City of Palo Alto (ID # 8466)

City Council Staff Report

Report Type: Informational Report **Meeting Date: 12/11/2017**

Summary Title: Middlefield Road North Traffic Safety Project Mid-pilot Report

Title: Accept Middlefield Road North Traffic Safety Project Mid-Pilot Report

From: City Manager

Lead Department: Planning and Community Environment

Recommendation
This report is provided for information only and requires no Council action.

Background
On January 23, 2017 Council approved the implementation of a one-year traffic safety pilot for Middlefield Road between the Menlo Park city limits and University Avenue. Installation was completed in mid-June 2017. Background information on the project can be found here: http://www.cityofpaloalto.org/civicax/filebank/blobdload.aspx?BlobID=55488. Staff will return to City Council in July 2018, one-year after the implementation of the pilot for direction on whether to make the improvements permanent or modify the alternative and complete additional monitoring.

The technical memorandum, included as Attachment A, describes the results of the pre-pilot and mid-pilot data collection efforts. The purpose of this report is to provide Council with a mid-year update on the Middlefield Road North Traffic Safety Project one-year pilot, which is currently underway.

Discussion
The results of the mid-pilot data collection are mixed, though no major issues were identified. Some key takeaways include:

- Collision rate has remained static
- Observed near-misses have increased slightly
- Average motor vehicle speeds have remained static or gone down on all area roadways except for Hawthorne Avenue, Everett Avenue, and Fulton Street (no local street exceeds the traffic calming speed threshold for a local street)

- Outdoor sound levels have remained relatively unchanged
- Motor vehicle traffic volumes at intersections has decreased slightly, while bicycle and pedestrian traffic has increased
- Delay at Middlefield Road and Lytton Avenue intersection has increased slightly
- Motor vehicle traffic volumes on segments has increased on all area roadways except for Middlefield Road north of Everett Avenue, Hawthorne Avenue and Everett Avenue, with Webster Street approaching the traffic calming volume threshold for a local street (Hawthorne Avenue and Everett Avenue were already above this threshold prior to the pilot)
- Public support for the project has increased

At this time, Staff does not recommend making any changes to the roadway configuration. However, at the conclusion of the one-year pilot, minor modifications may be recommended if current trends continue.

Resource Impact

Not applicable.

Timeline

The one-year pilot is scheduled to end in June 2018 and a final report will be presented to City Council in August 2018. At the conclusion of the pilot, City Council may adopt the current configuration as a permanent feature, direct staff to modify the current configuration, or direct staff to revert to the pre-pilot conditions. If the project is made permanent, Staff will identify opportunities to add landscaping and other aesthetic features.

Environmental Review

Not applicable.

Attachments:

- Attachment A - Middlefield Road North Traffic Safety Project Mid-pilot Report

alta PLANNING + DESIGN

100 Webster Street, Suite 300
Oakland, CA 94607
www.altaplanning.com

MEMO

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

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

Date: November 20, 2017

Re: Middlefield North Road Diet Evaluation – Technical Memorandum (Mid-Pilot Check-in)

Introduction

To improve traffic safety conditions on Middlefield Road in northwest Palo Alto, the City of Palo tested a temporary re-configuration of the roadway on Middlefield Road from the north City limit (San Francisquito Creek) to University Avenue. This technical memorandum documents the one-year test for the Middlefield North Road Diet Evaluation, 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 (data to be collected in the summer of 2018), 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
    - 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

Mid-Pilot Check-in

To identify any major safety issues that need to be addressed halfway through the Middlefield North Road Diet Evaluation, a mid-pilot check-in was included in the project timeline to report back preliminary findings following the mid-pilot data collection.

Responses to the mail-back survey sent to residences within the project study area showed the percent of respondents in favor of the project increased from 33.3 percent to 56.7 percent between the pre- and mid-pilot periods. Possible explanations for this increased approval of the Middlefield North Road Diet include limited survey sample size and random variability, increased awareness about the project among survey respondents, and/or decreased safety concerns.

While the percent of respondents with safety concerns decreased from 71.8 percent during the pre-pilot period to 52.0 percent during the mid-pilot period, residents have expressed a lingering anxiety about safety issues. The most frequent concerns expressed by survey respondents in both the pre- and mid-pilot survey was the lack of attention given by motorists when turning onto Middlefield Road and motorists avoiding turn restriction barriers. The collision rate remained the same between the pre- and mid-pilot periods (0.07 collisions per day); however, the number of observed near-miss collisions increased by 75.0 percent. Replay of the traffic camera video during these near-miss events confirmed the comments noted in the resident survey, showing motorists driving around roadway barriers to avoid turn restrictions. While these safety concerns may decrease as people driving adjust to the pilot configuration or if the more permanent barriers are implemented, an interim measure to addressing safety concerns stemming from turning movements could include police enforcement of the new configuration during select time periods.

Despite a 6.8 percent decrease in overall motor vehicle traffic at 12 count locations within the study area, streets parallel to Middlefield Road saw an increase in traffic. Between the pre- and mid-pilot periods, the motor vehicle counts at five (5) locations on parallel routes to Middlefield Road showed an average increase of 1,051 motor vehicles per weekday, representing a 30.6 percent increase in traffic along these routes. Although Fulton Street and Byron Street experienced an increase in motor vehicle volumes between the pre- and mid-pilot periods (47.7 percent and 83.2 percent respectively), both locations experienced less than 800 vehicles per day (vpd) during the mid-pilot period. The City of Palo Alto's threshold for considering traffic calming options on impacted streets is 1,200 vpd for local streets and 4,000 vpd for collector streets.

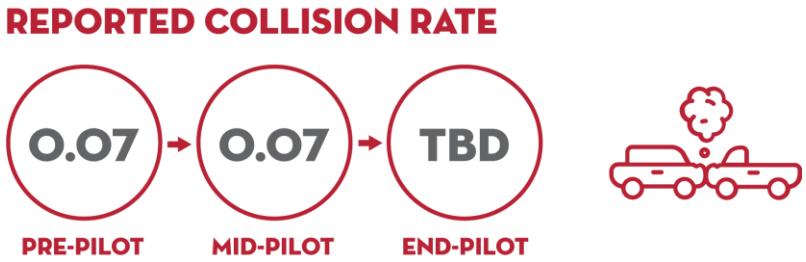
An intersection level of service analysis was conducted at Middlefield Road/Lytton Avenue and Middlefield Road/University Avenue. The only estimated degradation in motor vehicle traffic between the pre- and mid-pilot periods was during the evening peak period on Middlefield Road/Lytton Avenue in which the delay per motor vehicle increased from 60 seconds to 92 seconds. To address this increase in delay and any resulting traffic congestion created by it, the City of Palo Alto will re-time traffic signals along the study corridor and coordinate signals during peak periods.

Health & Safety

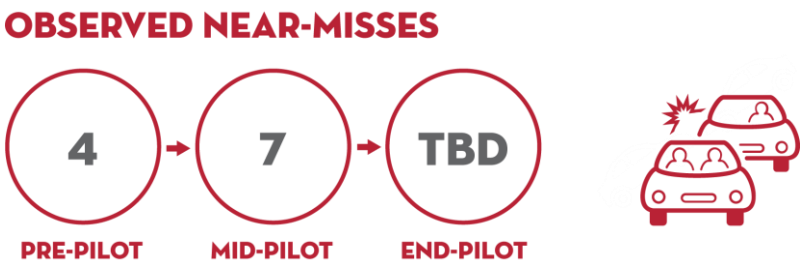
The health and safety of roadway users within the study area is the primary concern of the City of Palo Alto for the Middlefield North Road Diet Evaluation. For this evaluation category, four (4) performance measures were identified:

- Reported collisions – The number and rate of motor vehicle-, bicycle-, and pedestrian-involved collisions along the project corridor that were reported to 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
- 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 three (3) locations within the project study area

The rate of reported collisions remained consistent between the pre- and mid-pilot periods, showing no overall observed change in collision risk (0.07 collisions per day). Compared to the historic average number of collisions during the same time period in the three (3) years prior to the start of the Middlefield North Road Diet Evaluation, there was a decrease of six (6) collisions during the mid-pilot period.

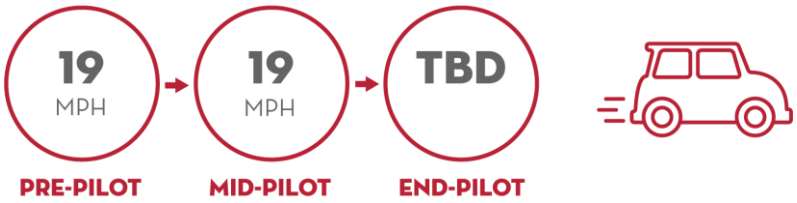


The number of near-miss collisions observed between the pre- and mid-pilot period increased by 75 percent during the weekday peak periods at two intersections along the project corridor (from 4 near-miss collisions to 7 near-miss collisions). This increase in near-miss collisions was representative of an increase in hazardous driving behavior observed during review of traffic camera video and reported by residents through the mid-pilot survey. This increase in hazardous behavior may be the result of temporary frustration with the new roadway configuration and may dissipate by the end of the evaluation period as motorists become familiar with the change, or it may require modification of the configuration or additional enforcement after the end-pilot evaluation period.



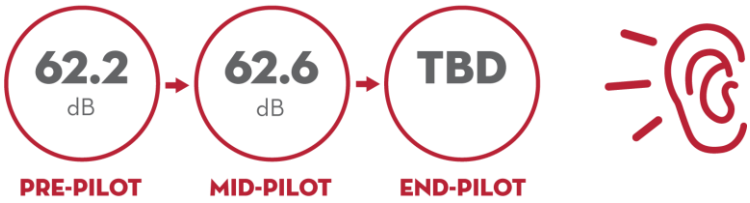
The average speed of motor vehicles between the pre- and mid-pilot periods remained consistent between the pre- and mid-pilot periods, showing no overall observed change in speed (19 mph). The 85th percentile motor vehicle speeds, averaged across the study area, also remained constant between the pre- and mid-pilot periods (25 mph).

AVERAGE MOTOR VEHICLE SPEEDS



The weighted average of outdoor sound levels increased by 4.7 percent between the pre- and mid-pilot periods (from 62.2 dB to 62.6 dB).[1]

OUTDOOR SOUND LEVELS



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

Reported Collisions and Observed Near-miss Collisions

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 Channing Avenue (800 block), as summarized in **Table 1** or documented in full detail in **Table 25**. In addition to reported collisions, unsafe travel behavior that resulted in close interactions between multiple roadway users was observed through the replay of recorded traffic camera video. These "near-miss collisions" 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** shows a summary of the near-miss collisions and **Table 26** contains a detailed list.

Pre-Pilot Period

The pre-pilot period for reported collisions was defined as April 1, 2017 to May 16, 2017. Historic collision data during this 45-day period showed a range of three to six reported collisions between 2014 and 2016. Reported collisions during the pre-pilot period fell within this range, with three collisions reported along the study corridor. Police reports indicated that all three collisions were the result of interactions between multiple motor vehicles, leading to six total injuries and no fatalities. The collision rate on the corridor during the pre-pilot period was 0.07 collisions per day, slightly below the historic rate of 0.08 collisions per day between January 1, 2014 to March 31, 2017.

Near-miss collisions for the pre-pilot period were observed on April 18, 2017 and April 19, 2017. There were two near-miss collisions observed at the intersection of Middlefield Road and Hawthorne Avenue, both resulting from interactions between motor vehicles. Similarly, there were two 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.

Mid-Pilot Period

The mid-pilot period for reported collisions was defined as May 17, 2017 to October 2, 2017. Historic collision data during this 138-day period showed a range of 11 to 20 reported collisions between 2014 and 2016. Reported collisions during the mid-pilot period fell within this range, with nine collisions reported along the study corridor. Police reports indicated that eight of the nine collisions were the result of interactions between multiple motor vehicles, leading to eight total injuries and no fatalities. The police report on the ninth collision did not contain information on parties involved. The mid-pilot collision rate of 0.07 collisions per day matched the pre-pilot rate, suggesting that the pilot project had no positive or negative impact on reported collisions.

Near-miss collisions for the mid-pilot period were observed on October 4, 2017 and October 5, 2017. There were two 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 observed during the mid-pilot period. Three of the five near-misses involved vehicle-vehicle interactions, one involved a vehicle-bicyclists interaction, and one involved a vehicle-pedestrian interaction.

End-Pilot Period

TBD

Table 1: Summary of Reported Collisions

		Reported Collisions				
	Evaluation Period	Average (2014-2016)	2017	Difference (% Change)	**Days Observed**	**Rate (collisions/day)**
PRE-PILOT	April 1 – May 16	4	3	-1 (-25.0%)	45	0.07
MID-PILOT	May 17 – October 2	15	9	-6 (-40.0%)	138	0.07
END-PILOT	TBD	TBD	TBD	TBD	TBD	TBD

* *Source: Palo Alto Police Department, Middlefield Road (100 block to 800 block)*

Table 2: Summary of Observed Near-miss Collisions

Location*	**PRE-PILOT**	**MID-PILOT**	**END-PILOT**
	April 18 - April 19, 2017	October 4 - October 5, 2017	TBD
Middlefield Road at Hawthorne Avenue	2	2	TBD
Middlefield Road at Everett Avenue	2	5	TBD
Total	**4**	**7**	**TBD**

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

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 3** for a summary of observed motor vehicle speeds at the 12 locations and see **Table 27** for a detailed list.

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 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).

End-Pilot Period

TBD

Table 3: 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) Mean	MID-PILOT** Miles per hour (% Change) Median	MID-PILOT** Miles per hour (% Change) 85th %	End-PILOT*** Miles per hour (% Change) Mean	End-PILOT*** Miles per hour (% Change) Median	End-PILOT*** Miles per hour (% Change) 85th %
Middlefield Road	Palo Alto Avenue (west)	Palo Alto Avenue (east)	26	27	33	24 (-7.7%)	26 (-3.7%)	32 (-3.0%)	TBD	TBD	TBD
Middlefield Road	Hawthorne Avenue	Everett Avenue	26	28	33	24 (-7.7%)	26 (-7.1%)	31 (-6.1%)	TBD	TBD	TBD
Middlefield Road	Everett Avenue	Lytton Avenue	24	26	32	21 (-12.5%)	23 (-11.5%)	28 (-12.5%)	TBD	TBD	TBD
Webster Street	Lytton Avenue	Everett Avenue	19	20	25	18 (-5.3%)	19 (-5.0%)	24 (-4.0%)	TBD	TBD	TBD
Byron Street	Lytton Avenue	Everett Avenue	17	19	24	18 (5.9%)	20 (5.3%)	24 (0.0%)	TBD	TBD	TBD
Fulton Street	Lytton Avenue	University Avenue	16	17	23	19 (18.8%)	20 (17.6%)	25 (8.7%)	TBD	TBD	TBD
Fulton Street	Lytton Avenue	Everett Avenue	19	20	25	18 (-5.3%)	20 (0.0%)	24 (-4.0%)	TBD	TBD	TBD
Guinda Street**	Lytton Avenue	University Avenue	13	15	19	11 (-15.4%)	11 (-26.7%)	18 (-5.3%)	TBD	TBD	TBD
Palo Alto Avenue	Middlefield Road	Fulton Street	17	18	22	17 (0.0%)	17 (-5.6%)	22 (0.0%)	TBD	TBD	TBD
Hawthorne Avenue	Byron Street	Middlefield Road	16	17	22	17 (6.3%)	18 (5.9%)	23 (4.5%)	TBD	TBD	TBD
Everett Avenue	Byron Street	Middlefield Road	16	17	22	18 (12.5%)	18 (5.9%)	23 (4.5%)	TBD	TBD	TBD
Everett Avenue	Middlefield Road	Fulton Street	19	20	24	17 (-10.5%)	18 (-10.0%)	23 (-4.2%)	TBD	TBD	TBD
Average			**19**	**20**	**25**	**19 (-2.6%)**	**20 (-3.3%)**	**25 (-2.3%)**	**TBD**	**TBD**	**TBD**

** 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*

**** TBD*

***** Pneumatic tubes were disconnected from 12:00 PM on October 25, 2017 to 9:45 AM on October 26, 2017*

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

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 4** for a summary of sound level data and see **Table 28** 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.

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 four locations. The average LAeq for the pre-pilot period was 62.2 dB. Data for the Fulton Street location was unable to be retrieved from the dosimeter and, therefore, was excluded from the average for the pre-pilot period and all future data collection periods.

The LAeq, tracked in one-minute increments, exceeded 80 dB twice during the pre-pilot period. The first "very 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 "very 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.

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[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>*

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 four locations. The average LAeq for the mid-pilot period was 62.6 dB. Compared to the pre-pilot period's average overall LAeq of 62.2 dB, the mid-pilot period was 0.04 decibels louder or approximately a 4.7 percent increase.

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

TBD

Table 4: Summary of Sound Level Data

Measure	Begin	End	PRE-PILOT* LAeq	MID-PILOT** LAeq	MID-PILOT** Percent Change****	END-PILOT*** LAeq	END-PILOT*** Percent Change****
Middlefield Road	Lytton Avenue	Everett Street	68.1 dB	67.0 dB	-11.9%	TBD	TBD
Middlefield Road	Lytton Avenue	University Avenue	63.5 dB	65.6 dB	27.4%	TBD	TBD
Byron Street	Lytton Avenue	Everett Avenue	54.9 dB	55.3 dB	4.7%	TBD	TBD
Fulton Street	Lytton Avenue	Everett Avenue	*****	53.8 dB	N/A	TBD	N/A
Overall Average (excluding Fulton Street)			**62.2 dB**	**62.6 dB**	**4.7%**	**TBD**	**TBD**
1-minute Periods above 80 dB			2	2		TBD	

** 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*

**** TBD*

***** 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*

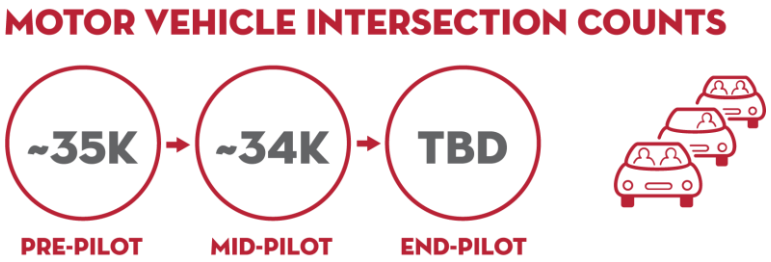
****** Pre-pilot data was unable to be retrieved for the Fulton Street location*

Intersection Impacts

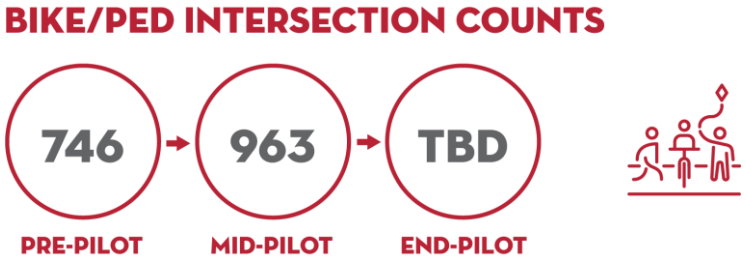
Secondary to health and safety but important to the quality of life of Palo Alto residents and visitors is the efficiency of the roadway network. The ability to move people through intersections efficiently can have a large influence on the overall network efficiency. For this evaluation category, three (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 extends relative to the amount of available space in the approach to two (2) intersections along the project corridor

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 2.0 percent between the pre- and mid-pilot periods (from 34,713 motor vehicles to 34,002 motor vehicles). This decrease is consistent with observed seasonal fluctuations on urban roads in California between the months of April 2016 and October 2016.[4]



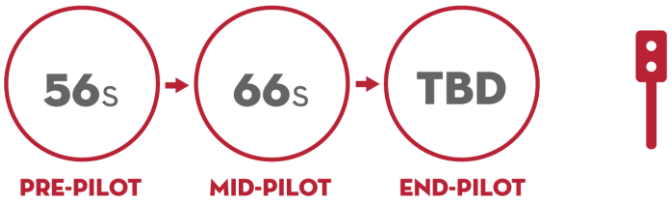
The total number of bicyclists and pedestrians traveling through the four (4) intersections along the project corridor during the assumed morning, midday, and evening peak periods increased by 29.1 percent between the pre- and mid-pilot periods (from 292 bicyclists and 454 pedestrians to 444 bicyclists and 519 pedestrians). This increase may be the result of undocumented seasonal fluctuations 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>

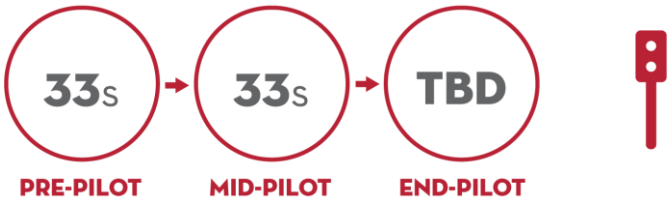
Between the pre-pilot and mid-pilot periods, the estimated motor vehicle level of service changed at one intersection and stayed the same at another intersection along the project study area. At the intersection of Middlefield Road and Lytton Avenue, the morning peak period level of service stayed the same between pre- and mid-pilot periods ('D'), increased from 'E' to 'D' during the midday peak period, and decreased from 'E' to 'F' during the evening peak period. The average delay per motor vehicle over the three peak periods increased from 56 seconds to 66 seconds between the pre- and mid-pilot periods.

AVERAGE PEAK MIDDLEFIELD/LYTTON DELAY



At the intersection of Middlefield Road and University Avenue, there was no change in the motor vehicle level of service between the pre- and mid-pilot periods. The average delay per motor vehicle over the three peak periods remained the same between the pre- and mid-pilot periods (33 seconds).

AVERAGE PEAK MIDDLEFIELD/UNIVERSITY DELAY



The number of intersection turning movements at Middlefield Road/Lytton Avenue that were estimated to back-up past the available storage space, possibly impacting downstream intersections, went from one (1) turning movement in the pre-pilot period to two (2) 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 three (3) during the pre-pilot period to two (2) during the mid-pilot period.

The number of intersection turning movements at Middlefield Road/University Avenue that were estimated to exceed the available storage space, possibility impacting downstream intersections, stayed the same between pre- and mid-pilot periods for the worst 5 percent of morning, midday, and evening peak period traffic.

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 5** for a summary of observed turning movement counts and see **Table 29** for a detailed list of turning movement counts.

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

TBD

Table 5: 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)	TBD	TBD	TBD
	11:00 AM – 1:00 PM	2,560	7	13	2,431 (-5.0%)	11 (57.1%)	7 (-44.0%)	TBD	TBD	TBD
	4:00 PM – 6:00 PM	3,315	9	24	3,188 (-3.8%)	19 (111.1%)	27 (12.5%)	TBD	TBD	TBD
	Total Peak Periods	**8,285**	**26**	**60**	**7,864 (-5.1%)**	**49 (92.2%)**	**50 (-16.0%)**	**TBD**	**TBD**	**TBD**
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%)	TBD	TBD	TBD
	11:00 AM – 1:00 PM	2,285	11	16	2,249 (-1.6%)	12 (14.3%)	23 (45.2%)	TBD	TBD	TBD
	4:00 PM – 6:00 PM	3,043	16	28	2,925 (-3.9%)	30 (84.4%)	38 (38.2%)	TBD	TBD	TBD
	Total Peak Periods	**7,735**	**41**	**58**	**7,434 (-3.9%)**	**80 (95.1%)**	**83 (44.3%)**	**TBD**	**TBD**	**TBD**
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%)	TBD	TBD	TBD
	11:00 AM – 1:00 PM	2,387	17	34	2,632 (7.2%)	28 (69.7%)	43 (26.9%)	TBD	TBD	TBD
	4:00 PM – 6:00 PM	3,272	44	55	3,290 (-1.2%)	54 (23.0%)	57 (3.7%)	TBD	TBD	TBD
	Total Peak Periods	**8,308**	**109**	**122**	**8,596 (0.8%)**	**143 (31.8%)**	**142 (16.9%)**	**TBD**	**TBD**	**TBD**
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%)	TBD	TBD	TBD
	11:00 AM – 1:00 PM	3,486	20	72	3,503 (0.5%)	35 (79.5%)	75 (3.5%)	TBD	TBD	TBD
	4:00 PM – 6:00 PM	3,495	54	89	3,475 (-0.6%)	80 (48.6%)	95 (6.2%)	TBD	TBD	TBD
	Total Peak Periods	**10,164**	**117**	**216**	**10,109 (-0.5%)**	**172 (46.6%)**	**244 (13.0%)**	**TBD**	**TBD**	**TBD**
All Observed Intersections during Assumed Peak Periods		**34,713**	**292**	**454**	**34,002 (-2.0%)**	**444 (51.9%)**	**519 (14.2%)**	**TBD**	**TBD**	**TBD**

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

*** Average of values from Wednesday, October 4, 2017 and Thursday, October 5, 2017*

**** TBD*

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 6** for a summary of the motor vehicle level of service for the two intersections and see **Table 30** and **Table 31** 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 52.3 second delay per motor vehicle, an estimated midday peak period level of service of 'E' with a 56.2 second delay per motor vehicle, and an estimated evening peak period level of service of 'E' with a 60.0 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 31.5 second delay per motor vehicle, an estimated midday peak period level of service of 'C' with a 30.7 second delay per motor vehicle, and an estimated evening peak period level of service of 'D' with a 36.0 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 51.0 second delay per motor vehicle, representing no change in level of service between the pre-pilot and mid-pilot periods and a 1.3 second decrease in delay. During the midday peak period, there was an estimated level of service 'D' with a 53.7 second delay per motor vehicle, representing a one letter grade improvement and a 2.5 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 91.9 second delay per motor vehicle, representing a one letter grade deterioration and a 31.9 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

TBD

Table 6: 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 (52.3 s)	E (56.2 s)	E (60.0 s)	D (51.0 s)	D (53.7 s)	F (91.9 s)	TBD	TBD	TBD
Middlefield Road at University Avenue	C (31.5 s)	C (30.7 s)	D (36.0 s)	C (31.5 s)	C (30.7 s)	D (36.0 s)	TBD	TBD	TBD

** Overall approach level of service (L.O.S.) on a scale of 'A' through 'F' and delay per motor vehicle in 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. For a summary of the estimated queue lengths, see **Table 7** and **Table 8.** For a detailed list of estimated queue lengths, see **Table 32**, **Table 33**, and **Table 34**.

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 exceeded the available storage during the morning peak period in one turning movement (northbound left). During the midday peak period, the 95th percentile queue length exceeded the available storage in one turning movement (northbound left). During the evening peak period, the 95th percentile queue length exceeded the available storage in three turning movements (westbound through, northbound left, and northbound through).

At the intersection of Middlefield Road and University Avenue, the 95th percentile queue length did not exceed the available storage in any turning movements. During the midday peak period, the 95th percentile queue length exceeded the available storage in one turning movement (northbound through). During the evening peak period, the 95th percentile queue length exceeded the available storage in one turning movement (northbound through).

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 two turning movements (westbound through and northbound left) compared to just one turning movement during the pre-pilot period. During the midday peak period, the 95th percentile queue length exceeded the available storage in two turning movements (westbound through and northbound left) compared to just one turning movement during the pre-pilot period. During the evening peak period, the 95th percentile queue length exceeded the available storage in two turning movements (westbound through and northbound left) compared to three 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 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 turning movement (northbound through), which was consistent with the pre-pilot period. During the evening peak period, the 95th percentile queue length exceed the available storage in one turning movement (northbound through), which was consistent with the pre-pilot period.

End-Pilot Period

TBD

Table 7: Summary of Queue Lengths (Middlefield Road at Lytton Avenue)

	PRE-PILOT†					MID-PILOT†						END-PILOT†					
	EB	WB	NB		SB	EB	WB		NB		SB	EB	WB		NB		SB
	Thru	Thru	Left	Thru	Thru	Thru	Left	Thru	Left	Thru	Thru	Thru	Left	Thru	Left	Thru	Thru
AM Peak (ft)	327	248	184 *	141	199	327	149	470 *	203 *	76	199	TBD	TBD	TBD	TBD	TBD	TBD
Mid Peak (ft)	248	236	187 *	201	85	248	145	407 *	197 *	161	85	TBD	TBD	TBD	TBD	TBD	TBD
PM Peak (ft)	316	357 *	293 *	397 *	108	316	100	797 *	308 *	311	108	TBD	TBD	TBD	TBD	TBD	TBD

† *95th percentile queue length (ft)*

* *Exceeded available storage*

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

	PRE-PILOT†						MID-PILOT†						END-PILOT†					
	EB	WB	NB		SB		EB	WB	NB		SB		EB	WB	NB		SB	
	Thru	Thru	Left	Thru	Left	Thru	Thru	Left	Left	Thru	Left	Thru	Thru	Left	Left	Thru	Left	Thru
AM Peak (ft)	223	164	31	167	91	243	223	164	31	167	91	243	TBD	TBD	TBD	TBD	TBD	TBD
Mid Peak (ft)	211	167	44	271 *	84	219	211	167	44	271 *	84	219	TBD	TBD	TBD	TBD	TBD	TBD
PM Peak (ft)	260	232	53	236 *	85	153	260	232	53	236 *	85	153	TBD	TBD	TBD	TBD	TBD	TBD

† *95th percentile queue length (ft)*

** *Exceeded available storage*

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 30.6 percent increase in motor vehicle volumes between the pre- and mid-pilot periods (an increase of 1,051 motor vehicles). At the three (3) observed locations on Middlefield Road, total traffic volumes decreased by 3,234 motor vehicles, suggesting that some of the motor vehicles that were using Middlefield Road during the pre-pilot period shifted to parallel routes.

The percent of heavy-duty vehicles increased on Middlefield Road (5.8 percent), decreased on its parallel routes (-14.7 percent), and decreased on its cross streets (-29.3 percent) between the pre- and mid-pilot periods, suggesting that heavy-duty vehicle traffic may have shifted from parallel and cross streets to Middlefield Road.

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 9** for a summary of observed motor vehicle speeds at the 12 locations and see **Table 35** 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 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 locations are along the same corridor, it is assumed that many of the vehicles counted passed through multiple count locations.

Along the five parallel routes to Middlefield Road, the average daily volume of motor vehicles ranged between 382 and 1,571, with heavy vehicles representing between 2.0 percent and 5.5 percent of all motor vehicle traffic.

Along the four 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 also 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. 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 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 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 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

TBD

Table 9: 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%)	TBD	TBD
Middlefield Road	Hawthorne Avenue	Everett Avenue	21,808	815	17,955 (-17.7%)	491 (-39.8%)	TBD	TBD
Middlefield Road	Everett Avenue	Lytton Avenue	14,765	499	16,800 (13.8%)	522 (4.7%)	TBD	TBD
Webster Street	Lytton Avenue	Everett Avenue	952	53	1,325 (39.2%)	37 (-30.5%)	TBD	TBD
Byron Street	Lytton Avenue	Everett Avenue	382	12	700 (83.2%)	21 (75.0%)	TBD	TBD
Fulton Street	Lytton Avenue	University Avenue	266	10	393 (47.7%)	8 (15.8%)	TBD	TBD
Fulton Street	Lytton Avenue	Everett Avenue	264	8	314 (18.9%)	9 (6.7%)	TBD	TBD
Guinda Street	Lytton Avenue	University Avenue	1,571	9	1,754 (11.6%)	22 (0.0%)	TBD	TBD
Palo Alto Avenue	Middlefield Road	Fulton Street	267	32	464 (73.8%)	11 (-31.3%)	TBD	TBD
Hawthorne Avenue	Byron Street	Middlefield Road	3,636	89	2,889 (-20.5%)	53 (-40.7%)	TBD	TBD
Everett Avenue	Byron Street	Middlefield Road	3,044	58	1,723 (-43.4%)	46 (-21.6%)	TBD	TBD
Everett Avenue	Middlefield Road	Fulton Street	1,193	20	660 (-6.8%)	15 (-23.1%)	TBD	TBD

† 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*

**** TBD*

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 mid-pilot periods, the average motor vehicle travel time along the project corridor increased by 207.6 percent in the northbound direction during the morning peak period (from 1 minute 20 seconds to 4 minutes 9 seconds) and decreased by 18.6 percent in the southbound direction from during the morning peak period (from 1 minute 41 seconds to 1 minute 30 seconds).

Between the pre- and mid-pilot periods, the buffer time index for motor vehicle traffic in the northbound direction along the project corridor increased by 41.2 percent during the morning peak period (from 1 minute 1 second to 1 minute 23 seconds) and decreased by 41.5 percent in the southbound direction during the morning peak period (from 1 minute 24 seconds to 46 seconds). This suggests that individuals traveling along the project corridor in the northbound direction need to add an additional 22 seconds to their morning commute to account for variability in travel times but save 38 seconds in the southbound direction.

The overall transit running time within the project study area decreased 7.5 percent for bi-directional travel between the pre- and mid-pilot periods (from 3 minutes 46 seconds to 3 minutes 29 seconds). However, morning peak and evening peak period transit running times increased between the pre- and mid-pilot periods (17.0 percent and 9.4 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 10** 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 identify 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 units positioned along the corridor, the travel time of one device (and presumably one motor vehicle) between the two 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 northbound direction and 2,169 trips were observed in the southbound 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 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 northbound direction and 239 trips were observed in the southbound 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 northbound direction and 278 trips were observed in the southbound 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). [It is anticipated that BlueMac units will be reused for the end-pilot period, producing before/after travel time data with a single, consistent method.] 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 northbound direction and 7 trips were observed in the southbound 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 southbound 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 northbound 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 northbound and southbound 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 southbound 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 decrease in mean southbound travel time. During the same time period in the northbound 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

TBD

Table 10: Summary of Motor Vehicle Travel Time Reliability

Measure	PRE-PILOT (ALL DAY)*		MID-PILOT (AM PEAK)**		END-PILOT (ALL DAY)***	
	Northbound (AM Peak)	Southbound (AM Peak)	Northbound [AM Peak % Change]	Southbound [AM Peak % Change]	Northbound (% Change)	Southbound (% Change)
Number of Trips	2,457 (310)	2,169 (239)	7	7	TBD	TBD
Mean Travel Time	00:01:23 (00:01:20)	00:01:41 (00:01:51)	00:04:09 [207.6%]	00:01:30 [-18.6%]	TBD	TBD
Mean Travel Time Weighted Average	00:01:31 (00:01:34)		00:02:50 [80.4%]		TBD	
Median Travel Time	00:01:10 (00:01:12)	00:01:31 (00:01:45)	00:03:47 [217.5%]	00:01:25 [-19.0%]	TBD	TBD
85th Percentile Travel Time	00:01:55 (00:01:56)	00:02:18 (00:02:25)	00:05:27 [181.8%]	00:02:10 [-10.3%]	TBD	TBD
95th Percentile Travel Time	00:02:24 (00:02:20)	00:03:05 (00:03:09)	00:05:32 [137.4%]	00:02:16 [-28.0%]	TBD	TBD
Standard Deviation	00:01:00 (00:00:39)	00:01:03 (00:00:56)	00:01:13	00:00:34	TBD	TBD
Buffer Index (points)	0.74 (0.73)	0.84 (0.70)	0.34	0.50	TBD	TBD
Buffer Index Weighted Average (points)	0.79 (0.72)		0.42		TBD	
Buffer Time	00:01:01 (00:00:59)	00:01:24 (00:01:18)	00:01:23 [41.2%]	00:00:46 [-41.5%]	TBD	TBD
Buffer Time Weighted Average	00:01:12 (00:01:07)		00:01:05 [-4.1%]		TBD	

** 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*

**** TBD*

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 11** 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 **overall 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 overall 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 overall 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 **overall 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 overall 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 overall 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 pre-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 overall 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.

The average **westbound** transit vehicle running time for the overall 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 pre-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

TBD

Table 11: Summary of Transit Vehicle Running Time

Direction	Running Time	PRE-PILOT		MID-PILOT		END-PILOT	
		Summer†	Winter††	Summer†††	% Change	Winter††††	% Change
Eastbound*	Overall Average	0:03:08	0:03:24	0:03:29	11.5%	TBD	TBD
	Overall Standard Deviation	0:01:23	0:01:53	0:02:15	62.9%	TBD	TBD
	AM Peak Average (7:00 AM – 9:00 AM)	0:01:17	0:01:32	0:01:30	16.7%	TBD	TBD
	PM Peak Average (4:00 PM – 6:00 PM)	0:02:10	0:02:11	0:02:22	9.8%	TBD	TBD
Westbound**	Overall Average	0:04:27	0:04:45	0:03:29	-21.5%	TBD	TBD
	Overall Standard Deviation	0:01:20	0:01:19	0:02:15	69.4%	TBD	TBD
	AM Peak Average (7:00 AM – 9:00 AM)	0:01:17	0:02:18	0:01:30	17.3%	TBD	TBD
	PM Peak Average (4:00 PM – 6:00 PM)	0:02:11	0:02:26	0:02:22	9.0%	TBD	TBD
Both Directions	Overall Average	0:03:46	0:04:04	0:03:29	-7.5%	TBD	TBD
	Overall Standard Deviation	0:01:30	0:01:46	0:02:15	49.3%	TBD	TBD
	AM Peak Average (7:00 AM – 9:00 AM)	0:01:17	0:02:01	0:01:30	17.0%	TBD	TBD
	PM Peak Average (4:00 PM – 6:00 PM)	0:02:10	0:02:05	0:02:22	9.4%	TBD	TBD

† 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

†† TBD

** 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 mid-pilot periods, the percent of respondents in favor of the project increased from 33.3 percent to 54.7 percent. Possible explanations for this increased approval of the Middlefield North Road Diet include sample survey sample sizes, random variability, an increase awareness among respondents about the project, and/or decreased safety concerns.

While the percent of respondents with safety concerns decreased between the pre- and mid-pilot from 71.8 percent to 50.5 percent, residents have expressed lingering safety concerns. The most frequent safety concern expressed by survey respondents in both the pre- and mid-pilot survey was concern about motorists avoiding the newly installed barriers out of frustration or a lack of patience.

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 six (6) questions about the Middlefield North Road Diet:

1. Were you aware of this project prior to receiving this survey? (see **Table 12**)
2. How often do you typically travel along the project corridor? (see **Table 13**)
3. Do you have any safety concerns about the project corridor? (see **Table 14**)
4. When traveling along the project corridor, what is your typical mode of transportation? (see **Table 15**)
5. Do you frequently travel along parallel or adjacent streets to Middlefield Road? (see **Table 16**)
6. Are you in favor of a lane reduction on Middlefield Rd. to improve traffic safety? (see **Table 17**)

Approximately 700 surveys were mailed to residences near the project study area during the pre- and mid-pilot periods. For the pre-pilot survey instrument, see **Table 38**. For the mid-pilot survey instrument, see **Table 39**. For the end-pilot survey instrument, see **Table 40**.

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 37**).

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 12** for a summary of responses to Question #1 and **Table 37** 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 13** for a summary of responses to Question #2 and **Table 37** 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 14** for a summary of responses to Question #3 and **Table 36** 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 36** 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 23** 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 15** for a summary of responses to Question #4 and **Table 36** 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 16** for a summary of responses to Question #5 and **Table 36** 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 24** 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 17** for a summary of responses to Question #6 and **Table 36** 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 18** 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 19** 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 20** 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 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 #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 22** 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 (15.4 percent)
- Concern about traffic diversion (15.4 percent)
- General pessimism about the Middlefield North Road Diet (15.4 percent)
- General optimism about the Middlefield North Road Diet (15.4 percent)
- Concern about traffic diversion to parallel streets (15.4 percent)
- Desire for motor vehicle speed enforcement (7.7 percent)
- Concern about motor vehicle speeds (7.7 percent)
- Concern about poor walking conditions (7.7 percent)
- Concern about traffic congestion (7.7 percent)
- Desire for advanced warning signage at the intersection of Middlefield Road and Hawthorne (7.7 percent)

Among the additional comments received by phone or email, none were shared during the pre-pilot period. See **Table 37** 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 12** for a summary of responses to Question #1 and **Table 37** 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 13** for a summary of responses to Question #2 and **Table 37** 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 14** for a summary of responses to Question #3 and **Table 36** 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 36** 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 23** 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 15** for a summary of responses to Question #4 and **Table 36** 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 16** for a summary of responses to Question #5 and **Table 36** 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 24** 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 17** for a summary of responses to Question #6 and **Table 36** 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 18** 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 19** 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 20** 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 21** 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 37** 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

TBD

Table 12: Summary of Resident Survey Responses (Question #1)

QUESTION:	PRE-PILOT	MID-PILOT		END-PILOT	
"Were you aware of this project prior to receiving this survey?"	Responses (%, excluding no response)	Responses (%, excluding no response)	% Change	Responses (%, excluding no response)	% Change
Yes	20 (51.3%)	106 (83.5%)	38.6%	TBD	TBD
No	17 (43.6%)	18 (14.2%)	-207.5%	TBD	TBD
Not Sure	2 (5.1%)	3 (2.4%)	-117.1%	TBD	TBD
No Response	0	0	-	TBD	TBD
Total	39 (100.0%)	127 (100.0%)	-	TBD	TBD

Table 13: Summary of Resident Survey Responses (Question #2)

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

Table 14: Summary of Resident Survey Responses (Question #3)

QUESTION:	PRE-PILOT	MID-PILOT		END-PILOT	
"Do you have any safety concerns about the project corridor?"*	Responses (%, excluding no response)	Responses (%, excluding no response)	% Change	Responses (%, excluding no response)	% Change
Yes	28 (71.8%)	66 (52.0%)	-27.6%	TBD	TBD
No	9 (23.1%)	61 (48.0%)	108.1%	TBD	TBD
No Response	2	0	-	TBD	TBD
Total	39 (100.0%)	127 (100.0%)	-	TBD	TBD

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

Table 15: 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%	TBD	TBD
Bike	12 (30.8%)	19 (15.0%)	-51.4%	TBD	TBD
Transit	2 (5.1%)	2 (1.6%)	-69.3%	TBD	TBD
Walk	10 (25.6%)	44 (34.6%)	35.1%	TBD	TBD
Other	0 (0.0%)	0 (0.0%)	N/A	TBD	TBD
N/A	0 (0.0%)	0 (0.0%)	N/A	TBD	TBD
No Response	0	0	-	TBD	TBD
Total Respondents/Responses	39/61	127/182	-	TBD	TBD

** Multiple responses allowed per respondent*

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

Table 16: 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%	TBD	TBD
No	11 (28.2%)	27 (21.3%)	-24.6%	TBD	TBD
Not Sure	1 (2.6%)	4 (3.1%)	22.8%	TBD	TBD
No Response	0	0	-	TBD	TBD
Total	39 (100.0%)	127 (100.0%)	-	TBD	TBD

Table 17: 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)	% Change	END-PILOT Responses (%, excluding no response)	% Change
Yes	13 (33.3%)	72 (56.7%)	70.1%	TBD	TBD
No	15 (38.5%)	39 (30.7%)	-20.2%	TBD	TBD
Not Sure	11 (28.2%)	15 (11.8%)	-58.1%	TBD	TBD
No Response	0	1	-	TBD	TBD
Total	39 (100.0%)	95 (100.0%)	-	TBD	TBD

Table 18: 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%, TBD	17.9%, 23.0%, TBD	7.7%, 9.5%, TBD	**20, 105, TBD**
	% No (Pre, Mid, End)	7.7%, 5.6%, TBD	17.9%, 6.3%, TBD	17.9%, 2.4%, TBD	**17, 18, TBD**
	% Not Sure (Pre, Mid, End)	0.0%, 0.8%, TBD	2.6%, 1.6%, TBD	2.6%, 0.0%, TBD	**2, 3, TBD**
	Total (Pre, Mid, End)	**13, 72, TBD**	**15, 39, TBD**	**11, 15, TBD**	**39, 126, TBD**

Table 19: 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%, TBD	20.5%, 17.5%, TBD	17.9%, 4.8%, TBD	**24, 68, TBD**
	% Once per day (Pre, Mid, End)	0.0%, 10.3%, TBD	10.3%, 9.5%, TBD	7.7%, 2.4%, TBD	**7, 28, TBD**
	% Weekly (Pre, Mid, End)	10.3%, 11.9%, TBD	7.7%, 4.0%, TBD	0.0%, 3.2%, TBD	**7, 24, TBD**
	% Monthly (Pre, Mid, End)	0.0%, 2.4%, TBD	0.0%, 0.0%, TBD	2.6%, 1.6%, TBD	**1, 5, TBD**
	% Never (Pre, Mid, End)	0.0%, 0.8%, TBD	0.0%, 0.0%, TBD	0.0%, 0.0%, TBD	**0, 1, TBD**
	Total (Pre, Mid, End)	**13, 72, TBD**	**15, 39, TBD**	**11, 15, TBD**	**39, 126, TBD**

Table 20: 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%, TBD	29.7%, 21.4%, TBD	21.6%, 7.1%, TBD	**28, 65, TBD**
	% No (Pre, Mid, End)	10.8%, 34.1%, TBD	8.1%, 9.5%, TBD	5.4%, 4.8%, TBD	**9, 61, TBD**
	Total (Pre, Mid, End)	**13, 72, TBD**	**14, 39, TBD**	**10, 15, TBD**	**37, 126, TBD**

Table 21: 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%, TBD	24.6%, 21.5%, TBD	18.0%, 6.6%, TBD	**37, 116, TBD**
	Bike (Pre, Mid, End)	11.5%, 8.8%, TBD	3.3%, 1.1%, TBD	4.9%, 0.6%, TBD	**12, 19, TBD**
	Transit (Pre, Mid, End)	0.0%, 1.1%, TBD	0.0%, 0.0%, TBD	3.3%, 0.0%, TBD	**2, 2, TBD**
	Walk (Pre, Mid, End)	9.8%, 16.0%, TBD	3.3%, 5.5%, TBD	3.3%, 2.8%, TBD	**10, 44, TBD**
	Other (Pre, Mid, End)	0.0%, 0.0%, TBD	0.0%, 0.0%, TBD	0.0%, 0.0%, TBD	**0, 0, TBD**
	Total (Pre, Mid, End)	**24, 112, TBD**	**19, 51, TBD**	**18, 18, TBD**	**61, 181, TBD**

Table 22: 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%, TBD	23.1%, 21.4%, TBD	23.1%, 7.9%, TBD	**27, 95, TBD**
	% No (Pre, Mid, End)	10.3%, 10.3%, TBD	15.4%, 8.7%, TBD	2.6%, 2.4%, TBD	**11, 27, TBD**
	% Not Sure (Pre, Mid, End)	0.0%, 0.8%, TBD	0.0%, 0.8%, TBD	2.6%, 1.6%, TBD	**1, 4, TBD**
	Total (Pre, Mid, End)	**13, 72, TBD**	**15, 39, TBD**	**11, 15, TBD**	**39, 126, TBD**

Table 23: 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%, TBD	17.9%, 20.5%, TBD	**23, 69, TBD**
	% Once per day (Pre, Mid, End)	21.4%, 12.6%, TBD	0.0%, 9.4%, TBD	**6, 28, TBD**
	% Weekly (Pre, Mid, End)	14.3%, 5.5%, TBD	10.7%, 13.4%, TBD	**7, 24, TBD**
	% Monthly (Pre, Mid, End)	0.0%, 0.0%, TBD	3.6%, 3.9%, TBD	**1, 5, TBD**
	% Never (Pre, Mid, End)	0.0%, 0.0%, TBD	0.0%, 0.8%, TBD	**0, 1, TBD**
	Total (Pre, Mid, End)	**28, 66, TBD**	**9, 61, TBD**	**37, 127, TBD**

Table 24: 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%, TBD	16.4%, 13.2%, TBD	1.6%, 1.6%, TBD	**37, 117, TBD**
	Bike (Pre, Mid, End)	16.4%, 8.8%, TBD	3.3%, 1.6%, TBD	0.0%, 0.0%, TBD	**12, 19, TBD**
	Transit (Pre, Mid, End)	3.3%, 0.5%, TBD	0.0%, 0.5%, TBD	0.0%, 0.0%, TBD	**2, 2, TBD**
	Walk (Pre, Mid, End)	11.5%, 20.3%, TBD	4.9%, 2.7%, TBD	0.0%, 1.1%, TBD	**10, 44, TBD**
	Other (Pre, Mid, End)	0.0%, 0.0%, TBD	0.0%, 0.0%, TBD	0.0%, 0.0%, TBD	**0, 0, TBD**
	Total (Pre, Mid, End)	**45, 144, TBD**	**15, 33, TBD**	**1, 5, TBD**	**61, 182, TBD**

Appendix

Table 25: Reported Collisions (Palo Alto Police Department)

Case #	Date	Time	Injuries	Fatalities	Violation	Hit/Run	Involved with	Location	At/ Or	#	Feet/ Miles	Cross Street
140000106	1/7/2014	2:12 PM	1	0	22107VC	N	C- Other Vehicle	700BLK Middlefield Rd	OR	151	FEET	Homer Ave
140000307	1/16/2014	4:14 PM	0	0	21804(A)VC	N	C- Other Vehicle	600BLK Middlefield Rd	AT	-	-	Forest Ave
140000762	2/7/2014	8:06 PM	1	0	21801(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
140001357	3/9/2014	5:59 AM	2	0	23152(A)VC	N	C- Other Vehicle	500BLK Middlefield Rd	AT	-	-	University Ave
140001700	3/13/2014	2:30 PM	0	0	-	N	-	Middlefield Rd	AT	-	-	University Ave
140001474	3/14/2014	8:57 AM	1	0	21453(A)VC	Y	D- Veh on Other Roadway	600BLK Middlefield Rd	AT	-	-	Hamilton Ave
140002023	4/11/2014	5:56 PM	1	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
140002094	4/16/2014	8:00 AM	1	0	22350VC	N	C- Other Vehicle	300BLK Middlefield Rd	OR	109	FEET	Everett Ave
140002232	4/23/2014	5:08 PM	1	0	21804(A)VC	N	D- Veh on Other Roadway	300BLK Middlefield Rd	AT	-	-	Everett Ave
140002599	5/10/2014	8:34 PM	0	0	22107VC	N	C- Other Vehicle	300BLK Middlefield Rd	OR	150	FEET	Lytton Ave
140002781	5/19/2014	12:54 PM	0	0	21802(B)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Everett Ave
140002800	5/20/2014	11:55 AM	1	0	21802(A)VC	Y	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave

Case #	Date	Time	Injuries	Fatalities	Violation	Hit/Run	Involved with	Location	At/ Or	#	Feet/ Miles	Cross Street
140002937	5/26/2014	5:04 PM	0	0	22450(A)VC	N	D- Veh on Other Roadway	Middlefield Rd	AT	-	-	Everett Ave
140003264	6/11/2014	11:45 AM	1	0	21802(A)VC	N	C- Other Vehicle	300BLK Middlefield Rd	AT	-	-	Everett Ave
140003581	6/26/2014	5:52 PM	2	0	-	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Hamilton Ave
140003786	7/6/2014	1:29 PM	0	0	-	N	D- Veh on Other Roadway	800BLK Middlefield Rd	AT	-	-	Channing Ave
140003806	7/7/2014	6:06 PM	1	0	21802(A)VC	N	C- Other Vehicle	300BLK Middlefield Rd	AT	-	-	Everett Ave
140003878	7/10/2014	6:10 PM	1	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Everett Ave
140004137	7/22/2014	5:03 PM	1	0	22350VC	N	C- Other Vehicle	100BLK Middlefield Rd	OR	20	-	Palo Alto Ave
140004226	7/27/2014	4:49 PM	3	0	21802(A)VC	N	C- Other Vehicle	700BLK Middlefield Rd	AT	-	-	Everett Ave
140004319	7/31/2014	6:45 PM	0	0	21802(B)VC	N	C- Other Vehicle	200BLK Middlefield Rd	AT	-	-	Everett Ave
140004844	8/26/2014	3:56 PM	2	0	21802(A)VC	N	C- Other Vehicle	700BLK Middlefield Rd	AT	-	-	Forest Ave
140005033	9/4/2014	9:30 AM	0	0	-	N	C- Other Vehicle	600BLK Middlefield Rd	OR	1	MILES	Forest Ave
140005518	9/26/2014	11:40 AM	0	0	21453(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Homer Ave
140005589	9/29/2014	1:14 PM	0	0	-	N	C- Other Vehicle	800BLK Middlefield Rd	OR	12	FEET	Homer Ave
140005776	10/8/2014	12:19 PM	1	0	21801(A)VC	Y	C- Other Vehicle	Middlefield Rd	AT	-	-	Hamilton Ave

Case #	Date	Time	Injuries	Fatalities	Violation	Hit/Run	Involved with	Location	At/ Or	#	Feet/ Miles	Cross Street
140006213	10/30/2014	10:25 AM	0	0	21802(A)VC	N	-	Middlefield Rd	AT	-	-	Everett Ave
140006873	12/4/2014	6:31 PM	1	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Everett Ave
140006900	12/6/2014	1:32 PM	1	0	21802(A)VC	N	C- Other Vehicle	200BLK Middlefield Rd	AT	-	-	Everett Ave
140007013	12/12/2014	5:16 PM	1	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Everett Ave
150000438	1/23/2015	6:08 PM	0	0	21802(A)VC	Y	C- Other Vehicle	200BLK Middlefield Rd	AT	-	-	Everett Ave
150000621	2/1/2015	4:19 PM	0	0	21453(A)VC	N	C- Other Vehicle	400BLK Middlefield Rd	AT	-	-	Lytton Ave
150000757	2/8/2015	8:32 PM	0	0	22107VC	N	H- Animal	600BLK Middlefield Rd	OR	6	FEET	Lytton Ave
150000952	2/18/2015	8:21 AM	1	0	22107VC	N	I- Fixed Object	200BLK Middlefield Rd	OR	75	FEET	Everett Ave
150001753	3/26/2015	5:00 PM	0	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Everett Ave
150002270	4/20/2015	4:45 PM	2	0	21802(A)VC	N	C- Other Vehicle	700BLK Middlefield Rd	AT	-	-	Forest Ave
150002406	4/26/2015	3:48 PM	0	0	21453(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Channing Ave
150002749	5/8/2015	6:05 PM	1	0	21800(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Everett Ave
150003145	5/26/2015	4:02 PM	3	0	21802(A)VC	N	C- Other Vehicle	700BLK Middlefield Rd	AT	-	-	Forest Ave
150003591	6/17/2015	12:07 PM	1	0	21658(A)VC	N	C- Other Vehicle	500BLK Middlefield Rd	OR	12	FEET	Hamilton Ave

Case #	Date	Time	Injuries	Fatalities	Violation	Hit/Run	Involved with	Location	At/ Or	#	Feet/ Miles	Cross Street
150003642	6/18/2015	2:18 PM	0	0	22350VC	N	-	400BLK Middlefield Rd	OR	30	FEET	University Ave
150003704	6/23/2015	8:48 AM	0	0	-	N	-	400BLK Middlefield Rd	OR	8	FEET	University Ave
150004358	7/18/2015	3:46 PM	2	0	22107VC	N	C- Other Vehicle	100BLK Middlefield Rd	OR	17	FEET	Scl of Palo Alto Avenue
150004609	7/28/2015	6:30 PM	2	0	21804(A)Vc	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
150004874	8/8/2015	9:38 PM	0	0	22107VC	N	C- Other Vehicle	300BLK Middlefield Rd	OR	150	FEET	Hawthorne Ave
150004948	8/12/2015	1:44 PM	0	0	21802(A)VC	N	-	700BLK Middlefield Rd	OR	9	FEET	Forest Ave
150005055	8/16/2015	3:41 PM	2	0	21453(A)VC	N	C- Other Vehicle	800BLK Middlefield Rd	AT	-	-	Channing Ave
150005111	8/18/2015	2:28 PM	0	0	21802(A)VC	N	C- Other Vehicle	200BLK Middlefield Rd	OR	1	FEET	Hawthorne Ave
150005824	9/16/2015	9:04 AM	0	0	21801(A)VC	N	C- Other Vehicle	600BLK Middlefield Rd	AT	-	-	Hamilton Ave
150006768	10/29/2015	1:27 PM	1	0	22107VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Channing Ave
150007178	11/19/2015	8:12 AM	1	0	22101(D)VC	N	C- Other Vehicle	200BLK Middlefield Rd	OR	50	FEET	Everett Ave
150007411	12/1/2015	9:35 AM	0	0	21802(A)VC	N	B- Pedestrian	Middlefield Rd	AT	-	-	Everett Ave
160000041	1/4/2016	8:11 AM	1	0	21802(A)VC	N	C- Other Vehicle	300BLK Middlefield Rd	AT	-	-	Everett Ave
160000374	1/23/2016	3:41 PM	0	0	21802(A)VC	N	C- Other Vehicle	100BLK Middlefield Rd	AT	-	-	Hawthorne Ave

Case #	Date	Time	Injuries	Fatalities	Violation	Hit/Run	Involved with	Location	At/ Or	#	Feet/ Miles	Cross Street
160000785	2/15/2016	6:10 PM	1	0	21802(A)VC	Y	C- Other Vehicle	700BLK Middlefield Rd	AT	-	-	Forest Ave
160000823	2/17/2016	2:06 PM	1	0	21453(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Channing Ave
160000975	2/26/2016	12:16 PM	2	0	21453(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Channing Ave
160001045	3/1/2016	12:22 PM	1	0	21801(A)VC	N	C- Other Vehicle	500BLK Middlefield Rd	AT	-	-	Hamilton Ave
160001046	3/1/2016	12:43 PM	1	0	21453(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Channing Ave
160001080	3/3/2016	10:57 AM	1	0	-	N	B- Pedestrian	800BLK Middlefield Rd	OR	52	FEET	-
160001375	3/20/2016	11:02 AM	1	0	21453(A)VC	N	-	Middlefield Rd	AT	-	-	Channing Ave
160001704	4/6/2016	6:50 PM	0	0	22350VC	N	C- Other Vehicle	300BLK Middlefield Rd	AT	-	-	Everett Ave
160001880	4/16/2016	4:23 PM	1	0	21453(A)VC	N	-	800BLK Middlefield Rd	AT	-	-	Channing Ave
160002116	4/29/2016	6:23 PM	2	0	21802(A)VC	N	C- Other Vehicle	300BLK Middlefield Rd	AT	-	-	Everett Ave
160002327	5/10/2016	8:47 AM	1	0	-	N	-	Middlefield Rd	AT	-	-	Everett Ave
160002358	5/11/2016	9:13 PM	1	0	21453(A)VC	N	B- Pedestrian	300BLK Middlefield Rd	AT	-	-	Lytton Ave
160002419	5/15/2016	1:00 PM	1	0	21801(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Everett Ave
160002540	5/22/2016	3:40 PM	1	0	21802(A)VC	N	C- Other Vehicle	600BLK Middlefield Rd	OR	16	FEET	Forest Ave

Case #	Date	Time	Injuries	Fatalities	Violation	Hit/Run	Involved with	Location	At/ Or	#	Feet/ Miles	Cross Street
160002729	6/2/2016	3:26 PM	1	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Everett Ave
160002994	6/19/2016	4:07 PM	3	0	22350(A)VC	N	C- Other Vehicle	100BLK Middlefield Rd	OR	70	FEET	Hawthorne Ave
160003143	6/28/2016	5:41 PM	2	0	22350(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
160003249	7/2/2016	6:21 PM	1	0	21802(A)VC	N	I- Fixed Object	200BLK Middlefield Rd	OR	12	FEET	Everett Ave
160003401	7/10/2016	5:17 PM	0	0	22450(A)VC	N	C- Other Vehicle	600BLK Middlefield Rd	AT	-	-	Forest Ave
160003477	7/14/2016	11:40 AM	0	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
160003506	7/15/2016	9:15 PM	1	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
160003614	7/21/2016	8:44 AM	0	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
160003763	7/28/2016	8:55 AM	0	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
160003792	7/29/2016	10:24 AM	0	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Hamilton Ave
160003865	8/2/2016	3:21 PM	1	0	-	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Hamilton Ave
160003960	8/6/2016	1:20 AM	0	0	21453(A)VC	Y	C- Other Vehicle	400BLK Middlefield Rd	AT	-	-	University Ave
160004053	8/11/2016	1:45 PM	0	0	-	N	-	Middlefield Rd	AT	-	-	Hawthorne Ave
160004217	8/19/2016	5:44 PM	0	0	21658(A)VC	N	C- Other Vehicle	200BLK Middlefield Rd	OR	20	FEET	Hawthorne Ave

Case #	Date	Time	Injuries	Fatalities	Violation	Hit/Run	Involved with	Location	At/ Or	#	Feet/ Miles	Cross Street
160004324	8/25/2016	3:00 PM	1	0	21802(A)VC	N	C- Other Vehicle	700BLK Middlefield Rd	AT	-	-	Forest Ave
160004582	9/8/2016	4:25 PM	0	0	22107VC	N	C- Other Vehicle	100BLK Middlefield Rd	OR	-	FEET	Palo Alto Ave
160004747	9/16/2016	4:58 PM	0	0	-	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Lytton Ave
160004834	9/20/2016	5:25 PM	2	0	21453(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	University Ave
160005023	9/30/2016	11:18 AM	1	0	22658(A)VC	Y	I- Fixed Object	Middlefield Rd	AT	-	-	Lytton Ave
160005318	10/17/2016	4:10 PM	1	0	21801(A)VC	N	C- Other Vehicle	300BLK Middlefield Rd	OR	2	FEET	-
160005391	10/20/2016	3:31 PM	2	0	21802(A)VC	N	C- Other Vehicle	700BLK Middlefield Rd	AT	-	-	Forest Ave
160005541	10/27/2016	3:40 PM	3	0	22350VC	N	C- Other Vehicle	500BLK Middlefield Rd	OR	100	FEET	Ringwood Ave
160005960	11/19/2016	12:25 PM	0	0	21802(A)VC	N	C- Other Vehicle	200BLK Middlefield Rd	AT	-	-	Everett Ave
160006220	12/2/2016	5:40 PM	0	0	21802(A)VC	Y	C- Other Vehicle	100BLK Middlefield Rd	AT	-	-	Hawthorne Ave
160006373	12/12/2016	5:05 PM	0	0	21658(A)VC	Y	C- Other Vehicle	200BLK Middlefield Rd	AT	-	-	Hawthorne Ave
170000754	2/8/2017	11:28 AM	1	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
170000922	2/16/2017	9:21 PM	0	0	22107VC	Y	I- Fixed Object	300BLK Middlefield Rd	OR	150	FEET	Lytton Ave
170001052	2/23/2017	6:49 PM	0	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Hawthorne Ave

Case #	Date	Time	Injuries	Fatalities	Violation	Hit/Run	Involved with	Location	At/ Or	#	Feet/ Miles	Cross Street
170001628	3/25/2017	2:58 PM	5	0	21801(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Hamilton Ave
170001665	3/28/2017	11:51 AM	0	0	21802(A)VC	N	C- Other Vehicle	300BLK Middlefield Rd	AT	-	-	Everett Ave
170001955	4/11/2017	2:30 PM	5	0	21453(A)VC	N	C- Other Vehicle	600BLK Middlefield Rd	AT	-	-	Hamilton Ave
170002226	4/25/2017	9:02 AM	0	0	21802(A)VC	N	C- Other Vehicle	200BLK Middlefield Rd	-	-	-	-
170002458	5/7/2017	5:50 PM	1	0	21801(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
170002762	5/20/2017	11:40 AM	0	0	-	N		Middlefield Rd	-	-	-	Palo Alto Ave
170003011	6/5/2017	8:36 AM	0	0	21802(A)VC	-	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
170003370	6/26/2017	9:18 AM	0	0	22350(A)VC	N	C- Other Vehicle	200BLK Middlefield Rd	OR	9	FEET	Hawthorne
170003483	6/30/2017	11:47 PM	1	0	21453(A)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	University Ave
170003761	7/14/2017	4:20 PM	0	0	21802(B)VC	N	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave
170004021	7/28/2017	12:11 PM	2	0	21802(A)VC	N	C- Other Vehicle	700BLK Middlefield Rd	AT	-	-	Forest Ave
170004348	8/14/2017	10:36 AM	1	0	21802(A)VC	N	C- Other Vehicle	Middlefield Rd	OR	8	FEET	Forest Ave
170005151	9/23/2017	12:01 PM	3	0	21802(A)VC	N	C- Other Vehicle	600BLK Middlefield Rd	AT	-	-	Forest Ave
170005356	10/2/2017	6:30 PM	1	0	21801(A)VC	-	C- Other Vehicle	Middlefield Rd	AT	-	-	Forest Ave

Table 26: 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 27: 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

Table 28: 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	TBD	TBD	TBD	TBD	TBD
	Byron Street between Lytton Avenue and Everett Avenue	TBD	TBD	TBD	TBD	TBD
	Middlefield Road between Lytton Avenue and Everett Avenue	TBD	TBD	TBD	TBD	TBD
	Fulton Street between Lytton Avenue and Everett Avenue	TBD	TBD	TBD	TBD	TBD

Table 29: 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

Table 30: Motor Vehicle Level of Service (Middlefield Road at Lytton Avenue)

			LOS (Delay)												
			Middlefield Road						Lytton Avenue						
Pilot Period	Peak Period	Measure	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Overall
PRE-PILOT	AM Peak Hour	Movement	D (51.1 s)			E (55.7 s)			E (62.4 s)	D (55.0 s)		D (37.3 s)			D (52.3 s)
		Approach	D (51.1 s)			E (55.7 s)			E (58.8 s)			D (37.3 s)			
	MID Peak Hour	Movement	D (54.6 s)			E (58.4 s)			E (59.5 s)	E (62.9 s)		C (27.9 s)			E (56.2 s)
		Approach	D (54.6 s)			E (58.4 s)			E (61.5 s)			C (27.9 s)			
	PM Peak Hour	Movement	D (51.4 s)			E (69.5 s)			D (54.7 s)	E (70.9 s)		D (40.8 s)			E (60.0 s)
		Approach	D (51.4 s)			E (69.5 s)			E (63.8 s)			D (40.8 s)			
MID-PILOT	AM Peak Hour	Movement	D (51.1 s)			D (38.9 s)	D (50.8 s)		E (62.7 s)	D (50.3 s)		D (48.8 s)			D (51.0 s)
		Approach	D (51.1 s)			D (47.7 s)			E (58.0 s)			D (48.8 s)			
	MID Peak Hour	Movement	D (54.6 s)			D (42.5 s)	E (55.4 s)		E (61.8 s)	E (55.2 s)		C (33.4 s)			D (53.7 s)
		Approach	D (54.6 s)			D (51.9 s)			E (58.3 s)			C (33.4 s)			
	PM Peak Hour	Movement	D (51.4 s)			D (43.2 s)	F (195.6 s)		E (63.5 s)	E (63.7 s)		D (42.5 s)			F (91.9 s)
		Approach	D (51.4 s)			F (176.1 s)			E (63.6 s)			D (42.5 s)			
END-PILOT	AM Peak Hour	Movement	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
		Approach	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
	MID Peak Hour	Movement	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
		Approach	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
	PM Peak Hour	Movement	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
		Approach	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	

Table 31: Motor Vehicle Level of Service (Middlefield Road at University Avenue)

			LOS (Delay)												
			Middlefield Road						University Avenue						
Pilot Period	Peak Period	Measure	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Overall
PRE-PILOT	AM Peak Hour	Movement	D (48.0 s)			D (50.3s)			B (14.2 s)	B (15.7 s)		B (15.3 s)	B (17.6 s)		C (31.5 s)
		Approach	D (48.0 s)			D (50.3 s)			B (15.5 s)			B (17.3 s)			
	MID Peak Hour	Movement	D (49.0 s)			D (50.4 s)			B (14.2 s)	B (16.9 s)		B (15.1 s)	B (16.4 s)		C (30.7 s)
		Approach	D (49.0 s)			D (50.4 s)			B (16.7 s)			B (16.2 s)			
	PM Peak Hour	Movement	D (47.4 s)			D (49.8 s)			B (18.3 s)	C (21.1 s)		B (19.4 s)	B (19.6 s)		D (36.0 s)
		Approach	D (47.4 s)			D (49.8 s)			C (20.7 s)			B (19.6 s)			
MID-PILOT	AM Peak Hour	Movement	D (48.0 s)			D (50.3s)		B (14.2 s)	B (15.7 s)	B (15.3 s)		B (17.6 s)	D (48.0 s)		C (31.5 s)
		Approach	D (48.0 s)			D (50.3 s)			B (15.5 s)			B (17.3 s)			
	MID Peak Hour	Movement	D (49.0 s)			D (50.4 s)		B (14.2 s)	B (16.9 s)	B (15.1 s)		B (16.4 s)	D (49.0 s)		C (30.7 s)
		Approach	D (49.0 s)			D (50.4 s)			B (16.7 s)			B (16.2 s)			
	PM Peak Hour	Movement	D (47.4 s)			D (49.8 s)		B (18.3 s)	C (21.1 s)	B (19.4 s)		B (19.6 s)	D (47.4 s)		D (36.0 s)
		Approach	D (47.4 s)			D (49.8 s)			C (20.7 s)			B (19.6 s)			
END-PILOT	AM Peak Hour	Movement	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
		Approach	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
	MID Peak Hour	Movement	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
		Approach	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
	PM Peak Hour	Movement	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Table 32: Queue Lengths (Pre-Pilot)

Measure	Middlefield Road at Lytton Avenue															
	AM Peak					MID Peak					PM Peak					
	EBT	WBT	NBL	NBT	SBT	EBT	WBT	NBL	NBT	SBT	EBT	WBT	NBL	NBT	SBT	
50th Percentile Queue Length (ft)	200	184	125	124	34	268	245	195	351	54	268	198	118	76	105	
95th Percentile Queue Length (ft)	248	236	187	201	85	316	357	293	397	108	327	248	184	141	199	
Storage Available (ft)	381	320	160	230	223	381	320	160	230	223	633	320	160	577	408	

Measure	Middlefield Road at University Avenue																	
	AM Peak						MID Peak						PM Peak					
	EBT	WBT	NBL	NBT	SBL	SBT	EBT	WBT	NBL	NBT	SBL	SBT	EBT	WBT	NBL	NBT	SBL	SBT
50th Percentile Queue Length (ft)	166	124	14	148	34	133	208	178	21	18	37	97	178	122	9	86	38	149
95th Percentile Queue Length (ft)	211	167	44	271	84	219	260	232	53	236	85	153	223	164	31	167	91	243
Storage Available (ft)	320	328	175	200	190	229	320	328	175	200	190	229	320	634	175	555	190	478

Table 33: Queue Lengths (Mid-Pilot)

Measure	Middlefield Road at Lytton Avenue																	
	AM Peak						MID Peak						PM Peak					
	EBT	WBL	WBT	NBL	NBT	SBT	EBT	WBL	WBT	NBL	NBT	SBT	EBT	WBL	WBT	NBL	NBT	SBT
50th Percentile Queue Length (ft)	268	83	271	136	26	118	200	82	243	132	90	38	268	51	533	217	217	54
95th Percentile Queue Length (ft)	327	149	470	203	76	199	248	145	407	197	161	85	316	100	797	308	311	108
Storage Available (ft)	633	-	320	160	577	408	381	-	320	160	230	223	381	-	320	160	230	223
Measure	Middlefield Road at University Avenue																	
	AM Peak						MID Peak						PM Peak					
	EBT	WBT	NBL	NBT	SBL	SBT	EBT	WBT	NBL	NBT	SBL	SBT	EBT	WBT	NBL	NBT	SBL	SBT
50th Percentile Queue Length (ft)	178	122	9	86	38	149	166	124	14	148	34	133	208	178	21	138	37	97
95th Percentile Queue Length (ft)	223	164	31	167	91	243	211	167	44	271	84	219	260	232	53	236	85	153
Storage Available (ft)	320	634	175	555	190	478	320	328	175	200	190	229	320	328	175	200	190	229

Table 34: Queue Lengths (End-Pilot)

Measure	Middlefield Road at Lytton Avenue																	
	AM Peak						MID Peak						PM Peak					
	EBT	WBL	WBT	NBL	NBT	SBT	EBT	WBL	WBT	NBL	NBT	SBT	EBT	WBL	WBT	NBL	NBT	SBT
50th Percentile Queue Length (ft)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
95th Percentile Queue Length (ft)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Storage Available (ft)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Measure	Middlefield Road at University Avenue																	
	AM Peak						MID Peak						PM Peak					
	EBT	WBT	NBL	NBT	SBL	SBT	EBT	WBT	NBL	NBT	SBL	SBT	EBT	WBT	NBL	NBT	SBL	SBT
50th Percentile Queue Length (ft)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
95th Percentile Queue Length (ft)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Storage Available (ft)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Table 35: 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%

				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
10/4/2017 - 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%

Table 36: Survey Responses

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	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	
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

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
									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	
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	1	1	2	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					completely gridlocked, and everyone will use Palo Alto as an alternatve making our neighborhood street dangerous.				
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
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	1, 2	1	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					speedway with average speed 40mph+				
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 accidents, speeding, and people making illegal left turns from Hawthorne and Everett	1	1	3	Q1- which plan is being implemented 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	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
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	
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	1	2	2	Too dangerous. Open up PA North more

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					Webster house. Lytton Gardens drive.				
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 reduction warning arrows at Univ. Ave. & Middlefield (arrows on the pavement) come too quickly - need more warning.	1	1	3	
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	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
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	
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	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
MID-PILOT	17	1	1	2		1	1	1	
MID-PILOT	18	1	3	2		1	1	1	
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 #6‡	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 streets for pedestrians and to make a left turn on Middlefield Road for the cars	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 #6‡	Additional Comments
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.
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.

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
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	
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	1	1	2	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					need to cross two lanes with heavy opposite traffic.				
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. Traffic backup at Willow makes above worse.	1	1	1	I assume you mean continued configuration of existing pilot.
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.	1,2,3	2	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					Otherwise it has seemed remarkably effective in promoting safe speeds and safe behavior.				
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 are unbearable. Often we cannot exit our Lytton driveway due to congested traffic.	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) 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	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
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 (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	1	1	3	
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 minutes for us to get home as we live just off of Hawthorne.	1	1	2	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
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	
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	1	1	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					(perhaps with green paint) the bike lane, that would be greatly appreciated. Thanks for your great work guys!				
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	
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	1	2	2	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					long. Engines idle, lines exist where none were before. This is no good.				
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	
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,	1,4	1	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					making a left turn on Middlefield to go home. Thanks!				
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!
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.	1,2,4	1	1	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					We have more traffic on Byron 200 block as confused motorists speed by. Biggest safety concern - drivers two DISREGARD barriers and drive 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	
MID-PILOT	103	1	2	1	Increase traffic at [Lytton] Ave.	1	1	2	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
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 from turning left from Hawthorne or Everett.	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.
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	4	1	1	Q2: Walk across Middlefield daily [; travel] weekly by car. Q5: walk Q6: I like the current changes

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					Middlefield safely using the new pedestrian crossing at Everett.				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 right lane. It's very disturbing and dangerous.	1	1	1	
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	1	1	2	

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
					Palo Alto is a sleepy suburb. It's not. Get over it.				
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].
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

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
									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 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

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
									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 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

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
									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, 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

Period	ID	Question #1*	Question #2**	Question #3***	Question #3 Follow-up†	Question #4††	Question #5†††	Question #6‡	Additional Comments
									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?

**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 #6: 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)

Table 37: 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

ID	Date Received	Comment
		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. 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

ID	Date Received	Comment
		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 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.

ID	Date Received	Comment
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.
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.

ID	Date Received	Comment
		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 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?

Table 38: 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 39: 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 40: End-Pilot Survey Instrument

TBD