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510.208.7400

# **Bicycle and Pedestrian Advisory Committee Meeting Agenda** Thursday, June 28, 2018, 5:30 p.m.

	Chair:	Matt Turner	Staff Liaison:	<u>Carolyn Clevenger</u> ,	<u>Chris G. N</u>	<u>Aarks</u>
	Vice Chair:	Kristi Marleau	Public Meeting Coordinator:	Angie Ayers		
1.	Call to O	rder				
2.	Roll Call					
3.	Public Co	omment				
4.	BPAC Me	eting Minutes			Page/	Action
	4.1. <u>App</u>	prove March 29, 20	18 BPAC Meeting Minutes		1	А
5.	Regular N	<b>Natters</b>				
	5.1. <u>East</u>	Bay Regional Bike	share: Ford GoBike and Bike She	are for All	7	I
	5.2. <u>2017</u>	7 Alameda County	wide Bike/Ped Count Program	<u>Update</u>	9	Ι
	5.3. <u>Cou</u>	intrywide Active Tr	ansportation Plan: Existing Cond	<u>ditions Update</u>	23	Ι
6.	Organiza	tional Meeting				
	6.1. <u>Elec</u>	tion of Officers for	FY 2018-19		47	А
	6.2. <u>App</u>	proval of the 2018-1	9 Fiscal Year Calendar		49	А
7.	Staff Rep	orts				
8.	Member	Reports				
	8.1. <u>BPA</u>	<u>C Roster</u>			51	Ι

#### 9. Adjournment

Next Meeting: October 18, 2018

Notes:

- All items on the agenda are subject to action and/or change by the committee.
- To comment on an item not on the agenda (3-minute limit), submit a speaker card to the clerk.
- Call 510.208.7450 (Voice) or 1.800.855.7100 (TTY) five days in advance to request a sign-language interpreter.
- If information is needed in another language, contact 510.208.7400. Hard copies available only by request.
- Call 510.208.7400 48 hours in advance to request accommodation or assistance at this meeting.
- Meeting agendas and staff reports are available on the website calendar.
- Alameda CTC is located near 12th St. Oakland City Center BART station and AC Transit bus lines. Directions and parking information are available online.



1111 Broadway, Suite 800, Oakland, CA 94607

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#### Alameda CTC Schedule of Upcoming Meetings:

Description	Date	Time
Alameda County Technical Advisory Committee (ACTAC)	July 5, 2018	1:30 p.m.
Finance and Administration Committee (FAC)		8:30 a.m.
I-680 Sunol Smart Carpool Lane Joint Powers Authority (I-680 JPA)	September 10, 2018	9:30 a.m.
I-580 Express Lane Policy Committee (I-580 PC)		10:00 a.m.
Planning, Policy and Legislation Committee (PPLC)		10:30 a.m.
Programs and Projects Committee (PPC)	July 9, 2018	12:00 p.m.
FAC Audit Committee		1:30 p.m.
Independent Watchdog Committee (IWC)	July 9, 2018	5:30 p.m.
Paratransit Technical Advisory Committee (ParaTAC)	September 11, 2018	9:30 a.m.
Alameda CTC Commission Meeting	July 26, 2018	2:00 p.m.
Paratransit Advisory and Planning Committee (PAPCO)	September 28, 2018	1:30 p.m.
Bicycle and Pedestrian Community Advisory Committee (BPAC)	September 20, 2018	5:30 p.m.

All meetings are held at Alameda CTC offices located at 1111 Broadway, Suite 800, Oakland, CA 94607. Meeting materials, directions and parking information are all available on the <u>Alameda CTC website</u>.

Commission Chair Supervisor Richard Valle, District 2

**Commission Vice Chair** Mayor Pauline Cutter, City of San Leandro

AC Transit Board President Elsa Ortiz

Alameda County Supervisor Scott Haggerty, District 1 Supervisor Wilma Chan, District 3 Supervisor Nate Miley, District 4 Supervisor Keith Carson, District 5

BART Director Rebecca Saltzman

City of Alameda Mayor Trish Spencer

City of Albany Councilmember Peter Maass

City of Berkeley Mayor Jesse Arreguin

**City of Dublin** Mayor David Haubert

City of Emeryville Mayor John Bauters

City of Fremont Mayor Lily Mei

City of Hayward Mayor Barbara Halliday

**City of Livermore** Mayor John Marchand

City of Newark Councilmember Luis Freitas

**City of Oakland** Councilmember At-Large Rebecca Kaplan Councilmember Dan Kalb

City of Piedmont Vice Mayor Teddy Gray King

**City of Pleasanton** Mayor Jerry Thorne

**City of Union City** Mayor Carol Dutra-Vernaci

Executive Director Arthur L. Dao



4.1

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1. Call to Order

Bicycle and Pedestrian Advisory Committee (BPAC) Vice Chair Kristi Marleau called the meeting to order at 5:30 p.m. After the call to order, Carolyn Clevenger welcomed new BPAC member Fred McWilliams.

# 2. Roll Call

A roll call was conducted and all members were present with the exception of Liz Brisson, Preston Jordan, Ben Schweng, Diane Shaw, and Matt Turner.

The Vice Chair moved item 5.3 before 5.1.

# Subsequent to the roll call:

Matt Turner arrived during agenda item 5.3.

# 3. Public Comment

There were no public comment.

# 4. Approval of October 5, 2017 Minutes

Jeremy Johansen made a motion to approve this item. Feliz Hill seconded the motion. The motion passed with the following votes:

Yes: Fishbaugh, Hill, Johansen, Marleau, McWilliams, Murtha
No: None
Abstain: None
Absent: Brisson, Jordan, Schweng, Shaw, Turner

# 5. Regular Matters

# 5.1. Countywide Active Transportation Plan Update

Chris Marks presented this agenda item second. The Countywide Active Transportation Plan was last brought to BPAC in July 2017. He presented the plan scope, purpose, vision, goals, and outreach plan. He informed the committee that the plan will replace the Countywide Bicycle and Pedestrian Plans, which were last updated in 2012, and that staff will continue to seek the BPAC's input at major milestones in the plan's development.

Dave Murtha asked what the island on the map on the second slide represents. Carolyn responded that those were areas where there were Community Based Transportation Plans in the past. David Fishbaugh asked about the outreach and engagement activities and to what extent there is common vision and buy in to the concept of complete streets overall and if there is resistance staff has encountered. He asked if there is anything BPAC as a committee can do to help at a local level. Chris noted that staff has not encountered resistance and that most jurisdictions which have mostly been engaged in the process and bringing ideas to staff.

Jeremy Johansen asked what the outreach plan is. Chris said there will be a fact sheet distributed. Jeremy asked if there will be forums, similar to the 2012 plan. Chris noted that the planning area meetings have a very similar purpose.

Dave Murtha mentioned putting your bike in a bike locker, or a cage in a monitored place would be great, and that Hayward BART is implementing a secured Bike rack. Chris stated it is definitely something worth looking into and that staff will be looking for recommendations on bicycle storage.

Kristi Marleau asked about the timeline of the plan since it is only updated every 5 years. Chris said we will have an evaluation plan to keep it moving forward.

Matt Turner said that Alameda CTC is the only agency with a multi-jurisdictional vision and it would be great to have local standards set and not rely on the California Department of Transportation (Caltrans) for best practices to handle an intersection, or putting in new street lights etc. On the safety map it would be great to try to integrate near-miss data collection.

Mr. Murtha said many agencies have mobile phone aps that allow you to report incidents. He asked if it is possible at a regional level to have an app that works with an agency who would then know who to report incidents to.

# 5.2. San Pablo Avenue Corridor Project Update

Carolyn Clevenger presented this item. She stated that San Pablo is the first major arterial corridor project Alameda CTC is advancing, which will be done in conjunction with the Alameda-Contra Costa Transit District (AC Transit), the West Contra Costa Transportation Advisory Committee (WCCTAC) and the Contra Costa Transportation Authority (CCTA) as well as Caltrans and the local jurisdictions. Caltrans will be involved because a portion of the corridor is a State Route. The intent is to use local plans as input to the corridor project.

Fred McWilliams said it seems like every block in downtown Oakland has multi story/ multi-use condos with store front businesses on the first level or two and condos above. He asked how the plan will deal with that today and plan for the future 10 or 20 years down the road. Carolyn said the plan will consider a long term vision. She noted most cities are already thinking that way as they plan future construction. Dave Murtha noted a bicyclist on a New York City bikeway was protected on one side of one-way street so that cars turning left could see the cyclist. He stated that the complexity is the two-way street and suggested considering alternating one-way streets.

David Fishbaugh asked for some of the other ideas that could be implemented. Carolyn stated that some of the additional improvements being considered include:

- Painting
- Signal improvements
- Improved wayfinding
- Pedestrian-scale lighting

# 5.3. Transportation Development Act Article 3 Project review and Alameda County Bicycle and Pedestrian Master Plan Update

This item was presented first, by Paul Keener from Alameda County Public Works.

Fred McWilliams asked if the City of Livermore's rollover of \$403,000 includes the \$88,000 from the rollover for fiscal year 2019-2020. Mr. Keener said footnote 6 shows a breakdown of the carryover amounts.

Jeremy Johansen asked how San Leandro is using its funds. Mr. Keener said that San Leandro typically use their funds for curb ramps.

Dave Murtha said that Hayward continues to state the same thing annually and his he questioned what intersections did the City of Hayward fix. Mr. Keener noted that Hayward is in the process of doing a Bike/Ped Plan and they have a vision of establishing a BPAC. Dave said there is nothing for us to review. Carolyn said that Alameda CTC will request that Hayward provide more detailed information with what they're doing with the ramps.

Feliz Hill asked if the funds are the same from year-to-year. Mr. Keener responded the funds are nearly the same from year to year with a possible fluctuation of 5%, and that these are State Funds, not Federal.

Fred McWilliams asked if the roll over funds have to be used in a specified time frame, and if the agencies have to specify what projects they're rolling over the funds for. Mr. Keener said the answer to both those questions is—No. However, they are held accountable. Mr. Keener asked if this an appropriate question for ACTC BPAC to ask as part of an advisory committee? Matt Turner said—yes. Carolyn said if they exceed a threshold or number of years ACTC could ask for more information. Paul noted that this pot of money does not flow through ACTC, so we could ask but they are not obligated to provide specifics.

Mr. Keener said the project applications are due on June 1<sup>st</sup>, and that would give him a better idea of how the cities plan to use their funds.

David Fishbaugh asked for examples of how much capital is required for 1 curb ramp and how far does that funding go. Aleida Adrino-Chavez said that the more you build the cheaper the price. A good estimate is from five to seven thousand per intersection.

Mr. Keener presented Bicycle & Pedestrian Master Plan for Unincorporated Areas of Alameda County. Bordering cities that are working on their Bike/Ped plans are San Leandro, Hayward, and Livermore.

Ms. Hill asked how Alameda County determines priority. Mr. Keener says in the past the priorities have been safety, schools, and transit. Feliz asked if they queried folks in the community to understand what their major concerns are.

Mr. Keener said that the top two community priorities are schools and safety.

Ms. Hill expressed concern that with the various dynamics and demographics in those unincorporated areas that one size doesn't fit all, and that you should consider each individually to access their specific needs.

Jeremy Johansen asked which portions E14th and other main thoroughfares that connect many communities, are there focus areas they are concentrating on or if they are considering the whole system? Paul responded that E14th and Mission is a long corridor. Some examples: E14th and Mission was completed in three phases. Hesperian Blvd. was completed in one phase. Castro Valley Blvd was divided into 2 phases. So the bigger the project or the longer the distance tends to determine the number of phases necessary to complete a project.

David Fishbaugh asked how you coordinate the county efforts with the cities. Chris said that ACTC is working on a corridor plan for E14th, which is designed to knit together all of those communities.

Mr. Johansen asked if what Mr. Keener presented is work in progress or the master plan. Have you reviewed other master plans around the county as far as priority areas or connectivity issues? Mr. Keener responded that they do interact with AC Transit and others that are affected by putting bicycle lanes in.

# 6. Staff Reports

# 6.1. 2017 Bicycle and Pedestrian Plans Implementation Report

This was part of the 2012 plan. This is the last time it will be updated. Any questions contact Chris Marks or Carolyn Clevenger.

# 7. BPAC Member Reports

# 7.1. BPAC Calendar FY2017-18

The committee calendar is provided in the agenda packet for review purposes.

Fred McWilliams invited everyone to join in the Oakland Yellow Jackets 28<sup>th</sup> Anniversary ride. He stated that it would be a short ride out to Alameda and back, followed by picnic lunch.

Matt Turner stated that he attended the Trails and Greenways Conference – one of the calls for action is that the California Transportation Commission is looking for Active Transportation Program (ATP) grant reviewers; he encourages all to apply.

# 7.2. BPAC Roster

The committee roster is provided in the agenda packet for review purposes.

### 8. Meeting Adjournment

The meeting adjourned at 7:55 p.m. The next meeting is scheduled for June 28, 2018 at the Alameda CTC offices.

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Memorandum

1111 Broadway, Suite 800, Oakland, CA 94607

510.208.7400

DATE:June 21, 2018TO:Bicycle and Pedestrian Advisory CommitteeFROM:Carolyn Clevenger, Director of Planning<br/>Chris G. Marks, Associate Transportation PlannerSUBJECT:Ford GoBike and Bike Share for All

# Recommendation

Receive an update on regional bikeshare activities (Motivate's Ford GoBike and Bikeshare For All). This item is for information only.

# Summary

In May 2015, the Metropolitan Transportation Commission (MTC) approved an agreement with Motivate International, Inc. (Motivate) to deliver, install, and operate a 7,000-dockedbicycle bike share system. In July 2017, the first East Bay stations were deployed in Oakland and later expanded to Berkeley and Emeryville. In March 2018, all 79 East Bay Stations were deployed. Currently 52 percent of stations system-wide have been deployed.

The Countywide BPAC last received an update on this item in February 2017 prior to the start of bikeshare expansion to the East Bay. Staff from the City of Oakland's Department of Transportation and the Metropolitan Transportation Commission will provide an update on the East Bay expansion of Ford GoBike and equity efforts related to regional bike share including Bike Share For All.

Fiscal Impact: There is no fiscal impact associated with the requested action.

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Memorandum

1111 Broadway, Suite 800, Oakland, CA 94607

DATE:	June 21, 2018
TO:	Bicycle and Pedestrian Advisory Committee
FROM:	Chris G. Marks, Associate Transportation Planner
SUBJECT:	Countywide Bicycle and Pedestrian Count Program

# Recommendation

Receive an Update on the Countywide Bicycle and Pedestrian Count Program.

#### Summary

Bicycle and pedestrian count data are important for a variety of planning and engineering purposes. Alameda CTC has collected bicycle and pedestrian count data in various forms dating back to 2002. The current program consists of annual in-person manual counts of bicyclists and pedestrians at 150 locations as well as a limited number of automated counters deployed around the county that are installed in the field and collect continuous data on biking and walking volumes. Between September and October 2016, the first 75 of 150 manual count locations were surveyed, with the other 75 surveyed between September and early November 2017. The 2017 count window was extended due to smoke from the North Bay Fires.

The Countywide Bicycle/Pedestrian Count Program is intended to achieve a range of goals and support a variety of planning applications. Notably, some goals require data at a large number of locations, whereas other goals require data over time. These goals include:

- Baseline data and trends: monitor if more people are biking and walking over time
- Return on investment: understand the usage of new facilities; understand how the buildout of a network increases bicycling and walking levels
- **Travel model enhancement**: enhancing the ability of the Alameda CTC travel model to represent bicycling and walking requires observed data to calibrate the model
- Accurate safety analysis: accurate safety analysis requires considering level of exposure (e.g. collisions per bicyclists/pedestrian) rather than simply number of collisions

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- Leverage funding: provide required information for grant applications such as Active Transportation Program; assist local jurisdictions in providing such information
- Communicate role of bicycle and pedestrian facilities in transportation system: provide information that shows how bicycling and pedestrian facilities carry significant volumes of people and are used for transportation/commuting purposes
- Provide data for interested researchers

# Manual Count Program

Manual counts are counts that rely on human processing while automated counts refer to use of a device that detects a bicyclist or pedestrian. Manual counts are an important component of a bicycle/pedestrian count program. Manual counts are capable of achieving a high degree of spatial coverage, which is important for understanding relative differences in levels of biking and walking between different areas. In addition, manual counts are capable of collecting information on user attributes, counting both bicyclists and pedestrians, and can be used in on-street (i.e. non-trail) locations (which is not true of many automated count technologies). Alameda CTC expanded the number of count locations from 63 locations to 150 locations in 2016 with additional locations added based on input from the Alameda County Technical Advisory committee and this BPAC. Additional locations were allocated by population and sited based on proximity to transit, activity centers, schools, collision history, and overall spatial coverage. The 2018 count program will include all 150 locations in one cycle. The results of the 2016/2017 count cycle are included as Attachments A and B.

# Automated Count Program

Automated counts have emerged as a best practice method for collecting information on bicycle and pedestrian volumes. Compared to manual counts which are typically collected for short duration and are therefore subject to statistical variability, automated counts can provide more reliable information on trends in biking and walking over time. Automated counts also enable analysis of variation in levels of biking and walking by time of day, day of week, and season. A comparison of automated counter data, collected at nine pilot locations, concluded that the automated counters under-reported cyclists approaching intersections and making particular movements, or approaching in groups. A technical memorandum detailing these findings is included as Attachment C.

Fiscal Impact: There is no fiscal impact associated with the requested action.

# Attachments:

- A. 2016 Count Program Summary
- B. 2017 Count Program Summary
- C. 2017 Automated/Manual Counter Comparison

# Alameda CTC Bicycle/Pedestrian Count Program 2016 Manual Count Data

					2016 Counts				2014						
							PM			Mi	dday	9	School	F	νM
					Bike -	No	Sidewalk	Wrong							
ID_2016	City	North/South	East/West	Date	Total	Helmet	Riding	Way	Ped	Bike	Ped	Bike	Ped	Bike	Ped
Alameda	CTC Counted Location	15													
	ALAMEDA	5TH STREET	CENTRAL AVENUE	TUESDAY SEPTEMBER 13, 2016	69	10	25	5 12	2 113				53 190	J 37	/ 120
	2 ALAMEDA	OTIS DRIVE	PARK STREET	TUESDAY SEPTEMBER 13, 2016	35	23	6	5 C	) 332	22	. 317			18	3 274
3	B ALAMEDA	WEBSTER STREET	ATLANTIC AVENUE	TUESDAY SEPTEMBER 13, 2016	33	18	4	L (	) 425	34	627			30	) 290
4	ALAMEDA COUNTY	REDWOOD ROAD	CASTRO VALLEY BOULEVARD	WEDNESDAY OCTOBER 12, 2016	45	29	7	' 6	5 195	21	. 134			4ç	J 161
Į.	ALAMEDA COUNTY	FOOTHILL BOULEVARD	164TH AVENUE	TUESDAY SEPTEMBER 13, 2016	10	2	2	2 (	) 30						-
(	ALAMEDA COUNTY	LAKE CHABOT ROAD	SOMERSET AVENUE	WEDNESDAY OCTOBER 5, 2016	29	13	4	4 3	3 54				30 89	÷	-
-	ALAMEDA COUNTY	HESPERIAN BOULEVARD	LEWELING BOULEVARD	WEDNESDAY OCTOBER 12, 2016	23	7	4	4 3	3 114					32	2 112
5	ALAMEDA COUNTY	MISSION BOULEVARD	GROVE STREET	WEDNESDAY OCTOBER 5, 2016	17	13	6	5 1	49					16	49 ز
	ALAMEDA COUNTY	VIA MEDIA	BOCKMAN ROAD	WEDNESDAY OCTOBER 12, 2016	11	3	8	3 7	/ 32				23 32	/	
10	) ALBANY	JACKSON STREET	BUCHANAN STREET	THURSDAY OCTOBER 13, 2016	108	42	35	;	l 260				59	2 126	163 ز
1:	LALBANY	MASONIC AVENUE	SOLANO AVENUE	TUESDAY OCTOBER 13 2016	133	7	68	3 13	364	48	313			180	337
12	2 BERKELEY	TELEGRAPH AVENUE	ASHBY AVENUE	THURSDAY OCTOBER 20 2016	102	54	12	2 5	5 424					222	475
13	BERKELEY	COLLEGE AVENUE	DERBY STREET	THURSDAY NOVEMBER 3 2016	122	56	8	3 1	667				73 549	) 120	) 844
14	I BERKELEY	COLUSA AVENUE	SOLANO AVENUE (NORTH)	THURSDAY NOVEMBER 3 2016	61	27	7	' E	8 891	27	' 819				1
15	BERKELEY	SHATTUCK AVENUE	BANCROFT WAY	THURSDAY OCTOBER 20 2016	191	49	8	3 8	3 2170	471	. 8354			-	1
16	5 BERKELEY	GILMAN STREET	6TH STREET	THURSDAY OCTOBER 20 2016	82	32	14	l 1	105					-	1
17	7 BERKELEY	CALIFORNIA STREET	UNIVERSITY AVENUE	WEDNESDAY OCTOBER 26 2016	188	60	23	3 4	J 325					-	1
18	BERKELEY	SAN PABLO AVENUE	VIGINIA STREET	THURSDAY OCTOBER 20 2016	122	57	42	2 8	3 179					147	/ 115
19	DUBLIN	SAN RAMON ROAD	DUBLIN BOULEVARD	THURSDAY OCTOBER 6 2016	g	4	0	) (	) 50					2€	36
20	) DUBLIN	VILLAGE PARKWAY	AMADOR VALLEY BOULEVARD	THURSDAY OCTOBER 6 2016	15	1	3	8 1	105					58	3 61
2:	EMERYVILLE	SAN PABLO AVENUE	40TH STREET	TUESDAY OCTOBER 11, 2016	161	74	17	' 10	) 674				79 560	5 150	648
22	2 EMERYVILLE	CHRISTIE AVENUE	POWELL STREET	WEDNESDAY SEPTEMBER 28, 2016	58	29	4	4 3	3 132	18	119			72	2 119
23	B FREMONT	CHERRY LANE	MOWRY AVENUE	THURSDAY OCTOBER 27 2016	5	2	1	. 0	) 80					3	3 18
24	FREMONT	PASEO PADRE PARKWAY	DECOTO ROAD	WEDNESDAY NOVEMBER 30. 2016	22	5	2		) 9					23	3 9
25	FREMONT	FREMONT BOULEVARD	CUSHING PARKWAY	WEDNESDAY NOVEMBER 2, 2016	27	13	6	5 C	) 47						
20	FREMONT	FREMONT BOULEVARD	MOWRY AVENUE	WEDNESDAY NOVEMBER 2, 2016	42	32	2	2 5	394	28	392			55	357
27	FREMONT	FREMONT BOULEVARD	PERALTA BOULEVARD	WEDNESDAY NOVEMBER 2, 2016	48	30	20	) 8	3 140	22	85			34	114
28	3 FREMONT	MISSION BOULEVARD	WASHINGTON BOULEVARD	WEDNESDAY NOVEMBER 2, 2016	18	1	4	4 5	5 50	22	. 72				
29	FREMONT	PASEO PADRE PARKWAY	MOWRY AVENUE	WEDNESDAY NOVEMBER 2 2016	40	2	10	) 6	5 224					37	/ 256
30	FREMONT	GRIMMER BOULEVARD	WARM SRINGS BOULEVARD	WEDNESDAY NOVEMBER 2 2016	25	14	5	5 E	5 7					23	12
3	FREMONT	FREMONT BOULEVARD	WASHINGTON BOULEVARD	WEDNESDAY NOVEMBER 2, 2016	41	0	0	) (	) 152					50	) 140
32	2 HAYWARD	GRAND STREET	C STREET	TUESDAY NOVEMBER 4 2016	25	19	14		) 127					27	/ 131
33	BHAYWARD	FOOTHILL BOULEVARD	D STREET	TUESDAY NOVEMBER 4, 2016	18	13	11	. 2	2 103	12	69			29	104
34	HAYWARD	HESPERIAN BOULEVARD	LA PLAYA DRIVE	TUESDAY OCTOBER 4, 2016	8	6	0	) (	) 41						
35	5 HAYWARD	DIXON STREET	INDUSTRIAL PARKWAY	WEDNESDAY SEPTEMBER 14, 2016	41	29	19	16	5 59						-
36	5 HAYWARD	MISSION BOULEVARD	CARLOS BEE BOULEVARD	WEDNESDAY SEPTEMBER 14, 2016	16	14	11		) 68						
3	HAYWARD	WHITMAN STREET	TENNYSON BOAD	WEDNESDAY SEPTEMBER 14, 2016	66	42	52	31	180				29 27	2 50	) 170
38	BHAYWARD	AMADOR STREET	WINTON AVENUE	WEDNESDAY SEPTEMBER 14 2016	29	17	11		) 122				25 16	4/	138
30			1ST STREET	WEDNESDAY SEPTEMBER 28 2016	13	8		1	108	11	95			10	1 99
4(			STANLEY BOULEVARD	WEDNESDAY SEPTEMBER 28 2016	23	8	6	3 8	3 44				34 218	1	
4		MURDELL LANE	CONCANNON BOULEVARD	WEDNESDAY SEPTEMBER 28 2016	5	1	0		) 5						-
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43	NFWARK		IAVIS AVENUE	TUESDAY SEPTEMBER 20 2016	29	8	10		2 77					24	4 65
44		WILLOW STREET		TUESDAY SEPTEMBER 20 2016	31	5	2		3 9					11	11
 		12TH STREET	1ST STREET	TUESDAY OCTOBER 18, 2016	175	104	2		120				87 90		
46			29TH AVENUE	TUESDAY OCTOBER 18 2016	43	27	26		) 453				32 632	,	-
			2ND STREET	WEDNESDAY DECEMBER 7, 2016	18	10	20		) <u>4</u> 55				52 057		+
49			1ST AVENUE	TUESDAY OCTOBER 18 2016	192	62	14	11	365						+
40			73RD AVENUE	TUESDAY OCTOBER 4 2016	17	4	0	) 4	1 345					-	-
	OAKLAND		REDWOOD ROAD	THURSDAY OCTOBER 6 2016	11	1	2						9 4	;	+
5		BANCROFT AVENUE	DURANT AVENUE	THURSDAY OCTOBER 6 2016	C	5			) 77	85	1667	1		1	+
5.		BROADWAY	TELEGRAPH AVENUE/15TH STREET	TUESDAY OCTOBER 4 2016	175	77	10	) 25	<u>2</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u>	00	1007	1		+	+
57					127	20	11	, <u>2</u> .	, <u> </u>	70	1020				+
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52					70	40 6	14		<u>220</u> ۲ ۲				4 79	2	+
5.		GRAND AVENUE	BROADWAY		200	20	10		1120			<u> </u>	r 70		+
50				THURSDAY OCTOBER 12 2016	200	71	10 E1	10						+	+
5.	OARLAND			THUNSDAT UCIUDER 13 2010	237	1 /1	51	10 10	950	<u>I</u>		J		ــــــــــــــــــــــــــــــــــــــ	

# Alameda CTC Bicycle/Pedestrian Count Program 2016 Manual Count Data

									2016 Count	:S					2014
							PM			Mi	dday	Sc	nool		PM
					Bike -	No	Sidewalk	Wrong							
ID_2016	City	North/South	East/West	Date	Total	Helmet	Riding	Way	Ped	Bike	Ped	Bike	Ped	Bike	Ped
58	OAKLAND	MAC ARTHUR BOULEVARD	SEMINARY AVENUE	WEDNESDAY OCTOBER 5 2016	11		7	3 2	2 72						,
59	OAKLAND	HORTON STREET	MANDELA PARKWAY	THURSDAY NOVEMBER 10 2016	114	4	0 1	3 1	. 100						
60	OAKLAND	MARKET STREET	14TH STREET	WEDNESDAY OCTOBER 5 2016	121	. 3	0	8 7	' 159			78	179		
61	OAKLAND	38TH STREET / 13TH AVENUE	PARK BOULEVARD	THURSDAY OCTOBER 6, 2016	28	3	6	2 (	76			10	225		
62	OAKLAND	41ST STREET	PIEDMONT AVENUE	WEDNESDAY OCTOBER 5 2016	149	3	1 1	1 14	730	64	1071				
63	OAKLAND	SHATTUCK AVENUE	61ST STREET (NORTH INTERSECTION)	TUESDAY JANUARY 17, 2016	90	)	7	0 1	. 66			72	. 79		
64	PIEDMONT	GRAND AVENUE	OAKLAND AVENUE	TUESDAY SEPTEMBER 27, 2016	19	)	8	1 1	. 86			20	93	3	6 64
65	PLEASANTON	MAIN STREET	BERNAL AVENUE	WEDNESDAY SEPTEMBER 28, 2016	7	,	2	4 3	3 7		2 5				7 23
66	PLEASANTON	OWENS DRIVE	ANDREWS DRIVE	WEDNESDAY SEPTEMBER 28, 2016	19	1	3 1	4 13	63					2	.3 77
67	PLEASANTON	SANTA RITA ROAD	FRANCISCO STREET	WEDNESDAY SEPTEMBER 28, 2016	20	) 1	0 1	5 16	5 7			5	18	5	6 113
68	PLEASANTON	HOPYARD ROAD	STONERRIDGE DRIVE	TUESDAY SEPTEMBER 27 2016	23	6	3	6 (	) 4					3	3 15
69	SAN LEANDRO	BANCROFT AVENUE	ESTUDILLO AVENUE	WEDNESDAY OCTOBER 5, 2016	38	3 3	3	8 9	80			31	. 554	1	.7 98
70	SAN LEANDRO	PIERCE AVENUE	DAVIS STREET	WEDNESDAY SEPTEMBER 28, 2016	12	2	5	6 8	8 48					2	5 49
71	SAN LEANDRO	E. 14TH STREET	HESPERIAN BOULEVARD	WEDNESDAY SEPTEMBER 28, 2016	25	5 1	6 1	1 (	86					3	8 97
72	SAN LEANDRO	E. 14TH STREET	MAUD AVENUE	TUESDAY OCTOBER 4, 2106	20	) 1	7 1	0 9	40					2	2 230
73	UNION CITY	7TH STREET	DECOTO ROAD	WEDNESDAY OCTOBER 5, 2016	12		3	3 (	) 19					1	.8 48
74	UNION CITY	ALVARADO NILES ROAD	DECOTO ROAD	WEDNESDAY OCTOBER 5, 2016	37	,	9	9 10	246					6	7 275
75	UNION CITY	ALVARADO NILES ROAD	DYER STREET	WEDNESDAY OCTOBER 5, 2016	10	)	6	0 (	) 59					2	8 72

# Alameda CTC Bicycle/Pedestrian Count Program 2017 Manual Count Data

					2016 Counts								
							PM			Mie	dday	Sch	lool
					Bike -	No	Sidewalk	Wrong					
2017 ID	City	North/South	East/West	Date	Total	Helmet	Riding	Way	Ped	Bike	Ped	Bike	Ped
Alameda	<b>CTC Counted Locatio</b>	ns											
1	ALAMEDA	BROADWAY	LINCOLN AVENUE	THURSDAY NOVEMBER 9, 2017	35	8	5	4	93			29	69
2	ALAMEDA	MAIN STREET	RALPH APPEZATO MEMORIAL PARKWAY	THURSDAY SEPTEMBER 28, 2017	97	15	51	7	24				
3	ALAMEDA	PARK STREET	CENTRAL AVENUE	THURSDAY SEPTEMBER 28, 2017	42	33	2	0	1039	21	1561		
4	ALAMEDA	WEBSTER STREET	SANTA CLARA AVENUE	TUESDAY NOVEMBER 14, 2017	41	19	15	7	514				
5	SAN LORENZO	ASHLAND AVENUE	LEWELLING BOULEVARD	THURSDAY SEPTEMBER 28, 2017	12	3	8	1	33			13	90
6	CASTRO VALLEY	CENTER STREET	CASTRO VALLEY BOULEVARD	THURSDAY SEPTEMBER 28, 2017	2	0	0	0	25	4	16		
7	SAN LEANDRO	E 14TH STREET	159TH AVENUE	THURSDAY SEPTEMBER 28, 2017	23	13	11	0	202				
8	SAN LORENZO	HESPERIAN BOULEVARD	HACIENDA AVENUE	THURSDAY SEPTEMBER 28, 2017	18	7	13	0	68				
9	HAYWARD	MAUD AVENUE	D STREET	THURSDAY NOVEMBER 9, 2017	0	0	0	0	6			0	58
10	ALAMEDA COUNTY	MINES ROAD	TESLA ROAD	WEDNESDAY NOVEMBER 8, 2017	15	1	4	1	0				
11	ALAMEDA COUNTY	REDWOOD ROAD	HEYER AVENUE	THURSDAY SEPTEMBER 28, 2017	6	2	3	1	71			12	226
12	SAN LORENZO	WASHINGTON AVENUE	GRANT AVENUE	THURSDAY SEPTEMBER 28, 2017	17	2	10	1	65			15	225
13	BERKELEY	9TH STREET	ALLSTON WAY	THURSDAY SEPTEMBER 14, 2017	164	42	2	1	187				
14	BERKELEY	ADELINE STREET	ALCATRAZ AVENUE	THURSDAY SEPTEMBER 14, 2017	95	37	14	28	669				
15	BERKELEY	CALIFONIA STREET	CHANNING WAY	THURSDAY SEPTEMBER 14, 2017	221	36	3	0	114				
16	BERKELEY	KING STREET	ASHBY AVENUE	WEDNESDAY SEPTEMBER 13, 2017	134	23	6	0	168			72	176
17	DUBLIN	TASSAJARA DRIVE	CENTRAL PARKWAY	WEDNESDAY NOVEMBER 1, 2017	15	8	8	0	66				Ļ
18	DUBLIN	SAN RAMON VALLEY BOULEVARE	DUBLIN BOULEVARD	WEDNESDAY NOVEMBER 1, 2017	13	2	2	1	73				
19	DUBLIN	VILLAGE PARKWAY	AMADOR VALLEY BOULEVARD	WEDNESDAY NOVEMBER 1, 2017	26	3	7	0	125	11	135	35	173
20	FREMONT	CENTRAL AVENUE	BLACOW ROAD	THURSDAY OCTOBER 19, 2017	13	5	1	0	43				Ļ
21	FREMONT	DEEP CREEK ROAD	ARIEL AVENUE	THURSDAY OCTOBER 19, 2017	3	0	0	0	29			3	26
22	FREMONT	DRISCOLL ROAD / OSGOOD ROAD	WASHINGTON BOULEVARD	THURSDAY OCTOBER 19, 2017	16	3	0	0	17				Ļ
23	FREMONT	GRIMMER BOULEVARD	FREMONT BOULEVARD	TUESDAY OCTOBER 10, 2017	28	3	9	1	39	19	47		ļ
24	FREMONT	GRIMMER BOULEVARD	BLACOW ROAD	WEDNESDAY OCTOBER 11, 2017	27	0	1	1	93			14	636
25	FREMONT	GRIMMER BOULEVARD	PASEO PADRE PARKWAY	WEDNESDAY NOVEMBER 8, 2017	15	8	0	2	37				<u> </u>
26	FREMONT		NILES CANYON ROAD	THURSDAY OCTOBER 19, 2017	7	0	1	0	6				
27	FREMONI			THURSDAY OCTOBER 19, 2017	9	0	1	0	2			6	16
28	FREMONI			THURSDAY OCTOBER 19, 2017	22	2	1	0	93	/	5/		<u> </u>
29	FREMONT			THURSDAY OCTOBER 19, 2017	1/	3	0	0	6/				<u> </u>
30	FREMONT			THURSDAY OCTOBER 19, 2017	41	6	2	5	352				<u> </u>
31				THURSDAY OCTOBER 19, 2017	13	3	/	0	470				<u> </u>
32				WEDNESDAY SEPTEMBER 27, 2017	13	3	/	0	4/0				
33					9	0	4	2	0/				<u> </u>
34				THURSDAY NOVENIBER 2, 2017	33	10	10	2	1/3				
35					17 6	14	8 0	0	03				
27		SANTA CLADA STREET			10	4	0	0	20			1	12
37				THURSDAY NOVEMBER 2, 2017	5	4	2	0	117				120
30				WEDNESDAY NOVEMBER 1, 2017	18	12	0	0	100			8	123
40				WEDNESDAY NOVEMBER 1, 2017	27	7	0	0	27			0	135
40				WEDNESDAY NOVEMBER 1, 2017	27 A	,	0	0	1				<u> </u>
41				WEDNESDAY NOVEMBER 1, 2017	- 16	1	3	0	22				
42				WEDNESDAY NOVEMBER 1, 2017	5	2	1	0	44			12	140
45 44	NEWARK	S MAGAZINE		WEDNESDAY NOVEMBER 1, 2017	4	0	1	0	46			12	145
45	OAKLAND	F STREET	105TH AVENUE	THURSDAY SEPTEMBER 21 2017	27	22	1	0	137			28	140
	OAKLAND	PARK STREET / 29TH AVENUE	23RD AVENUE	THURSDAY NOVEMBER 9 2017	78	1	0	0	6		<u> </u>	20	
-+0 47	OAKLAND	23RD AVENUE	F 27TH STREFT	THURSDAY SEPTEMBER 21 2017	4	2	0	0	78		<u> </u>	1	<u> </u>
47 48	OAKLAND	GALINDO STRFFT	35TH AVENUE	THURSDAY SEPTEMBER 21, 2017	26	9	9	0	116				<u> </u>
40 40	OAKLAND	F 12TH STRFFT	38TH AVENUE	WEDNESDAY SEPTEMBER 27 2017	53	47	8	0	68			1	<u> </u>
50	OAKLAND	INTERNATIONAL BOULFVARD	82ND AVENUE	THURSDAY NOVEMBER 9, 2017	31	4	13	0	370	28	209		<u> </u>
51	OAKLAND	ADELINE STREET	32ND STREET	THURSDAY SEPTEMBER 14. 2017	98	23	4	3	93				<u> </u>
52	OAKLAND	BROADWAY	42ND STREET	THURSDAY SEPTEMBER 21, 2017	89	22	5	4	275			53	408
52			l				i Š				1		

# Alameda CTC Bicycle/Pedestrian Count Program 2017 Manual Count Data

					2016 Counts								
							PM			Mic	day	School	
					Bike -	No	Sidewalk	Wrong					
2017 ID	City	North/South	East/West	Date	Total	Helmet	Riding	Way	Ped	Bike	Ped	Bike	Ped
53	OAKLAND	COOLIDGE AVENUE	MAC ARTHUR BOULEVARD	WEDNESDAY SEPTEMBER 27, 2017	29	16	0	0	100			23	92
54	OAKLAND	BROADWAY	MAC ARTHUR BOULEVARD	THURSDAY SEPTEMBER 21, 2017	184	34	19	2	926	132	1870		
55	OAKLAND	BROADWAY	MAC ARTHUR BOULEVARD	THURSDAY SEPTEMBER 21, 2017	184	34	19	2	926				
56	OAKLAND	HIGH STREET	TIDEWATER AVENUE	WEDNESDAY NOVEMBER 8, 2017	27	7	17	12	14				
57	OAKLAND	MAC ARTHUR BOULEVARD	82ND AVENUE	THURSDAY SEPTEMBER 14, 2017	9	8	3	0	185				
58	OAKLAND	MADISON STREET	10TH STREET	THURSDAY SEPTEMBER 21, 2017	55	9	10	13	513				
59	OAKLAND	MARTIN LUTHER KING JR WAY	14TH STREET	THURSDAY SEPTEMBER 14, 2017	99	20	10	1	294				
60	OAKLAND	E 18TH STREET	PARK BOULEVARD	TUESDAY SEPTEMBER 28, 2017	79	4	6	2	235				
61	OAKLAND	SAN PABLO AVENUE	STANFORD AVENUE / POWELL STREET	THURSDAY SEPTEMBER 14,2017	98	21	21	14	128				
62	OAKLAND	TELEGRAPH AVENUE	ALCATRAZ AVENUE	THURSDAY SEPTEMBER 14, 2017	130	20	10	3	308				
63	OAKLAND	VICKSBURG AVENUE	BANCROFT AVENUE	THURSDAY SEPTEMBER 21, 2017	21	6	3	0	72				
64	OAKLAND	WASHINGTON STREET	9TH STREET	THURSDAY SEPTEMBER 21, 2017	33	26	2	1	933				
65	PLEASANTON	SANTA RITA ROAD	STONERIDGE DRIVE	WEDNESDAY NOVEMBER 1, 2017	56	8	19	7	49				
66	PLEASANTON	VALLEY AVENUE	STANLEY BOULEVARD	WEDNESDAY NOVEMBER 1, 2017	52	9	17	13	7				
67	PLEASANTON	WILLOW ROAD	LAS POSITAS BOULEVARD	WEDNESDAY NOVEMBER 1, 2017	37	9	3	0	21			0	29
68	SAN LEANDRO	CORVALLIS STREET	FLORESTA BOULEVARD	WEDNESDAY SEPTEMBER 27, 2017	15	4	3	0	4			, ,	9
69	SAN LEANDRO	DOOLITTLE DRIVE	WILLIAMS STREET	TUESDAY, SEPTEMBER 12, 2017	28	2	8	1	31				
70	SAN LEANDRO	HAYS STREET	WEST JUANA STREET	THURSDAY SEPTEMBER 28, 2017	25	11	4	0	273	14	228		
71	SAN LEANDRO	SAN LEANDRO BOULEVARD	DAVIS STREET	TUESDAY NOVEMBER 7, 2017	37	4	10	4	218				
72	UNION CITY	H STREET	ALVARADO-NILES ROAD	THURSDAY NOVEMBER 2, 2017	31	1	8	0	198			22	488
73	UNION CITY	HOP RANCH ROAD	ALVARADO-NILES	THURSDAY NOVEMBER 2, 2017	19	6	3	0	31			19	31
74	UNION CITY	MISSION BOULEVARD	DECOTO ROAD	THURSDAY NOVEMBER 2, 2017	15	2	2	0	6				
75	UNION CITY	UNION CITY BOULEVARD	HORNER STREET	TUESDAY NOVEMBER 14, 2017	6	1	0	2	56				

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# MEMORANDUM

To: Chris Marks Alameda CTC From: David Huynh Haley Zhao

Date: December 21, 2017

RE: 2017/2018 Bicycle Data Collection, SmartCycle Pilot

# 1.0 INTRODUCTION

As part of the Bicycle and Pedestrian Count Program effort conducted in 2016, a pilot effort was initiated to test the viability of automating bicycle data collection using existing traffic signal video detection systems. As part of the pilot effort, nine locations were identified that had an existing video detection system with the SmartCycle capability. Of the nine locations, four are located in the City of Berkeley and five in the City of Oakland. To the extent possible, the SmartCycle locations were selected to match the manual bicycle count locations that was performed in 2016. Of the nine locations where the SmartCycle was configured, the following seven locations had corresponding manual counts to serve as a basis for comparison:

- Shattuck/Bancroft, Berkeley
- Gilman/6<sup>th</sup>, Berkeley
- University/California, Berkeley
- Colusa / Solano, Berkeley
- 1st Avenue/East 12th Street, Oakland
- Broadway/Telegraph/15th Street, Oakland
- Broadway/Grand, Oakland

The purpose of this memorandum is to provide a comparison of the manual bicycle count data compared to the SmartCycle automated count data.

# 2.0 METHODOLOGY

The manual bicycle counts were collected during a single day in September or October 2016 on either a Tuesday, Wednesday, or Thursday, excluding Walk of School week and the any days affected by weather, special events and construction. Data collection was conducted for the PM peak period (4-6pm) with some locations also including an afternoon period (12-2pm). The counts were reported in 15-minute increments.

The automated count data was retrieved from the video detection system at the seven locations (where manual bicycle counts were performed) during November and December 2017. The data retrieved included counts dating back to summer or early fall 2017, depending on the specific location. Since the manual counts were collected in 2016 and the automated count data was available for 2017, it was important to isolate the

automated count data to the same time of month as the manual counts in order to make an even comparison. As a result, the SmartCycle data was processed to include only the data collected on a Tuesday, Wednesday, and Thursday for October 2017. Table 1 illustrates a sample of the SmartCycle data record retrieved from the video detection system. The data provides the bicycle count data for a particular bicycle detection zone for a specific time and date.

Zone ID	Timestamp	Counts	Video Status
1	2017-08-01 07:30:00	5	Video OK
2	2017-08-01 07:30:00	0	Video OK
3	2017-08-01 07:30:00	12	Video OK
25	2017-08-01 07:30:00	19	Video OK
26	2017-08-01 07:30:00	24	Video OK
27	2017-08-01 07:30:00	1	Video OK
28	2017-08-01 07:30:00	0	Video OK

#### Table 1. Example of SmartCycle Data

The next step was to average the bicycle counts at each location for each day during the Noon and/or PM period. This is simply the result of adding up all of 15-minute bicycle counts during the PM and/or Noon period on a given day and calculating an overall average bicycle counts per day during the PM and/or Noon period to represent a typical weekday count.

# RESULTS

This section provides the results of comparison between the SmartCycle data and the manual counts at each location.

#### 1. Shattuck Avenue/Bancroft Way (Berkeley)

The manual bicycle counts were collected on October 20, 2016 (Thursday) during the Noon and PM periods. The automated count data was filtered to only include data collected on Tuesdays through Thursdays in October 2017. Figures 1 and 2 present the results for the intersection of Shattuck/Bancroft (Berkeley) during the Noon and PM periods, respectively. Note that the southbound approach automated data was not available for comparison. Overall, the SmartCycle undercounted the bicycle volume of right-turn and through traffic. The configuration could be one reason. The detection of bicycles was configured to identify a bicycle

object in the lane shared with the vehicle traffic. The SmartCycle wasn't able to capture the cyclist close to the curb or edge of the roadway, where bicyclists are more likely to ride or wait at red signal.



#### Figure 1. Shattuck/Bancroft (Berkeley) – Noon

#### Figure 2. Shattuck/Bancroft (Berkeley) – PM



#### 2. Gilman Street/6<sup>th</sup> Street (Berkeley)

The manual bicycle counts were collected on October 20, 2016 (Thursday) during the PM period. The automated count data was filtered to only include data collected on Tuesdays through Thursdays in October 2017. Figure 3 presents the results for Gilman/6<sup>th</sup> (Berkeley) during the PM period. The automated data collection showed a substantially higher count compared to the manual count for the through and right turn movements at this location. It is worth noting that there are conventional bikes lanes on both Gilman and 6<sup>th</sup> Street, which was configured as bicycle detection zone. The higher automated counts of through and right-turn traffic could be attributed to the vehicles merging into the bike lanes. However, the automated counts

Page | 3 Page 17 matched up very well compared to the manual counts for the eastbound, northbound and southbound left turn approach.



#### Figure 3. Gilman/6th (Berkeley) – PM

#### 3. University Avenue/California Street (Berkeley)

The manual bicycle counts were collected on October 26, 2016 (Wednesday) during the PM period. The automated count data was filtered to only include data collected on October 26, 2017 (Thursday). Figure 4 presents the results for University/California (Berkeley) during the PM period. Overall, the SmartCycle undercounted the bicycle volume compared to the manual count, especially along the north-south approaches. Similar to Shattuck/Bancroft, it may indicate that the accuracy of SmartCycle diminishes on a narrow street with the shared lanes. In terms of the through traffic, the reason for the undercount could be that the SmartCycle wasn't configured to count cyclists riding in the gap between two detection zones.



#### Figure 4. University/California (Berkeley) – PM

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#### 4. Colusa Avenue/Solano Avenue (Berkeley)

The manual bicycle counts were collected on November 3, 2016 (Thursday) during the Noon and PM periods. The automated count data was filtered to only include data collected on Tuesdays through Thursdays in October. Figures 5 and 6 present the results for Colusa/Solano (Berkeley) during Noon and PM period, respectively. For the noon period counts, every movement besides the southbound approach appear to be relatively close. The southbound movement shows the automated data to be substantially higher compared to the manual count. This may be due to cars being counted as bikes. This trend is also seen in the southbound counts for the PM period. Also for the PM period, the automated counts are less compared to the manual counts.





Figure 6. Colusa/Solano (Berkeley) – PM





#### 5. 1<sup>st</sup> Avenue/East 12<sup>th</sup> Street (Oakland)

The manual bicycle counts were collected on October 18, 2016 (Tuesday) during the PM period. The automated count data was filtered to only include data collected on Tuesdays through Thursdays in October 2017. Figure 7 presents the results for 1<sup>st</sup>/12<sup>th</sup> (Oakland) for the PM period. Overall, it appears that the automated counts are very comparable to the manual counts with the exception of the eastbound through movement. For the eastbound through movement, the automated count has undercounted the amount of bikes by around 50%. For approaches like this location that have high bicycle traffic, it is possible that the SmartCycle system is counting groups of multiple bikes as only one bike, therefore resulting in a significant undercount.





#### 6. Broadway/Telegraph Avenue/15<sup>th</sup> Street (Oakland)

The manual bicycle counts were collected on October 4, 2016 (Tuesday) during the noon and PM periods. The automated count data was filtered to only include data collected on Tuesdays through Thursdays in November 2017. This was the earliest date of data available as the automated counts for October were not available for this intersection. Figures 8 and 9 present the results for Broadway/Telegraph/15<sup>th</sup> (Oakland) noon and PM periods, respectively. For the noon period counts, the westbound automated counts are much higher compared to the manual counts. In comparison, the PM period appears to show that the automated counts are less compared to the manual counts in the eastbound and southbound directions.



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Figure 8. Broadway/Telegraph/15<sup>th</sup> (Oakland) – Noon

Figure 9. Broadway/Telegraph/15<sup>th</sup> (Oakland) – PM



#### 7. Broadway/Grand Avenue (Oakland)

The manual bicycle counts were collected on October 18, 2016 (Tuesday) during the PM period. The automated count data was filtered to only include data collected on Tuesdays through Thursdays in October 2017. Figure 10 presents the results for Broadway/Grand (Oakland) during the PM period. In general, it seems that the automated counts are less compared to manual counts for bikes traveling along Broadway while reversed for bikes traveling along Grand. For bicycle traffic on Broadway, it is seen that eastbound direction automated counts were less compared to the manual counts. For approaches that have high bicycle traffic, it is possible that the SmartCycle system is counting groups of multiple bikes as only one bike, therefore resulting in a significant undercount.



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#### Figure 10. Broadway/Grand (Oakland) – PM

# SUMMARY

The results of the comparison of SmartCycle and manual counts indicate inconsistencies between the two approaches. Overall, the automated counts appear to be match well compared to the manual counts for certain movements at various intersections, while not matching well at others. Part of this result may be that the comparison of data are from different years. While there was an attempt to control for this by using data from the same month and days of week, there may still be variability in the actual amount of bicycle traffic at each location between the years. From the data in this pilot, there appears to be a trend that the SmartCyle may tend to undercount approaches with high bicycle traffic due to groups or bicycles simultaneously in the bicycle zone being counted as one bike. While it was also expected that the automated count is more likely to undercount, compared to manual counts, due to the limited capture of fixed detection zones, it was not expected that the automated counts would be substantially higher as experienced on a number of approaches.



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Memorandum

1111 Broadway, Suite 800, Oakland, CA 94607

DATE:	June 21, 2018
TO:	Bicycle and Pedestrian Advisory Committee
FROM:	Aleida Andrino-Chavez, Associate Transportation Planner Chris G. Marks, Associate Transportation Planner
SUBJECT:	Countywide Active Transportation Plan Update

# Recommendation

Receive an Update on the Countywide Active Transportation Plan.

#### Summary

One of the main roles of the Countywide BPAC is to advise Alameda CTC staff and the Alameda CTC at major milestones during the development and update of the Countywide Active Transportation Plan (the Plan). This is the second of at least four opportunities the BPAC will have to review intermediate deliverables while Alameda CTC and its consultants develop the Plan. At this time, Alameda CTC staff requests the Countywide BPAC review and provide input on the draft existing conditions analysis consisting of the Level of Traffic Stress (LTS) analysis, High-Injury Corridor (HIC) Analysis, and Biking and Walking Trends Analysis. The updated project schedule, including upcoming deliverables and key milestones is included in Attachment A.

# Level of Traffic Stress (LTS) Analysis

LTS methodology expresses a "worst case scenario" bicycle comfort analysis whereby the characteristic of the street segment that scores the highest stress level on a scale of 1 to 4 preempts other factors. Alameda CTC staff obtained data from cities (wherever available) on:

- Road Class (number of lanes, direction of traffic, etc.)
- Auto Volumes(Average Daily Traffic)
- Posted Speed
- Parking Presence
- Bicycle Facility Type and width (existing and planned)

Where data was not available, Alameda CTC used assumptions about conditions based on road classification.

Only LTS 1 describes the "all ages and abilities" network with facilities likely to be comfortable to bicyclists of any age and comfort level. The results of this analysis are shown in Attachment B. Low stress "islands", disconnected from other parts of the low stress network, are common. The results of the LTS will be used to develop a bicycle connectivity analysis which will identify and score areas of the network where trip origins and destinations are accessible to cyclists of all ages and abilities.

# High Injury Corridor Analysis (HIC)

One of the CATP's stated goals is to improve safety for those who bike and walk in Alameda County. The HIC analysis uses collision data involving bicyclists and pedestrians from the five most recent complete years of reported crash data (2012-2016) from the University of California, Berkeley, Transportation Injury Mapping System (TIMS) database and the California Statewide Integrated Traffic Records System (SWITRS) database to locate areas of the network where collisions are occurring. Weights were assigned by the relative severity of collisions. For this analysis, the following weights were assigned:

- Fatal and severe injury crashes: 10
- Visual injury or complaint of pain crashes: 5
- Property Damage Only crashes: 1

The HIC then aggregates collision data in quarter mile increments which define corridors. Staff will present the results of this analysis and key findings at the meeting. The results of this analysis will be used to develop collision profiles for types of facilities which elevate the risk to those who walk and bike in Alameda County.

# **Biking and Walking Trends Analysis**

Alameda CTC and its consultants updated the analysis of geographic and demographic trends in Alameda County presented in the 2012 plans where data was available. The draft Biking and Walking Trends analysis is included as Attachment C. Table 1 presents a summary of the findings from the report.

Fiscal Impact: There is no fiscal impact associated with the requested action.

# Attachments:

- A: Project Schedule
- B: DRAFT Level of Traffic Stress for Existing and Planned Bicycle Facilities
- C: DRAFT Biking and Walking Trends Analysis

# ALAMEDA COUNTYWIDE ACTIVE TRANSPORTATION PLAN



# LEGEND

Plan TAC/BPAC

**Commission Meetings** 

(#) Task

5.3A

			2019						
	Q4		G	21					
ons	(3)								
7)									
l Est	imates (8)								
	Fin	al Plan Doci	umentation	(9)					
	R		R	<u>8</u>					
keho	older/Plannii Workshops	ng Area							
fety Traiı	Toolkit ning								

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# Active Transportation Demographics and Travel Patterns Assessment

Date:	June 20, 2018
То:	Cathleen Sullivan, Aleida Andrino-Chavez, and Chris Marks, Alameda CTC
From:	Jessica Zdeb and Patrick Gilster, Toole Design Group
Project:	Countywide Active Transportation Plan (CATP)
RE:	Task 1.4: Demographics Assessment

This memorandum presents Toole Design Group's findings regarding key trends in walking and biking throughout Alameda County. The purpose of this document is to provide a picture of the current state of bicycling and walking in the county that 1) forms the basis for comparing trends with past documents, 2) benchmarks progress with future updates, and 3) compares results across planning areas/geographies. Some trends presented are also highlighted for use in guiding future phases of CATP development and recommendations.

This memorandum could not include all data analyses included in the previous 2012 plans as one main source was the 2000 Bay Area Transportation Survey (BATS), and this survey has not been updated since that iteration. This assessment fills in the gaps using other available data sets for the most recent years. The data presented in this document comes from the most recent 2016 U.S. Census data set (ACS 1-year estimate), 2012 California House Travel Survey (CHTS), and the 2015 Bay Area Rapid Transit (BART) Station Profile Study.

# Countywide Active Transportation Travel Patterns

Alameda County is located in the heart of the San Francisco Bay Area. With 15 diverse jurisdictions, the County houses major employment hubs, diverse residential communities, and recreational destinations. With approximately 1.6 million residents, Alameda County is one of the largest population centers in all of California.

For planning purposes, the Alameda County Transportation Commission (Alameda CTC) divides the county into four planning areas as follows. These will be used to frame analysis in the remainder of this memo.

- North: Alameda (City), Albany, Berkeley, Emeryville, Oakland, and Piedmont
- **Central**: Hayward and San Leandro, and surrounding unincorporated areas such as Ashland, Cherryland, Castro Valley, and San Lorenzo
- South: Fremont, Newark, and Union City
- East: Dublin, Livermore, and Pleasanton, and surrounding unincorporated areas such as Sunol

# Mode Share – Work Trips

While the majority of Alameda County's 1.6 million residents commute by car each day (70 percent of commuters), the county is the 2ndmost multimodal of all Bay Area counties with 15 percent using transit, 3



percent walking, and 2 percent biking to work. Figure 1 shows Alameda County's commute mode split compared to the state average.



Figure 1 Commute Mode Share, California and Alameda County (2016)

SOURCE: US CENSUS, ACS 2016 (1-YEAR ESTIMATE)

Nearly two-thirds of Alameda County residents work within the county (63%) and the remaining 37 percent commute to other employment destinations outside Alameda County, such as Silicon Valley/South Bay, San Francisco, or along the I-680 Corridor in Contra Costa County. The Bay Area's geography, breadth, and infrastructure make using active transportation (walking or biking) a challenge for residents who travel to jobs outside the county therefore, nearly all intra-county commuters use autos or regional transit as the primary mode to get to work. The US Census only provides Journey to Work data for the primary mode of transportation and does not include information on linked trips which would include information about people who may walk or bicycle to access regional transit services. Therefore, additional bicycling and walking trips occur for commute purposes that are not represented here. Trips that occur for non-commute purposes are described in a subsequent section.

#### Work Mode Share by Geography

Nearly half (44 percent) of Alameda County's residents live in, and commute from, the North planning area. Interestingly, while the South planning area has the second highest share of the population, the proportion of commuters to the planning area population is much lower than any other planning area, as shown in Figure 2. Many trip types in the South planning area may be more prevalent. Unincorporated areas are primarily located in the Central and East planning areas but are not included as part of the planning areas shown in Figure 2.





#### Figure 2 Share of Commuters to Population by Planning Area

SOURCE: US CENSUS, ACS 2016 (1-YEAR ESTIMATE)

The North planning area is the densest planning area in both employment and housing and has the highest share of people who walk and bicycle to work (6 percent and 4 percent, respectively), over double the share for other planning areas. The South and East planning areas experience the lowest share of people walking and biking to work (1.3 and 0.4 percent respectively). Overall, walking trips make up a larger percentage of commute trips than bicycle trips in every planning area, as shown in Figure 3.



Figure 3 Share of People of Walk or Bicycle to Work by Planning Area

SOURCE: US CENSUS, ACS 2016 (1-YEAR ESTIMATE)

Beyond differences in mode share between the planning areas, mode split within each planning area also varies by city. For instance, the cities of Berkeley and Albany in North County far surpassed the bicycle mode share of



other adjacent cities in the same planning area. Dublin and Union City experience the lowest share of bicycle commute shares in Alameda County. For walking commuters, the cities of Berkeley and Emeryville top the list of highest walk commute share while Dublin and Livermore have the lowest shares. Table 1 shows the bicycling commute mode share by city, while Table 2 ranks the walking commute mode share by city, both in descending order.

City	Bicycling Commute Share
Berkeley	9.0%
Albany*	6.1%
Oakland	3.0%
Emeryville*	2.9%
Countywide Mean	2.1%
Alameda	1.9%
Piedmont*	1.1%
Pleasanton	1.1%
Hayward	1.1%
San Leandro*	1.0%
Livermore	0.7%
Fremont	0.4%
Newark*	0.4%
Dublin*	0.3%
Union City*	0.2%

Table 1 Bicycle Commute Mode Share by City

SOURCE: US CENSUS, ACS 2016 (1-YEAR ESTIMATES, \*5-YEAR ESTIMATES PROVIDED WHERE 1-YEAR DATA IS NOT AVAILABLE)



#### Table 2 Walking Commute Mode Share by City

City	Walking Commute Share
Berkeley	13.6%
Emeryville*	6.9%
Albany*	5.4%
Oakland	3.7%
Countywide Mean	3.2%
Alameda	2.4%
Hayward	2.3%
Pleasanton	2.0%
San Leandro*	1.5%
Union City*	1.3%
Newark*	1.3%
Fremont	1.3%
Piedmont*	1.2%
Dublin	1.0%
Livermore	0.9%

SOURCE: US CENSUS, ACS 2016 (1-YEAR ESTIMATES, \*5-YEAR ESTIMATES PROVIDED WHERE 1-YEAR DATA IS NOT AVAILABLE)

# **Non-Commute Trips**

Alameda County residents travel for many reasons other than traveling to/from work. In fact, only 6 percent of Alameda County trips are commute trips according to the California Household Travel Survey (CHTS), with an additional 12 percent of trips being work-related (work-related includes trainings, meal at work, meetings/deliveries, and work-related social activities). Therefore, 82 percent of trips made within Alameda County are for non-work-related purposes. In Alameda County the most common bicycle trip purposes include work-related and recreational trips while the most common walking trip purposes are for recreation and school trips.

Compared to work trips, these trips tend to be much shorter, falling within easy walking distances (1 mile or less), easy bicycling distances (1 to 3 miles), and/or moderate bicycling distances (3 to 5 miles), as shown in Figure 5. However, only trips under one mile show substantive use of non-auto modes. More than half (56



percent) of trips under one mile are walking trips. For 1 to 3-mile trips, which are easy bicycling distance, auto remains the primary mode, with biking, walking and transit around 5 to 6 percent each. For trips over three miles, driving far surpasses other modes, and transit carries 13 percent of trips, as shown in Figure 6.<sup>1</sup>

Based on this data, trips under three miles show the most potential for conversion from driving to biking or walking. Further, the CHTS shows that around one quarter of school and school-related trips in Alameda County are made on foot, which could increase with training and education. Commute trips are the longest trips made, and are therefore less likely to be covered wholly by bicycling or walking, but walking and biking combined with transit can be a viable alternative to driving.

One final consideration is, while walking is a mode choice available to most residents, a bicycle must be available for someone to make that mode choice, so this barrier may prevent even short distances being covered by bicycle.



Figure 4 Trip Purpose by Distance, All Modes

Source: California Household Travel Survey, 2013.<sup>2</sup>



<sup>&</sup>lt;sup>1</sup> The CHTS data reports mode choice at an aggregate level. Modes were aggregated into categories in the following way: Automobile includes auto driver, auto passenger, rental car, taxi, and carpool. Walking includes walking or use of a mobility device. Transit includes bus, express bus, premium bus, public shuttle, AirBART, paratransit, BART, heavy rail, light rail, streetcar, other rail, and ferry. Walking also includes trips using a mobility device. Bicycling is reported in its own category. <sup>2</sup> The California Household Travel Survey (CHTS) is a sample travel diary survey. Data in the 2013 survey included 13,170





#### Figure 5 Trip Distances by Mode

SOURCE: CALIFORNIA HOUSEHOLD TRAVEL SURVEY, 2013.

### Access to BART

BART provides transit service at 22 stations on five lines that travel throughout Alameda County from West Oakland to Dublin/Pleasanton in the east, and North Berkeley in the north to Warm Springs (Fremont) in the south. This comprehensive system forms a regional transit backbone for many residents and visitors. BART periodically conducts station profile studies to obtain information on passengers. Data is collected through onboard surveys and interviews. Figure 8 shows the breakdown of station access mode share for stations located in Alameda County by planning area. Countywide, a greater percentage of people walk to BART than drive alone (34 percent versus 30 percent). However, an additional 22 percent of people arrive at stations via private automobile, either being dropped off or taking a taxi/ride share service. In total, just over half of riders arrive by private auto, and just under half arrive via other modes.



Use of non-auto modes is most common in North County with nearly two -third of riders walking, biking or taking transit. This share drops by 10-20% as you move south and east by planning area with Central County at 42% non-auto access mode share, South County at 28%, and East County at 16%.

Walking to BART is very common in North County (46 percent), likely due to the more compact land use patterns and limited availability of parking, and walking is least common in East County (10 percent) likely due to the longer distances to access stations and higher availability of parking. Bicycling to BART is highest in North County (10 percent) and lowest in South County and East County (4 percent). This is likely due to many



Figure 6 Example of a BART Bicycle Station in Downtown Berkeley

factors including the availability of secure parking and comfortable bicycle facilities that directly connect to stations.

BART provides a variety of bicycle parking options to patrons including electronic long-term lockers (BikeLink), standard key-accessed lockers, bike racks, as well as bike valet stations at the Downtown Berkeley, Ashby, 19<sup>th</sup> Street, and Fruitvale stations (pictured in Figure 7). BART is also currently testing smart bike racks at the Hayward station, and Ford GoBike bike share stations are located adjacent to several stations in Oakland and Berkeley.



Figure 7 Alameda County BART Access Mode Share by Planning Area

SOURCE: 2015 BART STATION PROFILE STUDY.



# Demographics of People Walking & Biking in Alameda County

# **Race & Ethnicity**

Alameda County has a tremendously diverse population. Approximately 31 percent of the County's population in Asian, 22 percent is Latino, 20 percent is White, 11 percent is Black, 10 percent comprised of other races, and 6 percent are mixed race. Figure 9 presents Alameda County's population by racial group, as well as the share each group represents of walk and bicycle commuters. It is evident that while white residents make up only onefifth of the population, they make up a majority of the walking and bicycling commuters throughout the county. Latino and Asian residents each make up the next closest percentage of people who walk or bicycle. However, Asians make up disproportionally less of the walking and bicycling commuters compared to their share of the total population.



Figure 8 Share of Population, Walking and Bicycling Commuters by Race

SOURCE: US CENSUS, ACS 2016 (1-YEAR ESTIMATE).

# Vehicle Ownership

Almost 75 percent of Alameda County households have at least two vehicles available, while slightly over 20 percent have at least one vehicle available. Within Alameda County, 24 percent of households have only one individual with a majority have one or no vehicle available. The highest number of households have two people with the over 60 percent of households having two or more vehicles available. This trend continues for three and four-person households, each having more vehicles available as household size grows. Those residents with one or fewer vehicles available make a disproportionately high number of the walking and bicycling commute trips than those with two or more vehicles available, as shown in Figure 10. However, biking and walking occurs across all households, with almost half of those that walk or bicycle to work having at least two vehicles available. Data is not available regarding mode choice and vehicle ownership for non-work trips.





#### Figure 9 Share of Workers, Walking and Bicycling Commuters by Vehicle Ownership

SOURCE: US CENSUS, ACS 2016 (1-YEAR ESTIMATE).

# Age

Adults (between the ages of 25 to 44) are the most numerous age group in the county and walk and bike to work far more frequently than any other age groups. School-aged children (up to the age of 15 years old) make up the second largest age group in Alameda County. While data is not available for the walk and bicycle rates of residents under 15 years old, it is assumed that many of the county's younger residents walk and bicycle for some of the identified short trip purposes such as school-related, recreational, or social trips.

High school and college age residents (16 to 24 years old) make up only 12 percent of the population but make a higher number of commute trips by walking (27 percent), compared to their share of the overall population. At the other end of the age spectrum, seniors age 65 and older make up 13 percent of the overall population but make much lower walk or bicycle commute trips compared to their share of the population. However, this does not capture the number of seniors that may be retired and no longer commute to work but may walk or bicycle for other purposes. Figure 11 summarizes the share of the overall population and of commuters who walk or bicycle by age.





#### Figure 10 Share of Population, and Walking and Bicycling Commuters by Age

SOURCE: US CENSUS, ACS 2016 (1-YEAR ESTIMATE).

### Gender

Alameda County has close to an even split of men and women similar to California statewide. While slightly more women (52 percent) walk to work as compared to men (48 percent), almost half the number of women (36 percent) bicycle to work than men (64 percent), as presented in Figure 12. Compared to statewide trends, Alameda County has a higher percentage of women bicycle commuters (36 percent versus 29 percent). In bicycle planning, the share of female riders is often seen as an indicator of the level of comfort of the bicycling environment. This low share of female bike commuters in Alameda County may indicate that the current bicycle network is not viewed as adequately comfortable and connected to destinations.



Figure 11 Share of Population & Walking and Bicycling Commuters by Gender

SOURCE: US CENSUS, ACS 2016 (1-YEAR ESTIMATE).



# Implications for the Development of the CATP

To better plan for future walking and bicycle infrastructure and programs, the CATP should acknowledge who is currently being served by existing infrastructure and programs, and how new investments could be targeted to better serve all communities. Table 4 summarizes the key geographic and demographic trends presented in this report.

Existing mode choice data indicate that there is opportunity for mode shift especially for short, non-workrelated trips and for access to transit. This information can help guide development of programmatic encouragement recommendations, and the prioritization of infrastructure recommendations to best serve bicycling and walking trips.



Memorandum

1111 Broadway, Suite 800, Oakland, CA 94607

510.208.7400

DATE: June 21, 2018

SUBJECT: Election of BPAC Officers

**RECOMMENDATION:** Elect a chair and vice chair for the 2018-2019 fiscal year.

# Summary

Per the current BPAC bylaws, BPAC members must elect a chair and vice chair once per year. Elections are usually held at the last meeting before the beginning of the new fiscal year. This memo summarizes the roles and responsibilities of the chair and vice chair positions, should a member wish to run for one of these two positions. Currently, Matt Turner is the Chair and Kristi Marleau is the Vice Chair.

The applicable sections from the current BPAC bylaws are included below.

**4.1 Officers.** The BPAC shall annually elect a chair and vice chair. Each officer must be a duly appointed member of the BPAC.

**4.1.1 Duties.** The chair shall preside at all meetings and will represent BPAC before the Commission to report on BPAC activities. The vice chair shall assume all duties of the chair in the absence of, or on the request of the chair. In the absence of the chair and vice chair at a meeting, the members shall, by consensus, appoint one member to preside over that meeting.

**4.2 Office Elections**. Officers shall be elected by the members annually at the Organizational Meeting or as necessary to fill a vacancy. An individual receiving a majority of votes by a quorum shall be deemed to have been elected and will assume office at the meeting following the election. In the event of multiple nominations, the vote shall be by ballot. Officers shall be eligible for re-election indefinitely."

As noted above, the chair (or vice chair) is expected to attend the Alameda CTC Commission meetings to report on any BPAC meetings or activities that have occurred since the last report to the Commission. If there have been no recent BPAC meetings the chair does not need to attend the Commission meeting. Currently the Commission meetings take place at 2:00 p.m. on the fourth Thursday of each month. Fiscal Impact: There is no fiscal impact.

# Staff Contact

Carolyn Clevenger, Director of Planning

Chris G. Marks, Associate Transportation Planner

# Alameda County Transportation Commission Bicycle and Pedestrian Advisory Committee

# DRAFT Meeting Schedule for 2018-2019 Fiscal Year

Updated June 21, 2018

	Meeting Date	Meeting Purpose			
1	June 28, 2018	<ul> <li>Countywide Active Transportation Plan: Existing Conditions</li> <li>Bikeshare (GoBike and Alameda E-Bike Pilot)</li> <li>2017 Bike/Ped Count Program</li> <li>Organizational Meeting</li> </ul>			
2	Oct 18, 2018	<ul> <li>Report on Safe Routes to Schools, Bicycle Safety Education, and iBike Campaign</li> <li>Countywide Active Transportation Plan: Prioritization Framework</li> <li>I-80/Gilman</li> <li>East 14<sup>th</sup> Street Corridor Project Update</li> </ul>			
3	Dec 6, 2018	<ul> <li>Countywide Active Transportation Plan:</li> <li>2018 Bike/Ped Count Program</li> <li>San Pablo Corridor Project Update</li> </ul>			
4	Feb 21, 2019	<ul> <li>Review TDA Article 3 Projects</li> <li>Countywide Bicycle/Pedestrian Plans Network Recommendations</li> </ul>			

Other items to be scheduled:

- I-80/Ashby Interchange Project
- I-880 Interchange Projects
- East Bay Greenway

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# Alameda County Transportation Commission <u>Bicycle and Pedestrian Advisory Committee</u> Roster and Attendance Fiscal Year 2017-2018

	Suffix	Last Name	First Name	City	Appointed By	Term Began	Re- apptmt.	Term Expires
1	Mr.	Turner, Chair	Matt	Castro Valley	Alameda County Supervisor Nate Miley, District 4	Apr-14	Mar-17	Mar-19
2	Ms.	Marleau, Vice Chair	Kristi	Dublin	Alameda County Mayors' Conference, D-1	Dec-14	Jan-17	Jan-19
3	Ms.	Brisson	Liz	Oakland	Alameda County Mayors' Conference, D-5	Dec-16		Dec-18
4	Mr.	Fishbaugh	David	Fremont	Alameda County Supervisor Scott Haggerty, District 1	Jan-14	Jan-16	Jan-18
5	Ms.	Hill	Feliz G.	San Leandro	Alameda County Supervisor Wilma Chan, District 3	Mar-17		Mar-19
6	Mr.	Johansen	Jeremy	San Leandro	Alameda County Mayors' Conference, D-3	Sep-10	Feb-18	Feb-20
7	Mr.	Jordan	Preston	Albany	Alameda County Supervisor Keith Carson, District 5	Oct-08	Oct-16	Oct-18
8	Mr.	McWilliams III	Fred	Oakland	Alameda County Mayors' Conference, D-4	Feb-18		Feb-20
9	Mr.	Murtha	Dave	Hayward	Alameda County Supervisor Richard Valle, District 2	Sep-15		Sep-17
10	Mr.	Schweng	Ben	Alameda	Alameda County Mayors' Conference, D-2	Jun-13	Jun-17	Jun-19
11	Ms.	Shaw	Diane	Fremont	Transit Agency (Alameda CTC)	Apr-14	May-16	May-18

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