City of Palo Alto (ID # 9272)

City Council Staff Report

Report Type: Consent Calendar **Meeting Date: 1/14/2019**

Summary Title: Middlefield Road North Traffic Safety Project End-Pilot Report

Title: Receive Middlefield Road North Traffic Safety Project End-pilot Report and Direction to Adopt the Current Configuration as a Permanent Feature

From: City Manager

Lead Department: Transportation

Recommendation:

Staff recommends that Council receive the summary and results of a one-year pilot project on Middlefield Road between the Menlo Park city limits and Forest Avenue, and approve permanent retention of the roadway modifications that were implemented in June 2017.

Executive Summary:

On January 23, 2017, City Council approved implementation of a one-year traffic safety pilot for Middlefield Road with extensive monitoring of the corridor and adjacent areas. This report represents a summary of the detailed report developed by Alta Planning+Design, included as Attachment A.

The approved plan included a traditional road diet that removed one travel lane in each direction between Palo Alto Avenue and Everett Avenue, added a two-way left-turn lane, and converted turn restrictions from limited time-of-day to full time at the intersections of Hawthorne Avenue and Everett Avenue. The installation of these measures was completed in mid-June 2017. Staff documented travel patterns of the one-year pilot test for Middlefield Road North and divided the test into three evaluation periods:

- Pre-pilot: Prior to construction of the temporary re-configuration (spring 2017)
- Mid-pilot: The first three months after construction (fall 2017)
- End-pilot: The last three months before concluding the temporary re-configuration (spring 2018)

On December 11, 2017 City Council received a mid-year report describing the results of the pre-pilot and mid-pilot data collection efforts. The purpose of this report is to present the results of the end-pilot; and based on the findings of the data collection, Staff recommends that Council adopt the roadway modifications as permanent and direct Staff to consider use of more permanent materials.

Background:

The Middlefield Road North Traffic Safety Project was initiated in July 2016, in response to resident concerns of traffic conditions along Middlefield Road from Forest Avenue to the Menlo Park city limits, and unsatisfactory results of signed turn restrictions during the peak travel periods. Residents cited traffic congestion, collisions/safety, high travel speeds, pedestrian comfort, and noise as concerns, and identified improved safety and quality of life as the primary goals of the project between Menlo Park city limits and Forest Avenue. In August 2016, Staff convened a meeting with the local resident group to identify and prioritize issues of concern along Middlefield Road.

Staff worked with the neighborhood group to identify community needs and potential changes to the roadway to improve traffic safety along the project corridor. A community workshop was held in October 2016 at the Downtown Library where Staff presented five (5) concept ideas to address identified concerns with the option to mix and match various features from each concept plan. As a result of this community-driven process, Staff identified two alternative concept plans that would address most of the community concerns. The selected plans were slightly modified to limit impacts to motor vehicle level of service (LOS) and better address pedestrian safety.

City Council approved the road diet concept plan on January 23, 2017 and directed Staff to implement a one-year pilot project. The pilot roadway changes were implemented in June 2017. Specifically, the two southbound lanes between Woodland Avenue and Palo Alto Avenue were tapered down into one lane; the four lanes between Palo Alto Avenue and Everett Avenue were converted to two directional lanes and a two-way center turn lane with dedicated left turn lanes at Hawthorne Avenue and Everett Avenue. In the northbound direction, one lane between Everett Avenue and Lytton Avenue was removed and the northbound approach to Lytton Avenue was converted to one through lane and one left-turn only lane. In addition, full time right-turn only restrictions were implemented through the use of temporary rubber raised medians and signage at the Hawthorne Avenue and Everett Avenue approaches to Middlefield.

Discussion:

The detailed technical report included as Attachment A, describes the results of the end-pilot and provides a complete evaluation of the project. To determine if the pilot project was

successful in meeting the stated goals, a series of 20 performance measures were tracked during the pre-, mid-, and end-pilot periods. These metrics fall within the following categories:

- Safety
- Efficiency
- Diversion
- Reliability
- Opinion

Safety

Vehicular collisions occurring along Middlefield Road are of particular concern amongst residents. Past collisions resulted in injuries and encroachment onto the sidewalk areas and private properties, creating safety and quality of life concerns for the residents that live and travel along Middlefield Road. The primary goal for this project was to reduce vehicular collisions and improve corridor safety while minimizing impacts to vehicular operations.

Reported collision data was obtained from the Palo Alto Police Department for the pre-, mid-, and end-pilot periods. The Palo Alto Police Department shared motor vehicle-, bicycle-, and pedestrian-involved reported collisions on Middlefield Road from Palo Alto Avenue to Channing Avenue. Motorists reported three collisions during the last six months of the pilot from January 2018 through June 2018 on Middlefield Road between Palo Alto Avenue and Lytton Avenue. This is a decrease from an average of six reported collisions in the same six-month period between 2012 and 2016. The safety countermeasures are believed to have contributed to reducing the collision rate in half, during the end-pilot period. This represented a five-year low for the corridor.

Near-misses are close interactions between multiple roadway users that ultimately don't result in a collision. The number of near-misses observed between the pre- and end-pilot period decreased by 100 percent during the weekday peak periods at two intersections along the project corridor. After an initial increase during the mid-pilot period while drivers became accustomed to the new roadway configuration, the number of observed near-misses at Middlefield Road/ Hawthorne Avenue and Middlefield Road/Everett Avenue during peak morning, mid-day, and evening periods dropped to zero.

Based on the project survey, the number of residents with safety concerns about the project corridor was reduced between the pre-pilot and end-pilot periods. Approximately 58 percent of respondents claimed an improvement in safety conditions as a result of the pilot project. Additional time to adapt to the roadway restrictions along with enforcement would address lingering safety concerns surrounding illegal turning maneuvers.

Efficiency

A secondary objective of this project was to maintain the efficient movement of vehicles. Intersection Level of Service (LOS) and intersection queue lengths were measured to evaluate this category. LOS is defined in terms of the average total vehicle delay of all movements through an intersection. Staff collected turning movement counts at two signalized intersections --f Middlefield Road at Lytton Avenue and Middlefield Road at University Avenue -- and evaluated LOS for these intersections. The LOS is based on the highest peak hour during each of the AM and PM peak periods.

Middlefield Road at Lytton Avenue intersection

At the Middlefield Road/Lytton Avenue intersection, Level of Service (LOS) remained approximately the same between the pre- and mid- pilot period, but declined from "D" to "E" during the end-pilot period for the morning peak due to a six second increase in delay per vehicle. This may be attributed to the start of the separate Upgrade Downtown project, which involved a street closure of University Avenue in the downtown area and a subsequent detour of University Avenue traffic to Lytton Avenue and Hamilton Avenue. The midday and evening peak period levels of service stayed the same at 'E' between pre-pilot and end-pilot periods but experienced an eight second and a 16 second increase in delay per vehicle, respectively. The delay increases may also be attributable to the detours from University Avenue.

During the peak periods at this intersection, an increased potential for queues to back-up into the next intersection in the northbound direction was observed due to lane reconfiguration. This queuing was also observed to increase after the start of the Upgrade Downtown project closures of University Avenue. Overall, the potential for back-ups increased due to the reduction from two lanes to one lane in the northbound direction. In response, City Staff implemented coordinated signal timing programs during the AM and PM peak periods. Though the queues may extend between Lytton Avenue and University Avenue, the two intersections were observed to generally operate with improved conditions versus the pre-project condition without coordination. Adding signal coordination during the midday is currently being considered and would be investigated further if this project were to be approved for permanent retention. Staff will collect new traffic data upon completion of the Upgrade Downtown project.

At this intersection, occasional traffic disruptions were observed when transit or shuttle related vehicles utilize the bus stop located on the northeast corner in the northbound direction of Middlefield Road. Because the bus stop is located immediately after the traffic signal and only one northbound lane exists, buses or shuttles would temporarily block the lane and result in vehicles stopping in the intersection and limiting capacity. This may be addressed with modifications to the corner however may be complicated due to existing utility equipment. Further evaluation of corner modifications could be considered as part of additional or future

improvements if this project were to be approved for permanent retention.

Middlefield Road at University Avenue intersection
Intersection delay increased at Middlefield Road/University Avenue intersection during the morning peak period between the pre-pilot and end-pilot periods by approximately three seconds per vehicle. The midday and evening peak periods also experienced an approximately four second increase in delay per vehicle. However, the intersection continues to operate at LOS D or better during each of the peak periods, which is considered acceptable, per City standards.

Like Middlefield Road and Lytton Avenue, this intersection operates with signal coordination during the AM and PM peak periods. At Middlefield Road and University Avenue during the morning and midday peak periods, for the 95th percentile queues were reduced with the exception of a minimal increase for the southbound direction during the midday period. During the PM peak, the northbound approach has experienced an increase in queue length, likely due to a combination of detours to Lytton Avenue due to the Upgrade Downtown project (University Avenue roadway closure) and the reconfiguration at Lytton Avenue of only one northbound through lane. Overall, estimated queue lengths have generally decreased by end-pilot period.

The slight decline in the operations of the signalized intersections with Lytton Avenue and University Avenue may be due to the effects of ongoing construction along University Avenue as part of City's Upgrade Downtown project. It is assumed that upon completion of the Upgrade Downtown project, these two intersections would operate at approximately similar or improved levels of service (due to added coordination) as compared to the pre-pilot project.

<u>Diversion</u>

Traffic diversion from Middlefield Road to parallel streets and cross streets, motor vehicle traffic volumes and vehicle classifications was measured by data collected at 12 locations within the project study area during the pre-, mid-, and end-pilot periods. It should be noted that due to turn restrictions onto Middlefield Road from Hawthorne and Everett Avenues from the local neighborhoods, some traffic is expected and intended to divert to Lytton Avenue or University Avenue to access Middlefield Road.

At five parallel routes to Middlefield Road, the average number of motor vehicles calculated over a two-day period increased from 687 vehicles during pre-pilot period to 952 vehicles during end-pilot period, including a daily increase of 197 vehicles trips on Webster, 301 trips on Byron, 387 trips on Fulton, and a 441 daily trip increase on Guinda. These increases range between 20 and 100 percent, however the end-pilot project total average daily traffic (ADT) for the local and collector streets generally remain at levels consistent with the acceptable ranges

for the respective roadway classifications.

Though the parallel streets experienced the increase in vehicle trips, Hawthorne Avenue experienced a decrease of approximately 1183 trips (33.3 percent reduction) and Everett Avenue between Byron and Middlefield experienced a decrease of 1,127 trips (37 percent reduction). As anticipated much of the traffic within the local streets diverted from Hawthorne Avenue and Everett Avenue to other local streets in order to reach Lytton Avenue, Middlefield Road, or University Avenue. An additional data collection effort may be considered upon completion of the Upgrade Downtown Project.

The amount of heavy vehicles on the local streets generally stayed approximately the same with fluctuations of about 20 or less daily trips. Guinda Street is classified as a collector street and experienced an increase of approximately 63 heavy vehicles. Additional monitoring, enforcement, and evaluation may be considered for Guinda Street. Heavy vehicle trips on Middlefield Road, a Residential Arterial, fluctuated by segment, however remained approximately three percent of the total trips, which remains relatively normal for the respective roadway classification.

Reliability

Travel time reliability was compared by measuring how long it took to drive and ride transit along Middlefield Road between the pre-pilot and end-pilot periods.

The mean motor vehicle travel times along Middlefield Road between the pre-pilot and end-pilot increased by approximately four to 15 seconds for the Northbound and Southbound directions respectively.

The overall average time for the Dumbarton Express to travel through the study area (from the Middlefield/Willow stop to the Lytton/ Cowper stop) increased slightly between the pre-pilot and end-pilot periods by ten seconds. During the AM and PM peak period transit running times, the travel time increased by 47 seconds and three seconds respectively.

Community Opinion

Survey responses were mailed to residents living within the project study area during the pre, mid, and end periods. Support for keeping the safety measures implemented as part of the pilot project grew among survey respondents over the one-year testing period from 33 percent to 66 percent. While respondents still indicated issues that they would like to see resolved such as increased congestion (16 percent of write-in responses), many respondents indicated that the project made corridor conditions better and safer (31 percent of write-in responses). In addition to the survey responses, City Staff also received various emails regarding the project.

While some of the concerns of increased traffic on adjacent streets, much of the feedback regarding the revised configuration and operations have generally been positive.

Permanent Improvements

Should the Council approve permanent retention of the pilot project configuration as recommended, this approval would include direction to City Staff to investigate alternative roadway materials and to replace the current roadway furniture (temporary islands and delineators) used as part of the pilot project with more permanent products that would be more durable and effective. It is recommended that permanent materials still be removable to accommodate maintenance and other roadway work as needed. Staff would work with the neighbors and stakeholders to ensure an acceptable aesthetic appearance that maintains compliance with standard roadway requirements. Though a formal engineer's cost estimate has not yet been established, the cost for replacement street furniture is estimated to be approximately $80,000.

In addition, Staff would evaluate, develop, and test mid-day period traffic signal coordination between the intersections of Middlefield/Lytton and Middlefield/University.

Summary:

The goals of the one-year pilot project were to improve safety conditions without any major decreases in roadway efficiency and without a large diversion of traffic to parallel streets. The amount of time needed to drive the full corridor increased by seven seconds between the pre-pilot and end-pilot periods, and, on average, 265 motorists diverted from Middlefield Road to parallel routes each day, which is expected. This increase in travel time and subsequent diversion is, in part the result of physical turn restrictions at Hawthorne and Everett, increased delay at Lytton Avenue (nine seconds) and at University Avenue (three seconds), and the potential for an increased queuing during the peak traffic periods. However, the time needed for the Dumbarton Express to travel across the corridor improved by eight seconds, fewer heavy vehicles used the route (11 percent decrease), and more bicyclists (five percent increase) and pedestrians (13 percent increase) traveled along the Middlefield North corridor each day.

Overall safety conditions improved in the study area, but some new safety concerns were created. The collision rate was reduced between the pre-pilot and end-pilot periods by 56 percent, and the number of observed close calls was reduced to zero. Some motorists were observed driving around the installed traffic diverters or making illegal U-turns, which is considered a new hazardous maneuver. With enforcement and motorists acclimating to the new roadway configuration, the number of illegal maneuvers is anticipated to decrease. In general, motor vehicle speeds decreased in the study area, with an 11 percent decrease taking

place on Middlefield Road. Although, motor vehicles counts increased on parallel routes and cross streets, the average speeds remained below the posted speed limit. Survey respondents noted improved safety conditions, with 58 percent of 150 respondents indicating a belief that the project made the corridor safer. Twenty-six percent indicated that the project did not improve safety conditions and 16 percent responded as unsure.

Because the pilot project is believed to have improved the overall safety conditions, and has received a majority support from survey respondents (66 percent in favor of keeping the changes, 20 percent against keeping, and 14 percent unsure), staff recommends that traffic calming measures be made a permanent safety feature along the Middlefield North corridor and that staff proceed with finding alternative roadway materials that provide more durability and aesthetic appearance.

Policy Implications:

Comprehensive Plan goals, policies, and programs that support the Middlefield North Traffic Safety project include:

Policy T-2: Consider economic, environmental, and social cost issues in local transportation decisions.

Goal T-3: Facilities, Services, and Programs that Encourage and Promote Walking and Bicycling.

Policy T-14: Improve pedestrian and bicycle access to and between local destinations, including public facilities, schools, parks, open space, employment districts, shopping centers, and multi-modal transit stations.

Policy T-24: Maintain a hierarchy of streets that includes freeways, expressways, arterials, residential arterials, collectors, and local streets.

Policy T-25: When constructing or modifying roadways, plan for usage of the roadway space by all users, including motor vehicles, transit vehicles, bicyclists, and pedestrians.

Program T-34: Establish procedures for considering the effects of street modifications on emergency vehicle response time.

Policy T-28: Make effective use of the traffic-carrying ability of Palo Alto's major street network without compromising the need of pedestrians and bicyclists also using this network.

Program T-39: Maintain the current program of not adding traffic signals on Alma Street north of Lytton Avenue and south of Channing Avenue to Churchill Avenue and on Middlefield Road north of Lytton Avenue and south of Channing Avenue to Embarcadero Road.

Goal T-5: A Transportation System with Minimal Impacts on Residential Neighborhoods

Policy T-30: Reduce the impacts of through-traffic on residential areas by designating certain streets as residential arterials.

Program T-41: The following roadways are designated as residential arterials. Treat these streets with landscaping, medians, and other visual improvements to distinguish them as residential streets, in order to reduce traffic speeds.
• Middlefield Road (between San Francisquito Creek and San Antonio Road)

Policy T-33: Keep all neighborhood streets open unless there is a demonstrated safety or overwhelming through-traffic problem and there are no acceptable alternatives, or unless a closure would increase the use of alternative transportation modes.

Goal T-6: A High Level of Safety for Motorists, Pedestrians, and Bicyclists on Palo Alto Streets.

Policy T-39: To the extent allowed by law, continue to make safety the first priority of citywide transportation planning. Prioritize pedestrian, bicycle, and automobile safety over vehicle level-of-service at intersections

Resource Impact :

Permanent retention of the pilot configuration would require minmal resources; however replacement of the temporary/pilot roadway equipment is estimated to cost approximately $80,000. This would be funded from the City's current Transportation and Parking CIP, PL-12000. There is sufficient budget in this project, as approved in the Fiscal Year 2019 Adopted Capital Budget. No additional budget is needed.

Timeline:

With approval of permanent retention, Staff would begin investigating alternate roadway material immediately. Replacement of the roadway furniture would be anticipated for late

spring or summer 2019.

Environmental Review

The pilot project qualified for a Class 1 Categorical Exemption. The Class 1 exemption covers minor alterations to existing facilities so long as they involve no or negligible expansion of use. Although the pilot project included a lane reduction on Middlefield Road, the overall roadway capacity change was minimal because two lanes were maintained at the intersections with Lytton Avenue and University Avenue.

There is a slight decline in the operations of the signalized intersections with Lytton Avenue and University Avenue. However, this is due to the downstream impacts of ongoing construction along University Avenue as part of City's 'Upgrade Downtown' project. It is assumed that upon completion of Upgrade Downtown project, signalized intersections would operate at approximately the same motor vehicle level of service as prior to the implementation of the pilot project.

Attachments:

Attachment A: Detailed Evaluation Report for Middlefield Road North Traffic Safety Project (PDF)

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MEMO

To: Ruchika Aggarwal and Rafael Rius (City of Palo Alto)

From: Hugh Louch and Kyle James (Alta Planning + Design)

Date: January 3, 2019

Re: Middlefield North Road Diet Evaluation – Technical Memorandum

Introduction

To improve traffic safety conditions on Middlefield Road in northwest Palo Alto, the City of Palo Alto tested a temporary re-configuration of the roadway on Middlefield Road from the north City limit (San Francisquito Creek) to Forest Avenue. This technical memorandum documents the impacts of the one-year test for the Middlefield North Road Diet Evaluation for the segment of the roadway between Palo Alto Avenue and Lytton Avenue and divides the test into three evaluation periods:

- **Pre-pilot**: Prior to construction of the temporary re-configuration (summer 2017)
- **Mid-pilot**: The first three (3) months after construction of the temporary re-configuration (fall 2017)
- **End-pilot**: The last three (3) months before concluding the temporary re-configuration (summer 2018)

At the conclusion of the end-pilot period, the project will be presented to Palo Alto's City Council for adoption as a permanent feature along Middlefield Road, for modification, or for reversal to pre-pilot conditions. To help inform the City Council's decision, the City of Palo Alto identified a series of performance measures within five (5) categories to track over the life of the project:

1. **Health & Safety**
    - Reported collisions
    - Observed near-miss collisions
    - Hazardous maneuvers
    - Motor vehicle speeds
    - Outdoor sound levels
2. **Intersection Impacts**
    - Intersection turning movement counts
    - Intersection level of service
    - Intersection queue lengths
3. **Traffic Diversion**
    - Traffic volumes
    - Motor vehicle classifications
4. **Travel Reliability**
    - Motor vehicle travel times and buffer time indices
    - Transit running times
5. **Public Opinion**
    - Resident survey responses

Study Area

From January 2014 to April 2017, nearly 100 collisions occurred on Middlefield Road between the north City limit and Forest Avenue (see **Figure 1**). The City of Palo Alto identified this Middlefield North corridor as a strong candidate for a road diet and implementation of traffic calming measures. As part of the City's commitment to building better and safer streets, it began a traffic safety program, which included improved safety conditions on the Middlefield North corridor without any major decreases in roadway efficiency and without a large diversion of traffic to parallel streets (see **Figure 2** for a photo of pre-pilot travel conditions on the Middlefield North corridor).

Figure 1: Middlefield North Road Diet Study Area

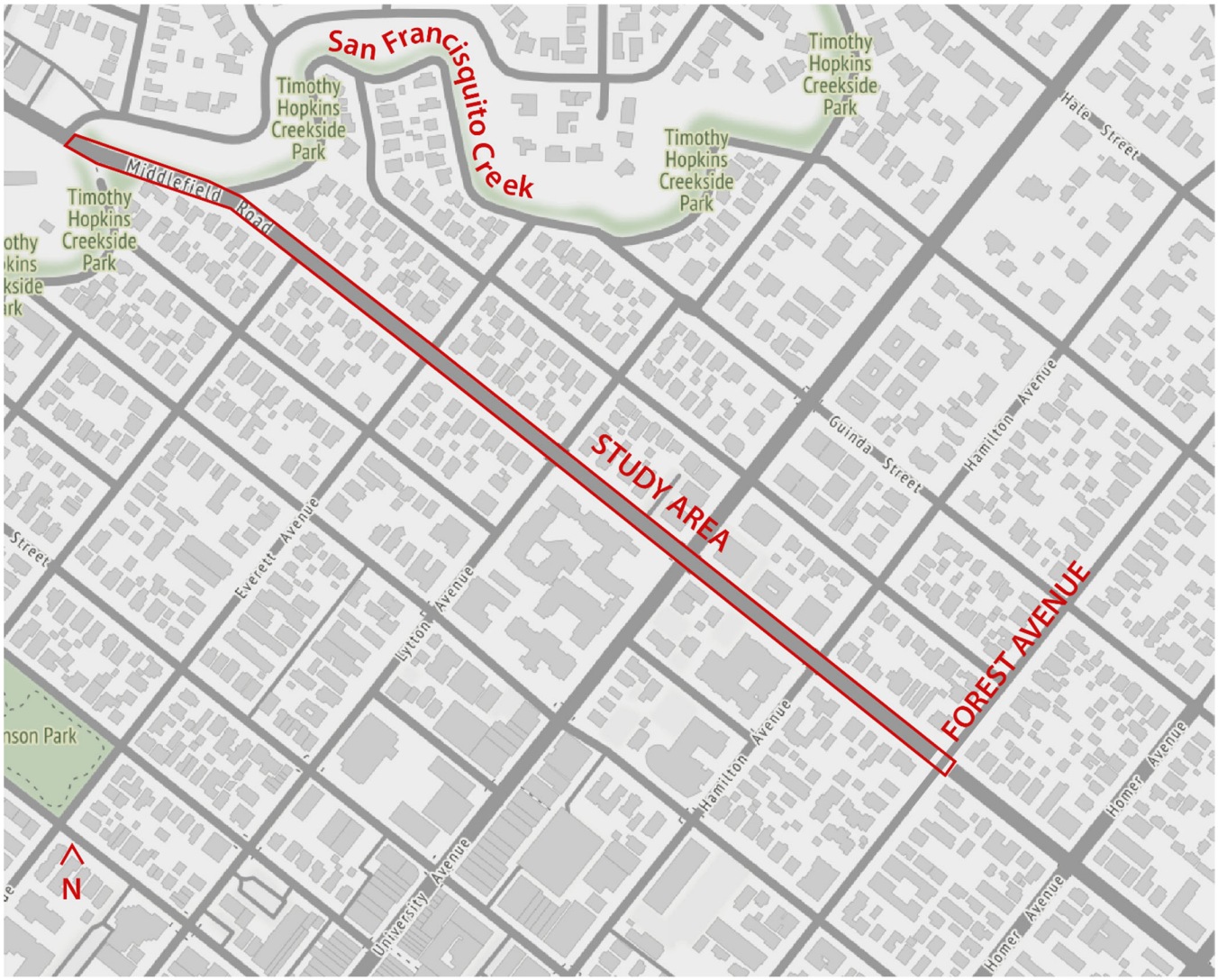


Figure 2: Pre-pilot Conditions on Middlefield North Corridor

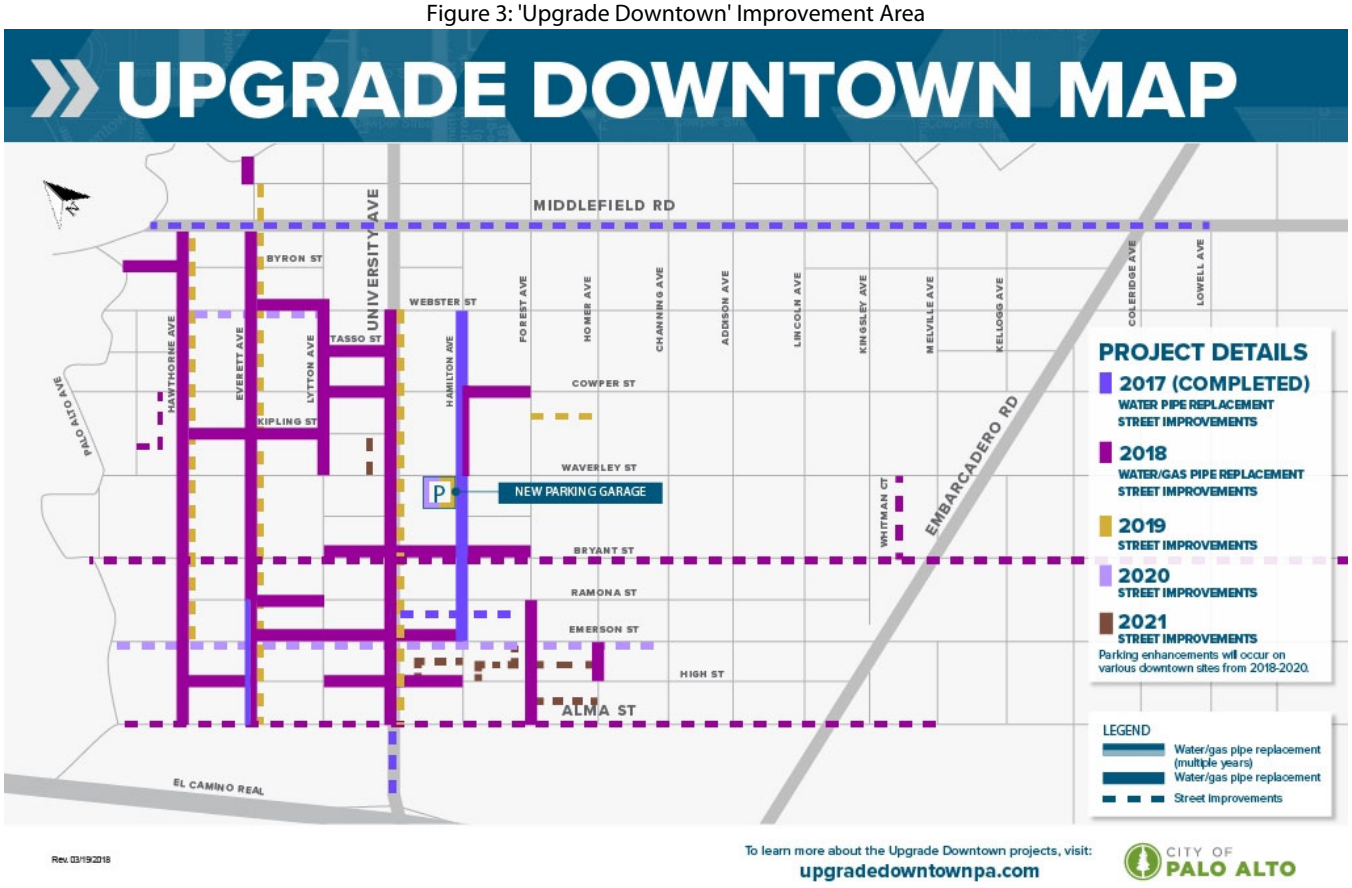
To achieve these goals, the City of Palo Alto created a one-year pilot project which included a road diet of the Middlefield North corridor. The City converted four-lane segments on the Middlefield North corridor into two lanes with a center turn lane and added turn restrictions at select intersections. Specifically, the City tested the following changes:

- Two southbound lanes between Woodland Avenue and Palo Alto Avenue were tapered into one lane
- Four lanes between Palo Alto Avenue and Everett Avenue were converted to two bi-directional lanes and a center turn lane
- One northbound lane between Everett Avenue and Lytton Avenue was removed
- Left-turn restrictions were implemented through the use of temporary rubber medians at the Hawthorne Avenue and Everett Avenue intersections

Limitations

During the end-pilot period, the City of Palo Alto began 'Upgrade Downtown', a utilities and street improvement project that overlapped with part of the Middlefield North Road Diet corridor. Construction from the concurrent project directly impacted multiple intersections along the study corridor (see **Figure 3**), and it likely had downstream impacts on travel patterns. While it was not possible to quantify the exact influence that 'Upgrade Downtown' had on the study corridor during the study period, it was assumed that ongoing construction resulted in a decrease in through motor vehicle traffic along the Middlefield North corridor.

Figure 3: 'Upgrade Downtown' Improvement Area



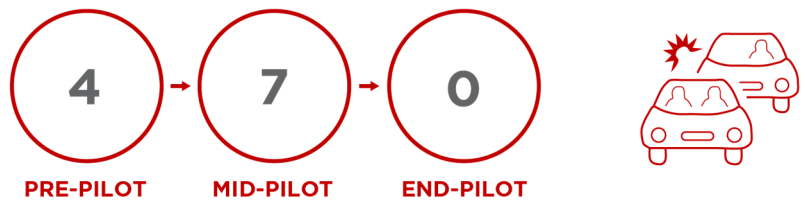
Health & Safety

The health and safety of roadway users within the study area is the primary concern of the City of Palo Alto for the Middlefield North Road Diet Evaluation. For this evaluation category, five (5) performance measures were identified:

- Reported collisions – The number and rate of motor vehicle-, bicycle-, and pedestrian-involved collisions along the project corridor that were reported to, and provided by, the Palo Alto Police Department
- Near-miss collisions – The number of unsafe travel behaviors at two (2) intersections along the project corridor that resulted in close interactions between multiple roadway users
- Hazardous maneuvers – The number of illegal travel behaviors at two (2) intersections along the project corridor that did *not* result in close interactions between multiple roadway users
- Motor vehicle speeds – The average speed of motor vehicles at 12 locations along the project corridor, parallel streets, and cross streets
- Outdoor sound levels – The weighted average of outdoor ambient noise at two (2) locations within the project study area

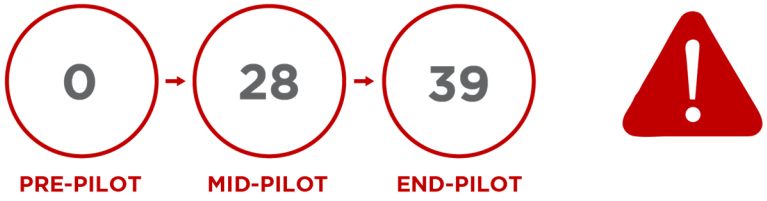
The rate of reported collisions was cut in half between the pre- and end-pilot periods, from 4 collisions per 100 days to 2 collisions per 100 days. While three (3) collisions were reported during the end-pilot period, this represented a five-year low compared to historic data for the corridor between 2012 and 2016.

The number of near-miss collisions observed between the pre- and end-pilot period decreased by 100 percent during the weekday peak periods at two intersections along the project corridor (from 4 near-miss collisions to 0 near-miss collisions). After an initial increase in near-miss collisions observed through review of traffic camera video during the mid-pilot period and reported by residents through the mid-pilot survey, survey respondents noticed a marked improvement in overall safety conditions which was reflected in reviewed video at the two (2) intersections.



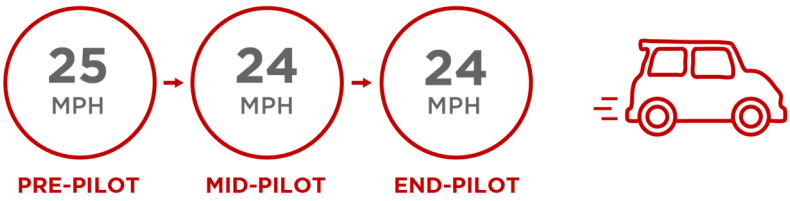
The number of observed hazardous maneuvers increased from 0 during the pre-pilot period to 39 during the end-pilot period, with most hazardous maneuvers coming from motorists driving around the temporary delineator posts or performing illegal u-turns to avoid the posts.

OBERVED HAZARDOUS MANEUVERS



The average motor vehicle speed at the three (3) observed locations on Middlefield Road decreased from 25 mph to 23 mph during between the pre- and end-pilot periods (-10.5 percent). However, the average motor vehicle speed at the five (5) observed parallel street locations increased from 17 mph to 19 mph between the pre- and end-pilot periods (13.1 percent), and the average motor vehicle speed at the four (4) observed cross street locations increased from 17 mph to 19 mph between the pre- and end-pilot periods (8.8 percent). Adjusting for volumes on each roadway, the median motor vehicle speeds decreased from 25 mph to 24 mph between the pre- and end-pilot periods (-5.8 percent).

VOLUME-ADJUSTED MEDIAN SPEEDS



The weighted average of outdoor sound levels increased by 4.7 percent between the pre- and end-pilot periods from 61.5 dB to 61.9 dB.[1] This may be the result of random variation over a limited sample size or may represent an increase in frequency and length of loud noise events such as honking or heavy braking.

OUTDOOR SOUND LEVELS

[1] Note: Decibels are measured along a logarithmic scale

Reported Collisions, Observed Near-miss Collisions, and Hazardous Maneuvers

Reported collision data was obtained from the Palo Alto Police Department for the pre-, mid-, and end-pilot periods. The Palo Alto Police Department shared reported collisions on Middlefield Road from Palo Alto Avenue (100 block) to University Avenue (400 block), as summarized in **Table 1** and **Figure 4** or documented in full detail in **Table 28-A** and **Table 28-B**. Because some collisions go unreported or some travel behaviors contribute to an unsafe environment, data on close interactions between multiple roadway users (near misses) and unsafe travel behaviors that did not result in close interactions (hazardous maneuvers) was observed through the replay of recorded traffic camera video. These near-miss collisions and hazardous maneuvers were observed during the assumed morning (7:00 AM – 9:00 AM), midday (11:00 AM – 1:00 PM), and evening (4:00 PM – 6:00 PM) peak periods at two intersections along the study corridor: Middlefield Road at Hawthorne Avenue and Middlefield Road at Everett Avenue. **Table 2** and **Figure 5** show a summary of the near-miss collisions and **Table 29** contains a detailed list. **Table 3** and **Figure 5** show a summary of hazardous maneuvers and **Table 30** contains a detailed list.

Pre-Pilot Period

The pre-pilot period for reported collisions was defined as January 1, 2012 to December, 2016. Historic collision data during this 1,827-day period showed a range of 11 to 19 reported collisions per year along Middlefield Road between Palo Alto Avenue and University Avenue. During this period, there were on average 0.04 collisions per day.

Near-miss collisions and hazardous maneuvers for the pre-pilot period were observed on April 18, 2017 and April 19, 2017. There were two (2) near-miss collisions observed at the intersection of Middlefield Road and Hawthorne Avenue, both resulting from interactions between motor vehicles. Similarly, there were two (2) near-miss collisions observed at the intersection of Middlefield Road and Everett Avenue, with the first resulting from a vehicle-vehicle interaction and the second from a vehicle-pedestrian interaction. No hazardous maneuvers were observed during the pre-pilot period.

Mid-Pilot Period

The mid-pilot period for reported collisions was defined as July 1, 2017 to December 31, 2017. Historic collision data on Middlefield Road between Palo Alto Avenue and University Avenue during this 183- to 184-day period showed a range of six (6) to ten (10) reported collisions between 2014 and 2016. There were no reported collisions during the mid-pilot period, representing a 100.0 percent decrease from the pre-pilot period.

Near-miss collisions and hazardous maneuvers for the mid-pilot period were observed on October 4, 2017 and October 5, 2017. There were two (2) near-miss collisions observed at the intersection of Middlefield Road and Hawthorne Avenue, both resulting from interactions between motor vehicles. Compared to the pre-pilot period, the intersection of Middlefield Road and Everett Avenue saw an uptick in near-miss collisions with five (5) observed during the mid-pilot period. Three (3) of the five (5) near-misses involved vehicle-vehicle interactions, one involved a vehicle-bicyclists interaction, and one involved a vehicle-pedestrian interaction. Also observed was an increase in hazardous maneuvers between the pre-pilot and end-pilot periods, increasing from zero (0) observed hazardous maneuvers to 28 hazardous maneuvers. Among the 28 observed hazardous maneuvers, 15 were the result of motorists making illegal turns around delineator posts or making illegal u-turns to avoid the intersection (54 percent).

End-Pilot Period

The end-pilot period for reported collisions was defined as January 1, 2018 to June 30, 2018. Historic collision data from the Palo Alto Police Department between 2012 and 2016 during this 180- to 181-day period showed a range of four (4) to nine (9) collisions. The historic rate of collisions during this period was between 0.02 collisions per day and 0.05 collisions per day. The number of reported collisions along Middlefield Road between Palo Alto Avenue and University Avenue during the end-pilot period fell below the historic range, with three (3) collisions leading to four (4) injuries and no fatalities. Police reports indicated that all three of the end-pilot collisions were the result of interactions between multiple motor vehicles, with one resulting in a side swipe collision, one resulting in a head-on collision, and the third with no collision type reported. Among the three collision reports, only one included a primary collision factor: unsafe turn. The collision rate during the end-pilot period of 0.02 collisions per day matched the lowest collision rate for the same period between 2012 and 2016 (the study corridor 0.02 collisions per day in 2012 and 2013) and represented a 55.9 percent decrease from the average rate of 0.04 collisions per day. The safety countermeasures appeared to contribute to the reversal of the upward trend of collisions seen between 2012 and 2016; however, some collisions do persist along the corridor.

Observation of near-miss collisions and hazardous maneuvers during the end-pilot period took place on April 17, 2018 and April 18, 2018. There were no near miss collisions observed during the end-pilot period, representing a 100 percent decrease from the pre-pilot period (4 observed near-miss events to 0 near miss events). However, observed hazardous maneuvers increased between the pre-pilot and end-pilot periods (0 observed hazardous maneuvers to 39 hazardous maneuvers). The majority (74 percent) of the observed hazardous maneuvers during the end-pilot period were motorist making illegal turns around the delineator posts or making illegal u-turns to avoid the intersection. The most common hazardous maneuver was motorists avoiding delineator posts while turning left (southbound) from Everett Avenue onto Middlefield Road (43 percent). There was also an observed increase in the number of pedestrians, bicyclists, and low-speed electric vehicle users (Segway) displaying hazardous behavior by either crossing the street outside of the crosswalk while oncoming motor vehicle traffic was present (18 percent).

Table 1: Summary of Reported Collisions

Location*	PRE-PILOT†			MID-PILOT††			END-PILOT†††		
	Collisions	Days Observed	Rate	Collisions	Days Observed	Rate (% Change)	Collisions	Days Observed	Rate (% Change)
Middlefield Road between Palo Alto Avenue and University Avenue**	69	1,827	0.04/day	0	183	0.00/day (-100.0%)	3	180	0.02/day (-55.9%)
Middlefield Road at Hawthorne Avenue	11	1,827	0.01/day	0	183	0.00/day (-100.0%)	0	180	0.00/day (-100.0%)
Middlefield Road at Everett Avenue	39	1,827	0.02/day	0	183	0.00/day (-100.0%)	0	180	0.02/day (-100.0%)

* *Source: Palo Alto Police Department, Middlefield Road (100 block to 400 block)*

** *Includes intersections of Middlefield Road at Hawthorne Avenue and Middlefield at Everett Avenue listed in the two rows below*

† January 1, 2012 through December 31, 2016

†† July 1, 2017 through December 31, 2017

†† January 1, 2018 through June 30, 2018

Table 2: Summary of Observed Near-miss Collisions

Location*	PRE-PILOT	MID-PILOT	END-PILOT
	April 18 & April 19, 2017 (% change)	October 4 & October 5, 2017 (% change)	April 17 & April 18, 2018 (% change)
Middlefield Road at Hawthorne Avenue	2	2 (0.0%)	0 (-100.0%)
Middlefield Road at Everett Avenue	2	5 (150%)	0 (-100.0%)
Total	**4**	**7 (75.0%)**	**0 (-100.0%)**

* *Observed on two weekdays from 7:00 AM – 9:00 AM, 11:00 AM – 1:00 PM, and 4:00 PM – 6:00 PM*

Table 3: Summary of Observed Hazardous Maneuvers*

Location**	PRE-PILOT	MID-PILOT	END-PILOT
	April 18 - April 19, 2017	October 4 - October 5, 2017	April 17 – April 18, 2018
Middlefield Road at Hawthorne Avenue	0	11	8
Middlefield Road at Everett Avenue	0	17	31
Total	**0**	**28**	**39**

* Includes motorists making illegal turning maneuvers, bicyclists and pedestrians making risky crossing decisions, motorists failing to yield to pedestrians in the crosswalk, and motorists driving around delineator posts

** *Observed on two weekdays from 7:00 AM – 9:00 AM, 11:00 AM – 1:00 PM, and 4:00 PM – 6:00 PM*

Figure 4: Rate of Reported Collisions (Middlefield Road between Palo Alto Avenue and University Avenue)

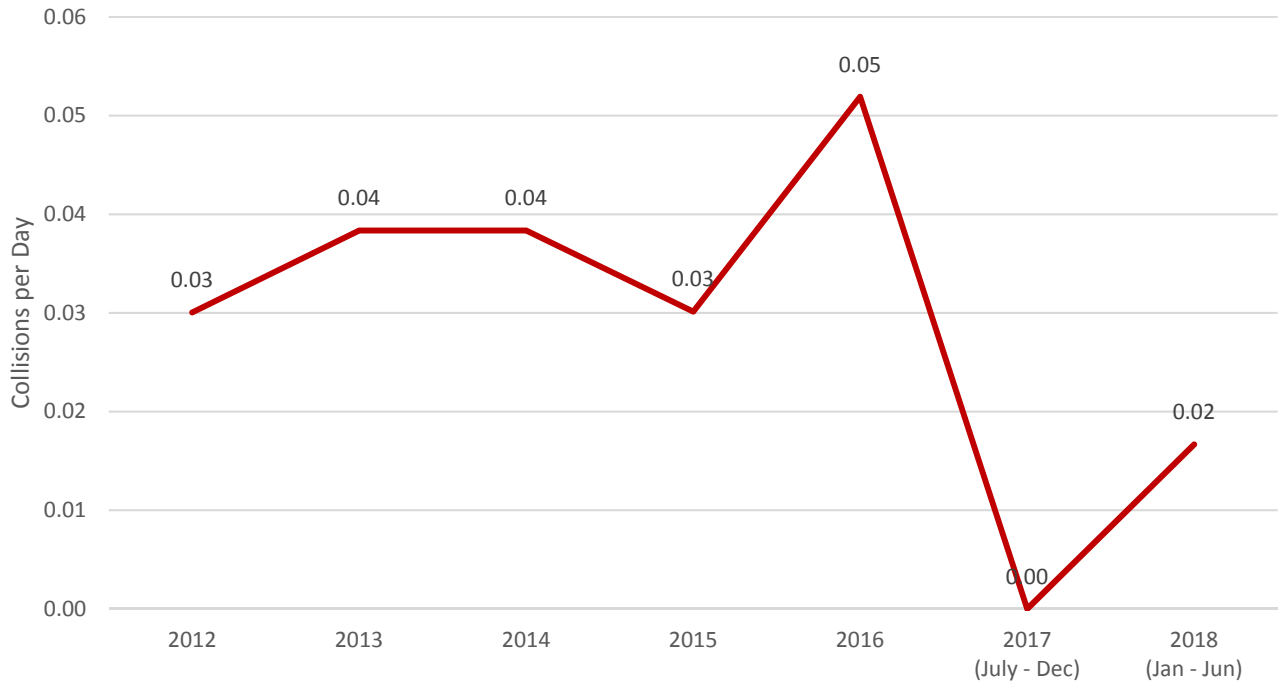
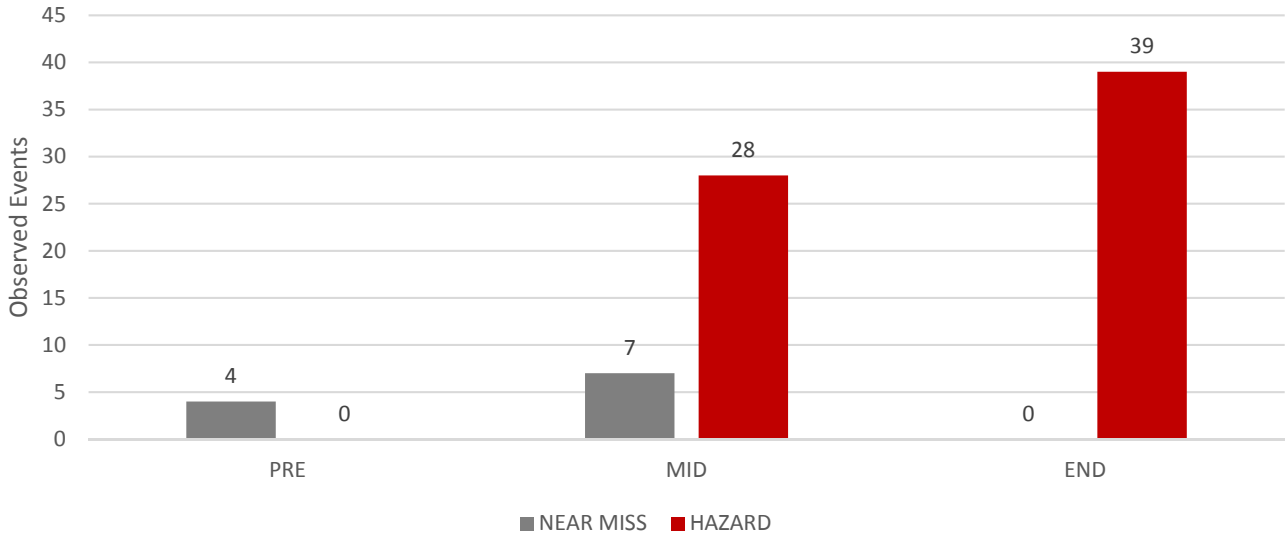


Figure 5: Observed Near-Miss and Hazardous Maneuver Events



Motor Vehicle Speeds

Motor vehicle speeds were observed at 12 locations within the project study area (three on the Middlefield Road corridor, five on parallel routes, and four on cross streets) during the pre-, mid-, and end-pilot periods:

- **Middlefield Road Corridor**
  - Middlefield Road between Palo Alto Avenue (west) and Palo Alto Avenue (east)
  - Middlefield Road between Hawthorne Avenue and Everett Avenue
  - Middlefield Road between Everett Avenue and Lytton Avenue
- **Parallel Routes**
  - Webster Street between Lytton Avenue and Everett Avenue
  - Byron Street between Lytton Avenue and Everett Avenue
  - Fulton Street between Lytton Avenue and University Avenue
  - Fulton Street between Lytton Avenue and Everett Avenue
  - Guinda Street between Lytton Avenue and University Avenue
- **Cross Streets**
  - Palo Alto Avenue between Middlefield Road and Fulton Street
  - Hawthorne Avenue between Byron Street and Middlefield Road
  - Everett Avenue between Byron Street and Middlefield Road
  - Everett Avenue between Middlefield Road and Fulton Street

Bi-directional speed data was collected through pneumatic tubes placed across each of the study streets over a 24-hour period on two weekdays. See **Table 4** and **Figure 6** for a summary of observed motor vehicle speeds at the 12 locations and see **Table 31** for a detailed list.

Overall, while there was an observed decrease in motor vehicle speeds along Middlefield Road between the pre-pilot and end-pilot periods; however, parallel and cross streets observed an increase in motor vehicle speeds. This suggests that although the safety interventions were successful in decreasing speeds on Middlefield Road, faster through traffic may have been diverted to parallel routes and cross streets.

Pre-Pilot Period

The pre-pilot traffic data collection period for motor vehicle speeds was defined as April 18, 2017 through April 19, 2017 for the 12 locations within the project study area. The average motor vehicle speed during the pre-pilot period for all 12 locations was 19 mph, and the average 85th percentile speed for all 12 locations was 25 mph.

The median motor vehicle speed during the pre-pilot period at the three locations on Middlefield Road ranged between 26 mph and 28 mph, slightly above the posted speed limit of 25 mph. The 85th percentile motor vehicle speed at the three locations on Middlefield Road ranged between 32 mph and 33 mph.

For the six parallel routes (Webster Street, Byron Street, Guinda Street, and two locations on Fulton Street), the median motor vehicle speeds ranged between 15 mph and 20 mph and the 85th percentile motor vehicle speeds ranged between 19 mph and 25 mph.

For the remaining four cross streets (Palo Alto Avenue, Hawthorne Avenue, and two locations on Everett Avenue), the median motor vehicle speeds ranged between 17 mph and 20 mph and the 85th percentile motor vehicle speeds ranged between 22 mph and 24 mph.

Mid-Pilot Period

The mid-pilot traffic data collection period for motor vehicle speeds was defined as October 25, 2017 through October 26, 2017 for the 12 locations within the project study area. The average motor vehicle speed during the mid-pilot period for all 12 locations was 19 mph, and the average 85th percentile speed was 25 mph, showing no overall change compared to the pre-pilot period. Data was also initially collected on October 4, 2017 through October 5, 2017; however, equipment failures at three locations prompted the need to re-collect data for all 12 locations later in the month.

The median motor vehicle speed during the mid-pilot period at the three locations on Middlefield Road ranged between 21 mph and 24 mph, representing a 3.7 percent to 11.5 percent decrease from the pre-pilot period. The 85th percentile motor vehicle speed during the mid-pilot period at the three locations on Middlefield Road ranged between 28 mph and 32 mph, representing a 3.0 percent and 12.5 percent decrease from the pre-pilot period.

For the six parallel routes to the Middlefield Road corridor, the median motor vehicle speeds ranged between 11 mph and 20 mph, representing increases and decreases at various locations compared to the pre-pilot period. The median motor vehicle speed decreased on Webster Street (-5.0 percent) and Guinda Street (-26.7 percent), stayed the same on Fulton Street between Lytton Avenue and Everett Avenue (0.0 percent), and increased on Byron Street (5.3 percent) and Fulton Street between Lytton Avenue and University Avenue (17.6 percent). The 85th percentile motor vehicle speeds on the parallel routes ranged between 18 mph and 25 mph. Compared to the pre-pilot period, the 85th percentile motor vehicle speeds decreased on Fulton Street between Lytton Avenue and Everett Avenue (-5.3 percent), Webster Street (-4.0 percent), and Guinda Street (-5.3 percent), stayed the same on Byron Street (0.0 percent), and increased on Fulton Street between Lytton Avenue and University Avenue (8.7 percent).

For the four cross streets, the median motor vehicle speed ranged between 17 mph and 18 mph. Compared to the pre-pilot period, the median motor vehicle speed decreased at Everett Avenue between Middlefield Road and Fulton Street (-10.0 percent) and Palo Alto Avenue (-5.6 percent), and it increased at Everett Avenue between Middlefield Road and Fulton Street (5.9 percent) and Hawthorne Avenue (5.9 percent). The 85th percentile motor vehicle speeds during the mid-pilot period on the four cross streets ranged between 22 mph and 23 mph. Compared to the pre-pilot period, the 85th percentile motor vehicle speed decreased on Everett Avenue between Middlefield Road and Fulton Street (-4.2 percent), stayed the same at Palo Alto Avenue (0.0 percent), and increased at Everett Avenue between Byron Street and Middlefield Road (4.5 percent) and Hawthorne Avenue (4.5 percent).

Adjusting for volumes along each roadway during the mid-pilot period, the median speed at the observed locations was 24 mph, a 6.7 percent decrease from the pre-pilot volume-adjusted median speed.

End-Pilot Period

The end-pilot traffic data collection period for motor vehicle speeds was defined as April 18, 2017 through April 19, 2017 for the 12 locations within the project study area. The average motor vehicle speed during the end-pilot period for all 12 locations was 20 mph (3.9 percent increase over pre-pilot speeds), and the average 85th percentile speed was 26 mph (2.3 percent increase over pre-pilot speeds).

The median motor vehicle speed during the end-pilot period at the three locations on Middlefield Road ranged between 23 mph and 26 mph, representing a 3.7 percent to 11.5 percent decrease from the pre-pilot period. The 85th percentile motor vehicle speed during the end-pilot period at the three locations on Middlefield Road ranged between 29 mph and 32 mph, representing a 3.0 percent and 9.4 percent decrease from the pre-pilot period.

For the six parallel routes to the Middlefield Road corridor, the median motor vehicle speeds ranged between 19 mph and 21 mph, representing increases and decreases at various locations compared to the pre-pilot period. The median motor vehicle speed decreased on Webster Street (-5.0 percent) and increased on Byron Street (5.3 percent), Fulton Street between Lytton Avenue and University (23.5 percent), Fulton Street between Lytton Avenue and Everett Avenue (5.0 percent), and Guinda Street (5.0 percent). The 85th percentile motor vehicle speeds on the parallel routes ranged between 23 mph and 27 mph. Compared to the pre-pilot period, the 85th percentile motor vehicle speeds decreased on Webster Street (-4.0 percent) but increased on Byron Street (4.2 percent), Fulton Street between Lytton Avenue and University (13.0 percent), Fulton Street between Lytton Avenue and Everett Avenue (8.0 percent), and Guinda Street (26.3 percent).

For the four cross streets, the median motor vehicle speed ranged between 18 mph and 20 mph. Compared to the pre-pilot period, the median motor vehicle speed stayed the same on Everett Avenue between Middlefield Road and Fulton Street and increased on Palo Alto Avenue (5.6 percent), Hawthorne Avenue (5.9 percent), and on Everett Avenue between Byron Street and Middlefield Road (5.9 percent). The 85th percentile motor vehicle speeds during the end-pilot period on the four cross streets ranged between 23 mph and 24 mph. Compared to the pre-pilot period, the 85th percentile motor vehicle speed stayed the same on Everett Avenue between Middlefield Road and Fulton Street but increased on Palo Alto Avenue (4.5 percent), on Hawthorne Avenue (4.5 percent), and on Everett Avenue between Byron Street and Middlefield Road (4.5 percent).

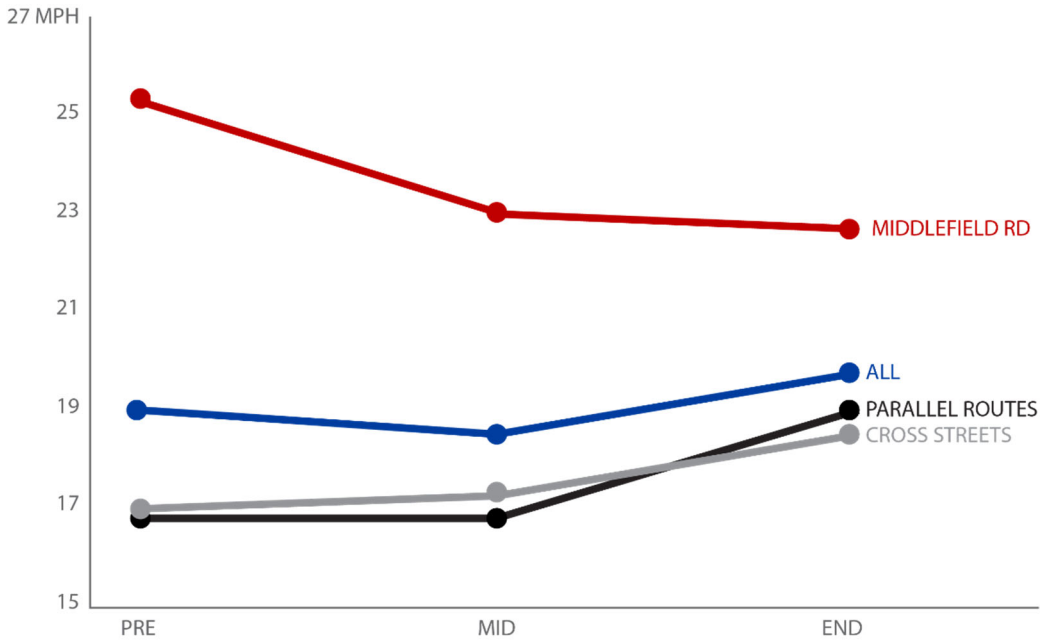
Adjusting for volumes along each roadway during the end-pilot period, the median speed at the observed locations was 24 mph, a 5.8 percent decrease from the pre-pilot volume-adjusted median speed.

Table 4: Summary of Observed Motor Vehicle Speed

Corridor	Begin	End	PRE-PILOT* Miles per hour Mean	PRE-PILOT* Miles per hour Median	PRE-PILOT* Miles per hour 85th %	MID-PILOT** Miles per hour (% change from pre-pilot) Mean	MID-PILOT** Miles per hour (% change from pre-pilot) Median	MID-PILOT** Miles per hour (% change from pre-pilot) 85th %	End-PILOT*** Miles per hour (% change from pre-pilot) Mean	End-PILOT*** Miles per hour (% change from pre-pilot) Median	End-PILOT*** Miles per hour (% change from pre-pilot) 85th %
Middlefield Road	Palo Alto Avenue (west)	Palo Alto Avenue (east)	26	27	33	24 (-7.7%)	26 (-3.7%)	32 (-3.0%)	24† (-7.7%)	26† (-3.7%)	32† (-3.0%)
Middlefield Road	Hawthorne Avenue	Everett Avenue	26	28	33	24 (-7.7%)	26 (-7.1%)	31 (-6.1%)	23 (-11.5%)	26 (-7.1%)	31 (-6.1%)
Middlefield Road	Everett Avenue	Lytton Avenue	24	26	32	21 (-12.5%)	23 (-11.5%)	28 (-12.5%)	21 (-12.5%)	23 (-11.5%)	29 (-9.4%)
Webster Street	Lytton Avenue	Everett Avenue	19	20	25	18 (-5.3%)	19 (-5.0%)	24 (-4.0%)	17 (-10.5%)	19 (-5.0%)	24 (-4.0%)
Byron Street	Lytton Avenue	Everett Avenue	17	19	24	18 (5.9%)	20 (5.3%)	24 (0.0%)	19 (11.8%)	20 (5.3%)	25 (4.2%)
Fulton Street	Lytton Avenue	University Avenue	16	17	23	19 (18.8%)	20 (17.6%)	25 (8.7%)	19 (11.8%)	19 (5.6%)	23 (4.5%)
Fulton Street	Lytton Avenue	Everett Avenue	19	20	25	18 (-5.3%)	20 (0.0%)	24 (-4.0%)	20 (25.0%)	21 (23.5%)	26 (13.0%)
Guinda Street****	Lytton Avenue	University Avenue	13	15	19	11 (-15.4%)	11 (-26.7%)	18 (-5.3%)	20 (5.3%)	21 (5.0%)	27 (8.0%)
Palo Alto Avenue	Middlefield Road	Fulton Street	17	18	22	17 (0.0%)	17 (-5.6%)	22 (0.0%)	19 (46.2%)	20 (33.3%)	24 (26.3%)
Hawthorne Avenue	Byron Street	Middlefield Road	16	17	22	17 (6.3%)	18 (5.9%)	23 (4.5%)	18 (12.5%)	18 (5.9%)	23 (4.5%)
Everett Avenue	Byron Street	Middlefield Road	16	17	22	18 (12.5%)	18 (5.9%)	23 (4.5%)	18 (12.5%)	18 (5.9%)	23 (4.5%)
Everett Avenue	Middlefield Road	Fulton Street	19	20	24	17 (-10.5%)	18 (-10.0%)	23 (-4.2%)	19 (0.0%)	20 (0.0%)	24 (0.0%)
Average			**19**	**20**	**25**	**19 (-2.6%)**	**20 (-3.3%)**	**25 (-2.3%)**	**20 (3.9%)**	**21 (2.9%)**	**26 (2.3%)**

** Average of bi-directional motor vehicle traffic values from Wednesday, April 18, 2017 and Thursday, April 19, 2017*
*** Average of bi-directional motor vehicle traffic values from Wednesday, October 25, 2017 and Thursday, October 26, 2017*
**** Average of bi-directional motor vehicle traffic values from Wednesday, April 18, 2018 and Thursday, April 19, 2018*
***** Pneumatic tubes were disconnected from 12:00 PM on October 25, 2017 to 9:45 AM on October 26, 2017*
† Due to equipment failure, data recollected on Wednesday, April 25, 2018 and Thursday, April 26, 2018

Figure 6: Observed Motor Vehicle Speeds



Outdoor Sound Levels

Collection of outdoor sound levels was attempted at four locations within the project study area during the pre-, mid-, and end-pilot periods:

- Middlefield Road between Lytton Avenue and University Avenue
- Byron Street between Lytton Avenue and Everett Avenue
- Middlefield Road between Lytton Avenue and Everett Avenue
- Fulton Street between Lytton Avenue and Everett Avenue

However, equipment malfunctions at the Middlefield Road and Fulton Street locations resulted in their exclusion from the analysis.

Sound level data was collected using micro noise dosimeters which are badge-sized sound meters designed to measure a person's exposure to loud noises over time. See **Table 5** and **Figure 7** for a summary of sound level data and see **Table 32** for a detailed list of sound level data. A common measure for prolonged periods of sound level data is Equivalent Continuous Level (LAeq), defined as the sound which would contain the same sound energy as the time varying sound. In other words, LAeq is a type of 'average', where noisy events have a significant influence.[2] This measurement is useful in assessing prolonged periods of continuously high sound levels, such as motor vehicle honking or sudden braking during a commute period.

"Moderate" outdoor urban sound levels fall between 60 dB and 69 dB and are the rough equivalent of a conversation or dishwasher running. "Loud" outdoor urban sound levels fall between 70 dB and 79 dB and are the rough equivalent of city traffic or an alarm clock (often considered to be annoyingly loud sounds). "Very loud" outdoor urban sound levels fall between 80 dB and 89 dB and are the rough equivalent of a noisy restaurant or person screaming (possible ear damage at eight hours of exposure).[3] "Super loud" outdoor sound levels fall between 90 dB and 99dB and are the rough equivalent of a motorcycle (likely to cause ear damage at eight hours of exposure). Because decibels are measured on a logarithmic scale, 60 dB is half as loud as 70 dB, 80 dB is twice as loud as 70 dB, and 90 dB is four times as loud as 70 dB.

Overall, after an initial decrease in outdoor sound levels during the mid-pilot period, a small increase was observed between the pre- and end-pilot periods.

[2] *Energy Averaging. NoiseNet.Org <http://www.noisenet.org/Noise_Terms_Leq.htm>*
[3] *Sound levels chart. Howard Goodyear (2012). <https://howardsgoodyearblog.files.wordpress.com/2012/02/sound-levels-chart.jpg>*

Pre-Pilot Period

The pre-pilot period for sound level data collection was defined as April 19, 2017 from approximately 9:00 AM to 6:30 PM for the two locations with available data. The average LAeq for the pre-pilot period was 61.5 dB. The LAeq, tracked in one-minute increments, exceeded 80 dB twice during the pre-pilot period. The first "super loud" noise event was at Middlefield Road between Lytton Avenue and University Avenue from 11:18 AM to 11:19 AM in which the dosimeter recorded an LAeq of 90.6 dB. The second "super loud" noise event was at Middlefield Road between Lytton Avenue and Everett Avenue from 11:19 AM to 11:20 AM in which the dosimeter recorded an LAeq of 90.3 dB. Honking or loud yelling in close proximity of the measurement device could trigger the two (2) "super loud" events.

Mid-Pilot Period

The mid-pilot period for sound level data collection was defined as October 4, 2017 from approximately 9:00 AM to 6:30 PM for the two locations with available data. The average LAeq for the mid-pilot period was 61.2 dB. Compared to the pre-pilot period's average overall LAeq of 61.5 dB, the mid-pilot period was 0.3 decibels quieter or approximately a 3.4 percent decrease in sound levels. The LAeq, tracked in one-minute increments, exceeded 80 dB twice during the mid-pilot period. The two "very loud" noise events took place during back-to-back one-minute intervals at Middlefield Road between Lytton Avenue and Everett Avenue from 11:16 AM to 11:18 AM in which the dosimeter recorded an LAeq of 80.6 dB and 86.1 dB.

End-Pilot Period

The end-pilot period for sound level data collection was defined as Thursday, April 19, 2018 from approximately 8:00 AM to 8:00 PM for the two locations with available data. The average LAeq for the end-pilot period was 61.9 dB. Compared to the pre-pilot's average overall LAeq of 61.5 dB, the end-pilot period was 0.4 decibels louder or an approximately a 4.7 percent increase in sound levels. One-minute increment data could not be retrieved during the end-pilot period.

Table 5: Summary of Sound Level Data

Measure	Begin	End	PRE-PILOT* LAeq	MID-PILOT** LAeq	MID-PILOT** Percent change from pre-pilot††	END-PILOT*** LAeq	END-PILOT*** Percent change from pre-pilot††
Middlefield Road	Lytton Avenue	Everett Street	68.1 dB	67.0 dB	-11.9%	69.3 dB	14.8%
Middlefield Road	Lytton Avenue	University Avenue	63.5 dB	65.6 dB	27.4%	****	N/A
Byron Street	Lytton Avenue	Everett Avenue	54.9 dB	55.3 dB	4.7%	58.0 dB	42.9%
Fulton Street	Lytton Avenue	Everett Avenue	****	53.8 dB	N/A	58.3 dB	N/A
Overall Average (excluding Middlefield Road between Lytton Avenue and Everett Street and Fulton Street between Lytton Avenue and Everett Avenue) †			**61.5 dB**	**61.2 dB**	**-3.4%**	**61.9 dB**	**4.7%**
1-minute Periods above 80 dB			2	2		****	

** Pre-pilot sound level data collected on Wednesday, April 19, 2017 from approximately 9:00 AM to 6:30 PM*

*** Mid-pilot sound level data collected on Wednesday, October 4, 2017 from approximately 9:00 AM to 6:30 PM*

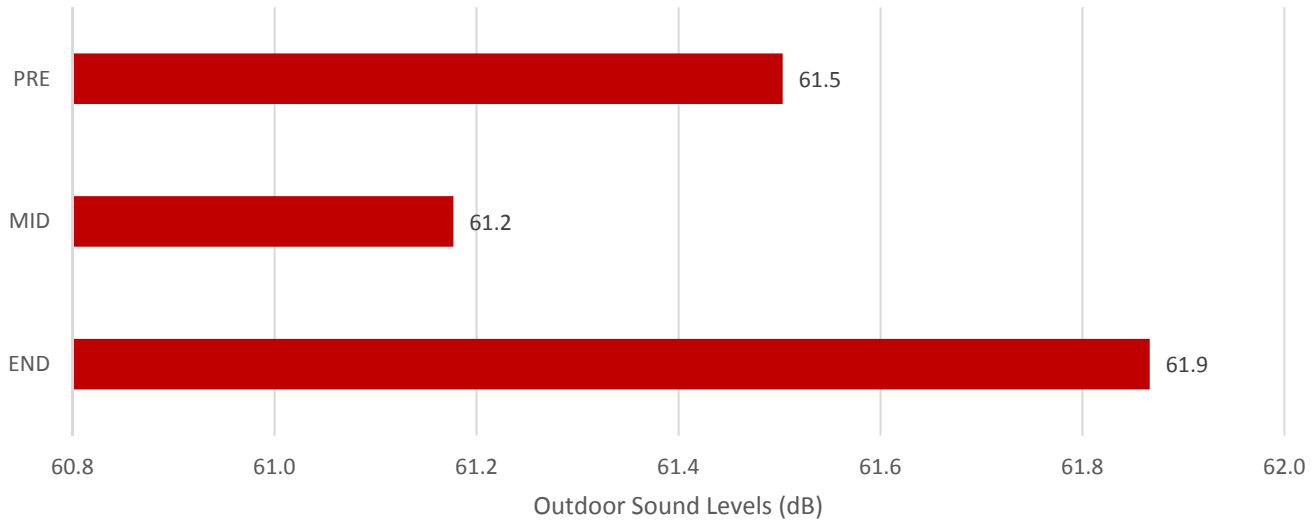
**** End-pilot sound level data collected on Thursday, April 19, 2018 from approximately 8:00 AM to 8:00 PM*

***** Data was unable to be retrieved due to a malfunctioning device*

† Data excluded due to equipment malfunction

†† Note: Decibels are expressed along a logarithmic scale of $I(dB) = 10 \log_{10} [I/I_O]$; where I = sound intensity and I_O = the standard threshold of hearing

Figure 7: Average Outdoor Sound Levels



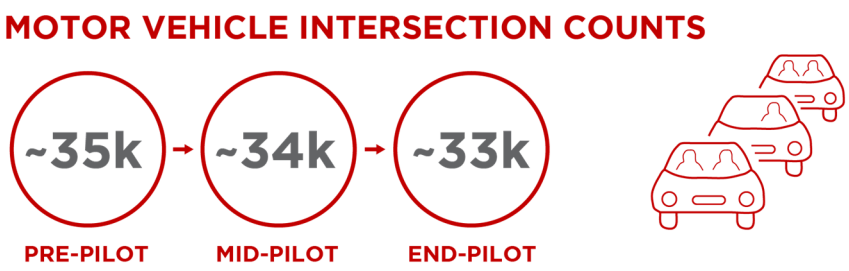
Intersection Impacts

Secondary to health and safety but important to the quality of life of Palo Alto residents and visitors is the efficiency of the roadway network. The ability to move people through intersections efficiently can have a large influence on the overall network efficiency. For this evaluation category, three (3) performance measures were identified:

- Intersection turning movement counts – The number of motor vehicles, bicycles, and pedestrians traveling through four (4) intersections along the project corridor
- Intersection level of service – The estimated efficiency of two (2) intersections along the project corridor on a scale where 'A' represents the highest level of service and 'F' representing the lowest
- Intersection queue lengths – How far the number of motor vehicles extend relative to the amount of available space in the approach to two (2) intersections along the project corridor

After a review of mid-pilot data, signal timing was optimized to improve intersection efficiency during the end-pilot period.

The total number of motor vehicles traveling through four (4) intersections along the project corridor during the assumed morning, midday, and evening peak periods decreased by 5.8 percent between the pre- and end-pilot periods (from 34,713 motor vehicles to 32,700 motor vehicles). By comparison, traffic volumes increased an average of 0.2 percent on California's urban arterials between April 2017 and April 2018.[4] The decrease in motor vehicle volumes on the study corridor compared to the statewide trend of increased volumes may be the result of ongoing construction noted on **Page 4** of this memorandum or the pilot project diverting traffic away from the study corridor.



The total number of bicyclists and pedestrians traveling through the four (4) intersections along the project corridor during the assumed morning, midday, and evening peak periods increased by 9.8 percent between the pre- and end-pilot periods (from 292 bicyclists and 454 pedestrians to 307 bicyclists and 512 pedestrians). This increase may be the result of random variation or an increase in bicyclist and pedestrian comfort along the project corridor.

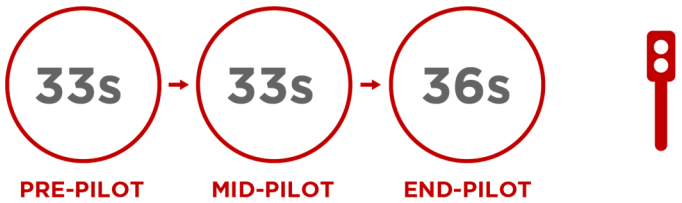
[4] *Traffic Volume Trends: January 2016-2017. FHWA. <https://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm>*

Between the pre-pilot and end-pilot periods, the estimated motor vehicle level of service declined at the intersection of Middlefield Road and Lytton Avenue. The morning peak period level of service declined from level of service 'D' to 'E' between the pre- and end-pilot periods due to a 6 second increase in delay per vehicle. The midday and evening peak period levels of service stayed the same at 'E' between pre- and end-pilot periods but experienced an 8 second and a 16 second increase in delay per vehicle, respectively.

AVERAGE PEAK MIDDLEFIELD/LYTTON DELAY

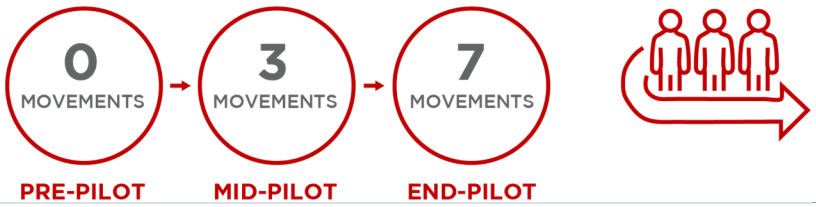
Between the pre- and end-pilot periods, the estimated motor vehicle level of service declined at the intersection of Middlefield Road and University Avenue. The morning peak period level of service declined from level of service 'C' to 'D' between the pre- and end-pilot periods due to a 3 second increase in delay per vehicle. The midday peak period level of service stayed at the same at level of service of 'C' between the pre- and end-pilot periods but experienced a 4 second increase in delay per vehicle. The evening peak period level of service stayed at the same level of service of 'D' but experienced a 4 second increase in delay per vehicle.

AVERAGE PEAK MIDDLEFIELD/UNIVERSITY DELAY

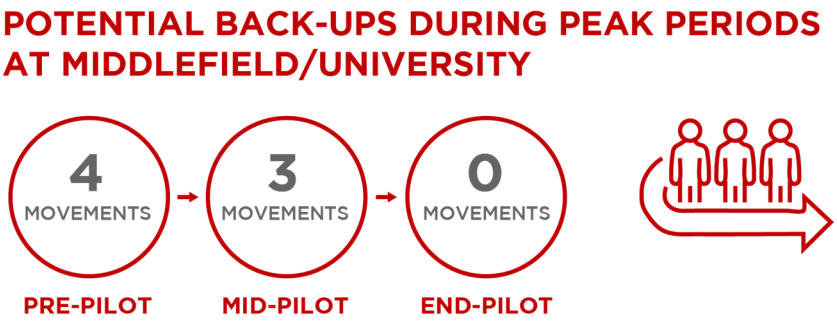


The number of intersection turning movements at Middlefield Road and Lytton Avenue that were estimated to back-up past the available storage space, possibly impacting downstream intersections, went from zero (0) turning movement in the pre-pilot period to two (2) turning movements during the worst 5 percent of morning and evening peak period traffic. During the worst 5 percent of midday peak period traffic, the number of intersection turning movements exceeding available storage capacity increased from zero (0) to three (3) between the pre-pilot and end-pilot periods.

POTENTIAL BACK-UPS DURING PEAK PERIODS AT MIDDLEFIELD/LYTTON



The number of intersection turning movements at Middlefield Road and Lytton Avenue that were estimated to back-up past the available storage space, possibly impacting downstream intersections, went from four (4) turning movement in the pre-pilot period to zero (0) turning movements during the worst 5 percent of morning and midday peak period traffic. During the worst 5 percent of evening peak period traffic, the number of intersection turning movements exceeding available storage capacity decreased from two (2) to zero (0) between the pre-pilot and end-pilot periods.



Intersection Turning Movement Counts

Turning movements counts were observed at four intersections within the project study area during the pre-, mid-, and end-pilot periods:

- Middlefield Road at Hawthorne Avenue
- Middlefield Road at Everett Avenue
- Middlefield Road at Lytton Avenue
- Middlefield Road at University Avenue

The turning movements counts were collected through traffic cameras during the assumed morning peak period (7:00 AM – 9:00 AM), assumed midday peak (11:00 AM – 1:00 PM), and assumed evening peak period (4:00 PM – 6:00 PM) over two mid-weekdays. See **Table 6** and **Figure 8** for a summary of observed motor vehicle turning movement counts and see **Table 33** for a detailed list of motor vehicle turning movement counts. See **Table 6** and **Figure 9** for a summary of bicycle and pedestrian turning movement counts and see **Table 33** for a detailed list of bicycle and pedestrian turning movement counts. Peak period coordination of traffic signal timing was implemented during the mid- and end-pilot periods between Lytton Avenue and University Avenue to help improve motor vehicle traffic flow; however, the ongoing construction noted on **Page 4** detoured traffic to Lytton Avenue, potentially offsetting efficiency improvements.

Pre-Pilot Period

The pre-pilot period for the turning movement count data was defined as April 18, 2017 and April 19, 2017 for the four intersections. On average over the two mid-weekdays observed, there were 34,713 motor vehicles at the four intersections during the assumed morning, midday, and evening peak periods. Over the same time periods, there were on average 292 bicyclists and 454 pedestrians observed.

Mid-Pilot Period

The mid-pilot period for the turning movement count data was defined as October 4, 2017 and October 5, 2017 for the four intersections. On average over the two mid-weekdays observed, there were 34,002 motor vehicles at the four intersections during the assumed morning, midday, and evening peak periods, representing a 2.0 percent decrease compared to the pre-pilot period. While there was a slight decrease in overall observed motor vehicle turning movement counts between the pre-pilot and mid-pilot periods, the trend in observed motor vehicles varied by location. Motor vehicles turning movement counts decreased at three of the four locations (Middlefield Road at Hawthorne: -5.1 percent; Middlefield Road at Everett Avenue: -3.9 percent; and Middlefield Road at University Avenue: -0.5 percent); however, counts increased slightly at the intersection of Middlefield Road and Lytton Avenue (0.8 percent).

Over the same time periods, there were on average 444 bicyclists and 519 pedestrians observed, representing a 51.9 percent and 14.2 percent increase respectively compared to the pre-pilot period. The number of bicyclists increased between the pre-pilot and mid-pilot periods for all four observed intersections (Middlefield Road at Hawthorne Avenue: 92.2 percent; Middlefield Road at Everett Avenue: 95.1 percent; Middlefield Road at Lytton Avenue: 31.8 percent; and Middlefield Road at University Avenue: 46.6 percent). The number of pedestrians increased at three of the four observed locations between the pre-pilot and mid-pilot periods (Middlefield Road at Everett Avenue (44.3 percent; Middlefield Road at Lytton Avenue: 16.9 percent; and Middlefield Road at University Avenue: 13.0 percent). The one intersection where the number of pedestrians decreased between the pre-pilot and mid-pilot periods was Middlefield Road at Hawthorne Avenue (-16.0 percent).

End-Pilot Period

The end-pilot period for the turning movement count data was defined as April 17, 2018 and April 18, 2018 for the four intersections. On average over the two mid-weekdays observed, there were 32,700 motor vehicles at the four intersections during the assumed morning, midday, and evening peak periods, representing a 5.8 percent decrease compared to the pre-pilot period. While there was a slight decrease in overall observed motor vehicle turning movement counts between the pre-pilot and end-pilot periods, the trend in observed motor vehicles varied by location. Motor vehicles turning movement counts decreased at three of the four locations (Middlefield Road at Hawthorne: -9.5 percent; Middlefield Road at Everett Avenue: -7.6 percent; and Middlefield Road at University Avenue: -17.4 percent); however, counts increased at the intersection of Middlefield Road and Lytton Avenue (13.2 percent).

Over the same time periods, there were on average 307 bicyclists and 512 pedestrians observed, representing a 5.1 percent and 12.8 percent increase respectively compared to the pre-pilot period. The number of pedestrians increased between the pre-pilot and end-pilot periods for all four observed intersections (Middlefield Road at Hawthorne Avenue: 4.2 percent; Middlefield Road at Everett Avenue: 37.4 percent; Middlefield Road at Lytton Avenue: 16.9 percent; and Middlefield Road at University Avenue: 6.3 percent). The number of bicyclists increased at three of the four observed locations between the pre-pilot and end-pilot periods (Middlefield Road at Hawthorne (31.4 percent; Middlefield Road at Everett Avenue: 13.4 percent; and Middlefield Road at Lytton Avenue: 7.4 percent). The one intersection where the number of bicyclists decreased between the pre-pilot and end-pilot periods was Middlefield Road at University Avenue (-5.6 percent). This may have been the result of ongoing construction on University Avenue.

Table 6: Summary of Observed Turning Movement Counts

Corridor	Time of Day	PRE-PILOT* Volumes			MID-PILOT** Volumes (% Change)			END-PILOT** Volumes (% Change)		
		Auto	Bike	Ped	Auto	Bike	Ped	Auto	Bike	Ped
Middlefield Road at Hawthorne Avenue	7:00 AM – 9:00 AM	2,410	10	23	2,245 (-6.8%)	19 (100.0%)	16 (-30.4)	2,285 (-5.2%)	17 (73.7%)	23 (-2.2%)
	11:00 AM – 1:00 PM	2,560	7	13	2,431 (-5.0%)	11 (57.1%)	7 (-44.0%)	2,202 (-14.0%)	6 (-14.3%)	22 (72.0%)
	4:00 PM – 6:00 PM	3,315	9	24	3,188 (-3.8%)	19 (111.1%)	27 (12.5%)	3,011 (-9.2%)	11 (22.2%)	18 (-25.0%)
	Total Peak Periods	**8,285**	**26**	**60**	**7,864 (-5.1%)**	**49 (92.2%)**	**50 (-16.0%)**	**7,498 (-9.5%)**	**34 (31.4%)**	**62 (4.2%)**
Middlefield Road at Everett Avenue	7:00 AM – 9:00 AM	2,407	15	15	2,261 (-6.1%)	39 (165.5%)	23 (55.2%)	2,324 (-3.4%)	22 (48.3%)	23 (58.6%)
	11:00 AM – 1:00 PM	2,285	11	16	2,249 (-1.6%)	12 (14.3%)	23 (45.2%)	2,047 (-10.4%)	10 (-9.5%)	25 (61.3%)
	4:00 PM – 6:00 PM	3,043	16	28	2,925 (-3.9%)	30 (84.4%)	38 (38.2%)	2,779 (-8.7%)	16 (-3.1%)	31 (12.7%)
	Total Peak Periods	**7,735**	**41**	**58**	**7,434 (-3.9%)**	**80 (95.1%)**	**83 (44.3%)**	**7,150 (-7.6%)**	**67 (13.4%)**	**79 (37.4%)**
Middlefield Road at Lytton Avenue	7:00 AM – 9:00 AM	2,650	49	34	2,675 (-2.6%)	62 (26.8%)	43 (28.4%)	3,132 (14.0%)	49 (1.0%)	44 (29.9%)
	11:00 AM – 1:00 PM	2,387	17	34	2,632 (7.2%)	28 (69.7%)	43 (26.9%)	3,122 (27.2%)	24 (45.5%)	53 (56.7%)
	4:00 PM – 6:00 PM	3,272	44	55	3,290 (-1.2%)	54 (23.0%)	57 (3.7%)	3,404 (2.3%)	44 (0.0%)	46 (-15.6%)
	Total Peak Periods	**8,308**	**109**	**122**	**8,596 (0.8%)**	**143 (31.8%)**	**142 (16.9%)**	**9,658 (13.2%)**	**117 (7.4%)**	**142 (16.9%)**
Middlefield Road at University Avenue	7:00 AM – 9:00 AM	3,183	44	55	3,131 (-1.6%)	57 (29.5%)	75 (36.7%)	2,449 (-19.4%)	47 (6.8%)	62 (12.8%)
	11:00 AM – 1:00 PM	3,486	20	72	3,503 (0.5%)	35 (79.5%)	75 (3.5%)	2,762 (-17.5%)	18 (-10.8%)	80 (10.4%)
	4:00 PM – 6:00 PM	3,495	54	89	3,475 (-0.6%)	80 (48.6%)	95 (6.2%)	2,893 (-15.5%)	46 (-14.0%)	88 (-1.1%)
	Total Peak Periods	**10,164**	**117**	**216**	**10,109 (-0.5%)**	**172 (46.6%)**	**244 (13.0%)**	**8,395 (-17.4%)**	**111 (-5.6%)**	**229 (6.3%)**
All Observed Intersections during Assumed Peak Periods		**34,713**	**292**	**454**	**34,002 (-2.0%)**	**444 (51.9%)**	**519 (14.2%)**	**32,700 (-5.8%)**	**307 (5.1%)**	**512 (12.8%)**

** Average of bi-directional motor vehicle traffic from Wednesday, April 18, 2017 and Thursday, April 19, 2017*

*** Average of bi-directional motor vehicle traffic from Wednesday, October 4, 2017 and Thursday, October 5, 2017*

**** Average of bi-directional motor vehicle traffic from Tuesday, April 17, 2018 and Wednesday, April 18, 2018*

Figure 8: Observed Motor Vehicle Turning Movement Counts

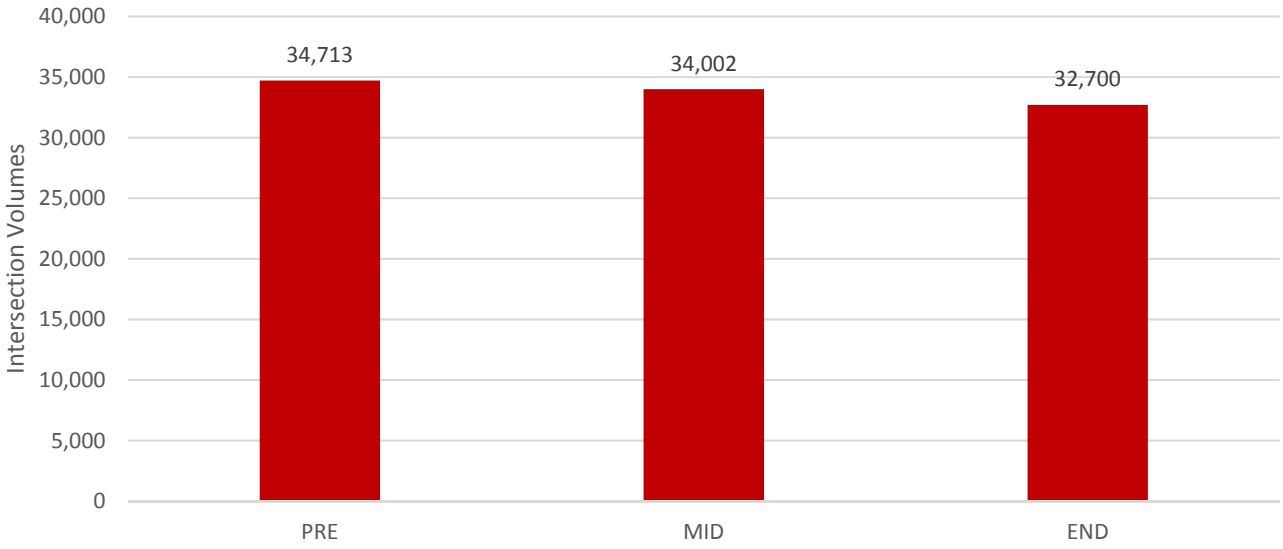
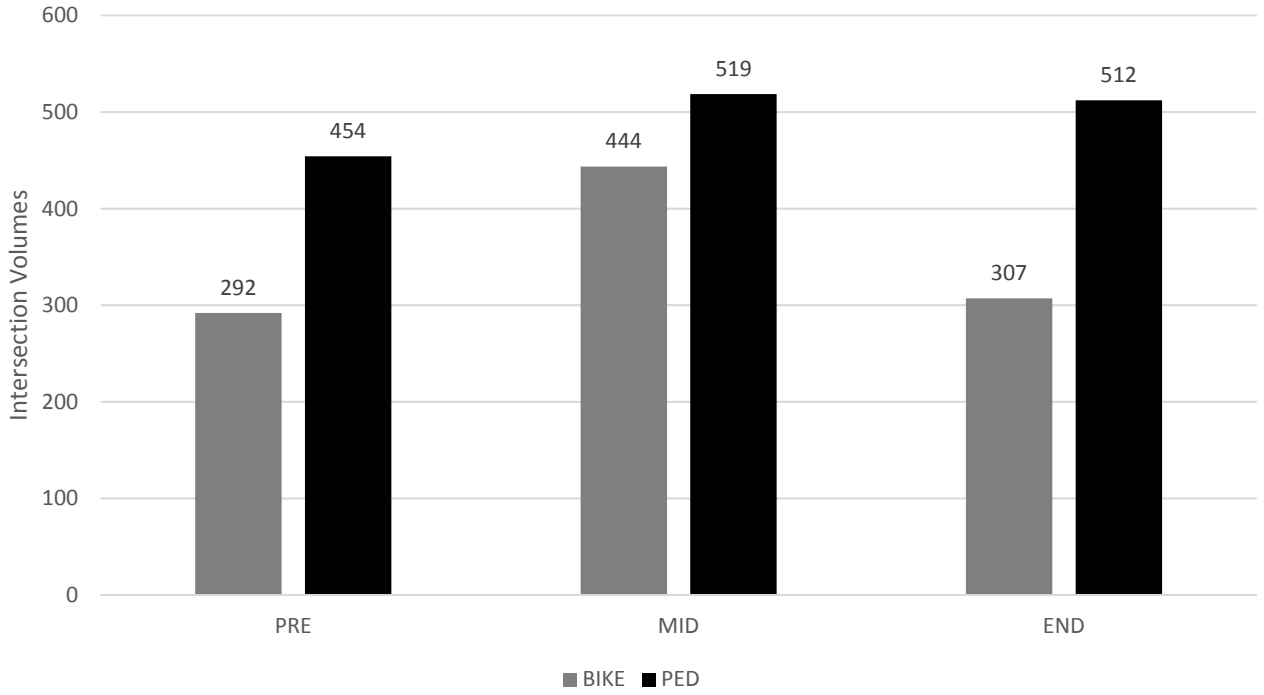


Figure 9: Observed Bicycle and Pedestrian Turning Movement Counts



Intersection Level of Service

Motor vehicle level of service was analyzed at two intersections within the project study area during the pre-, mid-, and end-pilot periods:

- Middlefield Road at Lytton Avenue
- Middlefield Road at University Avenue

The method used for the level of service analysis was the Highway Capacity Manual (HCM) 2000 method, and the traffic analysis software used was Synchro. For the assumed morning, midday, and evening peak periods, inputted signal timing data was provided by the City of Palo Alto. Level of service is expressed along a scale of 'A' through 'F', similar to many school grading systems, with 'A' representing the highest level of service and 'F' representing the lowest level of service. See **Table 7** for a summary of the motor vehicle level of service for the two intersections and see **Table 34** for a detailed list of motor vehicle level of service for the two intersections.

Pre-Pilot Period

The pre-pilot period for the motor vehicle level of service analysis was defined as April 1, 2017 to May 16, 2017.

At the intersection of Middlefield Road and Lytton Avenue, there was an estimated morning peak period level of service of 'D' with a 52 second delay per motor vehicle, an estimated midday peak period level of service of 'E' with a 56 second delay per motor vehicle, and an estimated evening peak period level of service of 'E' with a 60 second delay per motor vehicle.

At the intersection of Middlefield Road and University Avenue, there was an estimated morning peak period level of service of 'C' with a 32 second delay per motor vehicle, an estimated midday peak period level of service of 'C' with a 31 second delay per motor vehicle, and an estimated evening peak period level of service of 'D' with a 36 second delay per motor vehicle.

Mid-Pilot Period

The mid-pilot period for the motor vehicle level of service analysis was defined as May 17, 2017 to October 2, 2017.

At the intersection of Middlefield Road and Lytton Avenue, there was an estimated morning peak period level of service 'D' with a 51 second delay per motor vehicle, representing no change in level of service between the pre-pilot and mid-pilot periods and a 1 second decrease in delay. During the midday peak period, there was an estimated level of service 'D' with a 54 second delay per motor vehicle, representing a one letter grade improvement and a 3 second decrease in delay compared to the pre-pilot period. During the evening peak period, there was an estimated level of service 'F' with a 92 second delay per motor vehicle, representing a one letter grade deterioration and a 32 second increase in delay compared to the pre-pilot period.

At the intersection of Middlefield Road and University Avenue, there was no estimated change in motor vehicle level of service or delay between the pre-pilot and mid-pilot periods.

End-Pilot Period

The end-pilot period for the motor vehicle level of service analysis was defined as April 1, 2018 to May 16, 2018. Following review of data collection during the mid-pilot period, signal timing along the study corridor was optimized to improved intersection traffic flow for motor vehicles.

At the intersection of Middlefield Road and Lytton Avenue, there was an estimated morning peak period level of service 'E' with a 58 second delay per motor vehicle, representing a 6 second increase in delay and resulting in a one letter grade decline in level of service between the pre- and end-pilot periods. During the midday peak period, there was an estimated level of service 'E' with a 64 second delay per motor vehicle, representing an 8 second increase in delay but not resulting in any change in level of service between the pre- and end-pilot periods. During the evening peak period, there was an estimated level of service 'E' with a 74 second delay per motor vehicle, representing a 16 second increase in delay but not resulting in any change in level of service between the pre- and end-pilot periods. Note that the change in motor vehicle level of service may be influenced negatively by ongoing construction from the 'Upgrade Downtown' project (see the section below for more information).

At the intersection of Middlefield Road and University Avenue, there was an estimated morning peak period level of service 'D' with a 35 second delay per motor vehicle, representing a 3 second increase in delay and resulting in a one letter grade decline in level of service between the pre- and end-pilot periods. During the midday peak period, there was an estimated level of service 'C' with a 35 second delay per motor vehicle, representing a 4 second increase in delay but not resulting in any change in level of service between the pre- and end-pilot periods. During the evening peak period, there was an estimated level of service 'D' with a 39 second delay per motor vehicle, representing a 4 second increase in delay and resulting in a one letter grade decline in level of service between the pre- and end-pilot periods. Note that the change in motor vehicle level of service may be influenced positively or negatively by ongoing construction from the 'Upgrade Downtown' project (see the section below for more information).

Ongoing Construction

Because ongoing construction for the 'Upgrade Downtown' project may have impacted traffic volumes along the study corridor, a secondary analysis of intersection impacts was completed for morning peak period conditions at the Middlefield Road and Lytton Avenue intersection. Using pre-pilot motor vehicle volumes and the end-pilot intersection configuration, there was an estimated morning peak period level of service 'D' with a 53 second delay per motor vehicle, representing a 1 second increase in delay compared to pre-pilot conditions but no letter grade change in level of service. After completion of the 'Upgrade Downtown' project, additional motor vehicle traffic volume data may be needed to confirm if observed end-pilot changes in motor vehicle volumes at Middlefield Road and Lytton Avenue were largely impacted by ongoing construction and if they would return to pre-pilot volumes.

Table 7: Summary of Motor Vehicle Level of Service*

Intersections	PRE-PILOT L.O.S. (DELAY)**			MID-PILOT L.O.S. (DELAY)**			END-PILOT L.O.S. (DELAY)**		
	AM PEAK	MID PEAK	PM PEAK	AM PEAK	MID PEAK	PM PEAK	AM PEAK	MID PEAK	PM PEAK
Middlefield Road at Lytton Avenue	D (52s)	E (56s)	E (58s)	D (51s)	D (54s)	F (92s)	E (58s)	E (64s)	E (74s)
Middlefield Road at University Avenue	C (32s)	C (31s)	D (35s)	C (32s)	C (31s)	D (36s)	D (35s)	C (35s)	D (39s)

** Analysis uses data from Table 6, the Highway Capacity Manual 200 method for determining level of service (L.O.S.) and Synchro software*

*** Overall approach level of service (L.O.S.) on a scale of 'A' through 'F' and delay per motor vehicle in seconds, where 'A' ≤10 seconds of delay per vehicle at a signalized intersection, 'B' = 10-19 seconds, 'C' = 20-34 seconds, 'D' = 35-54 seconds, 'E' =55-80 seconds, and F > 80 seconds*

Intersection Queue Lengths

The queue lengths of two intersections within the project study area were analyzed during the pre-, mid-, and end-pilot periods:

- Middlefield Road at Lytton Avenue
- Middlefield Road at University Avenue

The analysis used the traffic analysis software Synchro to estimate the 95th percentile queue length for each turning movement at the two intersections (worst 5 percent of traffic conditions). For a summary of the estimated queue lengths, see **Table 8.**

Pre-Pilot Period

The pre-pilot period for the queuing analysis was defined as April 1, 2017 to May 16, 2017.

At the intersection of Middlefield Road and Lytton Avenue, the 95th percentile queue length did not exceed the available storage capacity during the morning, midday, or evening peak periods.

At the intersection of Middlefield Road and University Avenue, the 95th percentile queue length exceeded the available storage during the morning peak period in one (1) turning movement (eastbound through/right). During the midday peak period, the 95th percentile queue length exceeded the available storage in one (1) turning movement (eastbound through/right). During the evening peak period, the 95th percentile queue length exceeded the available storage in two (2) turning movements (eastbound left/through and westbound left/through/right).

Mid-Pilot Period

The mid-pilot period for the queuing analysis was defined as May 17, 2017 to October 2, 2017.

At the intersection of Middlefield Road and Lytton Avenue, the 95th percentile queue length exceeded the available storage during the morning peak period in one (1) turning movement (northbound through/right) compared to no turning movements during the pre-pilot period. During the midday peak period, the 95th percentile queue length did not exceed the available storage, which was consistent with the pre-pilot period. During the evening peak period, the 95th percentile queue length exceeded the available storage in two (2) turning movements (northbound through/right and eastbound through/right) compared to no turning movements during the pre-pilot period.

At the intersection of Middlefield and Lytton Avenue, the 95th percentile queue length exceeded the available storage in one (1) turning movement (eastbound through/right) during morning peak period, which was consistent with the pre-pilot period. During the midday peak period, the 95th percentile queue length exceeded the available storage in one (1) turning movement (eastbound through/right), which was consistent with the pre-pilot period. During the evening peak period, the 95th percentile queue length exceeded the available storage in one (1) turning movement (westbound through/through/right) compared to two (2) turning movements during the pre-pilot period.

End-Pilot Period

The end-pilot period for the queuing analysis was defined as April 1, 2018 and May 16, 2018.

At the intersection of Middlefield Road and Lytton Avenue, the 95th percentile queue length exceeded the available storage capacity during the end-pilot's morning peak period in two (2) turning movements (northbound left/through and through/right) compared to no turning movements during the pre-pilot period. During the end-pilot's midday peak period, the 95th percentile queue length exceeded the available storage capacity in three (3) turning movements (northbound left/through and through/right plus eastbound through/right) compared to no turning movements during the pre-pilot period. During end-pilot's the evening peak period, the 95th percentile queue length exceed the available storage capacity in two (2) turning movements (northbound thru/right and eastbound through/right) compared to no turning movements during the pre-pilot period.

At the intersection of Middlefield and Lytton Avenue, the 95th percentile queue length did not exceed the available storage in any turning movements during end-pilot's morning peak period, despite exceeding the available storage capacity in one (1) turning movement (eastbound through/right) during the pre-pilot period. During the end-pilot's midday peak period, the 95th percentile queue length did not exceed the available storage capacity compared to it exceeding the available storage capacity in one (1) turning movement (eastbound through/right) during the pre-pilot period. During the end-pilot's evening peak period, the 95th percentile queue length did not exceed the available storage capacity compared to it exceeding the available storage capacity in two (2) turning movements (eastbound left/through and westbound left/through/right) during the pre-pilot period.

Table 8: Summary of Queue Lengths (Middlefield Road at Lytton Avenue)*

		AM Peak Hour†			Mid Peak Hour†			PM Peak Hour†		
		Pre-Pilot	Mid-Pilot	End-Pilot	Pre-Pilot	Mid-Pilot	End-Pilot	Pre-Pilot	Mid-Pilot	End-Pilot
Northbound	Left/Thru [Left]††	255	147	**	215	132	**	297	139	212
	Thru/Right	237	**	**	217	301	**	300	**	**
Southbound	Left/Thru	48	318	281	264	256	281	297	301	304
	Thru/Right	146	358	319	289	258	319	264	306	268
Westbound	Left/Thru/Right [Thru/Right] ††	169	146	177	36	84	93	232	116	123
Eastbound	Left	140	194	212	66	194	227	303	222	217
	Thru/Right	221	169	321	215	193	**	102	**	**

† Estimated 95th percentile queue length

†† First lane configuration represents pre-pilot pilot conditions; second lane configuration in brackets represents mid- and end-pilot conditions

** Analysis uses data from Table 6, the Highway Capacity Manual 200 method for determining level of service (L.O.S.) and Synchro software*

*** Estimated queue length exceeds link capacity*

Table 9: Summary of Queue Lengths (Middlefield Road at University Avenue)*

Travel Lane		AM Peak Hour†			Mid Peak Hour†			PM Peak Hour†		
		Pre-Pilot	Mid-Pilot	End-Pilot	Pre-Pilot	Mid-Pilot	End-Pilot	Pre-Pilot	Mid-Pilot	End-Pilot
Northbound	Left/Thru	216	164	98	223	113	169	260	406	629
	Thru/Right	165	288	150	176	242	244	231	390	673
Southbound	Left/Thru	291	279	176	273	281	294	308	307	312
	Thru/Right	285	267	159	255	257	254	293	293	294
Eastbound	Left	58	64	30	563	42	151	96	94	97
	Left/Thru	26	265	121	270	255	215	**	255	179
	Thru/Right	**	**	85	**	**	153	227	321	169
Westbound	Left	81	74	2	165	76	16	227	125	18
	Left/Thru/Right	231	289	13	311	283	39	**	**	92

† Estimated 95th percentile queue length

** Analysis uses data from Table 6, the Highway Capacity Manual 200 method for determining level of service (L.O.S.) and Synchro software*

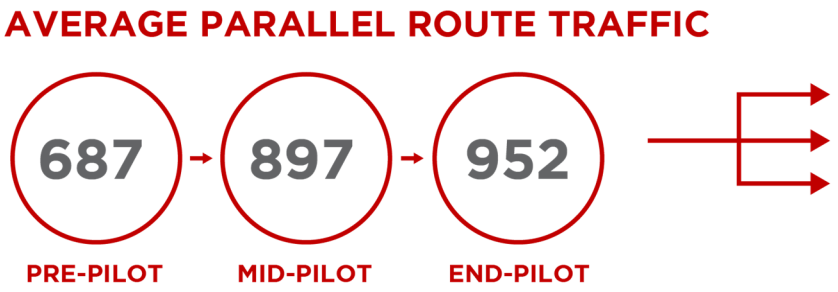
*** Estimated queue length exceeds link capacity*

Traffic Diversion

Changes in the roadway configuration can spark concerns that motor vehicle traffic along a major arterial street will shift to parallel streets. To track traffic diversion from Middlefield Road to parallel streets and cross streets, two (2) performance measures were identified:

- Traffic volumes – The number of motor vehicles traveling through 12 locations within the project study area
- Motor vehicle classifications – The percent of heavy-duty vehicles traveling through 12 locations within the project study area

Along the five (5) observed parallel routes to Middlefield Road, there was a 38.6 percent increase in average motor vehicle volumes between the pre- and end-pilot periods (an average net increase of 265 motor vehicles per roadway segment). At the three (3) observed locations on Middlefield Road, average traffic volumes decreased 11.2 percent (or a decrease of 2,104 motor vehicles per roadway segment), suggesting that a small number of the motor vehicles that were using Middlefield Road during the pre-pilot period may have shifted to parallel routes during the end-pilot period (up to 265 motor vehicles), but the rest may have diverted outside the study area.



The percent of heavy-duty vehicles slightly decreased at the twelve locations from 3.8 percent of all traffic during the pre-pilot period to 3.4 percent of all traffic during the end pilot period (-9.5% decrease).

Traffic Volumes and Motor Vehicle Classifications

Motor vehicle traffic volumes and vehicle classifications were observed at 12 locations within the project study area during the pre-, mid-, and end-pilot periods:

- **Middlefield Road Corridor**
  - Middlefield Road between Palo Alto Avenue (west) and Palo Alto Avenue (east)
  - Middlefield Road between Hawthorne Avenue and Everett Avenue
  - Middlefield Road between Everett Avenue and Lytton Avenue
- **Parallel Routes**
  - Webster Street between Lytton Avenue and Everett Avenue
  - Byron Street between Lytton Avenue and Everett Avenue
  - Fulton Street between Lytton Avenue and University Avenue
  - Fulton Street between Lytton Avenue and Everett Avenue
  - Guinda Street between Lytton Avenue and University Avenue
- **Cross Streets**
  - Palo Alto Avenue between Middlefield Road and Fulton Street
  - Hawthorne Avenue between Byron Street and Middlefield Road
  - Everett Avenue between Byron Street and Middlefield Road
  - Everett Avenue between Middlefield Road and Fulton Street

Bi-directional data was collected through pneumatic tubes placed across each of the study streets over a 24-hour period on two weekdays. See **Table 10** for a summary of observed motor vehicle speeds at the 12 locations and see **Table 36** for a detailed list.

Pre-Pilot Period

The pre-pilot period for motor vehicle traffic volumes and vehicle classifications was defined as April 18, 2017 through April 19, 2017 for the 12 locations within the project study area. There was an average daily volume of 67,739 motor vehicles during the pre-pilot period, with 1,852 vehicles classified as heavy (2.7 percent of all observed motor vehicles).

At the three (3) locations observed along Middlefield Road, the average daily volume of motor vehicles ranged between 14,765 and 21,808, with heavy vehicles representing between 1.3 percent and 3.7 percent of all motor vehicle traffic. Because these three (3) locations are along the same corridor, it is assumed that many of the vehicles counted passed through multiple count locations. Along the five (5) parallel routes to Middlefield Road, the average daily volume of motor vehicles ranged between 264 and 1,571, with heavy vehicles representing between 2.0 percent and 5.5 percent of all motor vehicle traffic. Along the four (4) cross street locations, the average daily volume of motor vehicles ranged between 267 and 3,636, with heavy vehicles representing between 1.6 percent and 3.6 percent of all motor vehicle traffic.

Mid-Pilot Period

The mid-pilot period for motor vehicle traffic volumes and vehicle classifications was defined as October 25, 2017 through October 26, 2017 for the 12 locations within the project study area. Data was initially collected on October 4, 2017 through October 5, 2017; however, equipment failures at three (3) locations prompted the need to re-collect data for all 12 locations later in the month. There was an average daily volume of 63,152 motor vehicles during the mid-pilot period, with 1,876 vehicles classified as heavy (3.0 percent of all observed motor vehicles). Compared to the pre-pilot period, there was a 6.8 percent decrease in overall motor vehicle volumes and a 1.3 percent increase in heavy vehicle volumes.

At the three (3) locations observed along Middlefield Road, the average daily volume of motor vehicles ranged between 16,800 and 18,175, with heavy vehicles representing between 2.7 percent and 3.5 percent of all motor vehicle traffic. Because these three (3) locations are along the same corridor, it is assumed that many of the vehicles counted passed through multiple count locations. Compared to the pre-pilot period, there was a 5.8 percent decrease in overall motor vehicle volumes. Along the five (5) parallel routes to Middlefield Road, the average daily volume of motor vehicles ranged between 314 and 1,754, with heavy vehicles representing between 1.3 percent and 3.0 percent of all motor vehicle traffic. Compared to the pre-pilot period, there was a 30.6 percent increase in overall motor vehicle. Along the four cross street locations, the average daily volume of motor vehicles ranged between 464 and 2,889, with heavy vehicles representing between 1.8 percent and 2.6 percent of all motor vehicle traffic. Compared to the pre-pilot period, there was a 29.5 percent decrease in overall motor vehicle volumes.

End-Pilot Period

The end-pilot period for motor vehicle traffic volumes and vehicle classifications was defined as April 18, 2018 through April 19, 2018 for the 12 locations within the project study area. There was an average daily volume of 60,557 motor vehicles during the end-pilot period, with 2,068 vehicles classified as heavy (3.4 percent of all observed motor vehicles). Compared to the pre-pilot period, there was a 10.6 percent decrease in overall motor vehicle volumes and a 19.1 percent decrease in heavy vehicle volumes.

At the three (3) locations observed along Middlefield Road, the average daily volume of motor vehicles ranged between 15,855 and 17,404, with heavy vehicles representing between 3.1 percent and 3.7 percent of all motor vehicle traffic. Because these three locations are along the same corridor, it is assumed that many of the vehicles counted passed through multiple count locations. Compared to the pre-pilot period, there was a 11.2 percent decrease in overall motor vehicle volumes. Along the five (5) parallel routes to Middlefield Road, the average daily volume of motor vehicles ranged between 347 and 2,012, with heavy vehicles representing between 2.3 percent and 4.7 percent of all motor vehicle traffic. Compared to the pre-pilot period, there was a 38.6 percent increase in overall motor vehicle volumes. Along the four cross street locations, the average daily volume of motor vehicles ranged between 492 and 2,435, with heavy vehicles representing between 2.5 percent and 3.7 percent of all motor vehicle traffic. Compared to the pre-pilot period, there was a 27.0 percent decrease in overall motor vehicle volumes.

Table 10: Summary of Motor Vehicle Traffic Volumes and Classifications

			PRE-PILOT*		MID-PILOT**		END-PILOT***	
			Volumes		Volumes (% Change)		Volumes (% Change)	
Corridor	Begin	End	ADT†	Heavy††	ADT†	Heavy††	ADT†	Heavy††
Middlefield Road	Palo Alto Avenue (west)	Palo Alto Avenue (east)	19,591	954	18,175 (-7.2%)	643 (-32.6%)	17,404 (-11.2%)	537 (-43.7%)
Middlefield Road	Hawthorne Avenue	Everett Avenue	21,808	815	17,955 (-17.7%)	491 (-39.8%)	16,594 (-23.9%)	605 (-25.8%)
Middlefield Road	Everett Avenue	Lytton Avenue	14,765	499	16,800 (13.8%)	522 (4.7%)	15,855 (7.4%)	588 (18.0%)
Webster Street	Lytton Avenue	Everett Avenue	952	53	1,325 (39.2%)	37 (-30.5%)	1,149 (20.7%)	26 (-50.5%)
Byron Street	Lytton Avenue	Everett Avenue	382	12	700 (83.2%)	21 (75.0%)	683 (78.8%)	20 (66.7%)
Fulton Street	Lytton Avenue	University Avenue	266	8	393 (47.7%)	8 (6.7%)	570 (114.3%)	18 (140.0%)
Fulton Street	Lytton Avenue	Everett Avenue	264	9	314 (18.9%)	9 (0.0%)	347 (31.4%)	11 (29.4%)
Guinda Street	Lytton Avenue	University Avenue	1,571	32	1,754 (11.6%)	22 (-31.3%)	2,012 (28.1%)	95 (196.9%)
Palo Alto Avenue	Middlefield Road	Fulton Street	267	10	464 (73.8%)	11 (15.8%)	492 (84.3%)	13 (36.8%)
Hawthorne Avenue	Byron Street	Middlefield Road	3,636	89	2,889 (-20.5%)	53 (-40.7%)	2,435 (-33.0%)	66 (-25.4%)
Everett Avenue	Byron Street	Middlefield Road	3,044	58	1,723 (-43.4%)	46 (-21.6%)	1,917 (-37.0%)	48 (-17.2%)
Everett Avenue	Middlefield Road	Fulton Street	1,193	20	660 (-44.7%)	15 (-23.1%)	1,099 (-7.9%)	41 (110.3%)

† Average Daily Traffic (ADT): Average of two-day motor vehicle counts

†† Includes all vehicles classified as long 2-axle vehicles, 2-axle vehicles with 6 tires, buses, and vehicles with 3+ axles; excludes non-classified vehicles

** Average of values from Wednesday, April 18, 2017 through Thursday, April 19, 2017*

*** Average of values from Wednesday, October 25, 2017 through Thursday, October 26, 2017*

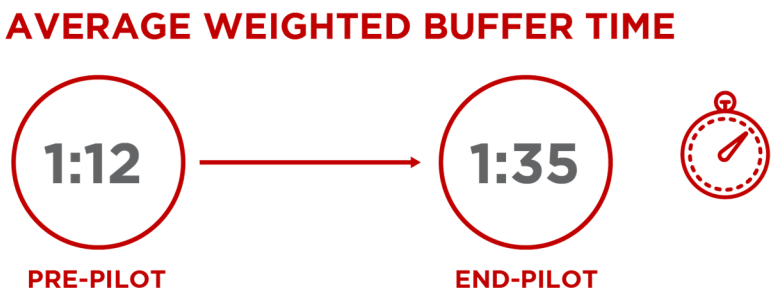
**** Average of values from Wednesday, April 18, 2018 through Thursday, April 19, 2018*

Travel Reliability

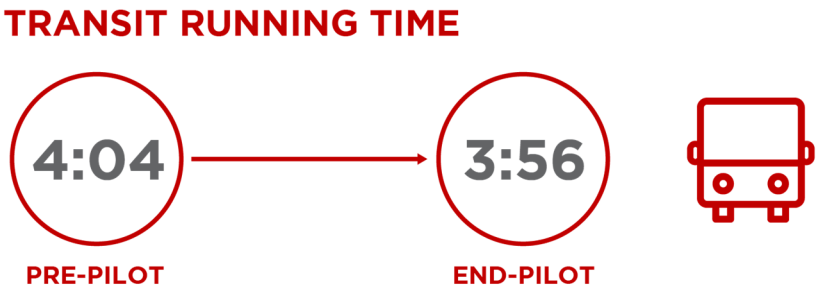
Another method for measuring the efficiency of a roadway network is tracking how long it takes to drive or ride transit along a given corridor. For this evaluation category, two (2) performance measures were identified:

- Motor vehicle travel times and buffer time indices – How long it takes to travel from one end of the project corridor to the other end and how much time you need to add to your schedule to account for fluctuations in travel times
- Transit running times – The average amount of time needed for the Dumbarton Express transit route to travel between two bus stops on opposite sides of the project corridor

Between the pre- and end-pilot periods, the weighted average buffer time for motorists along the project corridor increased by 31.9 percent in the combined southbound and northbound directions (from 1 minute 12 seconds to 1minutes 35 seconds).



The overall transit running time within the project study area decreased 3.4 percent for bi-directional travel between the pre- and end-pilot periods (from 4 minutes 4 seconds to 3 minutes 56 seconds). However, morning peak and evening peak period transit running times increased between the pre- and end-pilot periods (2.4 percent and 6.7 percent, respectively).



Motor Vehicle Travel Times & Buffer Time Indices

Motor vehicle travel time reliability was observed along Middlefield Road between Palo Alto Avenue and University Avenue during the pre-, mid-, and end-pilot periods. See **Table 11** for a summary of the travel time data along the Middlefield Road corridor.

Pre-Pilot Period

The pre-pilot period for motor vehicle travel time reliability was defined as April 18, 2017 through April 25, 2017 for the Middlefield Road corridor. Bi-directional data was collected through the use of BlueMac data collection units stationed at Middlefield Road between Woodland Avenue and Palo Alto Avenue and at Middlefield Road between Lytton Avenue and University Avenue. The BlueMac units identified a unique signal from a Bluetooth device, such as a Bluetooth-enabled mobile phone, and recorded what time the device passed within 250 feet of it. With two (2) units positioned along the corridor, the travel time of one device (and presumably one motor vehicle) between the two (2) stations can be tracked. To minimize the number of errors in data collection, travel times greater than 10 minutes and less than 30 seconds were excluded from the analysis as it was assumed these travel times did not represent a single consistent trip along the corridor or were the result of an equipment error.

During the pre-pilot period, 2,457 trips were observed in the southbound direction and 2,169 trips were observed in the northbound direction. The weighted mean travel time for both directions was 1 minute 31 seconds. The weighted buffer time for bi-directional traffic was 1 minute 12 seconds, suggesting that an individual planning to travel along the Middlefield Road corridor should add just over 1 minute to their expected travel time to account for variability in travel times between Palo Alto Avenue and University Avenue caused by traffic congestion, waiting at traffic signals, and other impediments to free-flow traffic.

During the pre-pilot's **morning peak period**, 310 trips were observed in the southbound direction and 239 trips were observed in the northbound direction. The weighted mean travel time for both directions was 1 minute 34 seconds. The weighted mean buffer time for bi-directional traffic was 1 minute 7 seconds, suggesting that an individual planning to travel along the Middlefield Road corridor should add just over 1 minute to their expected travel time to account for variability in travel times between Palo Alto Avenue and University caused by traffic congestion, waiting at traffic signals, and other impediments to free-flow traffic.

During the pre-pilot's **evening peak period**, 292 trips were observed in the southbound direction and 278 trips were observed in the northbound direction. The weighted mean travel time for both directions was 1 minute 44 seconds. The weighted mean buffer time for bi-directional traffic was 1 minute 15 seconds, suggesting that an individual planning to travel along the Middlefield Road corridor should add just over 1 minute to their expected travel time to account for variability in travel times between Palo Alto Avenue and University caused by traffic congestion, waiting at traffic signals, and other impediments to free-flow traffic.

Mid-Pilot Period

The mid-pilot period for motor vehicle travel time reliability was defined as October 26, 2017 for the Middlefield Road corridor. Bi-directional data was collected through manual travel time recordings conducted by a paid motorist driving on Middlefield Road between Palo Alto Avenue and University Avenue. This data collection method differs from the pre-pilot period which used automated BlueMac units. An attempt to collect travel time data using the BlueMac unit during the mid-pilot period was made but because of an equipment malfunction, verifiable data was not recorded. This discrepancy in data collection methods should be considered when comparing the pre- and mid-pilot periods, as it produced a large difference in sample sizes (4,626 recorded travel times during the pre-pilot period and 14 recorded travel times during the mid-pilot period). In addition, because the manual data collection method recorded travel times between intersections during the mid-pilot period instead of near intersections, defined as within 250 feet, the travel distance may vary between the pre- and mid-pilot periods.

During the mid-pilot's **morning peak period**, 7 trips were observed in the southbound direction and 7 trips were observed in the northbound direction. The weighted mean travel time for both directions was 2 minutes 50 seconds, representing an 80.4 percent increase compared to the pre-pilot's morning peak period. While the mean travel time in the northbound direction remained relatively consistent between the pre- and mid-pilot's morning peak periods (1 minute 51 seconds and 1 minute 30 seconds, respectively, for a -18.6 percent change in mean travel time), there was a 207.6 percent increase in the southbound direction (1 minute 20 seconds during the pre-pilot's morning peak period and 4 minutes 9 seconds during the mid-pilot's morning peak period).

Similarly, the same divergence in southbound and northbound travel times between the pre- and mid-pilot's morning peak periods was evident in the 85th percentile of observed travel times. During the mid-pilot period's morning peak period, the 85th percentile travel time in the northbound direction was 2 minutes 10 seconds compared to 1 minute 55 seconds during the pre-pilot's morning peak period, representing a 10.3 percent increase in mean southbound travel time. During the same time period in the southbound direction, the 85th percentile travel time during the mid-pilot period was 5 minutes 27 seconds compared to 1 minute 56 seconds during the pre-pilot period, representing a 181.8 percent increase in mean northbound travel time.

The bi-directional buffer time remained relatively consistent between the pre- and mid-pilot's morning peak periods. The weighted average of buffer times during the mid-pilot's morning peak period was 1 minute 5 seconds compared to 1 minute 7 seconds during the pre-pilot's morning peak period (-4.1 percent).

End-Pilot Period

The end-pilot period for motor vehicle travel time reliability was defined as April 17, 2018 through April 24, 2018 for the Middlefield Road corridor. Bi-directional data was collected through the use of BlueMac data collection units stationed at Middlefield Road between Woodland Avenue and Palo Alto Avenue and at Middlefield Road between Lytton Avenue and University Avenue. The BlueMac units identified a unique signal from a Bluetooth device, such as a Bluetooth-enabled mobile phone, and record what time the device passed within 250 feet of it. With two (2) units positioned along the corridor, the travel time of one device (and presumably one motor vehicle) between the two (2) stations can be tracked. To minimize the number of errors in data collection, travel times greater than 10 minutes and less than 30 seconds were excluded from the analysis as it was assumed these travel times did not represent a single consistent trip along the corridor or were the result of an equipment error.

During the end-pilot period, 1,786 trips were observed in the northbound direction and 1,927 trips were observed in the southbound direction. The weighted mean travel time for both directions was 1 minute 41 seconds, an increase of 11.1 percent compared to the pre-pilot weighted mean travel time (1 minute 34 seconds). The weighted buffer time for bi-directional traffic was 1 minute 35 seconds, suggesting that an individual planning to travel along the Middlefield Road corridor should add just over 1.5 minutes to their expected travel time to account for variability in travel times between Palo Alto Avenue and University Avenue caused by traffic congestion, waiting at traffic signals, and other impediments to free-flow traffic. This represents a 54.8 increase in weighted buffer time compared to the pre-pilot period (1 minute 12 seconds).

During the end-pilot's **morning peak period**, 210 trips were observed in the northbound direction and 196 trips were observed in the southbound direction. The weighted mean travel time for both directions was 1 minute 44 seconds, a 10.6 percent increase over the pre-pilot's morning peak period weighted mean travel time. The weighted mean buffer time for bi-directional traffic during the morning peak period was 1 minute 38 seconds, suggesting that an individual planning to travel along the Middlefield Road corridor should add just over 1.5 minutes to their expected travel time to account for variability in travel times between Palo Alto Avenue and University caused by traffic congestion, waiting at traffic signals, and other impediments to free-flow traffic. This represents a 46.3 percent increase in weighted buffer time compared to the pre-pilot's morning peak period (1 minute 7 seconds).

During the end-pilot's **evening peak period**, 295 trips were observed in the northbound direction and 306 trips were observed in the southbound direction. The weighted mean travel time for both directions was 1 minute 56 seconds, a 11.5 percent increase over the pre-pilot's evening peak period weighted mean average travel time (1 minute 44 seconds). The weighted mean buffer time for bi-directional traffic was 1 minute 40 seconds, suggesting that an individual planning to travel along the Middlefield Road corridor should add over 1.5 minutes to their expected travel time to account for variability in travel times between Palo Alto Avenue and University caused by traffic congestion, waiting at traffic signals, and other impediments to free-flow traffic. This represents a 33.3 percent increase in weighted buffer time compared to the pre-pilot's evening peak period (1 minute 15 seconds)

Table 11: Summary of Motor Vehicle Travel Time

Measure	PRE-PILOT*				MID-PILOT (% Change)**				END-PILOT (% Change)***			
	Southbound		Northbound		Southbound		Northbound		Southbound		Northbound	
	Avg. Weekly	AM Peak	Avg. Weekly	AM Peak	Avg. Weekly	AM Peak	Avg. Weekly	AM Peak	Avg. Weekly	AM Peak	Avg. Weekly	AM Peak
Number of Trips	2,457	310	2,169	239	-	7	-	7	1,927	61	1,786	61
Mean Travel Time	01:23	01:20	01:41	01:51	-	04:09 (207.6%)	-	01:30 (-18.6%)	01:38 (18.4%)	01:56 (42.9%)	01:45 (4.1%)	01:33 (-16.2%)
Median Travel Time	01:10	01:12	01:31	01:45	-	03:47 (217.5%)	-	01:25 (-19.0%)	01:28 (25.7%)	01:38 (37.1%)	01:40 (9.9%)	01:19 (-25.2%)
85th Percentile Travel Time	01:55	01:56	02:18	02:25	-	05:27 (181.8%)	-	02:10 (-10.3%)	02:30 (30.4%)	03:23 (75.0%)	02:42 (17.4%)	02:27 (1.4%)
95th Percentile Travel Time	02:24	02:20	03:05	03:09	-	05:32 (137.4%)	-	02:16 (-28.0%)	03:15 (35.4%)	03:49 (63.6%)	03:17 (6.5%)	02:57 (-6.3%)
Standard Deviation	01:00	00:39	01:03	00:56	-	01:13 (21.2%)	-	00:34 (-45.7%)	00:50 (-21.6%)	01:02 (56.9%)	00:49 (-17.6%)	00:47 (-29.9%)
Mean Travel Time Weighted Average	01:34				-				01:41 (11.1%)			

** Trips were observed over 24-hour periods between Wednesday, April 18, 2017 and Tuesday, April 25, 2017 (excludes times less than 30 seconds and greater than 10 minutes) from Middlefield Road between Woodland Avenue and Palo Alto Avenue to Middlefield Road between Lytton Avenue and University Avenue; BlueMac Bluetooth devices used for data collection*

*** Trips were observed from 8:30 AM to 9:30 AM on October 26, 2017 along Middlefield Road between Palo Alto Avenue and University Avenue; manual drive times used for data collection*

**** Trips were observed over 24-hour periods between Tuesday, April 17, 2018 and Monday, April 24, 2018 (excludes times less than 30 seconds and greater than 10 minutes) from Middlefield Road between Woodland Avenue and Palo Alto Avenue to Middlefield Road between Lytton Avenue and University Avenue; BlueMac Bluetooth devices used for data collection*

Table 12: Summary of Motor Vehicle Travel Time Reliability

Measure	PRE-PILOT*				MID-PILOT (% Change)**				END-PILOT (% Change)***			
	Southbound		Northbound		Southbound		Northbound		Southbound		Northbound	
	Weekly Avg.	AM Peak	Weekly Avg.	AM Peak	Weekly Avg.	AM Peak	Weekly Avg.	AM Peak	Weekly Avg.	AM Peak	Weekly Avg.	AM Peak
Buffer Index (points)	0.74	0.73	0.84	0.70	-	0.34 (-54.1%)	-	0.50 (-32.4%)	0.99 (33.8%)	0.98 (34.2%)	0.88 (5.8%)	0.90 (28.6%)
Buffer Time	01:01	00:59	01:24	01:18	-	01:23 (36.0%)	-	00:46 (-22.0%)	01:37 (59.0%)	01:53 (91.5%)	01:32 (24.3%)	01:24 (7.7%)
Buffer Index Weighted Average (points)	0.79				0.42 (-46.6%)				0.94 (19.0%)			
Buffer Time Weighted Average	01:12				01:05 (-4.1%)				01:35 (54.8%)			

** Trips were observed over 24-hour periods between Wednesday, April 18, 2017 and Tuesday, April 25, 2017 (excludes times less than 30 seconds and greater than 10 minutes) from Middlefield Road between Woodland Avenue and Palo Alto Avenue to Middlefield Road between Lytton Avenue and University Avenue; BlueMac Bluetooth devices used for data collection*

*** Trips were observed from 8:30 AM to 9:30 AM on October 26, 2017 along Middlefield Road between Palo Alto Avenue and University Avenue; manual drive times used for data collection*

**** Trips were observed over 24-hour periods between Tuesday, April 17, 2018 and Monday, April 24, 2018 (excludes times less than 30 seconds and greater than 10 minutes) from Middlefield Road between Woodland Avenue and Palo Alto Avenue to Middlefield Road between Lytton Avenue and University Avenue; BlueMac Bluetooth devices used for data collection*

Transit Running Times

Transit vehicle running time for the Dumbarton Express through the project study area was provided by AC Transit for the pre-, mid-, and end-pilot periods. Running times in the eastbound direction were observed between the Lytton Avenue/Cowper Street bus stop and the Middlefield Road/Willow Road bus stop. Running times in the westbound direction were observed between the Middlefield Road/Willow Road bus stop and the Lytton Avenue/Kipling Street bus stop. See **Table 13** for a summary of the transit vehicle running times.

Pre-Pilot Period

The pre-pilot period for transit vehicle running time was divided into two periods – summer and winter – to provide a more accurate comparison to mid-pilot and end-pilot data collection periods. The pre-pilot summer period was defined as May 5, 2016 through September 30, 2016. The pre-pilot winter period was defined as November 1, 2016 through February 28, 2017.

The average transit vehicle running time for the **pre-pilot summer period** was 3 minutes 46 seconds with a standard deviation of 1 minute 30 seconds. The average transit vehicle running time was 1 minute 17 seconds for the pre-pilot summer period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 10 seconds for the assumed **evening peak period** (4:00 PM to 6:00 PM).

The average **eastbound** transit vehicle running time for the pre-pilot **summer** period was 3 minutes 8 seconds with a standard deviation of 1 minute 23 seconds. The average eastbound transit vehicle running time was 1 minute 17 seconds for the pre-pilot summer period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 10 seconds for the assumed **evening peak** (4:00 PM to 6:00 PM).

The average **westbound** transit vehicle running time for the pre-pilot **summer** period was 4 minutes 27 seconds with a standard deviation of 1 minute 20 seconds. The average westbound transit vehicle running time was 1 minute 17 seconds for the pre-pilot summer period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 11 seconds for the assumed **evening peak** (4:00 PM to 6:00 PM).

The average transit vehicle running time for the **pre-pilot winter period** was 4 minutes 4 seconds with a standard deviation of 1 minute 46 seconds. The average transit vehicle running time was 2 minutes 1 second for the pre-pilot winter period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 5 seconds for the assumed **evening peak period** (4:00 PM to 6:00 PM).

The average **eastbound** transit vehicle running time for the pre-pilot **winter** period was 3 minutes 24 seconds with a standard deviation of 1 minute 33 seconds. The average eastbound transit vehicle running time was 1 minute 32 seconds for the pre-pilot winter period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 11 seconds for the assumed **evening peak** (4:00 PM to 6:00 PM).

The average **westbound** transit vehicle running time for the pre-pilot **winter** period was 4 minutes 45 seconds with a standard deviation of 1 minute 19 seconds. The average westbound transit vehicle running time was 2 minutes 18 seconds for the pre-pilot winter period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 26 seconds for the assumed **evening peak** (4:00 PM to 6:00 PM).

Mid-Pilot Period

The mid-pilot period for transit vehicle running time was defined as May 17, 2016 through September 18, 2016 and roughly aligns with the pre-pilot 'summer' period.

The average transit vehicle running time for the **overall mid-pilot period** was 3 minutes 29 seconds with a standard deviation of 2 minutes 15 seconds. Compared to the pre-pilot summer period, the overall mid-pilot transit vehicle running time decreased by 7.5 percent; however, the standard deviation increased by 45 seconds. The average transit vehicle running time was 1 minute 30 seconds for the mid-pilot summer period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 22 seconds for the assumed **evening peak period** (4:00 PM to 6:00 PM), representing a 17.0 percent and a 9.4 percent increase compared to the overall pre-pilot summer period.

The average **eastbound** transit vehicle running time for the mid-pilot was 3 minutes 29 seconds with a standard deviation of 2 minutes 15 seconds. Compared to the eastbound pre-pilot's summer period, the eastbound mid-pilot transit vehicle running time increased by 11.5 percent, and the standard deviation increased by 52 seconds. The average eastbound transit vehicle running time was 1 minute 30 seconds for the mid-pilot period's assumed **morning peak** (7:00 AM to 9:00 AM) in the eastbound direction and 2 minutes 22 seconds for the assumed **evening peak** (4:00 PM to 6:00 PM) in the eastbound direction, representing a 16.7 percent and a 9.8 percent increase compared to the eastbound pre-pilot's summer period, respectively.

The average **westbound** transit vehicle running time for the mid-pilot period was 3 minutes 29 seconds with a standard deviation of 2 minute 15 seconds. Compared to the westbound pre-pilot's summer period, the westbound mid-pilot transit vehicle running time decreased by 21.5 percent; however, the standard deviation increased by 55 seconds. The average westbound transit vehicle running time was 1 minute 30 seconds for the end-pilot summer period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 22 seconds for the assumed **evening peak** (4:00 PM to 6:00 PM), representing a 17.3 percent and a 9.0 percent increase compared to the westbound pre-pilot's summer period.

End-Pilot Period

The end-pilot period for transit vehicle running time was defined as October 2, 2017 through April 30, 2018 and roughly aligns with the pre-pilot 'winter' period.

The average transit vehicle running time for the end-pilot period was 3 minutes 56 seconds with a standard deviation of 1 minutes 38 seconds. Compared to the pre-pilot winter period, the end-pilot transit vehicle running time decreased by 3.4 percent, and the standard deviation increased by 8 seconds. The average transit vehicle running time was 2 minute 4 seconds for the end-pilot winter period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 13 seconds for the assumed **evening peak period** (4:00 PM to 6:00 PM), representing a 2.4 percent and a 6.7 percent increase compared to the pre-pilot winter period.

The average **eastbound** transit vehicle running time for the end-pilot was 3 minutes 14 seconds with a standard deviation of 1 minutes 24 seconds. Compared to the eastbound pre-pilot's winter period, the eastbound end-pilot transit vehicle running time decreased by 4.9 percent, and the standard deviation decreased by 29 seconds. The average eastbound transit vehicle running time was 1 minute 32 seconds for the end-pilot period's assumed **morning peak** (7:00 AM to 9:00 AM) in the eastbound direction and 2 minutes 5 seconds for the assumed **evening peak** (4:00 PM to 6:00 PM) in the eastbound direction, representing a 0.3 percent and a 4.9 percent decrease compared to the eastbound pre-pilot's winter periods, respectively.

The average **westbound** transit vehicle running time for the overall end-pilot period was 4 minutes 37 seconds with a standard deviation of 1 minute 38 seconds. Compared to the westbound pre-pilot's winter period, the westbound mid-pilot transit vehicle running time decreased by 2.8 percent; however, the standard deviation increased by 15 seconds. The average westbound transit vehicle running time was 2 minute 25 seconds for the end-pilot winter period's assumed **morning peak** (7:00 AM to 9:00 AM) and 2 minutes 21 seconds for the assumed **evening peak** (4:00 PM to 6:00 PM), representing a 5.0 percent increase and a 3.4 percent decrease compared to the westbound pre-pilot's winter period, respectively.

Table 13: Summary of Transit Vehicle Running Time

Direction	Running Time	PRE-PILOT		MID-PILOT		END-PILOT	
		Summer†	Winter††	Summer†††	% Change	Winter††††	% Change
Eastbound*	Overall Average	03:08	0:03:24	03:29	11.5%	03:14	-4.9%
	Overall Standard Deviation	01:23	0:01:53	02:15	62.9%	01:24	-25.8%
	AM Peak Average (7:00 AM – 9:00 AM)	01:17	0:01:32	01:30	16.7%	01:32	-0.3%
	PM Peak Average (4:00 PM – 6:00 PM)	02:10	0:02:11	02:22	9.8%	02:05	-4.9%
Westbound**	Overall Average	04:27	0:04:45	03:29	-21.5%	04:37	-2.8%
	Overall Standard Deviation	01:20	0:01:19	02:15	69.4%	01:34	18.1%
	AM Peak Average (7:00 AM – 9:00 AM)	01:17	0:02:18	01:30	17.3%	02:25	5.0%
	PM Peak Average (4:00 PM – 6:00 PM)	02:11	0:02:26	02:22	9.0%	02:21	-3.4%
Both Directions	Overall Average	03:46	0:04:04	03:29	-7.5%	03:56	-3.4%
	Overall Standard Deviation	01:30	0:01:46	02:15	49.3%	01:38	-7.3%
	AM Peak Average (7:00 AM – 9:00 AM)	01:17	0:02:01	01:30	17.0%	02:04	2.4%
	PM Peak Average (4:00 PM – 6:00 PM)	02:10	0:02:05	02:22	9.4%	02:13	6.7%

† Trips were observed from May 5, 2016 to September 30, 2016

†† Trips were observed from November 1, 2016 to February 28, 2017

††† Trips were observed from May 17, 2017 to September 18, 2017

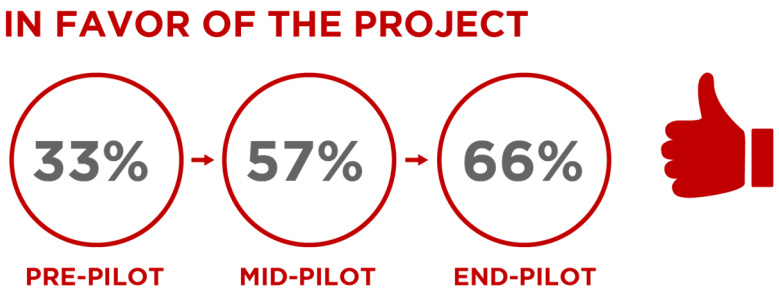
†††† Trips were observed from October 2, 2017 to April 30, 2018

** Transit running time for Dumbarton Express from Lytton Avenue at Cowper Street bus stop to Middlefield Road at Willow Road bus stop (includes dwell time and bus re-entry time)*

*** Transit running time for Dumbarton Express from Middlefield Road at Willow Road bus stop to Lytton Avenue at Kipling Street bus stop (includes dwell time and bus re-entry time)*

Public Opinion

A mail-back survey sent to residences within the project study area was the primary method for collecting feedback about public opinion. Between the pre- and end-pilot periods, the percent of respondents in favor of the project increased from 33.3 percent to 66.0 percent. Possible explanations for this increased approval of the Middlefield North Road Diet include sample survey sample sizes, an increase awareness among respondents about the project, and/or decreased safety concerns.



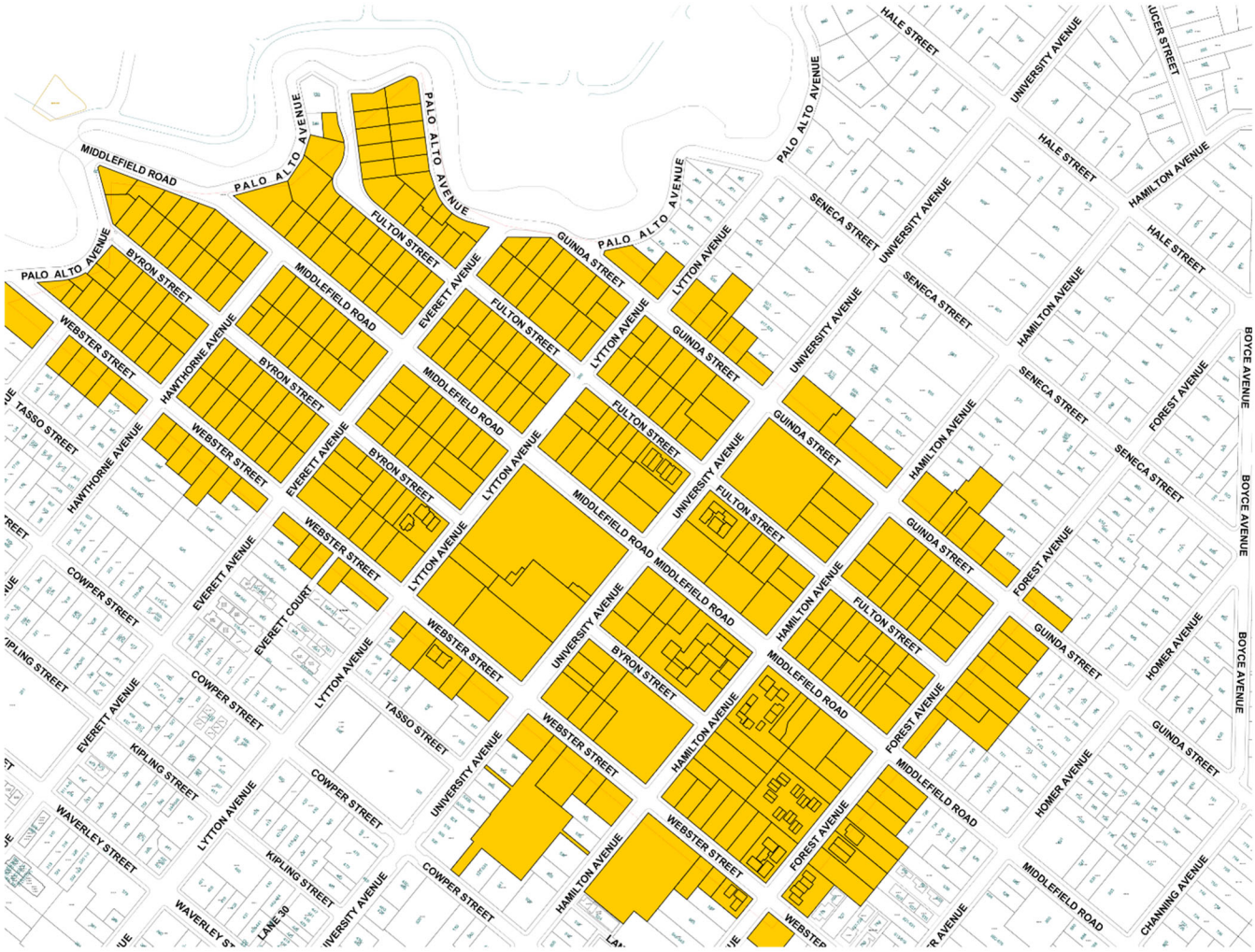
Resident Survey Responses

Public opinion of the Middlefield North Road Diet was collected through a mail-back survey sent to addresses within the study area. The survey was sent during the pre-, mid-, and end-pilot periods. The survey contained seven (7) questions about the Middlefield North Road Diet:

1. "Were you aware of this project prior to receiving this survey?" (see **Table 14**)
2. "How often do you typically travel along the project corridor?" (see **Table 15**)
3. Varied by pilot period (see **Table 16**)
    - Pre- and Mid-Pilot Survey: "Do you have any safety concerns about the project corridor? If yes, please describe:"
    - End-Pilot Survey: "Do you have any safety concerns about the project corridor?"
4. "When traveling along the project corridor, what is your typical mode of transportation?" (see **Table 17**)
5. "Do you frequently travel along parallel or adjacent streets to Middlefield Road?" (see **Table 18**)
6. Varied by pilot period (see **Table 20)**
    - Pre- and Mid-Pilot Survey: "Are you in favor of a lane reduction on Middlefield Rd. to improve traffic safety?"
    - End-Pilot Survey: "Would you like to retain the current safety measures after the pilot period ends?"
7. Varied by pilot period
    - Pre- and Mid-Pilot Survey: "Additional comments:"
    - End-Pilot Survey: "Have you perceived an improvement in safety conditions on Middlefield Road since the start of the pilot project?"

Approximately 1,000 surveys were mailed to residences near the project study area shown in **Figure 10** during pilot periods (approximately 350 surveys per study period). For the pre-pilot survey instrument, see **Table 39** (39 responses received). For the mid-pilot survey instrument, see **Table 40** (127 responses received). For the end-pilot survey instrument, see **Table 41** (150 responses received). In addition to survey responses, the City of Palo Alto collected emails that it received from residents about the Middlefield North Road Diet (see **Table 38**).

Figure 10: Resident Survey Distribution Area



Pre-Pilot Period

The pre-pilot mail-back survey was sent out to residences within the study area with a requested return date of May 22, 2017. A total of 39 survey responses were received by mail, and the relatively small sample size of responses should be considered when comparing survey results to mid- and end-pilot periods.

Of the 39 survey responses received by mail during the pre-pilot period, approximately half (51.3 percent) of the respondents indicated that they were **aware of the project prior to receiving the survey**. The remaining respondents indicated that they were **not aware** of the project prior to receiving the survey (43.6 percent) or were **not sure** if they were aware of the project prior to receiving the survey (5.1%). See **Table 14** for a summary of responses to Question #1 and **Table 38** for a full list of responses.

Of the 39 survey responses received during the pre-pilot period, approximately three-fifths (61.5 percent) of the respondents indicated that they **traveled along the project corridor multiple times per day**. The remaining respondents indicated that they traveled along the project corridor **once per day** (17.9 percent), **weekly** (17.9 percent), or **monthly** (2.6%). See **Table 15** for a summary of responses to Question #2 and **Table 38** for a full list of responses.

Of the 39 survey responses received during the pre-pilot period, over two-thirds (71.8 percent) of the respondents indicated that they had **safety concerns** about the project corridor. See **Table 16** for a summary of responses to Question #3 and **Table 37** for a full list of responses. Within the 49 categorized comments received asking respondents to describe their safety concerns, the most frequent types of concerns were:

- Concern about traffic congestion (18.4 percent)
- Concern about turning/turning movements (18.4 percent)
- Concern about motor vehicle speeds (14.3 percent)
- Concern about traffic divergence (12.2 percent)
- General anxiety about the dangerousness of the corridor (10.2 percent)
- Concern about poor bicycling conditions (8.2 percent)
- Concern about poor walking conditions (6.1 percent)
- Concern about difficulty in crossing the street (4.1 percent)
- Concern about stressed motorists (4.1 percent)
- Concern about no available shoulder on the travelway (2.0 percent)
- Concern about access to transit (2.0 percent)

In addition to types of safety concerns, respondents also highlighted **locations where they had safety concerns** (see **Table 37** for a full list of responses). Within the 13 location-based comments received by asking respondents to describe their safety concerns, the most frequent locations mentioned were:

- Middlefield Road at Everett Avenue (38.5 percent)
- Middlefield Road at Lytton Avenue (23.1 percent)
- Middlefield Road at Hawthorne Avenue (23.1 percent)
- Middlefield Road at Willow Road (7.7 percent)
- Middlefield Road between Willow Road and Lytton Avenue (7.7 percent)

A cross-tabulation of Question #3 (Do you have safety concerns about the project corridor?) and Question #2 (How often do you typically travel along the project corridor?) showed that people that frequently travel along the project corridor were more likely to have safety concerns about the project corridor. Of the 37 pre-pilot survey responses, 85.7 percent of respondents that traveled the along the project corridor once per day or multiple times per day and had safety concerns about the project corridor. Comparatively, 14.3 percent of respondents that traveled along the project corridor weekly, monthly, or never had safety concerns about the project corridor. See **Table 26** for a summary of the cross-tabulated responses.

Of the 39 survey responses received during the pre-pilot period, almost all (94.9 percent) of the respondents indicated that **driving a motor vehicle** was one of the **modes that they typically use to travel along the project corridor**. Among the other modes that respondents indicated they typically use to travel along the project corridor were **bicycling** (30.8 percent), **walking** (25.6 percent), and **riding transit** (5.1 percent). See **Table 17** for a summary of responses to Question #4 and **Table 37** for a full list of responses.

Of the 39 survey responses received during the pre-pilot period, over two-thirds (69.2 percent) of respondents indicated that they **frequently travel along streets that are adjacent or parallel to Middlefield Road**. The remaining respondents indicated that they **do not** frequent streets that are adjacent or parallel to Middlefield Road (28.2 percent) or were **unsure** if they frequent streets that are adjacent or parallel to Middlefield Road (2.6 percent). See **Table 18** for a summary of responses to Question #5 and **Table 37** for a full list of responses.

A cross-tabulation of Question #5 (Do you frequently travel along parallel or adjacent streets to Middlefield Road?) and Question #4 (When traveling along the project corridor, what is your typical mode of transportation?) showed that respondents regardless of mode of transportation frequently traveled along streets parallel or adjacent to Middlefield Road. Of the 61 pre-pilot survey responses, the percent of respondents that traveled along streets parallel or adjacent to Middlefield Road was higher for each mode of transportation than those that did not frequent parallel or adjacent streets (Auto: 42.6 percent frequent compared to 16.4 percent not frequent; Bike: 16.4 percent frequent compared to 3.3 percent not frequent; Walk: 11.5 percent frequent compared to 4.9 percent not frequent; and Transit: 3.3 percent frequent compared to 0.0 percent not frequent). See **Table 27** for a summary of the cross-tabulated responses.

Of the 39 survey responses received during the pre-pilot period, over one-third (38.5 percent) of respondents indicated that they were **not in favor of a lane reduction on Middlefield Road** to improve safety conditions. The remaining respondents indicated that they were **in favor** of a lane reduction on Middlefield Road to improve safety conditions (33.3 percent) or that they were **not sure** if they were in favor of a lane reduction on Middlefield Road to improve safety conditions (28.2 percent). See **Table 20** for a summary of responses to Question #6 and **Table 37** for a full list of responses.

A cross-tabulation of Question #6 (Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?) and Question #1 (Were you aware of this project prior to receiving this survey?) showed that respondents with a prior awareness of the project were more likely to be in favor of the Middlefield North Road Diet. Of the 20 pre-pilot survey respondents that were aware of the project prior to receiving the survey, ten (10) indicated that they were in favor of a lane reduction on Middlefield Road to improve traffic safety (25.6 percent of all respondents), seven (7) indicated that they were not in favor (17.9 percent of total respondents), and three (3) indicated that they were unsure (7.7 percent of total respondents). See **Table 21** for a summary of the cross-tabulated responses.

A cross-tabulation of Question #6 (Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?) and Question #2 (How often do you typically travel along the project corridor?) showed that respondents that travel the corridor frequently (multiple times per day or once per day) were more likely to not be in favor of the Middlefield North Road Diet. Of the 39 pre-pilot survey respondents, nine (9) indicated that they travel the corridor once per day or multiple times per day and are in favor of a lane reduction on Middlefield Road to improve traffic safety conditions (23.1 percent of all respondents). Comparatively, 12 respondents who travel the corridor once per day or multiple times per day were not in favor of the Middlefield North Road Diet (30.8 percent of all respondents, and 10 were unsure (25.6 percent of all respondents). See **Table 22** for a summary of the cross-tabulated responses.

A cross-tabulation of Question #6 (Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?) and Question #3 (Do you have any safety concerns about the project corridor?) showed that respondents with safety concerns about the project corridor were more likely to not be in favor of the Middlefield North Road Diet. Of the 28 pre-pilot respondents that indicated they had safety concerns about the project corridor, nine (9) indicated they were in favor of a lane reduction on Middlefield Road to improve traffic safety conditions (24.3 percent of all respondents), 11 were not in favor (29.7 percent of all respondents), and 8 were unsure (21.6 percent). See **Table 23** for a summary of the cross-tabulated responses.

A cross-tabulation of Question #6 (Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?) and Question #4 (When traveling along the project corridor, what is your typical mode of transportation?) of the 61 pre-pilot survey responses showed that respondents who bicycle and walk along the project corridor were more likely to be in favor of the Middlefield North Road Diet. Of the 12 respondents who indicated that bicycling was one of their typical modes of transportation along the project corridor, seven (7) were in favor of a lane reduction on Middlefield Road to improve traffic safety (18.0 percent of total responses), two (2) were not in favor (3.3 percent of total responses), and three (3) were not sure (4.9 percent of total responses). The cross-tabulated responses also showed that respondents who drive a motor vehicle along the project corridor were slightly more likely to be against a lane reduction on Middlefield Road to improve traffic safety. Among the 37 respondents that indicated that driving was one of their typical modes of transportation along the project corridor, 11 were in favor of a lane reduction on Middlefield Road to improve traffic safety (18.0 percent of total responses), 15 were not in favor (24.6 percent of total responses), and 11 were un sure (18.0 percent). See **Table 24** for a summary of the cross-tabulated responses.

A cross-tabulation of Question #6 (Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?) and Question #5 (Do you frequently travel along parallel or adjacent streets on Middlefield Road?) of the 39 pre-pilot survey responses showed that frequent travel along streets parallel or adjacent to Middlefield Road had little correlation with respondents' favorability of the Middlefield North Road Diet. An equal percent of respondents who do travel the project corridor frequently were in favor of the project (23.1 percent), not in favor of the project (23.1 percent) and not sure if they were in favor of the project (23.1 percent). See **Table 25** for a summary of the cross-tabulated responses.

At the end of the pre-pilot survey, some respondents provided **additional comments** about the project. Of the 39 survey responses received during the pre-pilot period, ten (10) surveys contained additional, unprompted comments on the survey instrument. Within the ten (10) additional comments received, the most frequent types of comments were:

- Concern about turning/turning movements (2 out of 13 categorized comments, 15.4 percent)
- Concern about traffic diversion (2 out of 13 categorized comments, 15.4 percent)
- General pessimism about the Middlefield North Road Diet (2 out of 13 categorized comments, 15.4 percent)
- General optimism about the Middlefield North Road Diet (2 out of 13 categorized comments, 15.4 percent)
- Concern about traffic diversion to parallel streets (2 out of 13 categorized comments, 15.4 percent)
- Desire for motor vehicle speed enforcement (1 out of 13 categorized comments, 7.7 percent)
- Concern about motor vehicle speeds (1 out of 13 categorized comments, 7.7 percent)
- Concern about poor walking conditions (1 out of 13 categorized comments, 7.7 percent)
- Concern about traffic congestion (1 out of 13 categorized comments, 7.7 percent)
- Desire for advanced warning signage at the intersection of Middlefield Road and Hawthorne (1 out of 13 categorized comments, 7.7 percent)

Among the additional comments received by phone or email, none were shared during the pre-pilot period. See **Table 38** for a full list of additional comments received by phone or email by date received.

Mid-Pilot Period

The mid-pilot mail-back survey was sent out to residences within the study area with a requested return date of November 20, 2017. A total of 126 survey responses were received by mail and one (1) survey response was received by email.

Of the 127 survey responses received during the mid-pilot period, approximately four-fifths (83.5 percent) of the respondents indicated that they were **aware of the project prior to receiving the survey**. The remaining respondents indicated that they were **not aware** of the project prior to receiving the survey (14.2 percent) or were **not sure** if they were aware of the project prior to receiving the survey (2.4 percent). Compared to the pre-pilot period, the percent of respondents who were aware of the project prior to receiving the survey increased by 38.6 percent. See **Table 14** for a summary of responses to Question #1 and **Table 38** for a full list of responses.

Of the 127 survey responses received during the mid-pilot period, approximately half (54.3 percent) respondents indicated that **they traveled along the corridor multiple times per day**. The remaining respondents indicated that they traveled along the project corridor **once per day** (22.0 percent), **weekly** (18.9 percent), **monthly** (3.9 percent), or **never** (0.8 percent). Compared to the pre-pilot period, the percent of respondents who indicated that they travel along the project corridor multiple times per day decreased by 11.7 percent, indicating that a larger proportion of respondents living further from the project study area may have responded to the mid-pilot survey. See **Table 15** for a summary of responses to Question #2 and **Table 38** for a full list of responses.

Of the 127 survey responses received during the mid-pilot period, approximately half (52.0 percent) of respondents indicated that they had **safety concerns** about the project corridor, representing a 27.6 percent decrease compared to the pre-pilot period. See **Table 16** for a summary of responses to Question #3 and **Table 37** for a full list of responses. Within the 80 comments received asking respondents to describe their safety concerns, the most prominent types of concerns were:

- Concern about traffic congestion (from 19.6 percent pre-pilot to 18.1 percent mid-pilot)
- Concern about turning/turning movements (from 18.4 percent pre-pilot to 21.7 percent mid-pilot)
- General expression about how project improved safety (11.6 percent mid-pilot)
- Concern about motor vehicle speeds (from 14.3 percent pre-pilot to 8.7 percent mid-pilot)
- Concern about difficulty in crossing street (from 4.1 percent pre-pilot to 5.1 percent mid-pilot)
- Concern about increased air pollution (from 0.0 percent pre-pilot to 4.3 percent mid-pilot)
- Need of additional signage (from 0.0 percent pre-pilot to 1.4 percent mid-pilot)
- Concern about poor walking conditions (from 6.1 percent pre-pilot to 3.6 percent mid-pilot)
- Concern about poor bicycling conditions (from 8.2 percent pre-pilot to 2.9 percent mid-pilot)
- Concern about traffic divergence (from 12.2 percent pre-pilot to 5.1 percent mid-pilot)
- Concern about increased noise pollution (from 0.0 percent pre-pilot to 0.7 percent mid-pilot)
- Concern about lanes being too narrow (from 0.0 percent pre-pilot to 2.2 percent mid-pilot)
- General anxiety about the dangerousness of the corridor (10.2 percent per-pilot to 5.1 percent mid-pilot)

In addition to types of safety concerns, respondents also highlighted **locations where they had safety concerns** (see **Table 37** for a full list of responses). Within the 47 location-based comments received by asking respondents to describe their safety concerns, the most frequent locations were:

- Middlefield Road at Lytton Avenue (from 23.1 percent pre-pilot to 34.0 percent mid-pilot)
- Middlefield Road at Everett Avenue (from 38.5 percent pre-pilot to 19.1 percent mid-pilot)
- Middlefield Road at Hawthorne Avenue (from 23.1 percent pre-pilot to 19.1 percent mid-pilot)
- Lytton Gardens Senior Communities (from 0.0 percent pre-pilot to 6.4 percent mid-pilot)
- Middlefield Road at University Avenue (from 0.0 percent pre-pilot to 6.4 percent mid-pilot)
- Middlefield Road at Willow Road (from 7.7 percent pre-pilot to 4.3 percent mid-pilot)
- Webster House (from 0.0 percent pre-pilot to 4.3 percent mid-pilot)
- Middlefield Road at Palo Alto Avenue (from 0.0 percent pre-pilot to 4.3 percent mid-pilot)
- San Francisquito Creek Bridge (from 0.0 percent pre-pilot to 2.1 percent mid-pilot)

A cross-tabulation of Question #3 (Do you have safety concerns about the project corridor?) and Question #2 (How often do you typically travel along the project corridor?) showed that the large pre-pilot discrepancy in the percent of people who traveled the project corridor frequently (once per day or multiple times per day) and had safety concerns compared to those without safety concerns may have been random variation due to a small sample size, as the percentages leveled out in the mid-pilot survey responses (from 85.7 percent to 46.5 percent). See **Table 26** for a summary of the cross-tabulated responses.

Of the 127 survey responses received during the mid-pilot period, almost all (92.1 percent) of the respondents indicated that **driving a motor vehicle** was one of the **modes that they typically use to travel along the project corridor**. Among the other modes that respondents indicated they typically use to travel along the project corridor were **bicycling** (15.0 percent), **walking** (34.6 percent), and **riding transit** (1.6 percent). The mid-pilot survey captured an increased number of pedestrians, shifting from 10 respondents in the pre-pilot survey indicating that walking was one of their typical modes of transportation along the project corridor to 44 respondents in the mid-pilot survey. See **Table 17** for a summary of responses to Question #4 and **Table 37** for a full list of responses.

Of the 127 survey responses received during the mid-pilot period, over three-quarters (75.6 percent) of respondents indicated that they **frequently travel along streets that are adjacent or parallel to Middlefield Road**. The remaining respondents indicated that they **do not** frequent streets that are adjacent or parallel to Middlefield Road (21.3 percent) or were **unsure** if they frequent streets that are adjacent or parallel to Middlefield Road (3.1 percent). Compared to the pre-pilot period, the mid-pilot survey captured 9.2 percent more respondents who travel frequently along the parallel or adjacent streets to Middlefield Road. See **Table 18** for a summary of responses to Question #5 and **Table 37** for a full list of responses.

A cross-tabulation of Question #5 (Do you frequently travel along parallel or adjacent streets to Middlefield Road?) and Question #4 (When traveling along the project corridor, what is your typical mode of transportation?) showed that the pre-pilot findings that respondents, regardless of mode of transportation, frequently traveled along streets parallel or adjacent to Middlefield Road remained consistent with mid-pilot survey responses. Of the 182 mid-pilot survey responses, the percent of respondents that traveled along streets parallel or adjacent to Middlefield Road was the same or higher for each mode of transportation than those that did not frequent parallel or adjacent streets (Auto: 49.5 percent frequent compared to 13.2 percent not frequent; Bicycle: 8.8 percent frequent compared to 1.6 percent not frequent; Walk: 20.3 percent frequent compared to 2.7 percent not frequent; and Transit: 0.5 percent frequent compared to 0.5 percent not frequent). See **Table 27** for a summary of the cross-tabulated responses.

Of the 127 survey responses received during the mid-pilot period, over half (56.7 percent) of respondents indicated that they were **in favor of a lane reduction on Middlefield Road** to improve safety conditions. The remaining respondents indicated that they were **not in favor** of a lane reduction on Middlefield Road to improve safety conditions (30.7 percent) or that they were **not sure** if they were in favor of a lane reduction on Middlefield Road to improve safety conditions (11.8 percent). Compared to the pre-pilot period, the percent of respondents that were in favor of the Middlefield Road North Diet increased 64.2 percent. See

Table 20 for a summary of responses to Question #6 and **Table 37** for a full list of responses.

A cross-tabulation of Question #6 (Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?) and Question #1 (Were you aware of this project prior to receiving this survey?) showed that respondents with a prior awareness of the project were more likely to be in favor of the Middlefield North Road Diet. This finding is consistent with the pre-pilot survey, with the percent of respondents both aware of the project and in favor of the Middlefield Road North Diet increasing from 25.6 percent to 50.8 percent between the pre- and mid-pilot periods. One possible explanation for this trend is that as residents become more familiar with the project, they are more likely to be in favor of it. See **Table 21** for a summary of the cross-tabulated responses.

A cross-tabulation of Question #6 (Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?) and Question #2 (How often do you typically travel along the project corridor?) showed that respondents that travel the corridor frequently (multiple times per day or once per day) were more likely to be in favor of the Middlefield North Road Diet. Of the 126 mid-pilot survey respondents, 42.1 percent indicated that they travel the corridor once per day or multiple times per day and are in favor of a lane reduction on Middlefield Road to improve traffic safety conditions. These results were inconsistent with pre-pilot survey responses, as only 23.1 percent of pre-pilot survey respondents traveled the project corridor frequently and were in favor of the Middlefield North Road Diet. See **Table 22** for a summary of the cross-tabulated responses.

A cross-tabulation of Question #6 (Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?) and Question #3 (Do you have any safety concerns about the project corridor?) showed that respondents with safety concerns about the project corridor were more likely to not be in favor of the Middlefield North Road Diet. Of the 65 mid-pilot respondents that indicated they had safety concerns about the project corridor, 29 indicated they were in favor of a lane reduction on Middlefield Road to improve traffic safety conditions (23.0 percent of all respondents), 27 were not in favor (21.4 percent of all respondents), and 9 were unsure (7.1 percent). This finding is consistent with pre-pilot period, suggesting that lingering safety concerns may be a primary reason why some residents are not in favor of the Middlefield North Road Diet. See **Table 23** for a summary of the cross-tabulated responses.

A cross-tabulation of Question #6 (Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?) and Question #4 (When traveling along the project corridor, what is your typical mode of transportation?) of the 181 mid-pilot survey responses showed that respondents who bicycle and walk along the project corridor were more likely to be in favor of the Middlefield North Road Diet compared to respondents who drove. Of the 19 respondents who indicated that bicycling was one of their typical modes of transportation along the project corridor, 15 were in favor of a lane reduction on Middlefield Road to improve traffic safety (8.8 percent of total responses), two (2) were not in favor (1.1 percent of total responses), and one (1) was not sure (0.6 percent of total responses). This finding was consistent with the pre-pilot survey responses. See **Table 24** for a summary of the cross-tabulated responses.

At the end of the mid-pilot survey, some respondents provided **additional comments** about the project. Of the 95 survey responses received during the pre-pilot period, 29 surveys contained additional, unprompted comments on the survey instrument. Within the 29 additional comments received, the most frequent types of comments were:

- Optimism about the Middlefield North Road Diet (from 15.4 percent pre-pilot to 38.1 percent mid-pilot)
- Pessimism about the Middlefield North Road Diet (from 15.4 percent pre-pilot to 23.8 percent mid-pilot)
- Concern about traffic diversion (from 15.4 percent pre-pilot to 14.3 percent mid-pilot)
- Concern about turning/turning movements (from 15.4 percent pre-pilot to 14.3 percent mid-pilot)
- Concern about motor vehicle speeds (from 7.7 percent pre-pilot to 4.8 percent mid-pilot)
- Concern about traffic congestion (7.7 percent pre-pilot to 4.8 percent mid-pilot)

Thirteen (13) additional comments were received by phone or email during the mid-pilot period. See **Table 38** for a full list of additional comments received by phone or email. Comments included:

- A desire for additional broader public outreach
- The installed barriers are too easy to bypass, allowing motorists to drive around them
- The need for improved bicycling conditions along the project corridor
- Opposition to the 24/7 turn restrictions, especially if they are not enforced
- The need for improved travel conditions to make it easier to drive through the corridor during peak periods
- The lack of space for motorists to drive around buses when they are boarding and alighting
- Difficulty turning out of driveway at 133 Middlefield Road [City of Palo Alto has made minor adjustments to signing and striping to improve access to roadway]

End-Pilot Period

The end-pilot mail-back survey was sent out to residences within the study area with a requested return date of May 11, 2018. A total of 151 survey responses were received by mail.

Of the 151 survey responses received during the end-pilot period, 90.7 percent of the respondents indicated that they were **aware of the project prior to receiving the survey**. The remaining respondents indicated that they were **not aware** of the project prior to receiving the survey (6.0 percent) or were **not sure** if they were aware of the project prior to receiving the survey (3.3 percent). Compared to the pre-pilot period, the percent of respondents who were aware of the project prior to receiving the survey increased by 76.8 percent. See **Table 14** for a summary of responses to Question #1 and **Table 38** for a full list of responses.

Of the 147 respondents that answered Question #2 during the end-pilot period, 59.2 percent of respondents indicated that **they traveled along the corridor multiple times per day**. The remaining respondents indicated that they traveled along the project corridor **once per day** (23.8 percent), **weekly** (15.0 percent), or **monthly** (2.0 percent). Compared to the pre-pilot period, the percent of respondents who indicated that they travel along the project corridor multiple times per day decreased by 3.8 percent, indicating that a larger proportion of respondents living further from the project study area may have responded to the end-pilot survey. See **Table 15** for a summary of responses to Question #2 and **Table 38** for a full list of responses.

Of the 149 respondents that answered Question #3 during the end-pilot period, 40.3 percent of respondents indicated that they had **safety concerns** about the project corridor, representing a 43.9 percent decrease compared to the pre-pilot period. See **Table 16** for a summary of responses to Question #3 and **Table 37** for a full list of responses.

A cross-tabulation of Question #3 (Do you have safety concerns about the project corridor?) and Question #2 (How often do you typically travel along the project corridor?) showed that most of the respondents in the end-pilot survey who had safety concerns about the corridor, traveled the corridor multiple times per day (33.8 percent) compared to those who did not have safety concerns about the corridor and traveled the corridor multiple times per day (20.8 percent). See **Table 26** for a summary of the cross-tabulated responses.

Of the 151 respondents that answered to Question #4 during the end-pilot period, almost all (97.3 percent) of the respondents indicated that **driving a motor vehicle** was one of the **modes that they typically use to travel along the project corridor**. Among the other modes that respondents indicated they typically use to travel along the project corridor were **bicycling** (16.0 percent), **walking** (23.3 percent), and **riding transit** (0.7 percent). Compared to the pre-pilot survey, the end-pilot survey captured a decreased proportion of bicyclists (-48.0 percent), pedestrians (-87.0 percent), and transit rider (-87.0 percent). See **Table 17** for a summary of responses to Question #4 and **Table 37** for a full list of responses.

Of the 149 respondents that answered Question #5 during the end-pilot period, the majority of respondents (85.8 percent) indicated that they **frequently travel along streets that are adjacent or parallel to Middlefield Road**. The remaining respondents indicated that they **do not** frequent streets that are adjacent or parallel to Middlefield Road (14.2 percent). Compared to the pre-pilot period, the end-pilot survey captured 23.9 percent more respondents who travel frequently along the parallel or adjacent streets to Middlefield Road. See **Table 18** for a summary of responses to Question #5 and **Table 37** for a full list of responses.

Of the 148 respondents that answered Question #6 during the end-pilot period, two-thirds (66.0 percent) of respondents indicated that they **were in favor of retaining the implementated safety measures** on Middlefield Road. The remaining respondents indicated that they were **not in favor** of a lane reduction on Middlefield Road to improve safety conditions (20.4 percent) or that they were **not sure** (13.6 percent). Compared to the pre-pilot period, the percent of respondents that were in favor of the Middlefield Road North Diet increased 98.0 percent. See **Table 20** for a summary of responses to Question #6 and **Table 37** for a full list of responses.

A cross-tabulation of Question #6 (Would you like to retain the current safety measures after the pilot period ends?) and Question #1 (Were you aware of this project prior to receiving this survey?) showed that respondents with a prior awareness of the project were more likely to be in favor of the Middlefield North Road Diet. This finding is consistent with the pre-pilot survey, with the percent of respondents both aware of the project and in favor of the Middlefield Road North Diet increasing from 25.6 percent to 57.1 percent between the pre- and end-pilot periods. One possible explanation for this trend is that as residents become more familiar with the project, they are more likely to be in favor of it. See **Table 21** for a summary of the cross-tabulated responses.

A cross-tabulation of Question #6 (Would you like to retain the current safety measures after the pilot period ends?) and Question #2 (How often do you typically travel along the project corridor?) showed that respondents that travel the corridor frequently (multiple times per day or once per day) were more likely to be in favor of the Middlefield North Road Diet. Of the 126 end-pilot survey respondents, 50.1 percent indicated that they travel the corridor once per day or multiple times per day and are in favor or retaining the safety countermeasures. These results were inconsistent with pre-pilot survey responses, as only 23.1 percent of pre-pilot survey respondents traveled the project corridor frequently (multiple times per day or once per day) and were in favor of the Middlefield North Road Diet. See **Table 22** for a summary of the cross-tabulated responses.

A cross-tabulation of Question #6 (Would you like to retain the current safety measures after the pilot period ends?) and Question #3 (Do you have any safety concerns about the project corridor?) showed a large shift in the percent of respondents that were in favor of retention and did not have safety concerns (10.8 percent during the pre-pilot period to 38.3 percent during the end-pilot period). See **Table 23** for a summary of the cross-tabulated responses.

At the end of the end-pilot survey, respondents were asked to describe why they would like to retain the current safety measures or not retain them. Of the 123 written responses received, most used the open-ended question as a way to provide additional feedback. A generalized coding of the responses is listed below:

- The project generally made the corridor safer or better (31.3 percent of write-in responses)
- The project generally made the corridor more congested or less convenient to use (16.3 percent of write-in responses)
- The project led to less adherence to traffic laws, an increase in illegal travel behaviors, or confused drivers (8.1 percent of write-in responses)
- The project led to more traffic being diverted from Middlefield Road (7.5 percent of write-in responses)
- The project led to less speeding (6.3% of write-in responses)
- The project led to less congestion or better traffic flow (6.3 percent of write-in responses)
- The project generally made the corridor less safe (4.4 percent of write-in responses)
- The project made the corridor better for walking (4.4 percent of write-in responses)

In addition, respondents indicated specific locations as potential problem areas. A total of 40 comments indicated specific locations which can be compared to pre-pilot survey responses.

- The percent of respondents indicating that Middlefield Road at Lytton Avenue as a potential problem area increased from 23.1 percent of all open-ended locational responses during the pre-pilot period to 27.5 percent during the end-pilot period
- The percent of respondents indicating that Middlefield Road at Everett Avenue as a potential problem area decreased from 38.5 percent of all open-ended locational responses during the pre-pilot period to 17.5 percent during the end-pilot period
- The percent of respondents indicating that Middlefield Road at Hawthorne Avenue as a potential problem area increased from decreased from 23.1 percent of all open-ended locational responses during the pre-pilot period to 15.0 percent during the end-pilot period
- The percent of respondents indicating that Fulton Street north of University Avenue as a potential problem area increased from 0.0 percent of all open-ended locational responses during the pre-pilot period to 12.5 percent during the end-pilot period

See **Table 37** for a full list of open-ended responses.

Two (2) additional comments were received by email during the end-pilot period. See **Table 38** for a full list of additional comments received by phone or email. Comments included:

- Commenter #1
    - Traffic speeds appear to have slowed down on Middlefield Road
    - The collision rate has appeared to decrease on Everett Avenue and Hawthorne Avenue
    - The crosswalk at Everett Avenue appears to have improved pedestrian safety conditions, but there are fewer gaps in motor vehicle traffic in order to cross Middlefield Road
    - There's a need for enforcement of turn restrictions
    - Motorists continue to make illegal turning movements and cut-through traffic has shifted to parallel facilities

- Commenter #2
    - Ingress and egress out of Lytton Gardens has become more difficult
    - Reductions in cut-through traffic on Everett Avenue and Hawthorne Avenue have led to increases in cut through traffic on Lytton Avenue
    - The neck down at University Avenue confuses motorists and leads to sudden lane changes
    - Current conditions for bus boardings and alightings contribute to traffic congestion, and buses have difficulty turning from Middlefield Road to Lytton Avenue.

Table 14: Summary of Resident Survey Responses (Question #1)

QUESTION: "Were you aware of this project prior to receiving this survey?"	PRE-PILOT Responses (%, excluding no response)	MID-PILOT Responses (%, excluding no response)	MID-PILOT % Change	END-PILOT Responses (%, excluding no response)	END-PILOT % Change
Yes	20 (51.3%)	106 (83.5%)	38.6%	136 (90.7%)	76.8%
No	17 (43.6%)	18 (14.2%)	-207.5%	9 (6.0%)	-86.2%
Not Sure	2 (5.1%)	3 (2.4%)	-117.1%	5 (3.3%)	-35.0%
No Response	0	0	N/A	0	N/A
Total	39 (100.0%)	127 (100.0%)	-	150 (100.0%)	-

Table 15: Summary of Resident Survey Responses (Question #2)

QUESTION: "How often do you typically travel along the project corridor?"	PRE-PILOT Responses (%, excluding no response)	MID-PILOT Responses (%, excluding no response)	MID-PILOT % Change	END-PILOT Responses (%, excluding no response)	END-PILOT % Change
Multiple times per day	24 (61.5%)	69 (54.3%)	-11.7%	87 (59.2%)	-3.8%
Once per day	7 (17.9%)	28 (22.0%)	22.8%	35 (23.8%)	32.7%
Weekly	7 (17.9%)	24 (18.9%)	5.3%	22 (15.0%)	-16.6%
Monthly	1 (2.6%)	5 (3.9%)	53.5%	3 (2.0%)	-20.4%
Never	0 (0.0%)	1 (0.8%)	N/A	0 (0.0%)	N/A
No Response	0	0	N/A	0	N/A
Total	39 (100.0%)	127 (100.0%)	-	147 (100.0%)	-

Table 16: Summary of Resident Survey Responses (Question #3)

QUESTION: "Do you have any safety concerns about the project corridor?"*	PRE-PILOT Responses (%, excluding no response)	MID-PILOT Responses (%, excluding no response)	MID-PILOT % Change	END-PILOT Responses (%, excluding no response)	END-PILOT % Change
Yes	28 (75.7%)	66 (52.0%)	-31.3%	60 (41.4%)	-45.3%
No	9 (24.3%)	61 (48.0%)	97.5%	85 (58.6%)	141.2%
No Response	2	0	N/A	4	N/A
Total	37 (100.0%)	127 (100.0%)	-	145 (100.0%)	-

** Question #3 contained an open-ended follow-up question: "If yes, please describe:"*

Table 17: Summary of Resident Survey Responses (Question #4)

QUESTION: "When traveling along the project corridor, what is your typical mode of transportation?"	PRE-PILOT Responses* (%, excluding no response)**	MID-PILOT Responses* (%, excluding no response)**	% Change	END-PILOT Responses* (%, excluding no response)**	% Change
Auto	37 (94.9%)	117 (92.1%)	-2.9%	146 (97.3%)	2.6%
Bike	12 (30.8%)	19 (15.0%)	-51.4%	24 (16.0%)	-48.0%
Transit	2 (5.1%)	2 (1.6%)	-69.3%	1 (0.7%)	-87.0%
Walk	10 (25.6%)	44 (34.6%)	35.1%	35 (23.3%)	-9.0%
Other	0 (0.0%)	0 (0.0%)	N/A	1 (0.7%)	N/A
N/A	0 (0.0%)	0 (0.0%)	N/A	0 (0.0%)	N/A
No Response	0	0	N/A	0	N/A
Total Respondents/Responses	39/61	127/182	-	150/207	-

** Multiple responses allowed per respondent*

*** Percent out of total respondents (Pre-pilot = 39 total responses; Mid-pilot = 127 total responses; End-pilot = 150 responses)*

Table 18: Summary of Resident Survey Responses (Question #5)

QUESTION: "Do you frequently travel along parallel or adjacent streets to Middlefield Rd.?"	PRE-PILOT Responses (%, excluding no response)	MID-PILOT Responses (%, excluding no response)	% Change	END-PILOT Responses (%, excluding no response)	% Change
Yes	27 (69.2%)	96 (75.6%)	9.2%	127 (85.8%)	23.9%
No	11 (28.2%)	27 (21.3%)	-24.6%	21(14.2%)	-49.7%
Not Sure	1 (2.6%)	4 (3.1%)	22.8%	0 (0.0%)	-100.0%
No Response	0	0	N/A	1	N/A
Total	39 (100.0%)	127 (100.0%)	-	148 (100.0%)	-

Table 19: Summary of Resident Survey Responses (Question #5b)

QUESTION: "Have you perceived an improvement in safety conditions on Middlefield Road since the start of the pilot project?"	PRE-PILOT Responses (%, excluding no response)	MID-PILOT Responses (%, excluding no response)	% Change	END-PILOT* Responses (%, excluding no response)	% Change
Yes	-	-	-	86 (58.1%)	74.3%
No	-	-	-	39 (26.4%)	-31.5%
Not Sure	-	-	-	23 (15.5%)	-44.9%
No Response	-	-	-	2	N/A
Total	-	-	-	150 (100.0%)	-

** Question only administered during the end-pilot period*

Table 20: Summary of Resident Survey Responses (Question #6)

QUESTION: "Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?"	PRE-PILOT Responses (%, excluding no response)	MID-PILOT Responses (%, excluding no response)	MID-PILOT % Change	END-PILOT* Responses (%, excluding no response)	END-PILOT* % Change
Yes	13 (33.3%)	72 (57.1%)	71.4%	97 (66.0%)	98.0%
No	15 (38.5%)	39 (31.0%)	-19.5%	30 (20.4%)	-46.9%
Not Sure	11 (28.2%)	15 (11.9%)	-57.8%	20 (13.6%)	-51.8%
No Response	0	1	N/A	1	N/A
Total	39 (100.0%)	126 (100.0%)	-	147 (100.0%)	-

** End-pilot survey question wording: "Would you like to retain the current safety measures after the pilot project period ends? Please describe why:"*

Table 21: Summary of Resident Survey Responses (Cross-tabulation: Question #6 and Question #1)

		Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?			
		% Yes (Pre, Mid, End)	% No (Pre, Mid, End)	% Not Sure (Pre, Mid, End)	**Total (Pre, Mid, End)**
Were you aware of this project prior to receiving this survey?	% Yes (Pre, Mid, End)	25.6%, 50.8%, 57.1%	17.9%, 23.0%, 22.4%	7.7%, 9.5%, 10.2%	**20, 105, 44**
	% No (Pre, Mid, End)	7.7%, 5.6%, 4.1%	17.9%, 6.3%, 2.0%	17.9%, 2.4%, 2.0%	**17, 18, 4**
	% Not Sure (Pre, Mid, End)	0.0%, 0.8%, 2.0%	2.6%, 1.6%, 0.0%	2.6%, 0.0%, 0.0%	**2, 3, 1**
	Total (Pre, Mid, End)	**13, 72, 31**	**15, 39, 12**	**11, 15, 6**	**39, 126, 49**

Table 22: Summary of Resident Survey Responses (Cross-tabulation: Question #6 and Question #2)

		Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?			
		% Yes (Pre, Mid, End)	% No (Pre, Mid, End)	% Not Sure (Pre, Mid, End)	**Total (Pre, Mid, End)**
How often do you typically travel along the project corridor?	% Multiple times per day (Pre, Mid, End)	23.1%,31.7%,31.3%	20.5%, 17.5%, 16.7%	17.9%, 4.8%, 4.2%	**24, 68, 25**
	% Once per day (Pre, Mid, End)	0.0%, 10.3%, 18.8%	10.3%, 9.5%, 6.3%	7.7%, 2.4%, 0.0%	**7, 28, 12**
	% Weekly (Pre, Mid, End)	10.3%, 11.9%, 12.5%	7.7%, 4.0%, 0.0%	0.0%, 3.2%, 4.2%	**7, 24, 8**
	% Monthly (Pre, Mid, End)	0.0%, 2.4%, 2.1%	0.0%, 0.0%, 2.1%	2.6%, 1.6%, 2.1%	**1, 5, 3**
	% Never (Pre, Mid, End)	0.0%, 0.8%, 0.0%	0.0%, 0.0%, 0.0%	0.0%, 0.0%, 0.0%	**0, 1, 0**
	Total (Pre, Mid, End)	**13, 72, 31**	**15, 39, 12**	**11, 15, 5**	**39, 126, 48**

Table 23: Summary of Resident Survey Responses (Cross-tabulation: Question #6 and Question #3)

	Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?				
		% Yes (Pre, Mid, End)	% No (Pre, Mid, End)	% Not Sure (Pre, Mid, End)	**Total (Pre, Mid, End)**
Do you have any safety concerns about the project corridor?	% Yes (Pre, Mid, End)	24.3%, 23.0%, 27.7%	29.7%, 21.4%, 14.9%	21.6%, 7.1%, 2.1%	**28, 65, 21**
	% No (Pre, Mid, End)	10.8%, 34.1%, 38.3%	8.1%, 9.5%, 8.5%	5.4%, 4.8%, 8.5%	**9, 61, 26**
	Total (Pre, Mid, End)	**13, 72, 31**	**14, 39, 11**	**10, 15, 5**	**37, 126, 47**

Table 24: Summary of Resident Survey Responses (Cross-tabulation: Question #6 and Question #4)

	Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?				
		% Yes (Pre, Mid, End)	% No (Pre, Mid, End)	% Not Sure (Pre, Mid, End)	**Total (Pre, Mid, End)**
When traveling along the project corridor, what is your typical mode of transportation?	Auto (Pre, Mid, End)	18.0%, 35.9%, 44.9%	24.6%, 21.5%, 17.4%	18.0%, 6.6%, 8.7%	**37, 116, 49**
	Bike (Pre, Mid, End)	11.5%, 8.8%, 11.6%	3.3%, 1.1%, 1.4%	4.9%, 0.6%, 1.4%	**12, 19, 110**
	Transit (Pre, Mid, End)	0.0%, 1.1%, 0.0%	0.0%, 0.0%, 0.0%	3.3%, 0.0%, 0.0%	**2, 2, 0**
	Walk (Pre, Mid, End)	9.8%, 16.0%, 8.7%	3.3%, 5.5%, 2.9%	3.3%, 2.8%, 2.9%	**10, 44, 0**
	Other (Pre, Mid, End)	0.0%, 0.0%, 0.0%	0.0%, 0.0%, 0.0%	0.0%, 0.0%, 0.0%	**0, 0, 0**
	Total (Pre, Mid, End)	**24, 112, 45**	**19, 51, 15**	**18, 18, 9**	**61, 181, 69**

Table 25: Summary of Resident Survey Responses (Cross-tabulation: Question #6 and Question #5)

	Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?				
		% Yes (Pre, Mid, End)	% No (Pre, Mid, End)	% Not Sure (Pre, Mid, End)	**Total (Pre, Mid, End)**
Do you frequently travel along parallel or adjacent streets on Middlefield Rd.?	% Yes (Pre, Mid, End)	23.1%, 46.0%, 55.3%	23.1%, 21.4%, 19.1%	23.1%, 7.9%, 10.6%	**27, 95, 40**
	% No (Pre, Mid, End)	10.3%, 10.3%, 8.5%	15.4%, 8.7%, 4.3%	2.6%, 2.4%, 2.1%	**11, 27, 7**
	% Not Sure (Pre, Mid, End)	0.0%, 0.8%, 0.0%	0.0%, 0.8%, 0.0%	2.6%, 1.6%, 0.0%	**1, 4, 0**
	Total (Pre, Mid, End)	**13, 72, 30**	**15, 39, 11**	**11, 15, 6**	**39, 126, 47**

Table 26: Summary of Resident Survey Responses (Cross-tabulation: Question #3 and Question #2)

	Do you have any safety concerns about the project corridor?			
		% Yes (Pre, Mid, End)	% No (Pre, Mid, End)	**Total (Pre, Mid, End)**
How often do you typically travel along the project corridor?	% Multiple times per day (Pre, Mid, End)	64.3%, 33.9%, 33.3%	17.9%, 20.5%, 20.8%	**23, 69, 26**
	% Once per day (Pre, Mid, End)	21.4%, 12.6%, 6.3%	0.0%, 9.4%, 16.7%	**6, 28, 11**
	% Weekly (Pre, Mid, End)	14.3%, 5.5%, 6.3%	10.7%, 13.4%, 10.4%	**7, 24, 8**
	% Monthly (Pre, Mid, End)	0.0%, 0.0%, 0.0%	3.6%, 3.9%, 6.3%	**1, 5, 3**
	% Never (Pre, Mid, End)	0.0%, 0.0%, 0.0%	0.0%, 0.8%, 0.0%	**0, 1, 0**
	Total (Pre, Mid, End)	**28, 66, 22**	**9, 61, 26**	**37, 127, 48**

Table 27: Summary of Resident Survey Responses (Cross-tabulation: Question #5 and Question #4)

	Do you frequently travel along parallel or adjacent streets to Middlefield Rd.?				
		% Yes (Pre, Mid, End)	% No (Pre, Mid, End)	% Not Sure (Pre, Mid, End)	**Total (Pre, Mid, End)**
When traveling along the project corridor, what is your typical mode of transportation?	Auto (Pre, Mid, End)	42.6%, 49.5%, 59.4%	16.4%, 13.2%, 10.1%	1.6%, 1.6%, 0.0%	**37, 117, 48**
	Bike (Pre, Mid, End)	16.4%, 8.8%, 11.6%	3.3%, 1.6%, 2.9%	0.0%, 0.0%, 0.0%	**12, 19, 10**
	Transit (Pre, Mid, End)	3.3%, 0.5%, 0.0%	0.0%, 0.5%, 0.0%	0.0%, 0.0%, 0.0%	**2, 2, 0**
	Walk (Pre, Mid, End)	11.5%, 20.3%, 13.0%	4.9%, 2.7%, 2.9%	0.0%, 1.1%, 0.0%	**10, 44, 11**
	Other (Pre, Mid, End)	0.0%, 0.0%, 0.0%	0.0%, 0.0%, 0.0%	0.0%, 0.0%, 0.0%	**0, 0, 0**
	Total (Pre, Mid, End)	**45, 144, 58**	**15, 33, 11**	**1, 5, 0**	**61, 182, 69**

Appendix

Table 28-A: Reported Collisions (Palo Alto Police Department)

Date	Time	Fatalities	Injuries	Hit/Run	Primary Collision Factor Violation	Collision Type	Parties Involved	Location	At/ Or	#	Feet/ Miles	Cross Street
1/9/2012		0	1	N	Basic speed law	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
4/13/2012	Occur Time	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	300 BLK	AT	30	FEET	EVERETT AVE
5/19/2012	8:52 AM	0	2	N	Basic speed law	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
6/25/2012	9:18 AM	0	0	N	Following too close	Rear End	Other Vehicle	100 BLK	OR	75	FEET	HAWTHORNE AVE
7/5/2012	2:37 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	200 BLK	AT	-		EVERETT AVE
9/27/2012	6:14 PM	0	0	N	Intersection - fail to stop/yield	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
10/3/2012	7:23 PM	0	1	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
10/24/2012	12:37 PM	0	1	N	Basic speed law	Rear End	Other Vehicle	300 BLK	OR	30	FEET	LYTTON AVE
12/12/2012	2:42 PM	0	2	N	Basic speed law	Rear End	Other Vehicle	100 BLK	OR	50	FEET	LYTTON AVE
12/14/2012	8:30 AM	0	0	N	-	Side Swipe	Other Vehicle	100 BLK	OR	1	FEET	PALO ALTO AVE

Date	Time	Fatalities	Injuries	Hit/Run	Primary Collision Factor Violation	Collision Type	Parties Involved	Location	At/ Or	#	Feet/ Miles	Cross Street
12/24/2012	2:08 PM	0	0	N	Left turn – fail to yield right of way	Head-on	Other Vehicle	-	AT	-		PALO ALTO AVE
1/31/2013	11:32 AM	0	1	N	Basic speed law	Rear End	Other Vehicle	200 BLK	AT	-		EVERETT AVE
3/23/2013	10:14 AM	0	0	N	Unsafe turn	Hit Object	Non-Collision	000 BLK	OR	200	FEET	PALO ALTO AVE
4/29/2013	9:04 AM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	300 BLK	AT	-		EVERETT AVE
5/28/2013	1:53 PM	0	0	Y	Drive under influence/alcohol	Rear End	Other Vehicle	100 BLK	OR	170	FEET	PALO ALTO AVE
7/26/2013	7:26 PM	0	0	Y	Unsafe turn	Side Swipe	Other Vehicle	100 BLK	OR	12	FEET	THE EAST CURBLINE
8/18/2013	4:21 PM	0	1	N	Intersection – fail to stop/yield	Side Swipe	Other Vehicle	-	AT	-		EVERETT AVE
10/4/2013	6:26 PM	0	2	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	200 BLK	AT	-		HAWTHORNE AVE
11/5/2013	5:36 PM	0	0	Y	Unsafe turn	Side Swipe	Other Vehicle	200 BLK	OR	20	FEET	EVERETT AVE
11/7/2013	9:24 AM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
11/7/2013	5:53 PM	0	0	N	Unsafe turn	Side Swipe	Other Vehicle	-	AT	-		LYTTON AVE
12/1/2013	4:32 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	300 BLK	AT	-		EVERETT AVE

Date	Time	Fatalities	Injuries	Hit/Run	Primary Collision Factor Violation	Collision Type	Parties Involved	Location	At/ Or	#	Feet/ Miles	Cross Street
12/9/2013	3:50 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	-	AT	-		HAWTHORNE AVE
12/30/2013	12:51 PM	0	0	N	Unsafe lane change	Side Swipe	Other Vehicle	100 BLK	OR	100	FEET	PALO ALTO AVE
12/31/2013	7:13 PM	0	1	N	Basic speed law	Rear End	Other Vehicle	300 BLK	OR	75	FEET	LYTTON AVE
4/16/2014	9:07 AM	0	1	N	Basic speed law	Rear End	Other Vehicle	300 BLK	OR	109	FEET	EVERETT AVE
4/23/2014	9:08 PM	0	1	N	Segment - Fail to yield right of way	Broadside	Vehicle on Other Roadway	300 BLK	AT	-		EVERETT AVE
5/10/2014	8:00 AM	0	0	N	Unsafe turn	Side Swipe	Other Vehicle	300 BLK	OR	150	FEET	LYTTON AVE
5/19/2014	5:08 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
5/26/2014	8:34 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Vehicle on Other Roadway	-	AT	-		EVERETT AVE
6/11/2014	12:54 PM	0	1	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	300 BLK	AT	-		EVERETT AVE
7/7/2014	5:04 PM	0	1	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	300 BLK	AT	-		EVERETT AVE
7/10/2014	11:45 AM	0	1	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
7/22/2014	6:06 PM	0	1	N	Basic speed law	Rear End	Other Vehicle	100 BLK	OR	20	FEET	PALO ALTO AVE

Date	Time	Fatalities	Injuries	Hit/Run	Primary Collision Factor Violation	Collision Type	Parties Involved	Location	At/ Or	#	Feet/ Miles	Cross Street
7/31/2014	6:10 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	200 BLK	AT	-		EVERETT AVE
10/30/2014	5:03 PM	0	0	N	Intersection – fail to stop/yield	Broadside	-	-	AT	-		EVERETT AVE
12/4/2014	6:45 PM	0	1	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
12/6/2014	10:25 AM	0	1	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	200 BLK	AT	-		EVERETT AVE
12/12/2014	6:31 PM	0	1	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
1/23/2015	1:32 PM	0	0	Y	Intersection – fail to stop/yield	Broadside	Other Vehicle	200 BLK	AT	-		EVERETT AVE
2/1/2015	5:16 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	400 BLK	AT	-		LYTTON AVE
2/18/2015	6:08 PM	0	1	N	Unsafe turn	Side Swipe	Fixed Object	200 BLK	OR	75	FEET	EVERETT AVE
3/26/2015	4:19 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
5/8/2015	8:21 AM	0	1	N	Intersection – fail to stop/yield	-	Other Vehicle	-	-	-		EVERETT AVE
7/18/2015	5:00 PM	0	2	N	Unsafe turn	Head-on	Other Vehicle	100 BLK	OR	17	FEET	SCL OF PALO ALTO AVE
8/8/2015	6:05 PM	0	0	N	Unsafe turn	Side Swipe	Other Vehicle	300 BLK	OR	150	FEET	HAWTHORNE AVE

Date	Time	Fatalities	Injuries	Hit/Run	Primary Collision Factor Violation	Collision Type	Parties Involved	Location	At/ Or	#	Feet/ Miles	Cross Street
8/18/2015	3:46 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	200 BLK	OR	1	FEET	HAWTHORNE AVE
9/14/2015	9:38 PM	0	0	N	-	-	-	-	-	-		EVERETT AVE
11/19/2015	2:28 PM	0	1	N	Req. or Prohibited turn/fail to	Broadside	Other Vehicle	200 BLK	OR	50	FEET	EVERETT AVE
12/1/2015	-	0	0	N	Intersection – fail to stop/yield	Broadside	Pedestrian	-	AT	-		EVERETT AVE
1/4/2016	8:12 AM	0	1	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	300 BLK	AT	-		EVERETT AVE
1/23/2016	9:35 AM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	100 BLK	AT	-		HAWTHORNE AVE
4/6/2016	8:11 AM	0	0	N	Basic speed law	Broadside	Other Vehicle	300 BLK	AT	-		EVERETT AVE
4/19/2016	3:41 PM	0	0	Y	-	Hit Object	Fixed Object	-	AT	-		LYTTON AVE
4/22/2016	6:50 PM	0	2	N	Left turn – fail to yield right of way	Broadside	Other Vehicle	-	AT	-		EVERETT AVE
4/29/2016	6:56 AM	0	2	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	300 BLK	AT	-		EVERETT AVE
5/11/2016	10:18 PM	0	1	N	Intersection – fail to stop/yield	Auto/Pedestrian	Pedestrian	300 BLK	AT	-		LYTTON AVE
6/2/2016	6:23 PM	0	1	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	-	AT	-		EVERETT AVE

Date	Time	Fatalities	Injuries	Hit/Run	Primary Collision Factor Violation	Collision Type	Parties Involved	Location	At/ Or	#	Feet/ Miles	Cross Street
6/19/2016	9:13 PM	0	3	N	Basic speed law	Rear End	Other Vehicle	100 BLK	OR	70	FEET	HAWTHORNE AVE
7/2/2016	3:26 PM	0	1	N	Intersection – fail to stop/yield	Hit Object	Fixed Object	200 BLK	OR	12	FEET	EVERETT AVE
8/11/2016	4:07 PM	0	0	N	-	-	-	-	AT	-		HAWTHORNE AVE
8/19/2016	6:21 PM	0	0	N	Unsafe turn	Side Swipe	Other Vehicle	200 BLK	OR	20	FEET	HAWTHORNE AVE
8/30/2016	1:45 PM	0	0	Y	Unauthorized Removal from Priv.	Side Swipe	Other Vehicle	-	AT	-		LYTTON AVE
9/8/2016	5:44 PM	0	0	N	Unsafe turn	Side Swipe	Other Vehicle	100 BLK	OR	-		PALO ALTO AVE
10/8/2016	3:10 PM	0	0	N	-	-	-	-	AT	-		EVERETT AVE
10/17/2016	4:25 PM	0	1	N	Left turn – fail to yield right of way	Broadside	Other Vehicle	300 BLK	OR	2	FEET	MIDDLEFIELD RD
11/19/2016	2:19 PM	0	0	N	Intersection – fail to stop/yield	Broadside	Other Vehicle	200 BLK	AT	-		EVERETT AVE
12/2/2016	4:10 PM	0	0	Y	Intersection – fail to stop/yield	Hit Object	Other Vehicle	100 BLK	AT	-		HAWTHORNE AVE
12/12/2016	12:25 PM	0	0	Y	Unsafe lane change	Side Swipe	Other Vehicle	200 BLK	AT	-		HAWTHORNE AVE
1/11/2018	5:40 PM	0	2	N	Unsafe turn	Side Swipe	Other Vehicle	100 BLK	OR	9	FEET	MIDDLEFIELD RD

Date	Time	Fatalities	Injuries	Hit/Run	Primary Collision Factor Violation	Collision Type	Parties Involved	Location	At/ Or	#	Feet/ Miles	Cross Street
3/19/2018	5:05 PM	0	2	N	-	Head-on	Other Vehicle	400 BLK	OR	21	FEET	LYTTON AVE
5/10/2018	10:09 AM	0		N	-	-	Other Vehicle	200 BLK	OR	15	FEET	PALO ALTO AVE

Table 28-B: Reported Collisions, Detailed Collision Factors (January 1st through June 30th)

Year (Average January through June)	Total Collisions	Type*						Injuries		Primary Collision Factors*						Motor Vehicle Involved with*			
		Hit Object	Rear End	Side Swipe	Head-on	Broadside	Not Reported	Total	Fatal	Unsafe Turn	Unsafe Speed	Unsafe Lane Change	Fail to Yield/Stop at Intersection	Req. or Prohibited turn failure	Not Reported	Other Auto	Fixed Object	Pedestrian	Not Reported
2012	4	0	1	0	0	3	0	3	0	0	2	0	1	0	0	4	0	0	0
2013	4	1	2	0	0	1	1	1	0	1	1	0	1	0	0	3	0	0	0
2014	6	0	1	1	0	4	0	3	0	1	1	0	3	0	0	4	0	0	0
2015	5	0	0	1	0	3	0	2	0	1	0	0	4	0	0	4	1	0	0
2016	9	1	1	0	0	6	1	10	0	0	2	0	5	0	1	7	1	1	0
Average (2012-2016)	5.6	0.4	1.0	0.4	0.0	3.4	0.4	3.8	0.0	0.6	1.2	0.0	2.8	0.0	0.2	4.4	0.4	0.2	0.0
2018	3.0	0	0	1	1	0	0	4	0	1	0	0	0	0	2	3	0	0	0
Difference	-2.6	-0.4	-1.0	0.6	1.0	-3.4	-0.4	0.2	0.0	0.4	-1.2	0.0	-2.8	0.0	1.8	-1.4	-0.4	-0.2	0.0

* Some factors excluded for simplification of table

Table 29: Near-Miss Collisions

Primary	Secondary	Date	Time	Event	Parties	Notes
Middlefield Road	Hawthorne Avenue	4/18/2017	7:39:34	Near Miss	Vehicle, Vehicle	N/A
Middlefield Road	Hawthorne Avenue	4/18/2017	17:19:30	Near Miss	Vehicle, Vehicle	N/A
Middlefield Road	Everett Avenue	4/19/2017	12:27:53	Near Miss	Vehicle, Vehicle	N/A
Middlefield Road	Everett Avenue	4/19/2017	16:40:39	Near Miss	Vehicle, Pedestrian	N/A
Middlefield Road	Everett Avenue	10/4/2017	17:33:08	Near Miss	Vehicle, Vehicle	N/A
Middlefield Road	Everett Avenue	10/4/2017	17:36:08	Near Miss	Vehicle, Vehicle	Illegal maneuver: car skirted around delineator as another car is reversing in intersection
Middlefield Road	Everett Avenue	10/4/2017	5:36:55	Near Miss	Vehicle, Bicyclist	N/A
Middlefield Road	Everett Avenue	10/5/2017	11:43:56	Near Miss	Vehicle, Vehicle	Illegal maneuver
Middlefield Road	Everett Avenue	10/5/2017	12:14:46	Near Miss	Vehicle, Pedestrian	Pedestrian continues running across the street while vehicle is turning right
Middlefield Road	Hawthorne Avenue	10/5/2017	8:15:34	Near Miss	Vehicle, Vehicle	Vehicle turning left onto Hawthorne from Middlefield; Other vehicle driving along Middlefield
Middlefield Road	Hawthorne Avenue	10/5/2017	8:59:45	Near Miss	Vehicle, Vehicle	Vehicle turning

Table 30: Hazardous Behaviour

Primary	Secondary	Date	Time	Event	Parties	Notes
Middlefield Road	Everett Avenue	10/4/2017	16:24:19	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/4/2017	16:25:35	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/4/2017	16:26:35	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/4/2017	16:47:11	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/4/2017	16:52:30	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/5/2017	8:01:06	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/5/2017	8:53:13	Hazard	Vehicle, Pedestrian	Failed to Yield to Pedestrian
Middlefield Road	Everett Avenue	10/5/2017	8:54:02	Hazard	Vehicle	Illegal maneuver: u-turn around delineator
Middlefield Road	Everett Avenue	10/5/2017	11:08:44	Hazard	Other	Illegal maneuver: pedestrian on Segway skirted around delineator
Middlefield Road	Everett Avenue	10/5/2017	11:20:05	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/5/2017	11:56:33	Hazard	Vehicle, Pedestrian	Vehicle turns while pedestrian is crossing
Middlefield Road	Everett Avenue	10/5/2017	12:00:16	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/5/2017	12:02:38	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/5/2017	16:39:50	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	10/5/2017	16:45:16	Hazard	Vehicle	Illegal maneuver: car on the north side of Middlefield backs up and makes left turn from right lane
Middlefield Road	Everett Avenue	10/5/2017	5:27:40	Hazard	Vehicle	Illegal maneuver
Middlefield Road	Everett Avenue	10/5/2017	5:45:43	Hazard	Vehicle	illegal maneuver: u-turn around delineator
Middlefield Road	Hawthorne Avenue	10/4/2017	8:30:52	Hazard	Bicyclist, Vehicle	No collision; Hazard/near miss between bicyclist and vehicle
Middlefield Road	Hawthorne Avenue	10/4/2017	11:29:49	Hazard	Vehicle	Illegal maneuver
Middlefield Road	Hawthorne Avenue	10/4/2017	4:23:20	Hazard	Pedestrian	Pedestrian crossing outside of crosswalk

Primary	Secondary	Date	Time	Event	Parties	Notes
Middlefield Road	Hawthorne Avenue	10/4/2017	17:35:55	Hazard	Pedestrian	Pedestrian crossing outside of crosswalk
Middlefield Road	Hawthorne Avenue	10/5/2017	8:25:11	Hazard	Pedestrian	Pedestrian crossing outside of crosswalk
Middlefield Road	Hawthorne Avenue	10/5/2017	8:43:09	Hazard	Pedestrian	Pedestrian crossing outside of crosswalk
Middlefield Road	Hawthorne Avenue	10/5/2017	11:16:27	Hazard	Vehicle	Vehicle turning illegally
Middlefield Road	Hawthorne Avenue	10/5/2017	11:59:56	Hazard	Vehicle	Vehicle turning illegally
Middlefield Road	Hawthorne Avenue	10/5/2017	12:57:19	Hazard	Vehicle	Vehicle turning illegally
Middlefield Road	Hawthorne Avenue	10/5/2017	16:24:46	Hazard	Pedestrian	Pedestrian crossing outside of crosswalk
Middlefield Road	Hawthorne Avenue	10/5/2017	17:50:04	Hazard	Vehicle	Vehicle turning illegally
Middlefield Road	Hawthorne Avenue	4/17/2018	6:58:55	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Hawthorne Avenue	4/18/2018	8:32:19	Hazard	Bicyclist	Bicyclist crossing outside crosswalk (during vehicle congestion)
Middlefield Road	Hawthorne Avenue	4/18/2018	10:58:33	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Hawthorne Avenue	4/18/2018	11:17:17	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Hawthorne Avenue	4/18/2018	12:05:27	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Hawthorne Avenue	4/18/2018	12:27:42	Hazard	Vehicle	Illegal maneuver: car skirted around delineators

Primary	Secondary	Date	Time	Event	Parties	Notes
Middlefield Road	Hawthorne Avenue	4/18/2018	17:32:19	Hazard	Vehicle	N/A
Middlefield Road	Hawthorne Avenue	4/18/2018	17:34:39	Hazard	Bicycle	Illegal maneuver: wrong-way bicycling
Middlefield Road	Everett Avenue	4/17/2018	7:20:44	Hazard	Pedestrian	Pedestrian crossing outside of crosswalk
Middlefield Road	Everett Avenue	4/17/2018	8:46:55	Hazard	Bicycle	Bicyclist crossing outside crosswalk
Middlefield Road	Everett Avenue	4/17/2018	8:51:25	Hazard	Pedestrian	Pedestrian crossing outside of crosswalk
Middlefield Road	Everett Avenue	4/17/2018	11:05:30	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	12:02:10	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	12:06:33	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	12:06:50	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	12:25:00	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	12:43:30	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	13:07:23	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	15:54:04	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	15:54:16	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	16:00:00	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/17/2018	16:15:53	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	8:36:27	Hazard	Bicyclist	Bicyclist crossing outside crosswalk
Middlefield Road	Everett Avenue	4/18/2018	10:58:12	Hazard	Other (Segway)	Other crossing outside crosswalk
Middlefield Road	Everett Avenue	4/18/2018	11:24:13	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	11:53:14	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	12:10:23	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	12:17:59	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	12:21:17	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	12:21:44	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	12:21:51	Hazard	Vehicle	Illegal maneuver: car skirted around delineators

Primary	Secondary	Date	Time	Event	Parties	Notes
Middlefield Road	Everett Avenue	4/18/2018	12:32:02	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	12:32:42	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	12:54:46	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	12:59:45	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	16:32:33	Hazard	Vehicle, Vehicle	Illegal maneuver: improper passing
Middlefield Road	Everett Avenue	4/18/2018	16:36:04	Hazard	Vehicle	Illegal maneuver: car skirted around delineators
Middlefield Road	Everett Avenue	4/18/2018	17:35:10	Hazard	Bicyclist	Bicyclist crossing outside crosswalk
Middlefield Road	Everett Avenue	4/18/2018	18:11:09	Hazard	Vehicle	Illegal maneuver: car skirted around delineators

Table 31: Observed Motor Vehicle Speeds

Dates	Corridor	Northbound/Westbound (mph)				Southbound/Eastbound (mph)				Both Directions (mph)			
		Mean	Median	Mode	85th Percentile	Mean	Median	Mode	85th Percentile	Mean	Median	Mode	85th Percentile
4/18/2017 - 4/19/2017	Middlefield Road from Palo Alto Avenue (west) to Palo Alto Avenue (east)	26	27	28	33	27	28	28	33	26	27	28	33
4/18/2017 - 4/19/2017	Middlefield Road from Hawthorne Avenue to Everett Avenue	26	28	28	34	26	27	28	33	26	28	28	33
4/18/2017 - 4/19/2017	Middlefield Road from Everett Avenue to Lytton Avenue	26	27	28	32	23	24	28	31	24	26	28	32
4/18/2017 - 4/19/2017	Webster Street from Lytton Avenue to Everett Avenue	17	18	23	24	21	21	23	27	19	20	23	25
4/18/2017 - 4/19/2017	Byron Street from Lytton Avenue to Everett Avenue	17	18	23	23	18	19	23	24	17	19	23	24
4/18/2017 - 4/19/2017	Palo Alto Avenue from Middlefield Road to Fulton Street	17	18	18	22	17	18	18	22	17	18	18	22
4/18/2017 - 4/19/2017	Fulton Street from Lytton Avenue to University Avenue	15	17	8	23	17	18	23	23	16	17	18	23
4/18/2017 - 4/19/2017	Fulton Street from Lytton Avenue to Everett Avenue	19	21	23	26	18	20	23	25	19	20	23	25
4/18/2017 - 4/19/2017	Guinda Street from Lytton Avenue to University Avenue	12	13	8	18	14	16	18	19	13	15	8	19
4/18/2017 - 4/19/2017	Hawthorne Avenue from Byron Street to Middlefield Road	17	18	18	22	16	17	18	22	16	17	18	22
4/18/2017 - 4/19/2017	Everett Avenue from Byron Street to Middlefield Road	15	17	18	20	18	19	18	23	16	17	18	22
4/18/2017 - 4/19/2017	Everett Avenue from Middlefield Road to Fulton Street	18	19	23	23	20	21	23	24	19	20	23	24
10/4/2017 - 10/5/2017	Middlefield Road from Palo Alto Avenue (west) to Palo Alto Avenue (east)	24	25	28	29	22	23	23	29	23	24	28	29

Dates	Corridor	Northbound/Westbound (mph)				Southbound/Eastbound (mph)				Both Directions (mph)			
		Mean	Median	Mode	85th Percentile	Mean	Median	Mode	85th Percentile	Mean	Median	Mode	85th Percentile
10/4/2017 - 10/5/2017	Middlefield Road from Hawthorne Avenue to Everett Avenue	27	27	28	32	23	25	28	31	25	26	28	31
10/4/2017 - 10/5/2017	Middlefield Road from Everett Avenue to Lytton Avenue	27	28	28	32	25	26	28	33	26	27	28	33
-	Webster Street from Lytton Avenue to Everett Avenue	-	-	-	-	-	-	-	-	-	-	-	-
10/4/2017 - 10/5/2017	Byron Street from Lytton Avenue to Everett Avenue	19	20	23	24	19	20	23	25	19	20	23	25
10/4/2017 - 10/5/2017	Palo Alto Avenue from Middlefield Road to Fulton Street	16	17	18	19	17	18	18	22	16	17	18	21
-	Fulton Street from Lytton Avenue to University Avenue	-	-	-	-	-	-	-	-	-	-	-	-
10/4/2017 - 10/5/2017	Fulton Street from Lytton Avenue to Everett Avenue	16	18	18	23	17	19	23	23	17	18	18	23
10/4/2017 - 10/5/2017	Guinda Street from Lytton Avenue to University Avenue	14	16	18	19	13	15	8	19	14	15	18	19
10/4/2017 - 10/5/2017	Hawthorne Avenue from Byron Street to Middlefield Road	19	20	23	24	18	18	18	23	18	19	18	23
-	Everett Avenue from Byron Street to Middlefield Road	-	-	-	-	-	-	-	-	-	-	-	-
10/4/2017 - 10/5/2017	Everett Avenue from Middlefield Road to Fulton Street	19	21	23	25	19	21	23	24	19	21	23	24
10/25/2017 - 10/26/2017	Middlefield Road from Palo Alto Avenue (west) to Palo Alto Avenue (east)	25	26	28	31	24	26	28	32	24	26	28	32
10/25/2017 - 10/26/2017	Middlefield Road from Hawthorne Avenue to Everett Avenue	26	27	28	31	23	25	28	31	24	26	28	31

Dates	Corridor	Northbound/Westbound (mph)				Southbound/Eastbound (mph)				Both Directions (mph)			
		Mean	Median	Mode	85th Percentile	Mean	Median	Mode	85th Percentile	Mean	Median	Mode	85th Percentile
10/25/2017 - 10/26/2017	Middlefield Road from Everett Avenue to Lytton Avenue	24	24	23	39	17	19	8	28	21	23	23	28
10/25/2017 - 10/26/2017	Webster Street from Lytton Avenue to Everett Avenue	16	18	8	24	19	20	23	25	18	19	23	24
10/25/2017 - 10/26/2017	Byron Street from Lytton Avenue to Everett Avenue	17	18	18	23	19	20	23	24	18	20	23	24
10/25/2017 - 10/26/2017	Palo Alto Avenue from Middlefield Road to Fulton Street	17	18	18	23	16	17	18	21	17	17	18	22
10/25/2017 - 10/26/2017	Fulton Street from Lytton Avenue to University Avenue	18	19	18	24	19	20	23	25	19	20	23	25
10/25/2017 - 10/26/2017	Fulton Street from Lytton Avenue to Everett Avenue	18	20	23	24	19	20	23	25	18	20	23	24
10/25/2017 - 10/26/2017	Guinda Street from Lytton Avenue to University Avenue	14	16	18	19	9	9	8	16	11	11	8	18
10/25/2017 - 10/26/2017	Hawthorne Avenue from Byron Street to Middlefield Road	18	19	23	23	17	18	18	22	17	18	18	23
10/25/2017 - 10/26/2017	Everett Avenue from Byron Street to Middlefield Road	18	18	18	23	18	18	18	22	18	18	18	23
10/25/2017 - 10/26/2017	Everett Avenue from Middlefield Road to Fulton Street	18	19	23	24	18	19	23	23	17	18	18	23
4/18/2018 - 4/19/2018	Middlefield Road from Palo Alto Avenue (west) to Palo Alto Avenue (east)	23	26	28	31	25	27	28	32	24	26	28	32
4/18/2018 - 4/19/2018	Middlefield Road from Hawthorne Avenue to Everett Avenue	21	23	28	29	25	27	28	33	23	26	28	31

Dates	Corridor	Northbound/Westbound (mph)				Southbound/Eastbound (mph)				Both Directions (mph)			
		Mean	Median	Mode	85th Percentile	Mean	Median	Mode	85th Percentile	Mean	Median	Mode	85th Percentile
4/18/2018 - 4/19/2018	Middlefield Road from Everett Avenue to Lytton Avenue	19	21	8	28	24	25	28	29	21	23	28	29
4/18/2018 - 4/19/2018	Webster Street from Lytton Avenue to Everett Avenue	18	19	23	24	16	18	23	23	17	19	23	24
4/18/2018 - 4/19/2018	Byron Street from Lytton Avenue to Everett Avenue	20	21	23	26	16	18	8	24	19	20	23	25
4/18/2018 - 4/19/2018	Palo Alto Avenue from Middlefield Road to Fulton Street	19	19	18	23	18	19	18	23	19	19	18	23
4/17/2018 - 4/18/2018	Fulton Street from Lytton Avenue to University Avenue	20	21	23	26	19	20	23	26	20	21	23	26
4/18/2018 - 4/19/2018	Fulton Street from Lytton Avenue to Everett Avenue	20	21	23	26	20	22	23	27	20	21	23	27
4/18/2018 - 4/19/2018	Guinda Street from Lytton Avenue to University Avenue	17	18	18	23	20	21	23	24	19	20	23	24
4/18/2018 - 4/19/2018	Hawthorne Avenue from Byron Street to Middlefield Road	18	18	18	23	18	19	18	23	18	18	18	23
4/18/2018 - 4/19/2018	Everett Avenue from Byron Street to Middlefield Road	18	19	18	23	17	18	18	22	18	18	18	23
4/17/2018 - 4/18/2018	Everett Avenue from Middlefield Road to Fulton Street	19	20	23	24	18	20	23	24	19	20	23	24

Table 32: Sound Level Data

Period	Location	> 80 dB	LCPeak	LAeq	LZPeak	Lavg
PRE-PILOT	Middlefield Road between Lytton Avenue and University Avenue	1	115.2	115.3	63.5	62.7
	Byron Street between Lytton Avenue and Everett Avenue	0	101.2	107.2	54.9	54.6
	Middlefield Road between Lytton Avenue and Everett Avenue	1	115.4	115.8	68.1	67.1
	Fulton Street between Lytton Avenue and Everett Avenue	-	-	-	-	-
MID-PILOT	Middlefield Road between Lytton Avenue and University Avenue	2	117.0	118.3	65.6	64.8
	Byron Street between Lytton Avenue and Everett Avenue	0	111.0	111.5	55.3	54.9
	Middlefield Road between Lytton Avenue and Everett Avenue	0	113.4	115.6	67.0	66.2
	Fulton Street between Lytton Avenue and Everett Avenue	0	108.0	109.6	53.8	53.5
END-PILOT	Middlefield Road between Lytton Avenue and University Avenue	-	-	-	-	-
	Byron Street between Lytton Avenue and Everett Avenue	-	120.0	58.0	120.0	72.2
	Middlefield Road between Lytton Avenue and Everett Avenue	-	110.6	69.3	119.3	71.2
	Fulton Street between Lytton Avenue and Everett Avenue	-	112.6	58.3	117.3	64.4

Table 33: Turning Movement Counts

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Hawthorne Avenue	4/18/2017	7:55 AM	8:55 AM	0.91	2,391	2,313	78	5	32
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Hawthorne Avenue	4/19/2017	8:00 AM	9:00 AM	0.93	2,429	2,352	77	14	14
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Hawthorne Avenue	AVERAGE	-	-	0.92	2,410	2,333	78	10	23
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Hawthorne Avenue	4/18/2017	11:40 AM	12:40 PM	0.89	2,572	2,510	62	9	10
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Hawthorne Avenue	4/19/2017	11:25 AM	12:25 AM	0.92	2,547	2,463	84	5	15
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Hawthorne Avenue	AVERAGE	-	-	0.91	2,560	2,487	73	7	13
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Hawthorne Avenue	4/18/2017	4:55 PM	5:55 PM	0.92	3,350	3,294	56	8	23
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Hawthorne Avenue	4/19/2017	4:50 PM	5:50 PM	0.96	3,280	3,216	64	10	25
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Hawthorne Avenue	AVERAGE	-	-	0.94	3,315	3,255	60	9	24
PRE-PILOT	-	Middlefield Road	Hawthorne Avenue	TOTAL	-	-	-	8,285	8,074	211	26	60
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Everett Avenue	4/18/2017	8:00 AM	9:00 AM	0.90	2,390	2,309	81	12	14
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Everett Avenue	4/19/2017	8:00 AM	9:00 AM	0.91	2,424	2,346	78	17	15
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Everett Avenue	AVERAGE	-	-	0.91	2,407	2,328	80	15	15

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Everett Avenue	4/18/2017	11:35 AM	12:35 AM	0.92	2,291	2,233	58	11	13
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Everett Avenue	4/19/2017	11:50 AM	12:50 PM	0.91	2,279	2,208	71	10	18
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Everett Avenue	AVERAGE	-	-	0.92	2,285	2,221	65	11	16
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Everett Avenue	4/18/2017	4:55 PM	5:55 PM	0.92	3,058	3,012	46	15	27
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Everett Avenue	4/19/2017	4:45 PM	5:45 PM	0.95	3,028	2,959	69	17	28
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Everett Avenue	AVERAGE	-	-	0.94	3,043	2,986	58	16	28
PRE-PILOT	-	Middlefield Road	Everett Avenue	TOTAL	-	-	-	7,735	7,534	202	41	58
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Lytton Avenue	4/18/2017	8:00 AM	9:00 AM	0.90	2,744	2,647	97	32	36
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Lytton Avenue	4/19/2017	7:55 AM	8:55 AM	0.94	2,750	2,652	98	65	31
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Lytton Avenue	AVERAGE	-	-	0.92	2,747	2,650	98	49	34
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Lytton Avenue	4/18/2017	11:40 AM	12:40 PM	0.96	2,466	2,410	56	19	27
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Lytton Avenue	4/19/2017	11:25 AM	12:25 PM	0.94	2,443	2,363	80	14	40
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Lytton Avenue	AVERAGE	-	-	0.95	2,455	2,387	68	17	34

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Lytton Avenue	4/18/2017	4:50 PM	5:50 PM	0.96	3,329	3,278	51	36	62
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Lytton Avenue	4/19/2017	4:45 PM	5:45 PM	0.96	3,328	3,265	63	51	47
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Lytton Avenue	AVERAGE	-	-	0.96	3,329	3,272	57	44	55
PRE-PILOT	-	Middlefield Road	Lytton Avenue	TOTAL	-	-	-	8,530	8,308	223	109	122
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	University Avenue	4/18/2017	8:00 AM	9:00 AM	0.94	3,151	3,007	144	44	48
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	University Avenue	4/19/2017	7:50 AM	8:50 AM	0.96	3,215	3,087	128	44	61
PRE-PILOT	7:00 AM - 9:00 AM	Middlefield Road	University Avenue	AVERAGE	-	-	0.95	3,183	3,047	136	44	55
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	University Avenue	4/18/2017	11:40 AM	12:40 PM	0.93	3,471	3,370	101	15	69
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	University Avenue	4/19/2017	11:25 AM	12:25 PM	0.95	3,501	3,380	121	24	75
PRE-PILOT	11:00 AM - 1:00 PM	Middlefield Road	University Avenue	AVERAGE	-	-	0.94	3,486	3,375	111	20	72
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	University Avenue	4/18/2017	4:35 PM	5:35 PM	0.97	3,488	3,426	62	50	93
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	University Avenue	4/19/2017	5:00 PM	6:00 PM	0.96	3,501	3,430	71	57	85
PRE-PILOT	4:00 PM - 6:00 PM	Middlefield Road	University Avenue	AVERAGE	-	-	0.97	3,495	3,428	67	54	89

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
PRE-PILOT	-	Middlefield Road	University Avenue	TOTAL	-	-	-	10,164	9,850	314	117	216
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Hawthorne Avenue	10/4/2017	7:45 AM	8:45 AM	0.95	2,256	2,198	58	13	9
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Hawthorne Avenue	10/5/2017	7:55 AM	8:55 AM	0.91	2,234	2,153	81	25	23
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Hawthorne Avenue	AVERAGE	-	-	0.93	2,245	2,176	70	19	16
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Hawthorne Avenue	10/4/2017	11:25 AM	12:25 PM	0.93	2,418	2,358	60	12	8
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Hawthorne Avenue	10/5/2017	11:45 AM	12:45 PM	0.95	2,443	2,396	47	10	6
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Hawthorne Avenue	AVERAGE	-	-	0.94	2,431	2,377	54	11	7
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Hawthorne Avenue	10/4/2017	5:00 PM	6:00 PM	0.94	3,200	3,152	48	21	28
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Hawthorne Avenue	10/5/2017	5:00 PM	6:00 PM	0.95	3,176	3,114	62	17	26
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Hawthorne Avenue	AVERAGE	-	-	0.95	3,188	3,133	55	19	27
MID-PILOT	-	Middlefield Road	Hawthorne Avenue	TOTAL	-	-	-	7,864	7,686	178	49	50
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Everett Avenue	10/4/2017	7:40 AM	8:40 AM	0.95	2,255	2,189	66	30	19
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Everett Avenue	10/5/2017	7:50 AM	8:50 AM	0.96	2,267	2,200	67	47	26

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Everett Avenue	AVERAGE	-	-	0.96	2,261	2,195	67	39	23
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Everett Avenue	10/4/2017	11:25 AM	12:25 PM	0.92	2,209	2,150	59	15	25
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Everett Avenue	10/5/2017	11:45 AM	12:45 PM	0.95	2,288	2,232	56	9	20
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Everett Avenue	AVERAGE	-	-	0.94	2,249	2,191	58	12	23
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Everett Avenue	10/4/2017	5:00 PM	6:00 PM	0.97	2,961	2,912	49	28	31
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Everett Avenue	10/5/2017	4:55 PM	5:55 PM	0.95	2,888	2,831	57	31	45
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Everett Avenue	AVERAGE	-	-	0.96	2,925	2,872	53	30	38
MID-PILOT	-	Middlefield Road	Everett Avenue	TOTAL	-	-	-	7,434	7,257	177	80	83
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Lytton Avenue	10/4/2017	7:40 AM	8:40 AM	0.97	2,676	2,598	78	68	41
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Lytton Avenue	10/5/2017	7:55 AM	8:55 AM	0.98	2,673	2,579	94	55	45
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Lytton Avenue	AVERAGE	-	-	0.98	2,675	2,589	86	62	43
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Lytton Avenue	10/4/2017	12:00 PM	1:00 PM	0.94	2,581	2,518	63	28	52
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Lytton Avenue	10/5/2017	11:50 AM	12:50 PM	0.98	2,682	2,610	72	28	33

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Lytton Avenue	AVERAGE	-	-	0.96	2,632	2,564	68	28	43
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Lytton Avenue	10/4/2017	5:00 PM	6:00 PM	0.96	3,309	3,247	62	49	55
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Lytton Avenue	10/5/2017	4:15 PM	5:15 PM	0.98	3,270	3,214	56	58	58
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Lytton Avenue	AVERAGE	-	-	0.97	3,290	3,231	59	54	57
MID-PILOT	-	Middlefield Road	Lytton Avenue	TOTAL	-	-		8,596	8,383	213	143	142
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	University Avenue	10/4/2017	7:50 AM	8:50 AM	0.93	3,136	3,004	132	49	70
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	University Avenue	10/5/2017	8:00 AM	9:00 AM	0.92	3,125	2,984	141	65	79
MID-PILOT	7:00 AM - 9:00 AM	Middlefield Road	University Avenue	AVERAGE	-	-	0.93	3,131	2,994	137	57	75
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	University Avenue	10/4/2017	11:30 AM	12:30 PM	0.93	3,456	3,344	112	34	76
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	University Avenue	10/5/2017	11:35 AM	12:35 PM	0.96	3,550	3,395	155	36	73
MID-PILOT	11:00 AM - 1:00 PM	Middlefield Road	University Avenue	AVERAGE	-	-	0.95	3,503	3,370	134	35	75
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	University Avenue	10/4/2017	5:00 PM	6:00 PM	0.91	3,559	3,501	58	83	77
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	University Avenue	10/5/2017	4:05 PM	5:05 PM	0.92	3,391	3,322	69	76	112

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
MID-PILOT	4:00 PM - 6:00 PM	Middlefield Road	University Avenue	AVERAGE	-	-	0.92	3,475	3,412	64	80	95
MID-PILOT	-	Middlefield Road	University Avenue	TOTAL	-	-	-	10,109	9,775	334	172	244
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Hawthorne Avenue	4/17/2018	7:40 AM	8:30 AM	0.92	2,323	2,251	72	18	21
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Hawthorne Avenue	4/18/2018	7:30 AM	8:30 AM	0.95	2,247	2,167	80	15	24
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Hawthorne Avenue	AVERAGE	-	-	0.94	2,285	2,209	76	17	23
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Hawthorne Avenue	4/17/2018	11:50 AM	12:50 PM	0.91	2,188	2,133	55	5	18
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Hawthorne Avenue	4/18/2018	11:25 AM	12:25 PM	0.87	2,216	2,154	62	7	25
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Hawthorne Avenue	AVERAGE	-	-	0.89	2,202	2,144	59	6	22
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Hawthorne Avenue	4/17/2018	5:00 PM	6:00 PM	0.94	2,969	2,921	48	8	16
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Hawthorne Avenue	4/18/2018	5:00 PM	6:00 PM	0.96	3,052	3,007	45	14	20
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Hawthorne Avenue	AVERAGE	-	-	0.95	3,011	2,964	47	11	18
END-PILOT		Middlefield Road	Hawthorne Avenue	TOTAL	-	-	-	7,498	7,317	181	34	62
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Everett Avenue	4/17/2018	7:35 AM	8:35 AM	0.94	2,363	2,285	78	17	27

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Everett Avenue	4/18/2018	7:30 AM	8:30 AM	0.93	2,285	2,210	75	26	19
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Everett Avenue	AVERAGE	-	-	0.94	2,324	2,248	77	22	23
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Everett Avenue	4/17/2018	11:20 AM	12:20 PM	0.93	2,024	1,964	60	7	18
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Everett Avenue	4/18/2018	11:25 AM	12:25 PM	0.86	2,070	2,014	56	12	32
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Everett Avenue	AVERAGE	-	-	0.90	2,047	1,989	58	10	25
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Everett Avenue	4/17/2018	5:00 PM	6:00 PM	0.92	2,760	2,696	64	15	33
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Everett Avenue	4/18/2018	5:00 PM	6:00 PM	0.96	2,798	2,748	50	16	29
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Everett Avenue	AVERAGE	-	-	0.94	2,779	2,722	57	16	31
END-PILOT		Middlefield Road	Everett Avenue	TOTAL	-	-	-	7,150	6,959	192	47	79
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Lytton Avenue	4/17/2018	7:45 AM	8:45 AM	0.93	3,168	3,034	134	56	54
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Lytton Avenue	4/18/2018	8:00 AM	9:00 AM	0.93	3,096	2,973	123	42	33
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	Lytton Avenue	AVERAGE	-	-	0.93	3,132	3,004	129	49	44
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Lytton Avenue	4/17/2018	11:50 AM	12:50 PM	0.96	3,117	3,010	107	23	51

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Lytton Avenue	4/18/2018	11:25 AM	12:25 PM	0.95	3,126	3,032	94	25	54
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	Lytton Avenue	AVERAGE	-	-	0.96	3,122	3,021	101	24	53
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Lytton Avenue	4/17/2018	4:45 PM	5:45 PM	0.97	3,335	3,256	79	35	44
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Lytton Avenue	4/18/2018	4:05 PM	5:05 PM	0.95	3,473	3,371	102	52	48
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	Lytton Avenue	AVERAGE	-	-	0.96	3,404	3,314	91	44	46
END-PILOT		Middlefield Road	Lytton Avenue	TOTAL	-	-	-	9,658	9,338	320	117	142
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	University Avenue	4/17/2018	7:40 AM	8:40 AM	0.94	2,588	2,482	106	52	60
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	University Avenue	4/18/2018	8:00 AM	9:00 AM	0.95	2,541	2,416	125	42	63
END-PILOT	7:00 AM - 9:00 AM	Middlefield Road	University Avenue	AVERAGE	-	-	0.95	2,565	2,449	116	47	62
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	University Avenue	4/17/2018	11:45 AM	12:45 PM	0.94	2,884	2,765	119	18	101
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	University Avenue	4/18/2018	11:30 AM	12:30 PM	0.95	2,869	2,758	111	17	58
END-PILOT	11:00 AM - 1:00 PM	Middlefield Road	University Avenue	AVERAGE	-	-	0.95	2,877	2,762	115	18	80
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	University Avenue	4/17/2018	5:00 PM	6:00 PM	0.96	2,976	2,920	56	42	98

Period	Time	Primary	Secondary	Date	Peak Hour Start	Peak Hour End	PHF	Volumes				
								Motor Vehicle			Bike	Ped
								All	Light	Heavy		
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	University Avenue	4/18/2018	5:00 PM	6:00 PM	0.92	2,931	2,865	66	50	78
END-PILOT	4:00 PM - 6:00 PM	Middlefield Road	University Avenue	AVERAGE	-	-	0.94	2,954	2,893	61	46	88
END-PILOT		Middlefield Road	University Avenue	TOTAL	-	-	-	8,395	8,103	292	111	229

Table 34: Motor Vehicle Level of Service (Middlefield Road at Lytton Avenue)

Location		AM PEAK HOUR			MID-DAY PEAK HOUR			PM PEAK HOUR		
		Pre-Pilot	Mid-Pilot	End-Pilot	Pre-Pilot	Mid-Pilot	End-Pilot	Pre-Pilot	Mid-Pilot	End-Pilot
Northbound	Left	D (56s)	E (63s)	E (67s)	E (58s)	E (62s)	E (68s)	E (70s)	E (64s)	D (43s)
	Thru/Right	N/A	D (50s)	E (63s)	N/A	E (55s)	D (52s)	N/A	E (64s)	F (86s)
	Approach	D (56s)	E (58s)	E (65s)	E (58s)	E (58s)	E (61s)	E (70s)	E (64s)	E (74s)
Southbound	Left/Thru/Right	D (51s)	D (48s)	D (53s)	D (55s)	C (33s)	E (56s)	D (51s)	D (43s)	D (53s)
	Approach	D (51s)	D (48s)	D (53s)	D (55s)	C (33s)	E (56s)	D (51s)	D (43s)	D (53s)
Eastbound	Left	E (62s)	D (39s)	E (72s)	E (60s)	C (43s)	E (66s)	D (55s)	D (51s)	E (73s)
	Thru/Right	D (55s)	D (51s)	D (55s)	E (63s)	D (55s)	F (93s)	E (71s)	F (*)	F (124s)
	All	E (58s)	D (52s)	E (64s)	E (62s)	D (52s)	F (81s)	E (64s)	F (*)	F (101s)
Westbound	Left/Thru/Right	D (37s)	D (51s)	D (39s)	C (28s)	D (55s)	C (33s)	D (41s)	D (51s)	D (40s)
	Approach	D (37s)	D (51s)	D (39s)	C (28s)	D (55s)	C (33s)	D (41s)	D (51s)	D (40s)
Intersection		D (52s)	D (51s)	E (58s)	E (56s)	D (54s)	E (64s)	E (60s)	F (92s)	E (74s)

Table 35: Motor Vehicle Level of Service (Middlefield Road at University Avenue)

Location		AM PEAK HOUR			MID-DAY PEAK HOUR			PM PEAK HOUR		
		Pre-Pilot	Mid-Pilot	End-Pilot	Pre-Pilot	Mid-Pilot	End-Pilot	Pre-Pilot	Mid-Pilot	End-Pilot
Northbound	Left	D (50s)	D (50s)	D (50s)	D (50s)	D (49s)	D (51s)	D (50s)	D (47s)	D (50s)
	Thru/Right	D (50s)	D (50s)	D (50s)	D (50s)	D (49s)	D (51s)	D (50s)	D (47s)	D (50s)
Southbound	Left/Thru/Right	D (48s)	D (48s)	D (48s)	D (49s)	D (50s)	D (48s)	D (47s)	D (50s)	D (47s)
	Approach	D (48s)	D (48s)	D (48s)	D (49s)	D (50s)	D (48s)	D (47s)	D (50s)	D (47s)
Eastbound	Left	B (14s)	B (14s)	B (13s)	B (14s)	B (14s)	B (13s)	B (18s)	B (18s)	B (17s)
	Thru/Right	B (16s)	B (16s)	B (14s)	B (17s)	B (17s)	B (13s)	B (21s)	C (21s)	B (17s)
	Approach	B (16s)	B (16s)	B (14s)	B (17s)	B (17s)	B (13s)	B (21s)	C (21s)	B (17s)
Westbound	Left	B (15s)	B (15s)	B (17s)	B (15s)	B (15s)	B (17s)	B (19s)	B (19s)	B (18s)
	Thru/Thru	B (18s)	B (18s)	B (15s)	B (16s)	B (16s)	B (14s)	B (20s)	B (20s)	B (18s)
	Approach	B (17s)	B (17s)	B (16s)	B (16s)	B (16s)	B (15s)	B (20s)	B (20s)	B (18s)
Intersection		C (32s)	C (32s)	D (35s)	C (31s)	C (31s)	C (35s)	D (36s)	D (36s)	D (39s)

Table 36: Motor Vehicle Traffic Volumes and Classifications

				Northbound/Westbound				Southbound/Eastbound				Both Directions			
Dates	Corridor	Begin	End	ADT	Light ADT	Heavy ADT	% Heavy	ADT	Light ADT	Heavy ADT	% Heavy	ADT	Light ADT	Heavy ADT	% Heavy
4/18/2017 - 4/19/2017	Middlefield Road	Palo Alto Avenue (west)	Palo Alto Avenue (east)	9,977	8,868	352	3.5%	9,614	17,432	602	6.3%	19,591	8,564	250	1.3%
4/18/2017 - 4/19/2017	Middlefield Road	Hawthorne Avenue	Everett Avenue	14,803	13,021	620	4.2%	7,005	6,190	195	2.8%	21,808	19,211	815	3.7%
4/18/2017 - 4/19/2017	Middlefield Road	Everett Avenue	Lytton Avenue	7,243	6,417	248	3.4%	7,522	6,399	251	3.3%	14,765	12,816	499	3.4%
4/18/2017 - 4/19/2017	Webster Street	Lytton Avenue	Everett Avenue	463	389	20	4.2%	488	399	33	6.8%	952	787	53	5.5%
4/18/2017 - 4/19/2017	Byron Street	Lytton Avenue	Everett Avenue	190	180	5	2.6%	191	180	7	3.7%	382	360	12	3.1%
4/18/2017 - 4/19/2017	Palo Alto Avenue	Middlefield Road	Fulton Street	163	97	2	0.9%	104	155	8	7.7%	267	252	10	3.6%
4/18/2017 - 4/19/2017	Fulton Street	Lytton Avenue	University Avenue	129	112	3	2.3%	137	127	5	3.3%	266	239	8	2.8%
4/18/2017 - 4/19/2017	Fulton Street	Lytton Avenue	Everett Avenue	132	120	5	3.4%	132	116	4	3.0%	264	235	9	3.2%
4/18/2017 - 4/19/2017	Guinda Street	Lytton Avenue	University Avenue	778	730	23	2.9%	793	753	10	1.2%	1,571	1,483	32	2.0%
4/18/2017 - 4/19/2017	Hawthorne Avenue	Byron Street	Middlefield Road	1,479	1,959	60	4.1%	2,157	1,399	29	1.3%	3,636	3,358	89	2.4%
4/18/2017 - 4/19/2017	Everett Avenue	Byron Street	Middlefield Road	1,897	1,083	25	1.3%	1,147	1,802	34	2.9%	3,044	2,885	58	1.9%
4/18/2017 - 4/19/2017	Everett Avenue	Middlefield Road	Fulton Street	552	605	11	1.9%	641	507	9	1.4%	1,193	1,111	20	1.6%

Dates	Corridor	Begin	End	Northbound/Westbound				Southbound/Eastbound				Both Directions			
				ADT	Light ADT	Heavy ADT	% Heavy	ADT	Light ADT	Heavy ADT	% Heavy	ADT	Light ADT	Heavy ADT	% Heavy
10/4/2017 - 10/5/2017	Middlefield Road	Palo Alto Avenue (west)	Palo Alto Avenue (east)	8,549	8,112	393	4.6%	8,386	7,621	358	4.3%	16,935	15,733	750	4.4%
10/4/2017 - 10/5/2017	Middlefield Road	Hawthorne Avenue	Everett Avenue	9,081	8,599	309	3.4%	9,519	7,719	247	2.6%	18,600	16,317	555	3.0%
10/4/2017 - 10/5/2017	Middlefield Road	Everett Avenue	Lytton Avenue	8,996	8,400	433	4.8%	10,747	9,944	559	5.2%	19,743	18,344	992	5.0%
-	Webster Street	Lytton Avenue	Everett Avenue	-	-	-	-	-	-	-	-	-	-	-	-
10/4/2017 - 10/5/2017	Byron Street	Lytton Avenue	Everett Avenue	212	193	9	4.0%	497	446	16	3.1%	710	639	24	3.4%
10/4/2017 - 10/5/2017	Palo Alto Avenue	Middlefield Road	Fulton Street	232	224	5	1.9%	198	185	8	3.8%	431	409	12	2.8%
-	Fulton Street	Lytton Avenue	University Avenue	-	-	-	-	-	-	-	-	-	-	-	-
10/4/2017 - 10/5/2017	Fulton Street	Lytton Avenue	Everett Avenue	193	161	4	1.8%	134	118	4	2.6%	327	279	7	2.1%
10/4/2017 - 10/5/2017	Guinda Street	Lytton Avenue	University Avenue	811	755	21	2.5%	783	725	26	3.3%	1,594	1,480	46	2.9%
10/4/2017 - 10/5/2017	Hawthorne Avenue	Byron Street	Middlefield Road	655	605	27	4.1%	2,131	2,041	48	2.2%	2,786	2,646	75	2.7%
-	Everett Avenue	Byron Street	Middlefield Road	-	-	-	-	-	-	-	-	-	-	-	-
10/4/2017 - 10/5/2017	Everett Avenue	Middlefield Road	Fulton Street	645	568	23	3.5%	602	549	16	2.7%	1,247	1,116	39	3.1%

				Northbound/Westbound				Southbound/Eastbound				Both Directions			
Dates	Corridor	Begin	End	ADT	Light ADT	Heavy ADT	% Heavy	ADT	Light ADT	Heavy ADT	% Heavy	ADT	Light ADT	Heavy ADT	% Heavy
10/25/2017 - 10/26/2017	Middlefield Road	Palo Alto Avenue (west)	Palo Alto Avenue (east)	8,324	7,265	269	3.2%	9,851	8,573	374	3.8%	18,175	15,838	643	3.5%
10/25/2017 - 10/26/2017	Middlefield Road	Hawthorne Avenue	Everett Avenue	8,780	7,895	239	2.7%	9,174	7,982	252	2.7%	17,955	15,877	491	2.7%
10/25/2017 - 10/26/2017	Middlefield Road	Everett Avenue	Lytton Avenue	8,669	8,354	288	3.3%	8,130	5,634	235	2.9%	16,800	13,987	522	3.1%
10/25/2017 - 10/26/2017	Webster Street	Lytton Avenue	Everett Avenue	525	427	16	3.0%	799	688	21	2.6%	1,325	1,114	37	2.8%
10/25/2017 - 10/26/2017	Byron Street	Lytton Avenue	Everett Avenue	227	194	9	3.7%	473	436	13	2.6%	700	630	21	3.0%
10/25/2017 - 10/26/2017	Palo Alto Avenue	Middlefield Road	Fulton Street	206	193	6	2.9%	258	246	5	1.9%	464	439	11	2.4%
10/25/2017 - 10/26/2017	Fulton Street	Lytton Avenue	University Avenue	149	139	2	1.3%	244	228	6	2.5%	393	367	8	2.0%
10/25/2017 - 10/26/2017	Fulton Street	Lytton Avenue	Everett Avenue	176	160	7	3.7%	137	131	2	1.5%	314	291	9	2.7%
10/25/2017 - 10/26/2017	Guinda Street	Lytton Avenue	University Avenue	900	394	11	1.2%	854	393	11	1.3%	1,754	786	22	1.3%
10/25/2017 - 10/26/2017	Hawthorne Avenue	Byron Street	Middlefield Road	673	621	18	2.7%	2,216	2,133	35	1.6%	2,889	2,754	53	1.8%
10/25/2017 - 10/26/2017	Everett Avenue	Byron Street	Middlefield Road	485	441	20	4.1%	1,238	1,187	26	2.1%	1,723	1,627	46	2.6%
10/25/2017 - 10/26/2017	Everett Avenue	Middlefield Road	Fulton Street	644	597	9	1.3%	1,305	1,195	24	1.8%	660	598	15	2.3%

Dates	Corridor	Begin	End	Northbound/Westbound				Southbound/Eastbound				Both Directions			
				ADT	Light ADT	Heavy ADT	% Heavy	ADT	Light ADT	Heavy ADT	% Heavy	ADT	Light ADT	Heavy ADT	% Heavy
4/18/2018 - 4/19/2018	Middlefield Road	Palo Alto Avenue (west)	Palo Alto Avenue (east)	8,859	7,559	217	2.4%	8,548	7,124	320	3.7%	17,404	14,683	537	3.1%
4/18/2018 - 4/19/2018	Middlefield Road	Hawthorne Avenue	Everett Avenue	8,362	7,205	222	2.7%	8,237	6,699	383	4.6%	16,594	13,904	605	3.6%
4/18/2018 - 4/19/2018	Middlefield Road	Everett Avenue	Lytton Avenue	7,646	6,464	247	3.2%	8,214	7,297	342	4.2%	15,855	13,760	588	3.7%
4/18/2018 - 4/19/2018	Webster Street	Lytton Avenue	Everett Avenue	730	641	16	2.2%	427	368	10	2.3%	1,149	1,009	26	2.3%
4/18/2018 - 4/19/2018	Byron Street	Lytton Avenue	Everett Avenue	402	378	12	3.0%	284	228	8	2.8%	683	605	20	2.9%
4/18/2018 - 4/19/2018	Palo Alto Avenue	Middlefield Road	Fulton Street	238	225	7	2.9%	258	247	6	2.3%	492	471	13	2.6%
4/17/2018 - 4/18/2018	Fulton Street	Lytton Avenue	University Avenue	376	342	11	2.9%	201	176	8	4.0%	570	518	18	3.2%
4/18/2018 - 4/19/2018	Fulton Street	Lytton Avenue	Everett Avenue	140	126	7	5.0%	212	189	5	2.4%	347	314	11	3.2%
4/18/2018 - 4/19/2018	Guinda Street	Lytton Avenue	University Avenue	980	892	35	3.6%	1,038	933	60	5.8%	2,012	1,825	95	4.7%
4/18/2018 - 4/19/2018	Hawthorne Avenue	Byron Street	Middlefield Road	2,030	1,941	50	2.5%	410	371	16	3.9%	2,435	2,312	66	2.7%
4/18/2018 - 4/19/2018	Everett Avenue	Byron Street	Middlefield Road	1,231	1,166	21	1.7%	692	639	28	4.0%	1,917	1,805	48	2.5%
4/17/2018 - 4/18/2018	Everett Avenue	Middlefield Road	Fulton Street	568	507	21	3.7%	535	455	20	3.7%	1,099	962	41	3.7%

Table 37: Survey Responses

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
PRE-PILOT	1	2	1	1	Big traffic jams which will cause people to get out of the jam in various non-safe ways.	1	1	-	3	
PRE-PILOT	2	2	3	1	more bike lanes! People turn from Middlefield onto Lytton very fast.	1, 2, 4	1	-	1	
PRE-PILOT	3	1	1	1	Lane reduction on Middlefield will only serve to increase traffic on adjacent and parallel streets- we've already seen an increase of people seeking shortcuts or ways to avoid traffic on Middlefield by zooming through our neighborhood.	1, 2, 4	1	-	3	
PRE-PILOT	4	1	1	1	Cycling is dangerous with such fast cars. Everett Junction is a fatality waiting to happen. Crossing Middlefield (beg. At Everett) is difficult 7AM-9PM	1, 2, 4	1	-	1	
PRE-PILOT	5	1	1	1	Two left turn lanes off Lytton always make for collisions, speeding! Strange road markings before Palo Alto Ave.	1, 4	2	-	2	speed cameras = $$$ --> this is vital. 25mph = good 50mph =bad
PRE-PILOT	6	2	1	2		1	2	-	2	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
PRE-PILOT	7	1	1	1	speeding traffic from Willow Road, Menlo into Palo Alto as if it is a highway. Slowing down to turn into Hawthorne is an ordeal. Always afraid of the unaware driver behind you. Rear ending danger.	1	2	-	1	Q4- "no way" next to walking option Q6- It is now one lane EA- North South. It looks like a highway traffic starts speeding from Willow notwithstanding the upcoming bend in the road especially busy hours AM and PM. Map on reverse of letter- [Middlefield and Hawthorne intersection] Dangerous bend, stop sign needed. "Turning" accident site some drive order curb
PRE-PILOT	8	1	1	1	No shoulder. Two lanes on a narrow residential street.	1, 2, 4	2	-	1	
PRE-PILOT	9	1	1	1	Concerned traffic will be even slower (and people will be less careful b/c of stress and delay)	1	1	-	2	
PRE-PILOT	10	2	1			1	1	-	3	
PRE-PILOT	11	2	3	1	need to allow for better flow of traffic on main corridor such as this if going to contrive allowing more people work in PA.	1	2	-	2	Q6- Middlefield is a main thoroughfare- reducing lanes just pushed traffic to real neighborhoods. People buy on Middlefield with knowledge that it is a busy street.
PRE-PILOT	12	1	3	2		1	2	-	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
PRE-PILOT	13	2	1	2		1	3	-	3	
PRE-PILOT	14	1	1	1	Middlefield is very dangerous between Lytoon and Willow. I have witnessed too many accidents.	1, 4	1	-	1	Q5- I live on Fulton
PRE-PILOT	15	1	1	1	I think restricting Middlefield is a HUGE mistake. Middlefield will be completely gridlocked, and everyone will use Palo Alto as an alternatve making our neighborhood street dangerous.	1	1	-	2	
PRE-PILOT	16	2	2	1	Already the size of many accidents and high traffic	1	1	-	3	Q5- I live on a parallel road Q6- will have to see but I think could even be worse
PRE-PILOT	17	1	2	1	Motorists ignore cross-Middlefield left turn and straight restrictions.	1	1	-	3	
PRE-PILOT	18	3	1	1	left turn fear Hawthorne visibility	1	1	-	2	
PRE-PILOT	19	1	3	1	traffic moving too fast	1	1	-	2	
PRE-PILOT	20	1	1	1	I am worried about all the accidents at the corner of Middlefield and Everett	1	1	-	1	
PRE-PILOT	21	1	1	2		1, 2, 4	1	-	1	Q6- We're excited and think it's going to be a great at reducing traffic

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
PRE-PILOT	22	2	2	1	It's terrible. Don't know how to fix it but something is very broken. It's not safer. Pushing to 1 lane will just move the mess onto other streets.	1, 2	1	-	2	
PRE-PILOT	23	1	2		Traffic will back up both ways on Middlefield- this will cause more congestion.	1	2	-	2	
PRE-PILOT	24	2	1	1	I live on Middlefield. There is traffic congestion morning and evening and at the other times road is like a speedway with average speed 40mph+	1, 2	1	-	1	
PRE-PILOT	25	2	1	1	traffic getting in/out of driveway	1	2	-	2	
PRE-PILOT	26	2	1	2		1	1	-	1	
PRE-PILOT	27	2	2	1	I get on or off the stops of bus #DB often and worry can I continue to take the bus during conducting this test. (Bus DB running through Middlefield Rd between MPCL and University Ave)	1	1	-	2	[map on back] Fulton and Lytton- bus stops I often take
PRE-PILOT	28	1	1	1	Too fast traffic unsafe for cyclists and pedestrians, illegal turns	2, 4	2	-	1	Q5- occasionally Bryant
PRE-PILOT	29	3	1	1	There is lots of congestion at the rush hours. Many	1	1	-	3	Q1- which plan is being implemented

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
					accidents, speeding, and people making illegal left turns from Hawthorne and Everett					Q6- (not sure) if this will work, but it might be worth a try
PRE-PILOT	30	2	1	2	Lane reduction would push traffic into parallel streets and impact neighborhoods directly. That is unacceptable	1	1	-	2	
PRE-PILOT	31	1	3	2		2	1	-	1	
PRE-PILOT	32	2	3	2		1	2	-	2	
PRE-PILOT	33	2	4	2		1	2	-	3	
PRE-PILOT	34	1	3	1	Drivers entering from Everett and Hawthorne like to ignore stop signs at Middlefield. Stop "cut thru traffic" if you can cars all racing thru P.A. to get to Downtown Bridge	1	1	-	1	
PRE-PILOT	35	2	2	1	Cyclists. Condition of road by sidewalks- narrow	1, 3	1	-	3	
PRE-PILOT	36	2	1	1	Lots of accidents at Everett and Lytton. There should be a traffic light there!	1, 2, 3	1	-	3	
PRE-PILOT	37	1	2	1	Will force traffic to Guinda and Palo Alto Av. Already a problematic intersection- against this	1	1	-	2	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
PRE-PILOT	38	1	1	1	Pedestrian crossing is dangerous. Vehicles ignore the posted turn restrictions and cause frequent near-accidents	1, 2, 4	1	-	3	Q4- bike/walk "across" Q6- I think the proposal will create major gridlock on Middlefield and divert unacceptable flows to Fulton Guinda and Webster. The test will fail. I think the best answer is a barrier down the centerline of Middlefield (live Ravenswood at Alma), blocking left/cross traffic at Everett and Hawthorne!
PRE-PILOT	39	1	1	1	Yes. Narrower lanes are dangerous. It will increase traffic on residential back streets.	1, 2, 4	1	-	2	
MID-PILOT	1	1	1	1	Dangerous back-ups on Lytton. Drivers turning anyway. Very dangerous to drive out of or into Webster house. Lytton Gardens drive.	1	2	-	2	Too dangerous. Open up PA North more
MID-PILOT	2	1	3	1	All very good ideas. Only issue is leaving Menlo and coming into Palo A. at S Fra Creek bridge on Middlefield, when 2 lanes merge, warning arrows on road to be placed sooner like across from the Willows Market - easy to forget what is coming. Also, the lane	1	1	-	3	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
					reduction warning arrows at Univ. Ave. & Middlefield (arrows on the pavement) come too quickly - need more warning.					
MID-PILOT	3	1	1	2	Comment: We would be in favor of an additional pedestrian crossing at Palo Alto Avenue & Middlefield Rd.	1	1	-	2	
MID-PILOT	4	1	1	2		1,2,4	1	-	1	
MID-PILOT	5	2	2	1	Slows traffic	1	1	-	2	
MID-PILOT	6	1	3	1	Elimination of lanes causes problems. No turns on Hawthorne & Everett cause TREMENDOUS congestion on Lynton - cause air pollution	1	2	-	2	You have sent much of the traffic to Lytton. Unfair to residents!
MID-PILOT	7	1	1	1	High traffic volume prior to re-config. Dangerous pedestrian crossings.	1,4	1	-	1	
MID-PILOT	8	1	1	2		1	1	-	2	Traffic is much WORSE with the pilot project
MID-PILOT	9	1	1	2		1	2	-	1	
MID-PILOT	10	1	1	1	If there were an emergency, vehicles that need to move quickly down Middlefield, the barriers might impede them.	1	1	-	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
MID-PILOT	11	1	1	1	I live @ 125 Middlefield and people are always taking a left onto Middlefield from Hawthorne. They do U turns into the Southbound lane with a blind turn in front of it, drive through the crosswalk, etc. NO ONE is policing this and it is dangerous.	1,2,4	1	-	1	As long as they fix the problems with people taking left hand turns going North on Middlefield at Hawthorne and Everett
MID-PILOT	12	2	1	2		1	1	-	2	
MID-PILOT	13	1	1	1	Occasionally, some drivers continue to make a left onto Middlefield from Hawthorne at off peak hours (late night, early morning)	1,2,4	1	-	1	
MID-PILOT	14	2	3	2		2	1	-	3	
MID-PILOT	15	2	3	2		1	1	-	1	
MID-PILOT	16	1	2	2	It's a great pity that the layout precludes radar speed checks - people really hammer down there!	1	2	-	1	
MID-PILOT	17	1	1	2		1	1	-	1	
MID-PILOT	18	1	3	2		1	1	-	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
MID-PILOT	19	1	1	1	People are now making illegal u turns - turning around in people's driveways on Middlefield and driving the wrong way (brazenly) on Middlefield to avoid the barriers. If it's going to be enforced by police take it out.	1,4	1	-	3	Q6: It depends (re-coded as "Not Sure")
MID-PILOT	20	1	1	2		1	1	-	1	
MID-PILOT	21	1	1	1	People still taking left turns onto Middlefield around the barriers in the middle of the day. People not stopping for pedestrians	1,4	1	-	2	
MID-PILOT	22	1	2	1	1. Pollution 2. Speeding on side streets by twice as many cars. 3. Danger crossing the street. 4. Silly turn restrictions that are ignored	1	1	-	2	Doesn't "improve" a thing!
MID-PILOT	23	1	2	2		1	1	-	1	
MID-PILOT	24	1	1	1	High speed & too much traffic contributing to many accidents. This has been reduced since the "road diet".	4	2	-	1	
MID-PILOT	25	1	4	2		1	1	-	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
MID-PILOT	26	1	1	2	Huge improvement!	1,2	1	-	1	
MID-PILOT	27	1	3	1	Notice no bicycles and that is wise. Need sidewalks on both sides for Hawthorne / Childrone -> Willow Market	1	1	-	1	
MID-PILOT	28	1	1	2		1	2	-	1	
MID-PILOT	29	1	3	2		1,4	1	-	1	
MID-PILOT	30	1	1	2	Actually makes the area safer.	1	2	-	1	
MID-PILOT	31	1	2	1	Narrow lanes, heavy traffic.	1	2	-	2	
MID-PILOT	32	1	1	2		1	1	-	1	
MID-PILOT	33	1	4	2		1	1	-	1	
MID-PILOT	34	1	2	1	Lytton & Middlefield intersection is now very backed up. So many cars limit pedestrian & bike visibility. This is due to those yellow bumps.	1	1	-	2	
MID-PILOT	35	3	1	1	There are constant traffic jams along Lytton Ave and Middlefield Road - mainly in rush hours. It is very dangerous to cross these	1,4	3	-	2	P.S. I want to add the previous situation was better

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
					streets for pedestrians and to make a left turn on Middlefield Road for the cars					
MID-PILOT	36	1	3	2		1	2	-	1	
MID-PILOT	37	1	1	1	Traffic now blocks up on Lytton past Webster St. blocking our driveway and causing us to deal with noise/pollution at many times throughout the day and into the evening. The signal is so long at Lytton/Middlefield that we are in a near-constant traffic jam with cars idling right next to our windows.	1,4	1	-	2	Unless the problems on Lytton can be fixed
MID-PILOT	38	1	3	1	People are still making a left turn from Hawthorne Ave. to Middlefield Rd. ignoring the yellow batons and raised curbs.	1	1	-	2	We don't want traffic along Middlefield impeded. The smoother, the more people will take arterial streets.
MID-PILOT	39	1	1	1	I would like the ability to turn left onto Middlefield from Hawthorne & Everett outside of rush hours.	1	1	-		
MID-PILOT	40	3	2	1	One lane left turn on Lytton is too congested - backing up 2 blocks at rush hour. Difficult for us to drive in and out of garage on Lytton.	1	1	-	2	Needed: More emtral of traffic speed and recurring red lights along Lytton.

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
MID-PILOT	41	1	1	1	Traffic stay in place - emitting exhaust below me - between University & Lytton on Middlefield. It wasn't like this before. We are the center of the mess now! Vehicles rush on Lytton - East bound - to make the signal.	1,4	1	-	2	You have backed up the problem to our area!! Lytton is tougher to negotiate now. Entry and exiting Lytton Gardens is much tougher.
MID-PILOT	42	1	1	1	People still speed through during off-hours. A speed trap might help. Northbound Middlefield still isn't very safe for bicyclists, especially as they reach far end of Palo Alto Ave, where curb ramp is way off to the side. A few people still cut through the yellow center barriers to make left turns off of Hawthorne and Everett. Longer, permanent barriers would help.	1	1	-	1	
MID-PILOT	43	1	1	2	Much better with new reconfiguration. People are forced to turn instead of zipping across Middlefield. I've seen a few drive around barriers, but much better than with just signs.	1,4	1	-	1	
MID-PILOT	44	2	1	2		1	1	-	1	

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MID-PILOT	45	1	1	2	I was extremely concerned… am now satisfied with results of the pilot.	1,2,4	1	-	1	Q6: Am very much in favor of pilot configuration. (re-coded to "Yes")
MID-PILOT	46	1	1	1	I live in Lytton Gardens senior community. There are more than 100 cars in the underground garage. Since the project has been implicated, driving in an out of the garage from Lytton Ave with left turn became complicated and dangerous for senior drivers. They need to cross two lanes with heavy opposite traffic.	1	1	-	2	
MID-PILOT	47	2	4	2		4	2	-	3	
MID-PILOT	48	2	4	2		4	3	-	3	
MID-PILOT	49	1	1	1	I have occasionally seen cars make a left turn onto Middlefield in spite of the barriers!	1,4	1	-	3	
MID-PILOT	50	2	4	2		1	2	-	1	
MID-PILOT	51	1	1	1	High speed traffic. Volume of traffic. Difficulty turning toward Menlo increases risk.	1	1	-	1	I assume you mean continued configuration of existing pilot.

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					Traffic backup at Willow makes above worse.					
MID-PILOT	52	1	2	2		1,2	1	-	1	
MID-PILOT	53	1	1	1	This configuration feels much safer. Wider lanes and better visibility both improve safety. I see cars going slower and much less aggressive behavior.	1	1	-	1	
MID-PILOT	54	1	1	2		1	2	-	2	
MID-PILOT	55	1	1	2		3,4	1	-	1	
MID-PILOT	56	1	1	1	The turn restrictions at Hawthorne and Everett sometimes result in people making unsafe u-turns. Otherwise it has seemed remarkably effective in promoting safe speeds and safe behavior.	1,2,3	2	-	1	
MID-PILOT	57	1	2	2		1	2	-	2	
MID-PILOT	58	1	1	1	You have push all traffic to Lytton. I live in a first floor apt on Lytton between Middlefield & Webster. Noise, fumes, crowding, speeding	1,4	2	-	2	It's only safe for those on Middlefield - not those on Lytton who are far less safe! There are 600 people (all seniors, many handicapped)

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
					are unbearable. Often we cannot exit our Lytton driveway due to congested traffic.					living on the University side of Lytton. This situation need to at least go back to where I was. Traffic will only increase. We walk, use walkers, and wheelchairs. We don't add a lot to traffic!
MID-PILOT	59	2	2	1	1. Cone markers create lanes that are too narrow. 2. Many drivers are crossing the double yellow lane lines. 3. Drivers are using residential driveways to turn to change their directions as they can't turn left at Middlefield when East on Everett	1,4	2	-	2	
MID-PILOT	60	1	1	2	Love love love the current configuration! *Noise is way down! Previously I couldn't walk, bike, or cross without being afraid.	2,4	1	-	1	So happy with this project!
MID-PILOT	61	1	2	1	People driving across Middlefield in crosswalk instead of turning right	1	1	-	1	
MID-PILOT	62	1	1	1	The left turn onto Everett etc. by cars going N on Middlefield gets clogged - better to have no turn// also confusing to anticipate left turn lanes, so cars cut in	1	1	-	3	

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					(when going North on Middlefield) I also see MANY cars disobeying no right turn in morning when going South. Again better to block Everett from turns					
MID-PILOT	63	1	1	1	Having only one lane on Middlefield causes Lytton to back up because everybody is trying to turn left on Middlefield to go to Willow. People frequently run the light at Webster and cross into the wrong lane to try and get around traffic.	1	1	-	2	
MID-PILOT	64	1	1	1	I've heard their concerns, but what's happened is Lytton Ave (my street) becomes over-congested, cars race down the street from Middlefield to beat the light on Webster. This a safety/noise issue.	1	1	-	2	
MID-PILOT	65	1	1	2	Not a safety concern, but traffic concern. We don't like the no right turns from Middlefield to Hawthorne & Everett. Combined with one lane traffic, it can add five	1	1	-	2	

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					minutes for us to get home as we live just off of Hawthorne.					
MID-PILOT	66	1	3	2		1	1	-	1	
MID-PILOT	67	3	2	2		1	3	-	1	
MID-PILOT	68	1	3	1	With limited access from Lytton to Middlefield traffic backs up for blocks on Lytton during rush hours. Difficult to enter Lytton from cross streets and driveways	1	3	-	3	
MID-PILOT	69	1	3	2		1	2	-	1	
MID-PILOT	70	1	2	2		1,4	1	-	1	
MID-PILOT	71	1	2	1	Previous traffic was too fast with dangerous land changes before. I am a physician at PAMF and have been a responder at several accidents at our corner. Hawthorne & Middlefield. The situation, accidents have significantly reduced, since you have installed this project. We are very happy with this!	1,2,4	1	-	1	

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MID-PILOT	72	1	3	2	And we had no safety concerns prior to the pilot project. Traffic gets so backed up now that there will be fewer higher speed accidents.	1	1	-	2	
MID-PILOT	73	1	1	1	Firstly: huge improvement from before! Secondly, if anything can be done to either widen or highlight (perhaps with green paint) the bike lane, that would be greatly appreciated. Thanks for your great work guys!	1	1	-	1	
MID-PILOT	74	1	1	1	Very dangerous	1,4	1	-	1	Absolutely
MID-PILOT	75	1	2	2		1	1	-	1	
MID-PILOT	76	1	3	2		1	1	-	1	
MID-PILOT	77	2	1	2		1	1	-	2	
MID-PILOT	78	1	1	1	As I stated in response to the previous survey, the change has merely pushed more traffic on to the formerly quiet neighborhood streets. We now have frustrated drivers speeding thru our neighborhood!	1,2,4	1	-	2	

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MID-PILOT	79	1	1	1	The lane reduction is causing more traffic than before!! It's harder to cross Middlefield while on foot and the traffic buildup is horrendous during commute hours. I beg please remove it!!	1,4	1	-	2	
MID-PILOT	80	1	1	1	Back up of the traffic from Menlo causing great increase in cut through traffic on our block	1,4	1	-	3	
MID-PILOT	81	1	3	1	The backups on Lytton of cars waiting to turn left is unhealthy and long. Engines idle, lines exist where none were before. This is no good.	1	2	-	2	
MID-PILOT	82	2	5	2		1,4	1	-	1	
MID-PILOT	83	2	2	1	Lanes are very narrow care merging from Willow Road intersection to Palo Alto from two to one lane need more warning. You have caused traffic jams from University intersection to Lytton Intersection. Very difficult for residents.	1,4	1	-	2	
MID-PILOT	84	1	2	2		1,4	1	-	1	

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MID-PILOT	85	1	1	1	Everyday I witness multiple violations sometimes 3 within 10 seconds. I have never seen the PA PD monitor this area. It's very dangerous for people to drive around the barriers.	1	1	-	3	
MID-PILOT	86	1	1	2		1	2	-	1	
MID-PILOT	87	1	1	1	I often cross Middlefield on Everette and while the new barriers are very helpful there are still some drivers going eastbound on Everett who drive through the pedestrian crosswalk at Middlefield.	2	2	-	1	It's working well
MID-PILOT	88	1	1	2	The current set up is perfect. I feel so much safer now crossing the street, making a left turn on Middlefield to go home. Thanks!	1,4	1	-	1	
MID-PILOT	89	1	3	2		1	1	-	1	
MID-PILOT	90	2	3	2		1,2	1	-	2	Please go back to other configuration
MID-PILOT	91	1	2	1	Some people continue to turn left going around the lane markers from Everett	1	1	-	1	This closure is inconvenient for us, but if it reduces accidents in this area we are all for it. Thanks!

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MID-PILOT	92	2	2	1	Emergency vehicles are so frequent that driving often seems hazardous.	1	1	-	2	
MID-PILOT	93	1	2	1	Accident & health safety. Long traffic backup on Lytton extend thru light on Webster causing increased air pollution from idling affecting Webster House & Lytton Gardens senior citizens (600) in one sq. block. Impatient, risky driving. Dangerous turns from Byron to Webster. Auto exit from Witt. negatively impacted. Emergency vehicles impeded. Afternoon traffic build up begins at 2:30 and can extend to 7 or after. Light on Middlefield at Lytton too long.	1	1	-	3	
MID-PILOT	94	1	1	2		1	1	-	1	
MID-PILOT	95	1	1	1	As a 34-year resident, I applaud efforts to reduce speeds & accidents. We have more traffic on Byron 200 block as confused motorists speed by. Biggest safety concern - drivers two DISREGARD barriers and drive	1,2,4	1	-	1	

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					around them in the opposite traffic lane. SO DANGEROUS! TICKET THEM!					
MID-PILOT	96	1	2	2	People seem to drive fast through the corridor and side streets to get through P.A. This seems unsafe for pedestrians and other traffic.	1	2	-	2	
MID-PILOT	97	2	2	1	Speed of cars seems slower. Value seeing bicyclists along road and people using Everett crosswalk. Absolutely fewer accidents.	1,4	1	-	1	
MID-PILOT	98	1	1	2	The backups on Middlefield and [from] this project will increase traffic on the side streets.	1,4	1	-	1	
MID-PILOT	99	1	1	1	People are making illegal U-turns and this needs to be enforced. The project improved safety a lot from the original two-lane configuration.	1	1	-	2	
MID-PILOT	100	1	1	1		1	2	-	1	
MID-PILOT	101	1	3	2		1	1	-	1	
MID-PILOT	102	1	1	2		1	1	-	1	

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MID-PILOT	103	1	2	1	Increase traffic at [Lytton] Ave.	1	1	-	2	
MID-PILOT	104	1	2	2	The pilot project makes this stretch much safer.	1	2	-	3	Q6: Did you mean additional lane reductions?
MID-PILOT	105	1	1	2		1,4	1	-	1	Q6: It made huge difference for the better! Thanks! Additional comment: P.S. For some reason trucks now travel more often on Hawthorne?!
MID-PILOT	106	2	2	2		1	2	-	2	Additional comment: What is the purpose of the project? How are you going to measure its success or failure? What precipitated the project?
MID-PILOT	107	1	2	1	Large size trucks turning from Middlefield to Hawthorne block the Menlo bound thru traffic. Also center lane marking unclear from opposing directions (i.e. left turn lanes).	1,2,4	1	-	1	Q5: To avoid Lytton Middlefield lights going south on Guinda. Q6: [Yes] but my wife disagrees (email removed for privacy)
MID-PILOT	108	2	3	2		1,4	1	-	1	
MID-PILOT	109	1	3	2		1	2	-	3	
MID-PILOT	110	1	1	1	Now some cars are making unsafe U-turns to get around the barriers that prevent them	1	1	-	1	Q6: I live on Middlefield and it's a little harder to pull out of my driveway. But overall, I think it's safer.

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					from turning left from Hawthorne or Everett.					
MID-PILOT	111	1	3	2	I love the changes at Middlefield and Everett. I usually walk downtown several times a week. Now I can cross Middlefield safely using the new pedestrian crossing at Everett.	4	1	-	1	Q2: Walk across Middlefield daily [; travel] weekly by car. Q5: walk Q6: I like the current changes Additional comments: Trying to cross Middlefield Road on foot before the changes was very dangerous. Drivers from downtown on Everett used to make left turns onto Middlefield without watching for pedestrians.
MID-PILOT	112	1	1	1	I live at [address removed for privacy]. My neighbor and I are left out of the convenient turn lane. Also with the lane merge in front of the house there is honking all day long.	1,2,4	1	-	1	Q6: [Yes] if my house gets a turn lane!! Extend turn lane to Palo Alto Ave.
MID-PILOT	113	1	2	2	[Illegible] at Hawthorne and Webster. It is inconvenient for me when I go north - I must drive 2 blocks south to Lytton to make the left turn on Middlefield.	1	1	-	3	
MID-PILOT	114	2	3	1	I still see cars turning left onto Middlefield from Hawthorne. They turn left onto oncoming traffic and then move to the	1	1	-	1	

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					right lane. It's very disturbing and dangerous.					
MID-PILOT	115	1	3	2		1	1	-	1	
MID-PILOT	116	1	1	1	Please allow left turns onto Middlefield again. Disallowing them is naïve, inconvenient, and stupid. This whole project is a waste of money devoted to the fantasy that Palo Alto is a sleepy suburb. It's not. Get over it.	1	1	-	2	
MID-PILOT	117	1	1	2		1	2	-	2	
MID-PILOT	118	1	2	1	Hard to see when you cross into Palo Alto Ave. from Middlefield.	1,2,4	1	-	1	
MID-PILOT	119	1	1	1	Due to traffic back up from the lane reductions, cars are cutting through the neighborhood in the morning. I regularly see multiple cars turning left on Middlefield onto Palo Alto Ave. and then racing down Fulton St. The opposite happens in the evening (Fulton out through to P.A. Ave).	1	1	-	3	Q6: Maybe - There needs to be other controls - Maybe no left turn onto Palo Alto Ave. in the morning (7-10 AM). [response recoded from no response to not sure].

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MID-PILOT	120	1	1	1	More bike lanes! Better ped. [crossing] times at Lytton and Middlefield.	4	1	-	1	
MID-PILOT	121	1	3	2		1,4	1	-	1	
MID-PILOT	127	1	1	1	Despite the signs and barriers, drivers on both Hawthorne and Everett still go straight across or turn left by jogging to the right around the barrier then jogging left or turning left.	1,4	1	-	2	Q1: …I didn't realize my block would be affected changing 2 straight lanes in to 1 left turn lane and 1 straight lane. Q2: morning, mid-day, and evening Q5: I travel northbound on Fulton when there is traffic and southbound on Guinda when I can't back out to go south. Q6: I am completely in favor of improving traffic safety, but too many drivers on Hawthorne and Everett are dangerously determined to go straight across or left on Middlefield for me to feel this is an improvement. I think it slows traffic down through congestion, not better safety. Now, southbound Middlefield is backing up on a regular basis. This configuration negatively impacts me because I now have to wait 1 or more light

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										cycles to get out of my driveway. I've always had to back out of my driveway. Backing out is more dangerous now because the lane going straight (north) tends to back up while the left-hand turn lane on Lytton doesn't, so cars in that lane drive fast. If I can't back out into just the north-bound lane (because drivers won't give me room), it creates a blind situation where a car turning left could hit me. It's now almost impossible for me to back out across both lanes to go south on Middlefield. Instead, I have to turn right on Lytton (because it's also difficult to get in the left-hand turn lane now -see above blind spot problem), turn right on Guinda (because it has a traffic light at University and Fulton doesn't) and then head south on Guinda until I get to Homer to go west or turn back on to Middlefield to go south. Whether I'm coming from the north or south, getting in my

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										own driveway is more difficult. The constant congestion on northbound Middlefield on my block means I have to wait an extra light cycle or 2 to turn right into my driveway. Turning left is also a problem. Right now, if everyone was driving legally and not yielding right of way, I could only get in to my driveway heading north and would have to wait minutes to back out. Thankfully, drivers allow me to back out even though they have right of way, but they do it when the northbound light is red. I'm forcing my way into traffic which is not safer. If you ask me if traffic is "calmer" on the last 4 blocks. I think it is, mainly because it's congested. I don't think it is safer or will be until there are consequences for turning illegally. I'm sorry I haven't been able to pay attention to all the decisions done on this project, so you might have already considered and dismissed this,

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										but would it help to go back to 4 lanes and put lights at Hawthorne and Everett with protected turn arrows and red light cameras? I know this would be more expensive, but there would be consequences for turning illegally and protection to turn. Other cities have block after block of traffic lights with success. I won't pretend to have all the answers, understand all the issues or even know what questions to ask, but this current configuration doesn't work for me and my wife. Can we please try another one?
END-PILOT	1	1	1	2	-	1	5	1	1	Left turn from Hawthorne on Middlefield could be open during off hours.
END-PILOT	2	2	1	2	-	1	1	3	3	I am usually in a car on Middlefield. I live a block West from there. I suspect it is sager now for bikes and pedestrians but for cars I don't think it matters. I don't walk there often so I am not a good person to ask about that.

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END-PILOT	3	1	1	1	-	1	1	1	1	Please keep the safety measures. Have made a big difference. Love it!
END-PILOT	4	1	1	1	-	1	2	1	1	Hawthorne and Middlefield turns into a complete mess if you remove the safety measures.
END-PILOT	5	1	2	1	-	1,2,4	1	1	2	While it has cut down on accidents at Middlefield-Everett, it has drastically increased speeding cut-through traffic on our block of P.A. Ave from Middledfield to Fulton to Everett to Guinda. A curvy block with near head on accidents daily (rest of text is cut off)
END-PILOT	6	1	1	1	-	1	1	2	3	LOTS more traffic on Hawthorne, Everett, Fulton, etc; Long, long lines of traffic on Middlefield and Lytton, ugh. Multiple violations everywhere everyday!! * Better times lights on Lytton would help East/West traffic. Why no enforcement anywhere?
END-PILOT	7	1	1,2	1,2	-	1	1	3	2	The project created extreme conjection of the area,

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										especially at Lytton and Middlefield. Huge inconvenience!!!
END-PILOT	8	1	2	2	-	1,2	1	1	1	Easier to enter/exit our driveway
END-PILOT	9	1	1	2	-	1		2	2	"Less is more" for left turns cars can use bike lanes to keep traffic moving
END-PILOT	10	1	2	1	-	1	1	1	1	It funnels heavy traffic into safer channels
END-PILOT	11	1	1	1	-	1,2,4	1	1	1	The neighborhood is much safer now. Speeding and accidents have decreased substantially. Thank you so much
END-PILOT	12	1	4	2	-	1	1	3	1	
END-PILOT	13	1	4	2	-	1	1	1	1	seems good
END-PILOT	14	1	1	2	-	1,2	2	1	1	The changes have ahd a marked positive impact on traffic speed and safety for drivers, bikers, and pedestrians. While backups persist they are much easier to live with given the new configuration.
END-PILOT	15	1	1	1	-	1	1	2	1	We live at Middlefield and Everett. People speed down Everett now. It's not safe.

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END-PILOT	16	3	1	1	-	1	1	1	1	
END-PILOT	17	1	3	1	-	1,2,4	2	3	3	See enclosed note
END-PILOT	18	1	1	1	-	1	1	1	1	
END-PILOT	19	1	1	2	-	1	1	1	1	
END-PILOT	20	1	1	2	-	1,4	1	3	2	These measures impair residents from full use of Middlefield while facilitating cut thru traffic to Alma. Please removed all diversions. Keep only ped zebra crossings.
END-PILOT	21	1	1	1	-	1,2,4	1	1	1	Better for biking and the no left turn onto Middlefield from Everett and Hawthorne a great improvement.
END-PILOT	22	1	2		-	1	1	2	2	I can't see that it has made any difference. How are you measuring whether not it is working?
END-PILOT	23	1	3	2	-	1	1	1	1	
END-PILOT	24	1	1	2	-	1	2	1	1	It works much better than before
END-PILOT	25	1	2	2	-	1	2	1	1	This project has reduced speeding. Traffic flows better.

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END-PILOT	26	1	1	1	-	1	1	2	2	One thing necessary. More posting making drivers aware of lane change far left turn only in lane at Lytton- Many drivers making lan change after (text cut off)
END-PILOT	27	2	2	2	-	1	1	1	1	Center turn lane improves traffic flow.
END-PILOT	28	1	2	2	-	1	1	1	1	I think it has helped the intersections become less chaotic
END-PILOT	29	1	1	1	-	1,4	2	2	2	People make unsafe lane changes all the time now. There is too much of a bottle neck now! Traffic is backed up a lot of the time on Middlefield.
END-PILOT	30	1	2	2	-	1,4	1	1	1	It's quieter and safer. I travel an extra 3 blocks and it's worth it. Thank you.
END-PILOT	31	1	1	1	-	1	1	2	2	Single lane slows and congests. People are making more dangerous turns to go North on Middlefield. Traffic gets backed up a lot more on Middlefield, very congested.
END-PILOT	32	1	3	2	-	1	1	1	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	33	1	1	2	-	1	1	1	1	It is safer and stops traffic cutting thru on Hawthorne where I've lived for 30 years.
END-PILOT	34	1	2	2	-	1	1	1	1	I live on Webster St. in Downtown North, so the project has been a siginificant inconvenience. However, realistically we need to contain for safety reasons so I support it going forward.
END-PILOT	35	1	1	1	-	1,2,4	1	2	1	I like the center lane but in my house does not have it or my neighbor!! It is now ridiculous to try to get out of my house. If I am coming from Alma or University (text cut off)
END-PILOT	36	2	2	2	-	1	1	2	3	
END-PILOT	37	1	1	2	-	1	1	1	1	Before the project there was an accident at Middlefield and Everett about once a week.
END-PILOT	38	1	1	1	-	1,4	1		1	Need to monitor for people driving over the barriers-making illegal U-Turns
END-PILOT	39	1	1	1	-	1	1	2	3	
END-PILOT	40	1	4	2	-	1	2	2	3	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	41	2	3	2	-	1	1	1	1	More even flow of traffic
END-PILOT	42	1	3	1	-	1	1	1	1	slowing speeders down
END-PILOT	43	1	2	2	-	1	1	2	2	Pain to not be able to turn left off the side streets. It congests the main lights even more.
END-PILOT	44	1	2	1	-	1,2,4	1	1	1	Current measures have greatly reduced congestion in the area. A full median would be an improvement in my opinion.
END-PILOT	45	1	1	1	-	1	1	1	1	It's a huge improvement left turns onto Middlefield used to be so hazardous! Please keep this!
END-PILOT	46	1	3	2	-	1	1	3	1	Appears to show incoming traffic from cross-streets
END-PILOT	47	1	1	1	-	1	1	1	1	Reduced number of accidents, cars driving slower, safer for pedestrians and bicycles
END-PILOT	48	1	3	2	-	1,2,4	1	1	1	+protected left turn lanes onto Everett/Hawthorne! + crosswalk along Everett!
END-PILOT	49	1	1	2	-	1,2	1	1	1	Has led to increase of cars/vehicles on side streets-ours 'Guinda'
END-PILOT	50	1	3	1	-	1	1	1	1	I think the traffic is slower although there is s lot of noise

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
										from man cars. I see no way to reduce traffic.
END-PILOT	51	1	1	2	-	1	1	1	1	- slows down speeding cars - manages flow much better for increased # of cars in town - cut through on Hawthorne & (text cut off)
END-PILOT	52	1	2	2	-	1	1	1	1	I think it has created more safety. It has also created more traffic bottlenecks. And it it difficult to leave the neighborhood and go north due to no left turn.
END-PILOT	53	2	3	2	-	1	1	3	1	
END-PILOT	54	1	2	1	-	1	1	2	2	This project creates dangerous conditions for drivers from senior communities Licon gardens and Webster house
END-PILOT	55	1	1	1	-	1	1	2	2	focus excess traffic on parallel streets and other streets due to longer delays and queing on Middlefield. Unsage traffic conditions on these other schools.
END-PILOT	56	1	1	2	-	1	2	1	1	Until a better plan comes along.

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	57	1	3	2	-	1	2	1	1	Accident rates have been significantly reduced, safer for bikes too!
END-PILOT	58	1	1		-	1	1	3	1	how to limit spillover traffic from univ. and Middlefield to P.A. Ave Neighborhood
END-PILOT	59	1	1	1	-	1	1	3	2	Traffic now backs up on Lytton Ave causing constant traffic jams at Lytton/Webster
END-PILOT	60	1	2	2	-	1,4	1	2	2	The project is a waste of my tax dollars. Palo Alto is not a sleepy suburb; give up on your dreams. If you don't like Palo Alto, sell your overvalued house and cash out. These "safety" improvements are nothing more than inconvenient NIMBYism
END-PILOT	61	1	1	2	-	1,2,4	1	1	1	Safer. Has NOT slowed down traffic.
END-PILOT	62	1	3	2	-	1	1	3		I live at 401 Webster and my apr. faces Lytton. I call Lytton from Webster to Middlefield Co2 Alley. So noisy cars speed between lights. I am so sorry I moved here. Some knocked off fire hydrant in January-- still not replaced, you (text cut off)

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	63	1	1	1	-	1,2	2	1	1	Feels safer! Traffic flows steadily and well
END-PILOT	64	1	1	1	-	1	1	1	1	It has improved safety. Note: people do drive around the barriers at Everett and Middlefield.
END-PILOT	65	2	2	2	-	1	1	1	1	we need a walkway to the Willow Market. If you want to improve traffic increase walking to local stores.
END-PILOT	66	1	1	2	-	1	1	2	2	Very inconvenient to not be able to make left turns evenings or on weekends when no cars are aroung. Prohibiting turns during busy periods was fine. Crosswalks at turning points is also unexpected and has almost caused several accidents!
END-PILOT	67	1	1	1	-	4	1	1	1	Crosswalks are much safer. However, when I observe the crossing of Palo Alto Ave to Woodland Ave. I see many bikes and pedestrians unprotected from quickly moving cars. Please protect this crossing as well.
END-PILOT	68	3	3	2	-	1,3	1	2	2	It is a hassle not being able to turn onto Middlefiels from

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
										certain streets (e.g. left onto Middlefield from Hawthorne)
END-PILOT	69	1	1	2	-	1	1	1	1	
END-PILOT	70	1	2	2	-	1	2	1	1	The side streets enties are now much safer (and no more entering out in the middle of Middlefield, blocking traffic. Overall result, much smoother ride on Middlefield
END-PILOT	71	1	1		-	1	1	1	1	Brilliant design!!! The Middlefield-Everett intersecionț is no longer littered with accidents! Also, excellent dedicated right-turn lane onto Homer (text cut off)
END-PILOT	72	1	2	2	-	1	1	1	1	Easier to make a left turn from Middlefield both north and southbound. Some like less congestion. Lytton, however, is a mess.
END-PILOT	73	1	3	2	-	1	1	1	1	This is the first time since implementing traffic calming measures that they have worked!!! Keep going!
END-PILOT	74	1	1	2	-	1	1	1	1	It seems much safer to me and prevents people from doing stupid things to cross Middlefield (mostly) (have seen a few drive around barriers)

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
										Maybe add blinkers to crosswalk if possible. Cars don't stop.
END-PILOT	75	1	2	2	-	1	1	3	3	
END-PILOT	76	1	1	2	-	1	1	1	1	A friend who lives on Middlefield says it's cut down on accidents. It's working.
END-PILOT	77	1	1	1	-	1,2,4	1	1	1	The signs too large and not street friendly! Look like highway. Remove please!
END-PILOT	78	1	1	2	-	1,2,4	2	1	1	I no longer fear for my life when walking on the sidewalk or gardening. There has been a HUGE reduction in crashes.
END-PILOT	79	1	2	1	-	1	1	1	1	Live 2 blocks away- even though not making L turn is a pain, I hear a lot fewer sirens in the PM
END-PILOT	80	1	3	2	-	1	1	1	3	Seems to be forcing traffic onto my street (Guinda) at rush hour. People run strop sign- many close calls.
END-PILOT	81	1	1	1	-	1,4	1	2	1	Sidewalks excellent. Congestion horrendous around Middlefield, Willow, and Lytton

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	82	1	1	1	-	1,2	1	3	2,3	I live on 400 block Fulton. It has greatly increased traffic on our block
END-PILOT	83	1	1		-	1	1	3	3	The merge going North between University and Lytoon doesn't provide enough distance.
END-PILOT	84	1	1,2	1	-	1	1		3	One dangerous spot is at Middlefield and Embarcadero--too little length left turn lane- r turn and thru traffic block left lane from getting to the light. Also, traffic only is horrendous between Tasso and Middlefield- (text cut off)
END-PILOT	85	3	2	2	-	1	1	1	1	I live on Hawthorne and Byron St. Traffic was terrible and many accidents at Haw and Middlefield and Everett. It's huge improvement!!
END-PILOT	86	1	2	2	-	1	1	3	1	I thought it might be annoying to have to turn right and go around a block but it's actually nice not to have the stress or longer wait of crossing both directions of traffic at once.
END-PILOT	87	3	2	2	-	1	2	1	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	88	1	1	1	-	5	1	1	1	
END-PILOT	89	1	1	1	-	1	1	1	1	Fewer accidents BUT people do bonehead maneuvers to get around proxy barriers including head on into opposing traffic. Please make this harder or impossible. My street traffic as increased because of this project but slwing speeds on Middlefield has been successful.
END-PILOT	90	1	1	2	-	4	1	2	1	Complete the project! Hope! Hope!
END-PILOT	91	1	3	1	-	1	1	2	2	Speeding on side streets- zero enforcement- excess pollution and traffic backups, etc.
END-PILOT	92	1	3	2	-	1	1	1	1	
END-PILOT	93	1	1	1	-	1	1	1	1	My neighbors can back out of their driveways more safely. However, northbound bicyclists abruptly have to merge into auto traffic at P.A. Ave. Also, central barricade against left turns off Everett and Hawthorne need to be longer and more robust. Still lots of illegal left turns- at harrowing risk.

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	94	1	1	1	-	1,2,4	1	1	1	The pilot program reduce the amount of thru-traffic and commuter on neighborhood streets
END-PILOT	95	1	2	1	-	1	1	3	3	The changes are very inconvenient, especially at lowtraffic times when I could easily turn left off Byron onto Middlefield but now cannot. But isf you have data showing that fewer people are being hurt or killed in accidents then I'm fine with the inconvenience. Please share the data. Thanks.
END-PILOT	96	1	1	1	-	1	1	2	2	I live here!! Middlefield and Menlo Park needs 2 lanes! Pinching it off at University is CRAZY!! You made (can't read) at Lytton Gardens very difficult!!!
END-PILOT	97	1	1	2	-	1	1	1	1	It seems to be safer, by far, and traffic seems to flow better
END-PILOT	98	1	1	2	-	2,4	1	1	1	There has not been a single car crash on my neighbor'ss lawn. At least monthly we would have to run out the door to help witness at the scene of an accident. (text cut off)

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	99	1	1	1	-	1	1	1	1	It definitely improved safety. The illegal u-turns happened very often which needs to be enforced.
END-PILOT	100	3	3	2	-	1	1	2	3	
END-PILOT	101	1	1	1	-	1,2	1	2	2	I see people confused making u-turn around barries, Traffic on Everett and Fulton due to detour.
END-PILOT	102	1	1	1	-	1,2,4	1	1	1,2	Middlefield does seem to be safer but other streets have become more dangerous! Fulton and Lytton for example.
END-PILOT	103	1	1	2	-	1,2,4	1	1	1	safer turns off Middlefield
END-PILOT	104	1	1	2	-	1	2	1	1	It is a safer configuration with no accidents that I am aware of.
END-PILOT	105	1	3	2	-	1	1	1	1	They (the measures) seems to have decreased public accidents at corner. It is easier to get out of driveway.
END-PILOT	106	1	2	1	-	1	2	2	2	Cars back up on Lytton- traffic does not flow. Gas fumes sped into lower level of Webster House- this is a terrible idea- ineffective
END-PILOT	107	2	1,2	2	-	1	2	2	1	The new lane configuration sensibly stows thru traffic

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	108	1	3	2	-	1,4	1	1	1	
END-PILOT	109	1	1	1	-	1,4	1	2	2	Now it's very difficult to drive along Middlefield Rd. and Lytton Ave. to go through and to make right or left turns because of severe traffic caused by the new project. Moreover, it is unsafe both for cars and pedestrians. Formerly it was better.
END-PILOT	110	1	1	2	-	1,4	1	1	1	1. "reduction" (elimination of certain kinds) of accidents (significant) 2. traffic at better pace-fewer speeding cars 3. "bike lane" is a plus. Overall-increased safety
END-PILOT	111	1	2	1	-	1	1	3	2	I have witnessed on cen(?) almost daily basis people ignoring the new features and simply going around.
END-PILOT	112	1	1	2	-	1	1	1	1	
END-PILOT	113	1	1	2	-	1,4	1	2	2	The project has significantly increased traffic/congestion during commute hours whih makes for angry drivers and more likelihood for accidents!

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	114	1	1	2	-	1,2,4	1	1	1	Now that people have adjusted to the changes, it is safer to both driver and walk in the area.
END-PILOT	115	1	2	2	-	1	1	1	1	no accidents, controlled traffic flow
END-PILOT	116	1	1	2	-	1	1	1	1	just seems far safer
END-PILOT	117	1	3	2	-	1	2	1	1	
END-PILOT	118	1	1	2	-	1	1	2	2	too many restrictions and long paths to go N. on Middlefield wastes time and gas. We live at 228 Byron St.
END-PILOT	119	1	1	2	-	1	1	2	3	I think traffic is slower and there are more and longer backups (at least when I am on Middlefield North); slowness and backups may make things safer, but they also create slow traffic and backup/congestion.
END-PILOT	120	1	3	2	-	1	2	2	3	I didn't notice a safety problem before.
END-PILOT	121	1	1	1	-	1,2,4	1	1	1	Remarkavle improvement to safety for both pedestrians and cars. I've noticed many cars try to go arount the barriers, FYI.

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	122	1	2	2	-	1	2	1	1	seems like significant improvement. Less fighting for lanes both directions.
END-PILOT	123	1	1	1	-	1	1	1	1	Although these safety measure are inconvenient for us the safety measures are mostly working, (although sometimes drivers on Everett or Hawthorne turn left onto Middlefield by driving around the safety poles), so they should probably remain in place. We do not know how they impact traffic back up. We have more (text cut off)
END-PILOT	124	1	1	1	-	1	1	1	1	this has been a big improvement
END-PILOT	125	1	1	1	-	1,4	1	1	1	Improving safety on Middlefield has reduced safety on adjacent streets as it has forced traffic elsewhere. Traffic has increased on Fulton St. by a facto of 10x
END-PILOT	126	1	1	2	-	1,4	1	1	1	Suggestion to add speed bumps to slow truths stop signs on crosswalks
END-PILOT	127	1	1	1	-	1	1	1	1	Please- someone needs to monitor people taking left turns from Hawthorne and Everett. They go through the

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
										crosswalk, around the median and even go in the southboudn lane to head north. This is extremely dangerous. Also no one stops for the crosswalk.
END-PILOT	128	1	1	1	-	1,2	1	2	2	Traffic is much worse. Also, please elminate the no right onto Everett and Hawthorne in the mornings which can add 5 minutes to my time getting done in the morning.
END-PILOT	129	1	1	2	-	1	1	2	1	
END-PILOT	130	1	1	2	-	1,4	1	3	2	It inconveniences the residents that are no longer able to turn left on Middlefield. Also a crossing at Palo Alto Ave would help safety.
END-PILOT	131	1	2	1	-	1	1	3	3	People drive over dividers to make illegal turns. Turn lanes very narrow-- no lefts ignored.
END-PILOT	132	1	1	2	-	1	1	3	3	I would like to see safety data rather than rely on personal anecdotal observations
END-PILOT	133	1	1	2	-	1	1	1	1	
END-PILOT	134	1	1	1	-	1	1	1	1	The number of accidents at Everett and Middlefield have dropped dramatically.

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	135	1	2	2	-	1	1	2	1	seems fine
END-PILOT	136	1	2	2	-	1	1	3	2	
END-PILOT	137	1	2	1	-	1	1	1	1	you are creating more traffic jams
END-PILOT	138	1	2	2	-	1	1	2	3	
END-PILOT	139	1	1	2	-	1,4	1	2	2	We feel strongly that the pendulum has swung too far away from having Middlefield act as an efficient artenal. Please allow a left out of Downtown North from either Everett or Hawthorne, add a lighted crosswalk at either Everett or Hawthorne and re-program the Lytton/Middlefield stoplight to (text cut off)
END-PILOT	140	1	1	1	-	1,4	1	2	2	Traffic on Lytton has gotten much worse causing idling in front of my windows, noise increase, safety for seniors living on Lytton gardens and Webster House difficulty getting in/out of driveway….
END-PILOT	141	1	1	2	-	1	1	1	1	Improved safety at Middlefield and Everett.

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
END-PILOT	142	2	2	1	-	1	1	3	3	Just moved to the area 2 weeks ago.
END-PILOT	143	1	1	2	-	1	2	1	1	
END-PILOT	144	1	3	2	-	1	1	2	2	I'd prefer the road to be one lane each direction for cars, with bike lanes on both sides all the way!
END-PILOT	145	2	1	1	-	1	1	2	3	
END-PILOT	146	1	2	1	-	1	1	3	3	
END-PILOT	147	1	1	2	-	1	1	1	1	This is a great improvement. It's perfect. Keep it in place please!
END-PILOT	148	1	1	2	-	1	2	1	1	Before this project people were doing illegal turns onto Middlefield from Hawthorne. Totally unsafe. Now it's much better!
END-PILOT	149	1	1	1	-	1,2,4	1	2	2	Congestion does not equal calming! People are still driving straight on Everett… 3 crashes in front of my house… Extra 20 min. a day getting out of my driveway…Less safe: almost get rear-ended by someone moving into "straight" lane on Middlefield at last minute

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #5b††††	Question #6/7‡	Additional Comments
										when [rest of comment cut off at bottom of page].
END-PILOT	150	1	1	2	-	1,4	1	3	1	

**Question #1: Were you aware of this project prior to receiving this survey? Yes (1), No (2), Not Sure (3), and No Response (4)*

*** Question #2: How often do you typically travel along the project corridor? Multiple times per day (1), Once per day (2), Weekly (3), Monthly (4), Never (5), and No Response (6)*

**** Question #3: Do you have any safety concerns about the project corridor? Yes (1), No (2), and No Response (3)*

† Question #3 Follow-up: If yes, please describe (Open-ended)

†† Question #4: When traveling along the project corridor, what is your typical mode of transportation? Auto (1), Bike (2), Transit (3), Walk (4), Other (5), N/A (6), and No Response (7)

††† Question #5: Do you frequently travel along parallel or adjacent streets to Middlefield Rd.? Yes (1), No (2), Not Sure (3), and No Response (4)

††† Question #5b: Have you perceived an improvement in safety conditions on Middlefield Road since the start of the pilot project? Yes (1), No (2), Not Sure (3), and No Response (4)

‡ Question #6/7:

Pre- and Mid-pilot: Are you in favor of a lane reduction on Middlefield Road to improve traffic safety? Yes (1), No (2), Not Sure (3), and No Response (4)

End-pilot: Would you like to retain the current safety measures after the pilot period ends? Yes (1), No (2), Not Sure (3), and No Response (4)

Table 38: Additional Comments Received

ID	Date Received	Comment
1	6/6/2017	I am a resident of Downtown North and noticed that the turn restrictions from Hawthorne and Everett onto and across Middlefield have become 24-7 prohibitions. My understanding is that this is part of the road diet trial for Middlefield. My question to you is, aside from the advocacy group that was working on the project, was anybody from the adjoining neighborhoods consulted on these changes to the hours? I don't recall ever seeing a meeting notice of any kind with regards to the change in the turn restrictions.
2	6/21/2017	Sorry for the delayed response as I was out of town. Thank you for your email. I have been a resident of Downtown North since 1990 and lived through the ill-fated road closure trial in the early 2,000's. So, when these 24/7 turn restrictions were put in, many of my neighbors became upset, not only because it was so sudden and severe, they didn't know about it and had they had a chance to attend a meeting in order to view the plans, they would have. I am speaking from experience here. Not everybody is on NextDoor, or is on subscriber lists. Most people don't read the Council agendas or notices in newspapers. Of all of the means of communication that you listed below, the most effective way to reach the residents is the post card mailers. It is not enough to just mail them within a 2.5 block radius of a proposed project. These turn restrictions affect everyone who lives in Downtown North and the Fulton neighborhood east of Middlefield. I strongly urge the City to send out post card mailers to ALL the households in Downtown North and The Fulton Street neighborhood before any more changes/additions are made to the Middlefield arterial trial or if there are going to be anymore more public meetings.
3	6/5/2017	As a resident of the Downtown North neighborhood for over 35 years, I have watch the gradual deterioration of the traffic situation on Middlefield Road as well as the gridlock on Willow Road and University Avenue approaches to the Dumbarton Bridge. Are there any proposals to address this difficult situation that is strangling this part of our city at peak traffic times?
4	6/11/2017	We live on Hawthorne between Cowper and Webster. I am writing to state my opposition to the "No Left Turn at all times" sign at Hawthorne (and Everett). As I live and drive on Hawthorne turning onto Middlefield going south multiple times a day, I have seen a blatant disregard and complete lack of enforcement for the signs even during just peak hours. Cars making illegal left turns clog up traffic beyond the city block during peak hours and I would watching this as the car at the end, waiting for 5-10 minutes to make my legal right turn onto Middlefield while all the illegal turners cleared their turns going left. This has created such bad blood and hostility both between neighbors and cut-through drivers. The addition of the "at all times" now with the lack of enforcement is one of the most ridiculous impediments to the smooth flow of traffic.

ID	Date Received	Comment
		The left turn restriction should be only during peak hours and ENFORCED. If not enforced, it is useless and only creates hostility. I would like to know who decided the unenforced left turn restriction during peak hours should have turned into an unenforced left turn restriction at all times.
5	6/9/2017	thanks, I am not sure either.... kind of blindsided, I know Middlefield is a mess during rush hour but there should be weekend and wee hour exemptions, imho :)
6	6/9/2017	I just heard tonight that those of us in Downtown North now cannot turn left onto Middlefield 24-7? Really? And there may be other restrictions. And this came up in casual conversation....as involved as I am I hadn't heard a thing. I get it, people on Middlefield have traffic issues, which were factored into the price of their homes, but be that as it may, this trial means that if even at 4a for an early flight or late night on a weeknight, we have to go blocks out of our way...and spend a lot of time, plus a LOT of idling car engines which is so bad for the environment..... This is extreme. Seriously. So what are your thoughts?
7	6/13/2017	I think your current direction is obstructive and signal lights would probably be a cheaper and better solution
8	6/13/2017	During the last 5 days, the intersection of Everett & Middlefield has come up in three different ways so I wanted to send you my thoughts on this. The three different threads have been: 1) The Upgrade Downtown outreach session at Johnson Park last Friday 2) An SVBC Palo Alto Local Team thread on other BPTP bike infrastructure to prioritize. 3) A NextDoor post about the new traffic signs prohibiting straight & left turn travel from Everett to Middlefield First and foremost, I would like to see Everett Avenue green lighted as a bike boulevard through downtown Palo Alto immediately. My 5-year-old daughter just learned to ride her bike, and she is soooo elated, wanting to ride her bike every chance she gets! We have her ride on the street, so we can ride with her, and have taught her how to signal left/right/slow/stop. It is crystal clear, riding with a 5-year-old, how treacherous our existing bike infrastructure is, even if we get Gold Bicycle Friendly Community status every year. Since the 101 Alma (Survey Monkey now A9) building was completed, the Lytton Avenue bike lane has ceased to exist from the train station to Middlefield, and there is now no good bike route through downtown PA that is parallel to University. The University Ave bike lane proposal presented at the Upgrade Downtown session is great (I have no problems with the parking reductions), but the 2012 BPTP calls out Everett Avenue as a Bike Boulevard so why not also create an immediate bike boulevard route on Everett? Everett is a much lower stress street to ride on, definitely much more so than Lytton, so we always choose to ride on Everett with our 5-year-old. With the buses, the cars, and the side by side left turn/all turn lanes, the Lytton/Middlefield intersection is a treacherous place for bikes to cross Middlefield. Everett/Middlefield would a much

ID	Date Received	Comment
		better bicycle crossing. Yesterday at 9a, I saw a dozen cyclists on Lytton Ave squashed in the shoulder or between two car lanes trying to get across Middlefield. If we really lived up to our reputation as a bike friendly community and had truly safe, low stress bike infrastructure, we wouldn't be squashing cyclists between cars and in narrow shoulders so they can bike downtown or to Stanford. That brings us to the new traffic signs on Everett and Middlefield. I was quite surprised (along with many others) to see these in place AT ALL TIMES not just during peak travel hours. I realize you may have been working with a lot of neighbors on this, but it still caught most of us off guard. I find it to be a real inconvenience, especially when traveling on my bike during off peak times (midday and on wknds). I much prefer to bike on Everett and cross Middlefield on Everett without the signal, then deal with the traffic (especially the buses) on Lytton. I understand the need to prevent accidents during peak travel times and the inconvenience of so many cars cutting through neighborhood streets so I grudgingly supported the signs during peak hours. (side note - you may want to step up enforcement- at 6:30p I have seen 6-8 cars queued to turn left onto Middlefield from Everett during a lull in the cross traffic). We shop at Willows Market, go to Zoe's Cafe in MP and visit friends in the Fulton St. neighborhood, and the new signs feel like overkill, especially when there is NO CROSS TRAFFIC on Middlefield. I understand the number of accidents at that intersection is higher during off peak times, but solving that problem may demand a different design solution that is not as large of an inconvenience. I also want to mention that Everett Ave is a well-traveled route to Johnson Park, which many people in the Fulton St and Willows neighborhood of MP consider to be their neighborhood park. The several families I know who live north/east of Middlefield all want to cross on foot or bike/scooter at Everett safely, at a crosswalk with a traffic signal. I would like to see a signal at Everett too, because as I said before, I would prefer to bike on Everett across Middlefield (instead of Lytton). For Everett & Middlefield, something like the Bryant and Embarcadero intersection could allow safe travel of bikes and ped.s across Middlefield, while also restricting car travel options (maybe right turn only?) onto Middlefield. I understand the no left/straight traffic signs at Everett & Middlefield are a one-year pilot. After the pilot is over, I hope you and you staff will consider some other design measures for that intersection that couple two things: - the need for improved bike infrastructure downtown - the need for safety, traffic calming and cut through traffic prevention on Everett. A Complete Streets corridor along Everett and Vision Zero engineering principles for Everett & Middlefield might be a more holistic way to think about all the issues, and lead us to a much safer, convenient, and well-designed solution.
9	9/8/2017	The new lane markers on Middlefield at the Menlo Park boarder going north eliminated what little space there was for a bicycle to travel safely in this direction. There is no sidewalk either to ride on across the creek. This has created a very dangerous situation for cyclists going north. I'm very disappointed that the city didn't take this into consideration at the time of remarking the road. This situation needs to be corrected before someone is seriously injured and sues the city. I ride this every day.

ID	Date Received	Comment
10	Undocumented (phone)	[Location redacted for privacy]. When a bus is stopped at this location to serve riders, it blocks traffic behind it since this is only one lane segment now. We have received complaints from drivers who got stuck behind the bus, blocking the travel lane.
11	Undocumented (phone)	[Location redacted for privacy]. Resident of this property complains that they are unable to get out of their driveway and travel southbound on Middlefield.
12	Undocumented (phone)	Middlefield/Hawthorne: Have received some complaints that vehicles are still trying to turn left from Hawthorne onto Middlefield and there is a request to add more bollards on the median. This could partly be due to lack of painted crosswalk on Middlefield at Hawthorne. City Contractor is scheduled to install a curb ramp and crosswalk in the next 2 - 3 weeks.
13	11/20/2017	I'd like to respond to your questionnaire questions and then add comments. 1. Were you aware of the project prior to receiving this survey? **Yes**, but I didn't realize my block would be affected changing 2 straight lanes in to 1 left turn lane and 1 straight lane. 2. How often do you typically travel along the project corridor? **Multiple times per day** – morning, mid-day and evening 3. Do you have any safety concerns about the project corridor? **Yes**. Despite the signs and barriers, drivers on both Hawthorne and Everett still go straight across or turn left by jogging to the right around the barrier and then jogging left or turning left. 4. When traveling along the corridor, what is your typical mode of transportation? **Auto**, but I also **Walk** on it daily. 5. Do you frequently travel along parallel or adjacent streets to Middlefield Rd.? **Yes**, I travel northbound on Fulton when there is traffic and southbound on Guinda when I can't back out to go south. 6. Are you in favor of a lane reduction on Middlefield Road to improve traffic safety? **No**. I am completely in favor of improving traffic safety, but too many drivers on Hawthorne and Everett are dangerously determined to go straight across or left on Middlefield for me to feel this is an improvement. I think it slows traffic down through congestion, not better safety. Now, southbound Middlefield is backing up on a regular basis. This configuration negatively impacts me because I now have to wait 1 or more light cycles to get out of my driveway. I've always had to back out of my driveway. Backing out is more dangerous now because the lane going straight (north) tends to back up while the left-hand turn lane on to Lytton doesn't, so cars in that lane drive fast. If I can't back out into just the north-bound lane (because drivers won't give me room), it creates a blind situation where a car turning left could hit me. It's now almost impossible for me to back out across both lanes to go south on Middlefield. Instead, I have to turn right on Lytton (because it's also difficult to get in the left-hand turn lane now - see above blind spot problem), turn right on Guinda (because it has a traffic light at University and Fulton doesn't) and then head south on Guinda until I get to Homer to go west or turn back on to Middlefield to go south.

ID	Date Received	Comment
		Whether I'm coming from the north or south, getting in to my own driveway is more difficult. The constant congestion on northbound Middlefield on my block means I have to wait an extra light cycle or 2 to turn right in to my driveway. Turning left is also a problem. Right now, if everyone was driving legally and not yielding right of way, I could only get in to my driveway heading north and would have to wait minutes to back out. Thankfully, drivers allow me to back out even though they have right of way, but they do it when the northbound light is red. I'm forcing my way in to traffic which is not safer. If you ask me if traffic is "calmer" on the last 4 blocks, I think it is, mainly because it's congested. I don't think it is safer or will be until there are consequences for turning illegally. I'm sorry I haven't been able to pay attention to all the decisions done on this project, so you might have already considered and dismissed this, but would it help to go back to 4 lanes and put lights at Hawthorne and Everett with protected turn arrows and red light cameras? I know this would be more expensive, but there would be consequences for turning illegally and protection to turn. Other cities have block after block of traffic lights with success. I won't pretend to have all the answers, understand all the issues or even know what questions to ask, but this current configuration doesn't work for me and my wife. Can we please try another one?
14	4/20/2018	Thank you for your follow-up survey on the Middlefield Road North Pilot Project. I believe this project has largely been a success: • Middlefield Road traffic is slowed. • As far as I know, there have been no collisions at Everett or Hawthorne. • The crosswalk at Everett has improved pedestrian safety in spite of poor driver compliance. • However, the project has created several issues: • Lengthened platoons mean fewer and shorter safe crossing intervals for pedestrians and cyclist. • Without enforcement of the morning turn restrictions into Downtown North from Middlefield and Alma (which are now flagrantly ignored), traffic has risen on Everett. • 20-50 cars/day U-turn on the short block of Everett between Middlefield and Fulton, many using my driveway. • At least 10 cars per day make an illegal turn through the crosswalk at Everett from Downtown North onto Middlefield. • Around 50 cars per day make U-turns on Middlefield after being forced to turn right at Hawthorne or Everett. • There is heavy northbound afternoon cut-through traffic on the eastbound El Camino-Alma-Hawthorne-Middlefield-Everett-Guinda-University rout, particularly problematic on Hawthorne. Here are a few suggestions: • Enforce the crosswalk across Alma at Everett, especially 8am-9am. • Add two flexible reflective channelizing devices inside the crosswalk at Middlefield and Everett, leaving a four foot clear area for wheelchairs but block automobiles.

ID	Date Received	Comment
		• Add additional channelizing devices to the barrier to discourage those who simply drive over it. • Add 'No U-Turn' signs on the northbound 700-749 block of Everett, and a "U-Turn OK" sign in the relatively spacious Everett/Fulton intersection. • Enforce the turn restrictions from Middlefield and Alma into Downtown North. • Add "No Through Traffic" signs at the Middlefield Road cross streets.
15	4/25/2018	While I have filled out the current survey, I wanted to make a few additional points on the project since I live at Lytton Gardens: 1) You have made ingress and egress very difficult at Lytton Gardens. We're trying to enter from west-bound Lytton and it not only is difficult to cut across and enter, but we also hold up the line behind us waiting. You might add some white lines. We used to be able to walk across Bryon at Lytton, but now you are taking your life hand. 2) To eliminate cut-through traffic on Everett and Hawthorne, you have funneled massive traffic on Lytton. We pay a steep price in traffic and danger now on Lytton. I have previously alluded to you "robbing Peter (Lytton) to pay Paul (Middlefield folks)." 3) We get a lot honks because you pinch off the right lane of Middlefield (north) at University, forcing unaware drivers to move suddenly from the left lane to the right lane. Why are you taking away two-lanes of Middlefield north, a main artery to Willow Road? 4) You don't take into consideration the buses twofold: there is a stop on Middlefield that can back up traffic; and buses pivoting from Middlefield to Lytton have a difficult time of it. Myself? I find the project ill-conceived from the get-go, a classic example of NIMN. If you wanted to make the traffic flow better, make Hawthorne and Everett on-way as a parallel to Homer and Channing Avenues.

Table 39: Pre-Pilot Survey Instrument

CITY OF PALO ALTO

Middlefield Road North Pilot Project

Please fill out this survey and mail it by May 22, 2017

1. Were you aware of this project prior to receiving this survey?
   ☐ Yes ☐ No ☐ Not sure

2. How often do you typically travel along the project corridor?
   ☐ Multiple times per day ☐ Once per day ☐ Weekly
   ☐ Monthly ☐ Never

3. Do you have any safety concerns about the project corridor?
   ☐ Yes ☐ No
   If yes, please describe:

4. When traveling along the project corridor, what is your typical mode of transportation?
   ☐ Auto ☐ Bike ☐ Transit ☐ Walk
   ☐ Other ☐ N/A

5. Do you frequently travel along parallel or adjacent streets to Middlefield Rd.?
   ☐ Yes ☐ No ☐ Not Sure

6. Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?
   ☐ Yes ☐ No ☐ Not Sure

For more information or to provide comments, visit:
www.cityofpaloalto.org/middlefield

CITY OF PALO ALTO

Middlefield Road North Pilot Project

The City will be conducting a one-year test of a temporary road reconfiguration along Middlefield Road between Menlo Park City Limit and University Avenue. The City is collecting preliminary feedback and residents' opinions about safety and existing travel conditions prior to implementing the changes. A new two-lane roadway configuration with a center turn lane will be implemented in Spring 2017.

City of Palo Alto
Transportation Division
P.O. Box 10250
Palo Alto, CA 94303

Table 40: Mid-Pilot Survey Instrument

CITY OF PALO ALTO

Middlefield Road North Pilot Project

Please fill out this survey and mail it by Nov. 20, 2017

1. Were you aware of this project prior to receiving this survey?
   ☐ Yes ☐ No ☐ Not sure

2. How often do you typically travel along the project corridor?
   ☐ Multiple times per day ☐ Once per day ☐ Weekly
   ☐ Monthly ☐ Never

3. Do you have any safety concerns about the project corridor?
   ☐ Yes ☐ No
   If yes, please describe:

4. When traveling along the project corridor, what is your typical mode of transportation?
   ☐ Auto ☐ Bike ☐ Transit ☐ Walk
   ☐ Other ☐ N/A

5. Do you frequently travel along parallel or adjacent streets to Middlefield Rd.?
   ☐ Yes ☐ No ☐ Not Sure

6. Are you in favor of a lane reduction on Middlefield Road to improve traffic safety?
   ☐ Yes ☐ No ☐ Not Sure

For more information or to provide comments, visit:
www.cityofpaloalto.org/middlefield

CITY OF PALO ALTO

Middlefield Road North Pilot Project

In June 2017, the City of Palo Alto started a one-year pilot project of a temporary road reconfiguration (two lanes with a center turn lane) along Middlefield Road from Menlo Park's southern City limit to University Avenue. We sent out a survey before beginning the pilot, and now that the new configuration is in place, we would like your feedback on how the pilot project is influencing safety and travel patterns.

City of Palo Alto
Transportation Division
P.O. Box 10250
Palo Alto, CA 94303

Table 41: End-Pilot Survey Instrument

Middlefield Road North Pilot Project

Please fill out this survey and mail it by May 11, 2018

1. Were you aware of this project prior to receiving this survey?
   ☐ Yes ☐ No ☐ Not sure

2. How often do you typically travel along the project corridor?
   ☐ Multiple times per day ☐ Once per day ☐ Weekly
   ☐ Monthly ☐ Never

3. Do you have any safety concerns about the project corridor?
   ☐ Yes ☐ No

4. When traveling along the project corridor, what is your typical mode of transportation?
   ☐ Auto ☐ Bike ☐ Transit ☐ Walk
   ☐ Other ☐ N/A

5. Do you frequently travel along parallel or adjacent streets to Middlefield Rd.?
   ☐ Yes ☐ No ☐ Not Sure

6. Have you perceived an improvement in safety conditions on Middlefield Road since the start of the pilot project?
   ☐ Yes ☐ No ☐ Not Sure

7. Would you like to retain the current safety measures after the pilot period ends?
   ☐ Yes ☐ No ☐ Not Sure

Please describe why: _____

_____

_____

For more information or to provide comments, visit:
www.cityofpaloalto.org/middlefield

Middlefield Road North Pilot Project

In June 2017, the City of Palo Alto started a one-year pilot project of a temporary road reconfiguration (two lanes with a center turn lane) along Middlefield Road from Menlo Park's southern City limit to University Avenue. We sent out surveys at the start and halfway points of the pilot, and now that the one-year period pilot is coming to a close, we would like your feedback on how the pilot project is influencing safety and travel patterns.

City of Palo Alto
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