcity.org" <farmhillfeedback@redwoodcity.org>
Cc: GRP-City Council <council@redwoodcity.org>, CD-Jessica Manzi <jmanzi@redwoodcity.org>
Subject: Farm Hill Blvd.
Reply-To: carolynf <>

I want you to know the traffic situation Wed. morning 9/28 at 8:04. When I made a right turn onto Fernside from Roosevelt, I was the 14th car in line waiting to turn left onto McGarvey. The traffic on McGarvey was backed up past the top of the hill that is between Fernside and the Alameda. These cars were waiting to get through the light at FH Blvd. Turning right onto Farm Hill, I counted 38 cars in line waiting for the green light at McGarvey. Of course, as usual, I had to wait for 15 cars to go through the intersection of FH and Jefferson before I could turn left onto Jefferson and eventually make my way to PCC.

The week before on Mon. 9/19 I counted 49 cars on FH waiting to get through the green light at the intersection of McGarvey and FH. Cars coming up from Jefferson were not able to proceed through the intersection of Jefferson/FH when they got the green light because the 49 cars were backed all the way down to that intersection.

I have found the streets more dangerous to drive. Several times I have seen cars using the 'turn lane' to pass cars. Bicyclists should not be riding on the Alameda between Brewster and Harding, it is too narrow on that curve and someday, will result in a head-on accident when a car is trying to pass them. I also, as do others, use Harding when driving from Canyon Rd to the Alameda.

This 'road diet' has caused many drivers to be frustrated and angry. Who wants to start their day angry but that is what is happening to many
because of the back up in the single lane. This 'pilot' program is a failure. Please give us back our second lane. FH definitely needs to be 2 lanes in each direction.

Carolyn Foster
-----Original Message-----
From: Council-John Seybert <jseybert@redwoodcity.org>
To: sandybball
Cc: GRP-City Council <council@redwoodcity.org>
Sent: Tue, Aug 30, 2016 1:32 pm
Subject: Re: Farm Hill traffic (Farmageddon)

Dear Ms. Bettencourt

On behalf of the City Council, I want to acknowledge receipt of your email and thank you for your comments on Farm Hill Blvd. Your thoughts will be considered by the Council.

Best regards,

John D. Seybert, Mayor
City of Redwood City

From: sandybball> Sent: Tuesday, August 30, 2016 12:59 PM
To: GRP-City Council
Subject: Farm Hill traffic (Farmageddon)

This is to request, yet again, that you put Farm Hill Blvd. traffic lanes back to their former status. Last year, 2088 people signed a petition to the City Council to do just that. The City Council paid little or no attention to the people.

The City Council has had a year to see that it is not working. The City Council has seen fit to allow thousands of apartments to be built in downtown Redwood City. And WOW, when you have this many apartments, you then generate more people and vehicles who wish to use feeder streets (Farm Hill Blvd being one) to get to 280. Well, cutting the lanes down from four to two makes no sense. It is a nightmare.

Years back, you placed stop signs at Emerald Hills Road and Farm Hill. This really helped slow down the traffic. If you put more stop signs on Farm Hill at Edenbower, Farm Hill at Lonesome Pine and Farm Hill at Silver Hill it would at least slow down the traffic. As it is now, with one lane going each
way, people are utilizing the bike lane and the turning lane to pass slower traffic.

Since schools have just begun again, we who live on the attached streets to Farm Hill have the worst time getting onto Farm Hill in the morning and evening hours. You basically have imprisoned us in our neighborhoods.

You say you want to make it more safe for our community. Since the change, there have been more accidents in the past year than previous years. I have researched past years and there have been no deaths due to traffic accidents on Farm Hill. All the accidents involving deaths were on Jefferson east of Alameda.

Again, listen to the people who live here and deal with this everyday. The people petitioned you to put it back to four lanes, please do so.

Thank you.

Sandra Bettencourt,
Jessica Manzi  
Senior Transportation Coordinator  
City of Redwood City  
650-780-7372

Begin forwarded message:

From: Melinda Marks  <>  Date: September 29, 2016 at 8:44:11 AM PDT  
To: farmhillfeedback@redwoodcity.org  
Subject: Feedback on Farm Hill Traffic/Lanes

Hi,
I wanted to send my family's feedback on the lane changes on Farm Hill. I live at Farm Hill (me, my husband, and we have a toddler). We are very happy with the lane changes. We love our neighborhood, but the one thing we did not like before was living on a busy street. Before the lane change, it was extremely dangerous to parallel park by our house. We had two hit and runs of my husband's car, and the other time it was hit, it was totaled. For one of the hit and runs, we heard the crash, but by the time we went outside. Another time, we heard a loud crash, ran outside, and found out that a car hit our neighbor's car (two houses up the street), skipped our car, and hit another car, and sped off. Needless to say, once we got a new car, we never parked on the street, and we often instructed people to park on the driveway or around the corner.

The time that the car was totaled, the woman was claiming that another car was swerving into her lane. She had her son in the car, thankfully he was not hurt.

Since the lane change - we've had 0 such accidents with cars parallel parked by our house because there is more room with the bike lane.

Before the lane change, we also had a tough time pulling in and out of our driveway. Because of the hill and the way the curb is, you do need some time to pull out into the street. With two lanes of traffic so close together, if cars were going by, it would be difficult to pull out and get into the right lane. Now, with the bike lane, if there is traffic, we can pull into the far right, and then wait and safely enter traffic.

It is also much easier to use the middle lane to make left turns into our driveway. Before, if we made a left turn from one of the two lanes, people would jam their brakes not expecting it because the left lanes on both sides of Farm Hill were like racing lanes before the lane change...When there are two lanes available everyone
went way too fast in the left lanes.

So we are very happy with the lane changes. Sometimes it does get backed up, but there is always some time where there are gaps to get in (partly because there is a traffic light a block away).

Thank you so much for the opportunity to give feedback.

Best,
Melinda
Jessica Manzi  
Senior Transportation Coordinator  
City of Redwood City  
650-780-7372

Begin forwarded message:

From: dat nguyen <>  
Date: September 29, 2016 at 8:03:33 PM PDT  
To: "csac@mself.com" <csac@mself.com>,  
"farmhillfeedback@redwoodcity.org" <farmhillfeedback@redwoodcity.org>  
Subject: Strong support to keep Farm Hill lane changes  
Reply-To: dat nguyen >

Dear Farm Hill committee

I wanted to provide feedback to you before your final decision to let you know I fully support the Farm Hill lane changes and think it would be a travesty to change them back. I live on Farm Hill and it has been a very positive change. The street feels much more sane and safe from a driver, pedestrian, and biker's perspective. It is easier to get out of my driveway as well as turn into it from the center lane. It feels safer having my children walk to and from Roy Cloud, which they do daily.

I have two teenage boys and they are now able to bike to their friends' houses that live several miles away. They will also be able to bike to Woodside when they start high school next year. This gives them much needed exercise and autonomy and will make it much to coordinate their transportation, especially since there is no bus line that goes directly to Woodside. My wife now bikes to work periodically. If the street reverts back to 4 lanes, this will no longer be an option since it feels too dangerous to bike without a designated lane. It is also much easier to pass bikes on the road when they have their own lane.

I have noticed no change in traffic or commute times, in spite of driving the street extensively both during peak times and off. I used to pick up my son at PCC at 5pm every night, and did not notice any difference in the time it took to get there and home again. Having the center turn lane makes it much less stressful to turn into the parking lot.

My family very much hopes Farm Hill stays as a three lane road with bike lanes to provide a more livable neighborhood to residents and neighbors and to avoid going back to the expressway it used to be.
Sincerely,
Dat Nguyen
To whom it may concern,

I have found the Farm Hill Blvd pilot program changes to be overall an improvement. While I am frustrated by traffic or extremely slow drivers from time to time, these occasional annoyances are outweighed by the benefits of a larger buffer between opposing traffic lanes (via the center turn lane), a larger buffer between traffic lanes and parked cars and the sidewalk on either side due to the bike lanes, the lack of people coming to a complete stop in a traffic lane for a left turn now that they can use the center turn lane, and calmer traffic in general. I think the changes should be made permanent.

My biggest wish for the pilot’s conclusion, should it become permanent, is that all road indicators and lines be improved to reflect the new normal. In particular, the westbound split at Jefferson and Oak Ridge/Highland needs work. More often than I would like, I’ve seen drivers cruising along in the right lane (which exits to Highland/Canyon) suddenly make the left to continue on Jefferson, without knowing they are not in any valid traffic lane anymore. Although there is now a sign that says “right lane must exit”, I think the signage and markings need to be completely redone from Alameda all the way past that point to reflect the intended usage.

Thanks for continuing to find ways to improve our already-great community,

Matt Lee
PLEASE do not change the lanes back to the way they were!!!! I live on the sharp turn of Jefferson Ave. and for 10 years have had to listened to cars screeching around the curve and have personally witnessed probably a dozen accidents, some were major. I have been discussing and pushing for a change to happen and the pilot change for the past year has been wonderful. I don't remember the last time I heard tires screeching, in anticipation for the loud band of a collision. There is a small back up time in the morning during the week but that is a very small price to pay for making this street safer. We needed the traffic to slow down and with this new configuration, that problem has definitely improved. I see the results every day. Additionally, the center turn lane was a much needed change and has also proven to work wonderfully.

I read posts on the Nextdoor Neighborhood group often about others frustrated that there are back ups now but they seem to forget that this is our neighborhood. The cars needed to slow down. And the back up times are exaggerated. I see it every day outside my kitchen window and it does not last long each morning.

I am all in favor of keeping the FarmHill and Jefferson street lanes the way they are now. It would be a shame to revert things back to the way they were when that was clearly unsafe for all...pedestrians, children, bicyclists, parked cars and even other drivers.

Very Sincerely,
Carol Papazisis
Hi Jessica, I hope you're doing well. I really believe that I was right in my dislike of the new design, I really hate driving up and down Farm Hill. Slow, Congested and lots of frustration. It is good driving if you are 90 years old. The bike lanes and the turn lanes are a total waste, there are very few bike riders on Farm Hill (just as I had mentioned) it is a route to the freeway, not a side street. All the new design did was to make it more difficult to live and function on Farm Hill (the people who don't live on it like it because it does not effect their lives and their properties like it does ours). Thanks.

John Akay
I live at Farm Hill Blvd. I have 3 young children and a dog. We walk to and from Roy Cloud and to the Stulsaft Park daily.

I want to thank you for proceeding with the Farm Hill pilot. It has changed the way we live and made it much safer to get in and out of our driveway. Parking on the street is also safer on our block. Before the change, I witnessed several cars taking out side mirrors of parked cars. The changes have significantly decreased speeding and moved the cars further from the sidewalk and parked cars, increasing actual and perceived safety. Before the pilot, we would frequently have buses and cars barreling down the road, literally blowing our hair up as we walked down the street. It was a scary place to be and I would shuffle my kids from point A to point B with constant fear one of those cars could lose control and end up hitting us.

There are some delays in the morning (and there were before the pilot) but I would definitely take a minute or two of inconvenience to make it safer for drivers and pedestrians.

I hope that the lane changes are permanent. Please feel free to reach out to me for specifics on our positive experience with the changes.

Lisa Furtado

Sent from my iPhone
In my qualitative opinion the pilot is successful and we should make it permanent. Traffic is flowing well, and it is easier to cross the street (to turn into our home).

Udi Nir
The changes made last year to Farm Hill Boulevard and subsequent enhancements to adjust, are a tribute to our Cities interest in being a safe and healthy community.

There can be no doubt that the changes have improved safety. Not knowing the exact percentages of major or minor accidents post implementation, I can confidently attest to a significant increase in foot traffic and bicycle usage all day long on Farm Hill Boulevard. This builds community and expands the community watch program making our neighborhoods safe. This is what we want as a community and we must continue to support this.

Farm Hill Blvd. was never meant to be a freeway. The changes made make sense and must stay in place.

Many thanks,
Lori

Sent from my iPad
Hi,

My wife mentioned that you are interested in hearing feedback on people that regularly use Jefferson/Farm Hill, before and after the bike lane reconfiguration. Here’s what I’ve observed:

1. Rarely see people use the bike lanes, just like before, just people walking on the old sidewalks for exercise as before.
2. More people jockeying for last-minute left-right lane position and not stopping at Emerald Hills Drive, or in the least, drag racing to cut in front of the car next to them, in order to get ahead of the car next to them in anticipation of the lane narrowing in either direction. We had this problem before. But in conjunction with the old habit of not signaling, this new lane-change/failure-to-stop/speeding-cut-over behavior creates more stress, anger, and accident risk.
3. Similar to #2, we’re seeing more of this behavior just east of the Canada College/Farm Hill intersection, eastbound.
4. I don’t mind the single-lane constriction on Jefferson around the bend towards Alameda. From what I hear, the guy with the dinosaur on his lawn was one of the main lobbyists for all these changes, so if you keep that constriction there to placate him and return the rest of Farm Hill more like it was, that will be the best compromise.
As my opinion about this project is very strong, it is important for me to have whoever is reading this know....I feel the Farm Hill project is a failure. Please acknowledge this as a vote to go back to the original configuration at the meeting on Oct. 5th.

I have tried to keep an open mind about the lane changes on Farm Hill over this last year. Unfortunately, I feel exactly the same way about it now as I did when the project was implemented. Where are all of the bikers we are accommodating? I have, intentionally, counted every bike I've seen going up or down Emerald Hills Dr. and Farm Hill and over the year I have not gotten to 10. The bicycles on Jefferson are incredibly dangerous, for the bikers and drivers, as they make their way to Canada Rd., making such a huge accommodation on Emerald Hills and Farm Hill makes no sense.

Perhaps the most important observation about this misguided project is the flow of traffic above the Alameda. I personally believe that commuters should be considered more important than bikers. The lane change confusion is dangerous and the back up is unforgivable. It is hard for me to understand how this "project" got off the ground (as I have no recollection of being asked my opinion) in the first place. Traffic at least moved along the two lanes above the Alameda on Jefferson fairly well. Thankfully, I do not have children in elementary school, as the morning drop off around Roy Cloud is scary.

Has there been any discussion about a tax rebate for the money wasted on all of this?

Thank you for your attention.
From: Jim Dudley
To: GRP-Farm Hill Feedback
Subject: Please end this experiment
Date: Thursday, September 15, 2016 8:59:09 PM

On most weekdays during the school year, the back up approach to Farm Hill from Alameda is unbearable. I try to enter onto McGarvey and see that the backup extends from Alameda to Jefferson on McGarvey. Once onto Jefferson the slow crawl of single stacked vehicles crawls along until past Emerald Hill. It was never like this, pre-experiment. There is some driver modification as many go to Edgewood where the 7am-9am back up is similar.

Please end this project. I never see bicycles using the lanes. Accidents still occur. This was a solution seeking a problem. Completely unnecessary and a waste of funds, regardless of where they came from.

Jim Dudley

Sent from Desktop email
Our family uses the bike lane daily. It is important to us that the changes made to farm hill remain in place and it is not changed back to how it was a year ago.

Please make the pilot permanent.

Thank you,

Elise
I can't explain the continued and growing frustration with the amount of traffic on Jefferson/Farm Hill.

It takes me almost 15 -20 min in the mornings to get from Alameda to 280 - that is insanity. On Tuesday or Wednesday of this week I saw a horrible accident at the intersection of McGarvey and Farm Hill. Impatient driver wants to turn left, one lane of traffic going down the hill that wants to move and collision happens. I saw it happen and my reaction was thank goodness I am ahead of this mess and its really going to back things up now. That's sad. But the reality of how screwed up the flow is has brought me to that point.

If you want to slow cars down for speed put in speed bumps but don't get rid of lanes. Help the traffic flow not create more.

Reconsider.

Resident Natalie Kennedy
To Whom It May Concern,

It is unclear to me whether the data collection project terminated on September 1, 2016. If so, the following information necessarily has to be considered.

I reside in Redwood City. I drive to my office in San Jose. I typically leave my home at 8 a.m. and proceed to Highway 280 via Farm Hill Boulevard. Prior to September 1, 2016, there was a relatively free flow of traffic on the street. However, since September 1, there has been inordinate delay between Alameda de las Pulgas and the top area of Farm Hill where the road widens to two lanes in each direction. Prior to the 2015 change in Farm Hill, it took me approximately 8 minutes to travel from my home to the freeway. Since September 1, 2016, the travel time has doubled to approximately 15 minutes.

My strong opinion is that the road should be returned to four lanes as it existed prior to the pilot project. In my experience, the prior road was not dangerous. I have used the road during commute hours since 1992. I can honestly say that I have never witnessed an accident or near accident in the past 24 years. I also very much doubt that the new configuration has slowed traffic in off hours. There is no impediment to driving fast in one lane rather than the prior two lane road. This is especially true with respect to the downhill portion of the road.

Thank you for taking my view into consideration.

Dallas Sacher
My summary feedback based on the 32 page document of interim data report: The full review can be seen better on my thread on Nextdoor titled "Farm Hill City data and October 5th meeting".

Without looking at data, and just understanding that on one end of Jefferson, Redwood City decided to expand and grow its downtown with major companies such as Box, Google, and is expecting Stanford, as well as several new residential buildings, it is illogical to shrink the other end of Jefferson and Farm Hill Bouelvard, which directly connects its downtown to the I-280, and its Farmhill and Emerald Hills residents to Alameda de las Pulgas, El Camino Real, and Veteran to Whipple to the 101, from 2 lanes each way to 1 lane each way.

But, I did take the time to look at the interim data report on the website, and it is largely inconclusive due to unequal period of time comparisons of the data. It also does not seem to take into consideration the increasing population of residents and non-resident commuters which are as a result of the City's decision to expand downtown. Essentially, it appears that the city heard complaints for residents who lived on Farm Hill in 2012, implemented this project in 2015 without any further data or notification to residents or neighbors, causing a surprise to the community, all the while having new growth in downtown.

The project created bike lanes, shrunk driving lanes, and consequently, diverted traffic to narrower hill streets that were not designed to carry the increased traffic loads, often do not have shoulders or sidewalks, will experience accelerated deterioration, and thus, making those streets unsafe, particularly during peak times. For example, according to the interim report, within the first 3 months of the pilot, Highland Avenue had 60 additional cars driving on it each morning, likely avoiding Farm Hill, and being used as an alternate route to get kids to Roy Cloud. Perhaps it should be considered that Farm Hill is a Boulevard and bikes should have routes on smaller side streets to be safer. The way the interim data reads right now, the average of 1.3 accidents per month over the 5 year period compared to the average of 1 accident per month in 3 months, can be interpreted to mean that the previous configuration was actually safer than the pilot, statistically speaking. The majority of people still speed on Farm Hill. Bicyclists and people crossing the street and riding the busses increased, but that data becomes moot because it is not considering the increased population RWC has experienced.

Doesn't the city see that if you create more jobs and more housing, that would create more cars and more traffic, which should mean more lanes and not less lanes on the major boulevard and avenue that connects the I-280 to downtown?

I would love to know what your thoughts are to this feedback and what the plan is for the final data set.

Thank you,
Sherine Khalil
Highland Avenue Resident in East Farmhill / Lower Emerald Hills
I’m still against it. The wait to get to 280 takes 10 more minutes. The later I get on 280 the worse the traffic is. Now it takes 45 minutes to an hour to get to Palo Alto.

Martin Kamph

As you are aware, the 1-year Farm Hill pilot is coming to a close. The City hired a traffic data collection firm to collect the “post pilot” data which has been provided to Kimley-Horn & Associates to evaluate the project. These data have been posted on the project website (www.redwoodcity.org/farmhill) and are available for anyone who is interested. When it is complete, the evaluation and a summary of the findings will be posted on the website as well.

The results of the evaluation will be presented to the Complete Streets Advisory Committee at a special meeting on October 5, 2016 at 6:30 pm at the Council Chambers in City Hall (1017 Middlefield Road). Interested parties are encouraged to attend the meeting to hear a presentation on the pilot evaluation and to provide feedback. At the meeting, the Committee will decide on its recommendation to the City Council: to discontinue the pilot (return to original lane configuration) or to make the pilot configuration permanent.

If you are unable to attend the meeting, you may continue to provide feedback to the project’s email address: farmhillfeedback@redwoodcity.org. Due to the volume of emails that we expect to receive, please understand if we aren’t able to respond to individual comments. All feedback will be collected and shared with the Complete Streets Advisory Committee and the City Council.

We look forward to seeing you on October 5th!

Jessica Manzi, PE
Senior Transportation Coordinator, Community Development Department
Phone: (650)780-7372
E-mail: jmanzi@redwoodcity.org
www.redwoodcity.org
WE LOVE THE ROAD AS IS NOW!!!!
So much safer and quieter! I hope you all keep it this way!

Adrienne

Sent from my iPhone

Please excuse any typographical errors

On Sep 15, 2016, at 4:24 PM, CD-Jessica Manzi <jmanzi@redwoodcity.org> wrote:

As you are aware, the 1-year Farm Hill pilot is coming to a close. The City hired a traffic data collection firm to collect the “post pilot” data which has been provided to Kimley-Horn & Associates to evaluate the project. These data have been posted on the project website (www.redwoodcity.org/farmhill) and are available for anyone who is interested. When it is complete, the evaluation and a summary of the findings will be posted on the website as well.

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We look forward to seeing you on October 5th!

Jessica Manzi, PE
Senior Transportation Coordinator, Community Development Department
Phone: (650)780-7372
E-mail: jmanzi@redwoodcity.org
www.redwoodcity.org
Jessica,- Thank you for you help with the direct link to the delay files. Why is it that the delay at Farm Hill Boulevard and Emerald Hill Road west bound (towards 280) is of no interest?

Can you please review the reconfiguration at Farm Hill Boulevard and Cambridge Road? Left hand turns from Cambridge Road onto Farm Hill Boulevard are dangerous because of the sudden change from one lane to two lanes right at the intersection of Cambridge Road and Farm Hill Boulevard. East bound (towards Alameda de Las Pulgas) drivers often illegally change lanes within the intersection before the second lane begins (the second lane begins after the intersection). Some drivers illegally use the center right/left turn lane before the intersection as a second lane 100 to 200 feet before the intersection. Most of the time when I make this left hand turn (eight or nine times out of ten times) drivers cut in front of me without having signaled a lane change before the intersection. It is especially dangerous at 8:15 AM Monday through Friday when I make this left hand turn on to Farm Hill Boulevard.

I have attached an MP4 file (3.5 MB) with nine seconds of a dash camera video I captured this morning of a driver doing what I described above. This time the driver actually honked at me as they were cutting me off (and I honked at them for cutting me off). They did not use their turn signal to indicate a lane change before or in the intersection and they did not make a left turn at Emerald Hill Road which would have necessitated them changing to the left lane. At the long signal at Alameda de Las Pulgas I had an opportunity to ask to the driver why they made a lane change in the intersection without signaling a lane change and they responded that I had better watch my driving. What did I do that was wrong?

Thank you,

David

---

Jessica Manzi, PE

Here is a direct link to the delay files (2) – I tested and they worked (at least internally):

Just as an FYI, we’re doing more travel time runs this week which will be incorporated into an updated memo shortly thereafter.

If you’re still having trouble with the files, let me know and I can send the files directly to you.
From: David Reis
Sent: Thursday, September 15, 2016 8:10 PM
To: CD-Jessica Manzi <jmanzi@redwoodcity.org>
Cc: GRP-Farm Hill Feedback <farmhillfeedback@redwoodcity.org>
Subject: Re: Farm Hill Pilot Project Update

Jessica,- Thank you for the update.

Can you please explain how to navigate the “post pilot ... data ... posted on the project website.” I would like to review “delay” but I keep going around in circles arriving back where I began.

Thank you,

David

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.

T.S. Eliot, Little Gidding

From: CD-Jessica Manzi
Sent: Thursday, September 15, 2016 4:24 PM
To: GRP-Farm Hill Feedback
Subject: Farm Hill Pilot Project Update

As you are aware, the 1-year Farm Hill pilot is coming to a close. The City hired a traffic data collection firm to collect the “post pilot” data which has been provided to Kimley-Horn & Associates to evaluate the project. These data have been posted on the project website (www.redwoodcity.org/farmhill) and are available for anyone who is interested. When it is complete, the evaluation and a summary of the findings will be posted on the website as well.

The results of the evaluation will be presented to the Complete Streets Advisory Committee at a special meeting on October 5, 2016 at 6:30 pm at the Council Chambers in City Hall (1017 Middlefield Road). Interested parties are encouraged to attend the meeting to hear a presentation on the pilot evaluation and to provide feedback. At the meeting, the Committee will decide on its recommendation to the City Council: to discontinue the pilot (return to original lane configuration) or to make the pilot configuration permanent.

If you are unable to attend the meeting, you may continue to provide feedback to the project’s email address: farmhillfeedback@redwoodcity.org. Due to the volume of emails that we expect to receive, please understand if we aren’t able to respond to individual comments. All feedback will be collected and shared with the Complete Streets Advisory Committee and the City Council.
We look forward to seeing you on October 5th!

Jessica Manzi, PE
Senior Transportation Coordinator, Community Development Department
Phone: (650)780-7372
E-mail: jmanzi@redwoodcity.org
www.redwoodcity.org
We live on Farm Hill. Originally we were vocally opposed. Thank you so much with sticking with it. Farm hill is safer and better with the pilot program.

Best,
Joan Smith

Sent from my iPhone

On Sep 15, 2016, at 4:24 PM, CD-Jessica Manzi <jmanzi@redwoodcity.org> wrote:

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Senior Transportation Coordinator, Community Development Department
Phone: (650)780-7372
E-mail: jmanzi@redwoodcity.org
www.redwoodcity.org
Hi Ms. Manzi (and the feedback team):

My two areas of concern remain:

1) the westbound merge on Farm Hill after you cross over Alameda de las Pulgas and it quickly goes from two lanes to one as you go up the hill. The merge is abrupt, people don't realize there is a merge there and they get stuck on the right unable to re-enter or they try to dash in quickly. I don't like this spot at all.

2) I loved the right turning late Cambridge on to Farm Hill. Made that so much safer. Am sad you took it away and am not sure why.

I will try to make it to the Oct. 5 meeting but I may not be able to so wanted to make sure I sent these two points.

Thanks,
Janine

On Thu, Sep 15, 2016 at 4:24 PM, CD-Jessica Manzi <jmanzi@redwoodcity.org> wrote:

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www.redwoodcity.org

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Janine Zacharia
Carlos Kelly McClatchy Visiting Lecturer
Stanford University
http://comm.stanford.edu/faculty/zacharia/
cell: 202-251-7193
skype: janinezacharia twitter: @janinezacharia
We’ve lived off Farm Hill for 18 years, the past 12 across from Cañada College. We were originally opposed to the change, but after hearing supportive comments from people living on Farm Hill, agreed to wait for pilot data before making our decision.

We are now supportive of making the changes to Farm Hill Blvd. permanent.

A few points:

It’s true that there are delays, but we prefer the slowed traffic to previous conditions. The delays are not statistically significant.

We need regular RWC patrols at intersections, especially Farm Hill/Emerald Hill, where many folks coast through (no stop).

We would appreciate better timing for lane changes and road work, in general. The start up of road projects as school is getting underway creates less community support for any changes, however positive they may be.

John and Danielle Dearborn
I can not tell you how much better the street is since the improvement was put in place. It's starting to feel like an actual neighborhood. People are respectful of the bike lanes (it also helps that the new bike ordinance was put in place that has made people think about biking safety. Since Woodside high started the year, I now see high school students biking back home. This is something that never has happened before. I hope that you continue to leave it in place.

Janice Valletta

- "The best user experiences are enchanting. They help the user enter an alternate reality, whether it’s the world of making music, writing, sharing photos, coding, or managing a project.” – Kathy Sierra
Good morning,
This morning I planned my usual commute from Crompton road west up Jefferson/Farmhill but traffic was again stalled from McGarvey and alameda. I chose an alternate route on canyon to Edgewood. The rerouted traffic impact was felt on Edgewood west as well. Please see this mornings 3 minute video showing the Edgewood slowdown. Please include this in correspondence and forward to council.
Thanks
For what it's worth, FH traffic towards 280 is backing up to McGarvey in the morning commute, stand-still style. I vote to restore to 4 lanes, 280 to Jefferson if possible.

Best Regards,
Fred Sinfield

Sent from my iPhone
Robert Mazzei  
Redwood City, CA 94061

September 30, 2016

Complete Streets Advisory Committee  
City of Redwood City  
1017 Middlefield Road  
Redwood City, CA 94063

To Whom It May Concern:

I am writing in response to your flyer regarding the meeting to be held on October 5, 2016. Unfortunately, I am unable to attend the meeting, but wish to provide some input.

Let me begin by thanking all of you who have taken on this task. Farm Hill Blvd. does needs some modification to decrease speeding. From my experience, however, the latest lane changes have only succeeded in creating congestion and road rage where there was none before. I would strongly recommend returning Farm Hill Blvd. to the original 4 lane configuration, and adding more arterial stop signs. This appears to work very well on Trousdale Blvd. in Burlingame.

Respectfully Submitted,

[Signature]

Robert Mazzei
Good day: when I attended the briefings on the Improvement Project two years ago at Roy Cloud School (excellent presentation; detailed charts, informed spokespersons) I said to myself that this was a solution looking for a problem. My home adjoins Stuilsa Park, where I have lived since 1978, and I have commuted from there both south to Saratoga (1980s) and north to San Francisco (since 1990). I am a native New Yorker and am accustomed to and comfortable with city traffic; I have no children. Except for the moderate backup at the Emerald Hill intersection before morning classes at RCS, I was never delayed or inconvenienced. I can now say that I was wrong in my skepticism. Since the re-striping, traffic moves as smoothly as ever, and I have new advantages: when I back out of my garage to the street, I have ample room to see cars coming down the hill and to maneuver to avoid them; the center turn lane gives me ample space to turn into my garage as I proceed uphill (this is a very noticeable difference from before and an improvement in safety); my travels to/from #280 and to/from downtown have not been adversely affected in any way.

Bravo! Don't change anything. Thank you for your good planning and your good communications with residents.

Cordially,

[Signature]
Mr. Jan A Wells
While the newly striped traffic lanes have indeed slowed autos down and does not greatly affect my retired status as a daily user on non-commute times, could we please look beyond today and consider the much greater use of Hgy. 280 north east on Farm Hill Blvd as a access/exit from downtown Redwood City to the many new building now being constructed therein.

Couldn't we plan to divert some of this traffic off of Jefferson?

Please don't tell anyone else, but Brewster (north westerly of El Camino) is one my best kept secrets (as opposed to either Woodside Road or Jefferson!)

Don Carlson, R.C. Farm Hill Resident since 1956

Sent from my Don iPad!
To whom it may concern,

I’m not sure if I will be able to attend the meeting on 10/5 (per the notice you sent) but I wanted to voice my opinion.

My family and I have lived on Farm Hill for over twenty years, at the intersection of Farm Hill and McGarvey. We have been here long enough to have witnessed earlier, failed efforts to get this street reconfiguration in place. Several years ago it looked like the project was all set to go forward when there was a final meeting held which, to my surprise and disappointment, was attended by many people who were not at previous meetings and who do not live on Farm Hill who basically loudly shouted down the proposal without a vote. Not very democratic. I also remember that prior to that meeting a certain columnist for the S.F. Chronicle, who’s name I don’t recall, made personal use of his column to lobby against the project. Apparently many commuters have no empathy for Farm Hill residents and their God-given right to drive as fast as possible supersedes the rights of others. At those earlier meetings I heard more than one account from people who have had their parked cars side swiped by speeding, reckless drivers and various other incidents. I have personally witnessed on Farm Hill, pretty routinely, cars and motorcycles traveling at 50+ mph, cars not yielding to pedestrians in the cross walks, and there have been at least four accidents that I’m aware of in my intersection. One ended up right in my front yard. I have also witnessed, on more than one occasion, cars spinning doughnuts in my intersection in the middle of the night for their amusement. There’s never a cop when you need one...

After my earlier disappointments and having seen no improvement to the situation whatsoever, needless to say I was pleasantly surprised that this pilot project finally went forward. While I don’t have any empirical evidence, I believe things have improved somewhat. It looks to me like, at least during the commuting hours, traffic has slowed down a bit but I fear that if we return to the old four lane configuration things will be worse than ever, considering the new traffic resulting from all the recent development downtown. So, assuming anyone in authority reads this and I get a vote, I vote to make the new configuration permanent. It’s not perfect and I feel we need other measures but it’s better than nothing.

Sincerely,

Bill Mortimer
To Whom It May Concern.

The other day somebody posted this URL somewhere:
SF Bay Area Traffic Google Maps 1 Min Time Lapse (Sept 2016)
https://www.youtube.com/watch?v=O4Bx0ygwBxo

I thought that looks useful, so I did something similar for Redwood City:
- 20160928 We Rushhour (https://youtu.be/A--2rg_EPnU)
  and a little bit more detailed about commuting travel times between
  the intersections of Jefferson/ECR and FHB/Canada College:
- 20160928 We downtown travel times (https://youtu.be/HpCZIV5ha_8)
- 20160928 We uphill travel times (https://youtu.be/aG5KpNg4BQI)

Since school has started and the re-paving of Farm Hill neighborhood,
the traffic hasn't really settled in yet.
Edgewood also had a few more rough days on the uphill area, mostly due to
slow trucks bringing traffic to a crawl and then the merging from
Brittan/Crestview does the rest.
If Woodside goes bad early (7:30-7:45h) in the Hudson/Vaiotta Area, we
usually see more traffic on Mcgarvey, increasing travel times on Farm Hill Blvd.
by 1-2 minutes.
I believe that is why we see quite a few more cars on Mcgarvey these days.
So after watching Google Traffic realtime on a lot of mornings over the last year,
my summary would be:
rush hour is only Mondays-Thursdays ~8:00-8:30 when school is in session.
In the evening there is no noticeable rush hour. All day long the only bottleneck when
going downhill is the long traffic light wait at Alameda/Jefferson.
Travel times from El Camino Real going to the Canada College Intersection:
- without traffic 7-8 min. (before and after)
- rush hour (without school) 9min. (before and after)
- rush hour (with school) 9-10 min. with a short peak at 11min. (before)
- rush hour (with school) 10-11 min. with a short peak at 12min. (now)
- rush hour (Fridays) 9min. (before)
- rush hour (Fridays) 9min. with an occasional peak at 10min. (now)
please let me know if you have any questions.

best regards,
Gerd Stiey
Brandy Rock Way
PS.: attached is a PDF file with max travel times on Jefferson/Farm Hill Blvd since last year
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No data  Vacation time usually means 8-9 min. during rush hour

| We      | Aug-17, 2016 | 9       |                              |
| Mo      | Aug-22, 2016 | 9 First Day of School |                      |
| We      | Aug-24, 2016 | 11      |                              |
| Th      | Aug-25, 2016 | 14      |                              |
| Fr      | Aug-26, 2016 | 9       |                              |
| Fr      | Sep-02, 2016 | 9       |                              |
| We      | Sep-07, 2016 | 13 Streets are re-paved around Roy Cloud ... |                      |
| Th      | Sep-08, 2016 | 14 ... and West Farm Hill |                      |
| Fr      | Sep-09, 2016 | 10      |                              |
| Mo      | Sep-12, 2016 | 10      |                              |
| Tu      | Sep-13, 2016 | 14 Waze-incident around McGarvey? |                      |
| We      | Sep-14, 2016 | 14 Streets are re-paved around West Farm Hill |                      |
| Th      | Sep-15, 2016 | 12      |                              |
| Fr      | Sep-16, 2016 | 10      |                              |
| Mo      | Sep-19, 2016 | 11 Re-paving at Roy Cloud |                      |
| Tu      | Sep-20, 2016 | 13      |                              |
| We      | Sep-21, 2016 | 12 Re-paving at Brandy Rock |                      |
| Th      | Sep-22, 2016 | 16 Woodside=18min. 5 incidents on Waze. |                      |
| Fr      | Sep-23, 2016 | 9       |                              |
| Sa      | Sep-24, 2016 | 8       |                              |
| Su      | Sep-25, 2016 | 8       |                              |
| Mo      | Sep-26, 2016 | 11 Cambridge and Lonesome closed |                      |
| Tu      | Sep-27, 2016 | 14      |                              |
| We      | Sep-28, 2016 | 12      |                              |
| Th      | Sep-29, 2016 | 12      |                              |
| Fr      | Sep-30, 2016 | 9       |                              |

Page 2 of 2 10/2/2016
Dear Mayor Seybert, City Council, and Complete Streets Committee,

I am regretfully unable to attend the Oct. 5 meeting, so instead must voice my full support for the reduced lane road configuration pilot in this letter. I use Farm Hill Blvd daily for commuting by car, jogging for exercise, and dog walking. I also regularly bicycle on the route to access Canada College and Canada Rd. The reduced lane configuration in the pilot has been an extremely positive change, so please make the pilot permanent.

Your data sheds light on many of the reasons I feel so positive about the reduced lane pilot, and my personal experience as a resident confirms those findings, namely increased safety, ability to cross the street in crosswalks, ability to merge onto Farm Hill from side streets, all while keeping traffic delays and congestion to a minimum. And I implore you to keep increased safety as the top priority in determining the future of the pilot.

People will argue against the reduced lane configuration, mostly on the theory that they believe traffic is worse and that people need to get to downtown more now. These are arguments are false, as shown in the data collected by Kimley Horn – most commute metrics improved or stayed relatively constant. And furthermore, new downtown development commuting must be serviced by Caltrain and public transportation, which was the original idea that led to the approval of such development.

In summary, please make the reduced lane configuration pilot a permanent change.

Thank you,

Will Hambly
Hello Committee,

Thank you so much for your efforts in this pilot program.

I cannot attend the community meeting, but wanted to be sure my voice is heard. I want to KEEP the lanes as they currently are.

I think the data that you present supports keeping the pilot in place. It is tough to sell this to the general community, because intuition wants to tell people that 4 lanes means less traffic than 2.

The reduction in congestion due to having a middle turn lane really keeps the cars flowing, even with 1 lane in each direction.

Again, thanks,

Amy Truesdale
I won’t be able to attend the Oct 5 meeting, but I’m hoping that this feedback can be included.

Both my husband and I drive (separately) on Farm Hill during the week and on weekends. My husband drives on Farm Hill daily while I drive on it about 3x per week. My husband drives during peak commute times and I travel at non-peak hours.

We are both very happy with the changes to Farm Hill down to one lane each way with a turn lane in the center. For me, it makes trips to Stulsaft park and PCC so much easier and safer.

Thanks so much!

-Guy & Trish Taylor
We received the email of the so-called results of the pilot project. Several issues are apparent but we will address a couple. First, what difference does it make if the speed has gone down between Eden Bower and Lonesome Pine? There are no houses there and those are the safest areas to walk on the sidewalk because there was always plenty of room for traffic due to no cars parked in this area anyway. Also the date that speed and pedestrian traffic was checked was only one day, and it was during the Memorial Day weekend wasn't it, when there was obviously less traffic. On the other hand, we must admit that in actuality we like the changes. The passing lane on Farm Hill has been working fantastically, many people have learned to take advantage of it. The optional stop at Emerald Hill is great for when you're in a hurry. Also it has been great entertainment to watch the pedestrians at Eden Bower play Frogger. Every day it's exciting to watch the drag racing that occurs both uphill and downhill between Eden Bower and Canada College. Obviously, this is sarcasm. If you actually lived in the area where we do you would know what I'm talking about. However, we knew that once this project started there was no way it would ever be reversed. So when someone is finally seriously injured or killed because of the extreme reckless driving that has resulted, then maybe it will be changed back. You cannot regulate people's attitudes, so no matter what you do with paint on the roadway, it will not succeed. The only deterrent we have seen is when there is police presence. We have never seen any traffic police sit on Farm Hill between Eden Bower and Canada College in all the years we've lived here. If students and commuters would get the idea that tickets might likely be handed out for speeding here, that might help some.

Sincerely,

Jill Edwards

Sent from my iPad
Greetings,

My comments re above test follow. My thoughts are not in any particular order. I don’t give this plan much thought except when I am trying to leave or arrive to my driveway.

I live on 3400 block of Jefferson. During the day, I have noticed a more steady stream of traffic with fewer breaks between cars. During peak driving periods, the traffic light at Alameda & Jefferson, backs up traffic towards the turn, west of my house.

Another problem is that if a car comes around the blind turn at an unsafe rate of speed, there is not much reaction time when they find traffic slowed or stopped in front of them.

When I back out of my driveway, I have to wait longer than before due to cars coming down the single lane are spaced out so that there are fewer breaks for time to back out. Before, with 2 lanes, the cars were more spaced out. Now, when I do get out, there is usually a line of cars waiting for me to "get it in gear" and drive forward, getting out of their way. Luckily, the cars have stopped.

When coming home, I have to use the left turn lane to wait to get into my driveway. If some fool comes around the turn in the passing lane, I would have no place to go with the possibility of a head on.

All of this is for bike lanes. Bicycle traffic is extremely low due to the hill, that starts west of my house. When I'm outside or driving on Jefferson, I note that normally there are very few bicycles. Some days I don't see any bicyclists, when I am outside.

I think the bicycle lanes should be removed between the Alameda and Canada college, due to lack of use. Restoring 2 traffic lanes would improve the traffic flow.

Hopes this helps. I will not be able to attend the meeting on October 5th.

Ray Green
Hello,

We are residing on Jefferson Avenue, between Midfield Way and Farm Hill. The traffic lanes reconfiguration done for this project has tremendously helped the safety of residents like us and people walking, biking or crossing Jefferson Ave. and Farm Hill Blvd. We feel a lot safer now, at the expense of slightly increased traffic behind the Jefferson/Farm Hill traffic light only during rush hours. Please make these changes permanent.

Thank you for your consideration

Shahab Layeghi & the family
Dear Complete Streets Committee,

This email expresses my support for the Farm Hill restripe project. I regret that I can not attend your next meeting to voice my support in person due to business travel. Please accept this message in my absence - I'll be brief.

Reasons why I like the project:

1. **Safety.** I note that we seem not to be accumulating the ominous looking skid marks as I walk my son to school.

2. **Less Rage.** There seems to less racing on Farm Hill. We also don't have the agressive lane changing because left turns can go in the center lane and right turns have room as well. Therefore, the one lane travels more smoothly.

3. **Better travel times at the cost of little or no delays during rush hour.** Travel is really smooth when it's not rush hour. When it is, my timing measurements indicate little additional delay during rush hour. I expect your data will bear that out.

Thanks for your excellent work in support of streets throughout Redwood City,

Chris Gellrich
Dear Jessica, Redwood City Community Development, City Council Members;

I wrote several times last year to express my extreme disagreement with the lane reductions on Farm Hill / Jefferson. It was easy to see for anyone who drives this road every day that this solution was not going to increase safety, reduce speeds or accomplish any of the objectives which justified the pilot. Now that we have lived with this insane inconvenience for a full year, the data supports what so many of us anticipated a year ago.

Objective 1: Reduce vehicle crash rate by reducing the number of conflict points. It did not achieve this goal – the results were insignificant at best, but in actuality the number of accidents increased if you take into account all of the accidents which occurred (which for some reason despite promises were not included in the data.) In addition, there were more accidents on adjacent streets which have experienced an increase in traffic. The lane reductions actually increases the number of conflict points tremendously when you take into account all of the merges / unmerges that are now introduced (each of these is a conflict point.) These merges incite rage, frustration, confusion, anger, near misses, and aggressive driving. Why are you creating problems which didn’t exist before?

Objective 2: was equally inconclusive. It is uncertain whether it’s safer to cross the street, but given that there are 15,000 drivers per day and a very small number of pedestrians, why is this Objective #2?

Objective 3: has completely failed. There is substantial increase in travel times. However, you’re not properly measuring this to understand this metric. For instance, the wait time to turn right from Jefferson (westbound) onto upper Jefferson, is now much longer because of the pile up of traffic at that light, making it impossible for drivers to make a right on red which they could do previously. It takes longer to turn left onto McGarvey (from westbound Farm Hill) because you have to wait twice as long for cars coming down the hill single file. By the time you do get a break in the traffic, the light changes. I have personally had several near misses due to this new challenge which didn’t exist before! In addition, you have punished the commuters who are driving during the heavy commute times which was not a pre-pilot issue. Nothing has been accomplished to slow traffic down during off peak times (which was the pre-pilot issue). In fact, it is actually easier now to drive faster given that there is only one lane with plenty of space on both sides!

Objective 4: drivers have shifted to streets which are much less safe, and much less capable of handling additional traffic. I personally take upper Jefferson consistently now whenever I’m heading northbound onto 280 (something I never did before.) The data supports that there is an increase in traffic on side streets which really were quiet neighborhood streets before! This reduces neighborhood safety overall!

Objective 5: while the data seems to support your goals, I have not found this to be true at all. Whenever I am turning right from McGarvey onto Farm Hill, the wait is much longer because once again, I am waiting for traffic to flow single file rather than in parallel.

Objective 6: has definitely NOT been met especially since you took your speed data while “coincidently” three motorcycle cops were on a vigilant mission to ticket speeders. This is completely disingenuous, and to think we would believe that this was ‘coincidence’ is an insult to our intelligence. If this were truly coincidence, then I highly urge you to buy a lottery ticket. The odds are about the same.
In addition, the lane changes have done nothing to reduce speeding during off peak hours when some of the worse pre-pilot accidents occurred. It has done nothing to reduce the drivers who are texting while driving, and it has done nothing to reduce the number of intoxicated drivers. All of which would have been addressed with the addition of a part-time police officer on Farm Hill.

Objective 7: has completely failed. We are seeing much more traffic on adjacent streets that are less capable of handling the traffic (see early points in objective #4.)

Objective 8: showed an increase in emissions, although I don’t see this as a major driver either way.

Objective 9: this is inconclusive, but it makes no sense to focus on cyclists and pedestrians on a roadway that is 95% - 99% utilized by drivers. I am an avid cyclist, and I have NEVER ridden on Farm Hill. Cyclists ride on Jefferson. They are going from Alameda (a cycling highway) to Jefferson to Canada Road (another cycling highway). Now that you have increased traffic on upper Jefferson, you have actually made it less safe for the abundance of cyclists who ride on Jefferson every day. Are you trying to kill a cyclist? Cyclists do not take Farm Hill because Farm Hill goes to 280, and cyclists cannot ride on 280. For the minority of riders who happen to live off of Farm Hill, I am sure both of them are happier now.

Objective 10: completely inconclusive (and again a minority would benefit at the expense of the majority.)

Objective 11: this has completely failed. There is no increase in feelings of comfort! Drivers can come flying down Farm Hill even faster than before. There is much more aggressive driving as drivers now have to jockey for merge positions which didn’t exist in the old configuration. This has incited rage and anger. And this has created complete and utter frustration going uphill when you get stuck behind a slow diesel truck! Why remove options which we had in the original configuration?

Overall, the pilot was a complete failure to achieve essentially ANY of the objectives!

A small number of residents who actually live on Farm Hill seemed to have benefited by this pilot. The rest of us are completely dumbfounded that we have had to endure such an illogical and inconvenient pilot. We would like the lanes returned to what they were. You can address the 2-3 left turns that were challenging in the old configuration by adding a turn lane in those isolated cases without the lane reductions (e.g., westbound Farm Hill onto McGarvey, and left turn into PCC from eastbound Farm Hill).

If you’d like to increase safety on Farm Hill, the single most effective (and thereby cost efficient) method is to dedicate a police officer to Farm Hill and surrounding areas. It only requires about 4 hours a week to be effective. The police officer should be there at different and unpredictable locations and times of day, and you will tremendously reduce speeding, increase safety, as well as, address the many other unsafe factors which affect safety such as phone use and intoxication. I believe you already know this or else you wouldn’t have had three cops on the days you were taking speed measurements. Why are you wasting our tax paying dollars on methods which do not solve the problem?

If you do not conclude that this pilot was a complete failure, then we will seriously need to question what hidden agenda exists. The majority want the lane configuration restored back. If you don’t believe us, why not put this to a vote of the Redwood City and Emerald Hills residents who have to live with the results?

Sincerely,

Chris Abato
In 1954 my parents moved their family from San Francisco to Goodwin Avenue in Redwood City. I vaguely remember the buildout of Farmhill and the boulevard (my father complained about all the mud rolling downhill onto McGarvey and Fernside). There was no west of crosswalk where the children’s park now is (there was no children’s park) and a young girl who lived on Farmhill Blvd. was killed by a motorist while crossing the street. There was no Hwy 280, no Canada College and Mt. Alverno Convent was in the middle of nowhere.

I inherited my parents house and am living there now. I think the changes made to Farmhill Blvd are good. The middle lane gives people who live on the boulevard an opportunity to more safely turn into their driveways, and the two lanes going west up the hill allow for slower traffic. I, personally would not want to cross Farmhill as a pedestrian on the steep part on the hill by Eden Bower Lane. The city might want to consider installing one of those flashing pedestrian right-of-way lights.

That’s my 2 cents.

I also very much like and want to thank the city for installing that 4-way stop at Goodwin and Fernside.

:)

Sandra Meyer
Hello,

I am providing my comments on Farm Hill. While I don’t commute, I do walk on Farm Hill when walking my dog and I live on Highland Avenue.

I find walking on Farm Hill much noisier and much less nice due to the exhaust from the cars that now pass one by one every few seconds.

I find it no safer as I cross the street. Today, crossing at Dover, a person driving west stopped for us but the car behind went around her in the bike lane and passed her and almost hit us as we cross. I always worry as I cross Dover and believe it should be a stop or light rather than a pedestrian crosswalk alone.

There have been very few walkers or bikers added to the street, because, one lane or not, it is a corridor to downtown and not a street seen as residential by drivers, despite the change to one-lane.

But I will mostly confine my comments to the increased volumes on selected streets. I find it a bit disingenuous in the report to applaud the changes in the road configuration as the reasons for 1-3 mph less speed, easier left turns, and .3 less accidents, but then say in the report that the increase in traffic on side streets is because of general volume on 280. Let’s be realistic. There has been one house built on Laurel Way, yet the traffic from Laurel Way to Jefferson on Highland has increased 14% in the morning, on average, and 38% in the evening. Traffic on Jefferson from Utah to Farm Hill has increased 19% in the morning and 28% in the afternoon. There has not been new housing built in this area around Jefferson either. The same goes for Lancaster....no new homes have been built yet traffic in the AM is up 26%. McGarvey has increased by 25% in the morning and 48% in the afternoon. The traffic is not increasing because of general increases in populations in these areas. People are trying to find their way around Farm Hill Rd / Jefferson Ave intersections and traffic. Let’s call a spade a spade and admit that traffic is being diverted from Farm Hill and Alameda.

Highland is a winding, two lane street with no sidewalks or bike lanes. Jefferson is a winding, two lane street with no sidewalks. Lancaster is a two lane, residential street. Dover is a two block, two lane street. Even Edgewood road, which I would expect would pick up an increase in traffic from general increased volume on 280, has picked up 56% more traffic during the pilot, and is another two-lane street without sidewalks and the increase cannot be totally explained by general increase in traffic alone, but can be explained by diversion from Farm Hill Rd., which many residents have admitted to doing.
I would ask that the City determine what to do about the diversion, especially on city streets not ever meant to be corridors to 280 and Farm Hill.

We also are pedestrians, walkers and drivers who desire safe streets on our streets as well. You may have made Farm Hill residents happy, but many other residents now experience more dangerous roads because of the diversion.

Thank you,
Deborah Henken.

From: Marty and Debbie | Sent: Sunday, October 2, 2016 5:04 PM
To: 'MARTIN KAMPH'
Subject: FM Hill project

Table 20: Average Morning Peak Hour (8:00 to 9:00 AM) Traffic Volumes on Selected Streets
Segment
Average Peak Hour Traffic Volume
Pre-Pilot Post Pilot
Absolute Change
Percent Change
Locations Within Pilot Corridor
Farm Hill Blvd: Eden Bower Ln - Lonesome Pine Rd 1,277 1,327 50 4%
Farm Hill Blvd: McGarvey Ave - Jefferson Ave 1,027 1,159 132 13%
Jefferson Ave: Highland Ave to Alameda de las Pulgas 1,208 1,405 197 16%
Parallel Routes
Woodside Road: I-280 to Alameda de las Pulgas 2,821 3,122 301 11%
Edgewood Road: I-280 to Alameda de las Pulgas 1,227 1,917 690 56%
Other Potential Diversion Routes
Woodside Rd: Alameda de las Pulgas to El Camino Real 2,180 3,103 923 42%
Highland Ave: Laurel Way to Jefferson Avenue 94 107 13 14%
Jefferson Ave: Utah Way and Farm Hill Boulevard 433 514 81 19%
Dover Rd: Lancaster Way and Alameda de las Pulgas 43 54 11 26%
McGarvey Ave: Farm Hill Blvd and Fernside St 460 573 113 25%
Lancaster Way: Jefferson Ave and Harding Ave 30 39 9 30%
Bret Harte Dr: Emerald Hill Rd and Glennan Dr 95 96 1 1%
Table 21: Average Evening Peak Hour (5:00 to 6:00 PM) Traffic Volumes on Selected Streets
Segment
Average Peak Hour Traffic Volume
Pre-Pilot Post Pilot
Absolute Change
Percent Change
Locations Within pilot corridor
Farm Hill Blvd: Eden Bower Ln - Lonesome Pine Rd 1,149 1,248 99 9%
Farm Hill Blvd: McGarvey Ave - Jefferson Ave 935 1,089 154 16%
Jefferson Ave: Highland Ave to Alameda de las Pulgas 1,325 1,476 151 11%
Parallel Routes
Woodside Road: I-280 to Alameda de las Pulgas 3,080 3,207 127 4%
Edgewood Road: I-280 to Alameda de las Pulgas 1,864 1,855 -9 -1%
Other Potential Diversion Routes
Woodside Rd: Alameda de las Pulgas to El Camino Real 2,543 3,011 468 18%
Highland Ave: Laurel Way to Jefferson Avenue 61 84 23 38%
Jefferson Ave: Utah Way
and Farm Hill Boulevard 365 468 103 28% Dover Rd: Lancaster Way and Alameda de las Pulgas 45 46 1 2% McGarvey Ave: Farm Hill Blvd and Fernside St 461 681 220 48% Lancaster Way: Jefferson Ave and Harding Ave 30 24 -6 -20% Bret Harte Dr: Emerald Hill Rd and Glennan Dr 42 40 -2 -5% Sources: Quality Traffic Data (May 26-28, 2015 and May 31-June 2, 2016).
From: Don and Fran Carlson>
Sent: Tuesday, October 4, 2016 9:32 PM
To: GRP-Farm Hill Feedback
Subject: Re: Culmination of Farm Hill Blvd. Pilot (trial) program

Want to add a comment about Cambridge and Farm Hill intersection. When making left turns off of Cambridge and onto FHB, turning drivers cannot clearly see which one of two FHB lanes are occupied by north east FHB drivers that are approaching from right side; how can Cambridge drivers view be improved?

Don Carlson

Sent from my Don iPad

> On Oct 4, 2016, at 3:46 AM, Don and Fran Carlson <> wrote:
> >
> > While the newly striped traffic lanes have indeed slowed autos down and does not greatly affect my retired status as a daily user on non-commute times, could we please
> > look beyond today and consider the much greater use of Hgy. 280 north east on Farm Hill Blvd as a access/exit from downtown Redwood City to the many new building now being constructed therein.
> >
> > Couldn't we plan to divert some of this traffic off of Jefferson?
> >
> > Please don't tell anyone else, but Brewster (north westerly of El Camino) is one my best
> > kept secrets (as opposed to either Woodside Road or Jefferson!)
> >
> > Don Carlson, R.C. Farm Hill Resident since 1956
> >
> > Sent from my Don iPad
> >
The report concludes that traffic diversion to side streets is inconclusive because of an overall increase in area traffic but does not conclude that the same increase in area traffic will only continue to worsen the traffic on Farm Hill over time, garbage in equals garbage out., Did anyone even look at the increase in traffic on Hopkins, Brewster and Whipple because I can tell you that since the lane change traffic on those streets has also increased.

Additionally, based on my experience and that of others, someone is going to be seriously injured as a result of the vehicle conflict created by the addition of the center lane, how do you quantify the impact of this continuous conflict point. I have personally witnessed several near misses as drivers traveling in either direction use the center lane as a passing lane.

It was clear from the beginning of this so called pilot program that the City never intended to change it back no matter how many people opposed it, never the less for the record I support changing Farm Hill back to four lanes.

Finally, I am sure that tonight’s attendance will not be as robust as it would be if the Giants were not playing for a wildcard spot.

TCI Properties
Dennis P. Danielian Corporation, Partner
Redwood City, CA 94063
Jessica Manzi, PE  
Community Development Department  
Phone: (650)780-7372

From: Brooke Wagner ]  
Sent: Tuesday, October 04, 2016 10:01 AM  
To: GRP-City Council <council@redwoodcity.org>; GRP-Farm Hill Feedback <farmhillfeedback@redwoodcity.org>; CD-Jessica Manzi <jmanzi@redwoodcity.org>  
Subject: Farm Hill Improvement Project- SUPPORT Bike Lanes

To Farm Hill Improvement Team-

With all the vocal dissent from people concerned about traffic congestion as a result of reducing traffic lanes and adding bike lanes on Farm Hill, I felt that the voices of support were being lost and wanted to share my experience with the project.

I am a mother of twin 4 year olds who attend Redwood Parent's Nursery School at the top of Jefferson Ave. I love biking with kids and had previously been forced to ride (illegally) on the sidewalk because of the lack of bike lanes on Farm Hill. People are mistaken in the notion that hills prevent people from riding bikes. I currently ride an electric cargo bike and "drove" carpool with that bike last year, using those bike lanes every time I rode my children and a friend of theirs up to school. I just used that bike lane yesterday while riding with my son. It was FAR too dangerous to ride that section of road before the installation of the lanes.

The lanes provide bike access to Emerald Hills Road that previously had a "floating" bike lane- a bike lane that was essentially useless because it lacked continuity with the rest of the community. The Farm Hill lanes effectively bring the entire Emerald Hills Neighborhood into bike accessibility- particularly in a world where electric bikes make hills insignificant and act as a true alternative to driving. The new lanes also provide bike access to Canada College which had previously been only accessible by bike for those who approached from West of 280. It also provides bike access to Stulsaft AND Barkley Parks, which, again, had not been accessible via bike previously.

For most people, what is far more important than the bike lanes is the fact that the lane reduction has done what policing had failed to do: it has slowed speeders down and made the neighborhood safer.

Prior to the lane reduction, cars exiting the freeway frequently sped in speeds excess of 50MPH down Farm Hill Blvd despite frequent policing and many signs warning of a 35MPH speed limit. Although I have yet to see any increases in traffic congestion, the reduction in lanes limits the ability of drivers to drive at unsafe speeds when exiting the freeway as long as
another car is in front of them. This is a residential area where children and pets play—unsafe speeds were not inhibited by signage or policing but the lane reduction has made a noticeable difference.

Stulsaft park is a popular park for both the play area and the off leash pet area. The park is primarily accessed by parking along Farm Hill Blvd which meant that, prior to the lane reduction, drivers had to exit into a fast moving traffic lane. This was dangerous enough, but with the previously mentioned problem of speeding, it made it quite dangerous to visit the park via car but inaccessible to visit via bicycle. With the added bike lane, users of the park are buffered from cars making the park safer for visitors as well as by giving the park accessibility via bicycle.

The benefits of this lane reduction/bike lane addition have been profound for this neighborhood and with little to no changes in traffic flow patterns. Any changes in traffic congestion seem negligible, at best.

As an electric bicycle owner, I can attest that eBikes truly provide a viable alternative to car traffic, provided there are safe places to ride. I applaud Redwood City's progressive ideas regarding increasing bike accessibility. EBikes are opening cycling up to people who are NOT the typical fitness fanatics and are allowing every day people to ride bikes to work at the same speed as cars and with no sweating/showers. This is revolutionary and should be an important component of Redwood City's growth by reducing traffic congestion and emissions problems. (There are currently more eBikes in China than Cars in the US: the eBikes are coming here now too)

I would be happy to testify or help to promote the benefits of the bike lane increases in Redwood City and help to dispel the dual myths that hills prevent cycling or that bike riding is only for the fitness fans.

Thank you in advance,

Brooke Wagner

(mother of twin four year olds who currently rides an electric family cargo bike to do ALL my driving with BOTH children: Costco, groceries, pet store, school, errands etc. I also happen to be a former professional cyclist- but I ride THIS bike because I don't want to break a sweat while running my errands. My husband rides HIS electric bike to Sunnyvale for work)
Hi there,

I did not hear back from anyone who receives this email. I just had a chance to review the final evaluation prepared by Kimley Horn. The summary chart of Goal vs. Met or Worsened at the end is far too simplistic to capture an actual analysis of the data. Further, the fact that the traffic diversion outcome is considered "inconclusive" is a significant result. Across the board in all the charts the number of actual cars have increased since pre-pilot. This can likely be linked to the increased development in the downtown, but nowhere in the evaluation or analysis does it mention that this is the reason, nor does any analysis or outcome of any of the objectives consider this as a co-factor. Instead, the analysis examines each objective alone and without any context. For example, saying that bikes increased by 7 more bicyclists means nothing if you take into consideration the addition of the city's population and commuters, yet the summary chart portrays it as a positive and meeting the goal.

In addition, are you aware that some of the data included in the Interim report does not match or add up to the numbers in the Final report? For example, the number of people crossing the street at Farm Hill and McGarvey said pre-pilot was 0 and interim was 20, but now in the final it says 14. This is an actual number, not an average during the pilot. So, something is wrong with the data, by example of this alone.

Finally, no statistician would ever validate data based on different lengths of time - Comparing 2010 to 2014 for the average number of crashes at 1.28 to just 1 year of crashes post-pilot to 1, basically implies that we will have more crashes per year with this pilot design than we did with our previous 4 lane street, but again, the summary chart shows this as a decrease of crashes and meeting goal. This is incorrect.

There are so many mistakes, miscalculated data, and lack of analysis in this report. I cannot see how this final report could lead to any informed management decision.

Frankly, we have MORE cars, MORE residents, MORE commuters, and LESS lanes on the major corridor. We also have MORE diverted traffic as a consequence of this pilot, on roads that
cannot support that amount of traffic, and has made those truly neighborhood / residential roads less safe, and convincing others that Farm Hill is somehow safer because it has a bike lane and people are crossing the street, with still the same speeding traffic, is incredibly misleading.

Please consider this in your analysis, and recommend that the lanes be changed back or modified in a way that would allow 4 lanes in some parts of the corridor to help relieve the enormous increase of cars on smaller streets. On Highland avenue alone, this final data says we have about 200 more cars on our road during peak times. We did not buy our home on a main street. Farm Hill residents did and knowingly so. Farm Hill cannot be considered a "neighborhood" street. It's a BOULEVARD and meant to connect the major highway to the downtown of the city. If you want to continue to grow downtown and increase commerce, and taxes from revenue as a result, you cannot hurt the families and residents that live in the city in the process based on decisions made from poor data.

I would appreciate a thoughtful reply back.

Thanks,
Sherine Khalil
Highland Avenue Resident

On Thu, Sep 29, 2016 at 7:27 PM, Sherine Khalil <> wrote:

Dear Jessica,

Thank you for taking the time to review my email about feedback on Farm Hill / Jefferson pilot project. Do you or anyone on your team concerning this project follow feedback on Nextdoor? That would save a lot of time. Maybe you could create a group on there.

I am including a summary of my feedback below about the Farm Hill pilot project, but before I get into that, I would like to suggest one of two options regarding the upcoming meeting on October 5th:

The city has only published its Interim data report on the website and has not yet provided residents with the final data report, but plans on presenting the final data at the meeting, AND wants to hear from residents and have the committee provide a recommendation to the City Council on whether or not to keep the pilot as is or revert it back to 2 lanes each way, in the same meeting. I do not think that is fair, unless the City really does not care to hear resident, homeowner, tax payer opinions or questions about the validity of the data to meet the said objectives, or even if those objectives were valid to begin with, but just says it does and will do what it wants regardless of feedback.

So, one option I suggest is that you cancel the meeting, and instead, provide the final data set report to the residents, since the interim report only reflects 3 months of data compared to, often several years of pre-pilot data, yet still draws conclusions at that "interim" period, which is not mid-point data as described, but rather, one quarter data. Give the residents time to review the report, provide feedback, analyze the data, ask questions, etc. before meeting, and then have a meeting to discuss the final data and the public feedback before deciding on what to advise the
Council.

The second option is to still provide the final data set as early as tomorrow, keep the October 5th meeting to present and discuss, but don’t determine the conclusion within that meeting. Give it a month to continue to collect feedback and then have another meeting to advise the Council.

Given that the Interim data report was completed in January 2016, (and it is basically useless because of the time period taken), and we are now September and no final data report was provided to residents, but you have a meeting scheduled for next week to discuss it, and decide all at once without any feedback is completely unacceptable to this community, particularly the neighborhoods that are directly affected by this poorly implemented pilot. I explain why I think this is, below. Also, what did the city do with the petition from residents that was sent in with over 2500+ names on it to change the lanes back to 2?

My summary feedback based on the 32 page document of interim data report: The full review can be seen better on my thread on Nextdoor titled "Farm Hill City data and October 5th meeting".

Without looking at data, and just understanding that on one end of Jefferson, Redwood City decided to expand and grow its downtown with major companies such as Box, Google, and is expecting Stanford, as well as several new residential buildings, it is illogical to shrink the other end of Jefferson and Farm Hill Bouelvard, which directly connects its downtown to the I-280, and its Farmhill and Emerald Hills residents to Alameda de las Pulgas, El Camino Real, and Veteran to Whipple to the 101, from 2 lanes each way to 1 lane each way.

But, I did take the time to look at the interim data report on the website, and it is largely inconclusive due to unequal period of time comparisons of the data. It also does not seem to take into consideration the increasing population of residents and non-resident commuters which are as a result of the City’s decision to expand downtown. Essentially, it appears that the city heard complaints for residents who lived on Farm Hill in 2012, implemented this project in 2015 without any further data or notification to residents or neighbors, causing a surprise to the community, all the while having new growth in downtown.

The project created bike lanes, shrunk driving lanes, and consequently, diverted traffic to narrower hill streets that were not designed to carry the increased traffic loads, often do not have shoulders or sidewalks, will experience accelerated deterioration, and thus, making those streets unsafe, particularly during peak times. For example, according to the interim report, within the first 3 months of the pilot, Highland Avenue had 60 additional cars driving on it each morning, likely avoiding Farm Hill, and being used as an alternate route to get kids to Roy Cloud. Perhaps it should be considered that Farm Hill is a Boulevard and bikes should have routes on smaller side streets to be safer. The way the interim data reads right now, the average of 1.3 accidents per month over the 5 year period compared to the average of 1 accident per month in 3 months, can be interpreted to mean that the previous configuration was actually safer than the pilot, statistically speaking. The majority of people still speed on Farm Hill. Bicyclists and people crossing the street and riding the busses increased, but that data becomes moot because it is not considering the increased population RWC has experienced.

Doesn't the city see that if you create more jobs and more housing, that would create more cars and more traffic, which should mean more lanes and not less lanes on the major boulevard and avenue that connects the I-280 to downtown?
I would love to know what your thoughts are to this feedback and what the plan is for the final data set.

Thank you,
Sherine Khalil
Highland Avenue Resident in East Farmhill / Lower Emerald Hills
Jessica Manzi  
Senior Transportation Coordinator  
City of Redwood City  
650-780-7372

Begin forwarded message:

From: Rob Hammond > Date: October 4, 2016 at 5:51:09 PM PDT  
To: farmhillfeedback@redwoodcity.org  
Subject: Change Farm Hill Blvd back to two lanes

I live off of Farm Hill Blvd and work on Jefferson Ave. As a result I drive Farm Hill Blvd about 10 one-way trips per day.

Before the change to Farm Hill, I had no problems driving the road. It was an enjoyable drive. Ever since the change to single lanes I HATE DRIVING FARM HILL!!! It is so incredibly frustrating ever since the change to single lanes.

First of all, no one stops at the intersection of Farm Hill and Emerald Hill Rd. anymore. I have lived on Emerald Hill for 20 years. Until the road change, I rarely had a problem there. Now, so many people want to get ahead of other people that they either come to a rolling stop at the stop sign or just blow right through it. This happens nearly every time I come to the intersection. I have been nearly hit multiple times by people not stopping at the sign in the last year. It is particularly bad for people coming down the hill from Hwy 280, but drivers coming up the hill are guilty as well. There used to be a stop sign in the middle of the road at Farm Hill & Emerald Hill. I do not know if they are in a rush to pass other drivers or maybe people don't see the stop sign. If a sign was in the middle of the street, drivers would have no excuse. Please put it back!!! Please make it as obvious as possible that there is a stop sign there!!! Please increase enforcement at that intersection!!!

Another issue is that driving Farm Hill is now so incredibly frustrating. It is particularly bad going up the hill from Alameda, but it is also annoying going down the hill. So many people drive 20mph up the hill. You used to be able to pass them, but now you are stuck behind them. It is why people use any opportunity to pass slow drivers at places like Emerald Hill Rd. It is the cause of so much aggression on the road.

You may have achieved your goal of slowing everyone down and maybe the end result is less severe accidents since everyone is going slower, but I personally find the road to be much less safe than before since there is so much more road rage. There is now so much backed up traffic and people going too slow that I see all sorts of bad behavior, such as blowing through the stop sign at Emerald Hill, tailgating, or passing cars in the middle turn lane. I hate driving the road now.

Please change Farm Hill Blvd back to two lanes in both directions.
Cheers,
Rob Hammond
I’ve been living on Jefferson Ave. for 12 years now. I live next to Dug the Dinosaur, on the sharp curve. I’ve been discussing a road change with my neighbors since the day I moved in because the traffic was much too fast and very dangerous in front of our houses. For all the ideas that we had brainstormed to help slow traffic and increase safety, we never came up with the idea that the traffic engineers have designed for the Pilot Project to help fix the traffic issues. I want to thank the engineers for really analyzing the problem and coming up with a fantastic solution.

I would like to remind people, especially those that are opposing the Project, that the whole purpose of this change is SAFETY. I think people put too much importance on their commute time being a couple additional minutes and forget that we are aiming to save lives and create a safer neighborhood for families to live in.

I have personally witnessed multiple accidents in front of my house. My wife’s car was hit and totaled, my car was hit and sideswiped on two separate occasions, my next door neighbor’s cars were hit multiple times and a car actually crashed into my neighbor’s living room across the street from me.

We must also remember that the entire span of road for the Pilot Project is purely a residential area that includes a park and schools. There is not a single business on the stretch of Farm Hill and Jefferson, yet we had a 4 lane road that became a 4 lane expressway. No wonder residents, including me, rally for a change.

Even though it’s very democratic to include all residents in Redwood City to express their feelings about this change, the truth is the people that live on Farm Hill and Jefferson are the ones that are affected the most. Their voice should be heard and considered all the more since they are affected by the traffic problem every minute of each day.

Having said that, myself and my fellow neighbors (I mention “my fellow neighbors” confidently because I have collected over 100 signatures for a change) support the change the engineers have made for the corner of Jefferson that I live on, referred to as the Jefferson/Highland area of the Project..

With the current configuration, I do feel that it is much safer for me, my wife and our two young children to get in and out of the car when I’m parked on Jefferson. If we were to revert back to the 4 lane configuration, I would fear for the safety of my family and my neighbor’s families.

After analyzing the data, it is clear that indeed the engineers found a way to decrease speeds and increase safety as they proposed.

I don’t see any reason why we would revert back to the original configuration, especially on the Jefferson / Highland part of the project.

I would like to believe that the council members that we have elected will review the data and make an educated decision to keep the current configuration in place.

Finally I do feel very strongly again about keeping the Jefferson/Highland area as it is, since I live here and experience the improvement to this particular part each day.

Sincerely,

Vagelis Papazisis
Hi Jessica, happy Monday!

I reviewed the report and it seems that all vehicle data between 7AM -8AM was discarded. Was it determined that there is no traffic on Farm Hill during 7-8AM. 7-8AM is when the peak traffic delays, slowest commute, highest conflicts and most pollution occurs. The evaluation report is rigged. Without showing traffic data between 7-8AM results for all parameters show "improved". I also find it interesting that pedestrian traffic data between 7 and 8 am was included. The report and study is flawed.

Best Regards,
Fred Sinfield

Sent from my iPhone

On Sep 30, 2016, at 5:33 PM, CD-Jessica Manzi <jmanzi@redwoodcity.org> wrote:

All,

Attached to this email you will find the final evaluation memo for the pilot project. As mentioned previously, it will be presented to the Complete Streets Advisory Committee at a special meeting next Wednesday, October 5th at City Hall (1017 Middlefield Road) at 6.30pm (light refreshments are available at 6pm). Please join us!

Jessica Manzi, PE
Senior Transportation Coordinator, Community Development Department
Phone: (650)780-7372
E-mail: jmanzi@redwoodcity.org
www.redwoodcity.org

<Farm Hill Blvd Post-Pilot Evaluation Memorandum - Final.pdf>
I think page 10, max time, westbound am should be 3:42 not 1:06. Also midday westbound should be -0:01 instead of 0:18

Tom Pressburger
Farm Hill Blvd Redwood City, CA 94061

On Fri, Sep 30, 2016 at 5:33 PM, CD-Jessica Manzi <jmanzi@redwoodcity.org> wrote:

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Jessica Manzi, PE
Senior Transportation Coordinator, Community Development Department

Phone: (650)780-7372
E-mail: jmanzi@redwoodcity.org

www.redwoodcity.org
Jessica,

I appreciate your intentions to keep the public fully informed about community decisions and how information was gathered to make these decisions, but, as a rather old senior and over fifty year citizen of Redwood City, would you also in the future include a brief optional summary that requires two minutes of reading, rather than 20 minutes. That way, you satisfy all parties and we all feel happily informed. Thanks for your community work.

Derald Blackmore

On Sep 30, 2016, at 5:33 PM, CD-Jessica Manzi <jmanzi@redwoodcity.org> wrote:

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Jessica Manzi, PE
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<Farm Hill Blvd Post-Pilot Evaluation Memorandum - Final.pdf><Farm Hill_Improvement_Flyer092016.pdf>
Thank you, Jessica.

We live on Farm Hill and have greatly appreciated the change. It's not only slowed people down, it's stop the drag racing that use to occur, made it easier to cross the street to see our neighbors, increased the number of bikers on the street (including us), made it easier to get in and out of our driveway and much more.

For most of the day the traffic moves without any loss of time. The only time I've noticed any type congestion (and I use that term loosely as the traffic still moves freely) is between of 7:50 am and 8:40 am during the week when school is in session.

I strongly support making the pilot program lane adjustments permanent. It makes redwood city better and is much safer for the residents.

Let's not undue a good thing because people are in a hurry, leave late and do a bad job of planning their day.

Let's keep Farm Hill and Redwood City safe and a great place to live.

Thank you,
Jeff Missad

Sent from my iPhone

On Sep 30, 2016, at 5:33 PM, CD-Jessica Manzi <jmanzi@redwoodcity.org> wrote:

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Jessica Manzi, PE
Senior Transportation Coordinator, Community Development Department
Phone: (650)780-7372
E-mail: jmanzi@redwoodcity.org
www.redwoodcity.org
Dear Redwood City,
Thank you very much for the new bike lanes and the traffic calming on Farm Hill.
Please note that if we still had the old 4-lane design, our family would be adding significantly to both Farm Hill and local commute traffic. We would *daily* be adding at least 3 and possibly 5 trips on Farm Hill during morning peak commute.

Instead, we now have 2-3 *weekdays* every week when our cars are not needed at all - ALL local trips, including to work, to two different schools, to shopping, are done on foot or by bicycle. Sometimes it’s difficult to see what is not there. We are happy to not be in those traffic lanes. Thank you for helping us get off the road - The Gellcliffs
Re: Farm Hill Boulevard Street Improvement Pilot Project

October 4, 2016

To Whom It May Concern:

I am unable to attend this Wednesday’s meeting, but aware that the recent Farm Hill project results will be presented to the Complete Streets Advisory Committee. In lieu of attending in person, I submit this letter as a resident of Farm Hill Blvd.

I have reviewed the project evaluation distributed on September 30, 2016, which demonstrates a balance of notable improvements alongside neutral and even some negative results.

My family has lived at the corner of Farm Hill and Glennan Drive since 2007. During this time, we have witnessed multiple accidents at this particular intersection, and had three vehicles in nine years drive directly onto our property – one large truck hit and run came within feet of our front porch at a dangerously high speed. As a resident who lives on Farm Hill Blvd, with a home bordering a bus stop and a busy intersection, with children who walk to school and who walks, and who runs and drives regularly up and down Farm Hill, commuting to and from work - Farm Hill to 280 to San Mateo - during the morning and afternoon rush hours, I offer a first person account of improvement.

Speeding traffic has been improved. Squealing tires and tire marks from taking the turn off Farm Hill onto Glennan too quickly have become more rare, even in the summer months where there used to always increase. We have witnessed less accidents during the pilot than in the last nine years. We feel safer crossing the street with our dog and our children.

These are observations as a resident, and it also appears that Farm Hill drivers have become more courteous, turns and driveway exits less dangerous, and while traffic is certainly slowed at rush hour and school drop off, a main concern of opponents to the project, I believe tradeoffs in safety and speed are worth it.

Thank you,

Robin Bulanti
Redwood City, CA 94061
Good morning,

This morning I planned my usual commute from Crompton road west up Jefferson/Farmhill but traffic was again stalled from McGarvey and alameda. I chose an alternate route on canyon to Edgewood. The rerouted traffic impact was felt on Edgewood west as well. Please see this mornings 3 minute video showing the Edgewood slowdown. Please include this in correspondence and forward to council.

Thanks