

Office of the City Manager

December 4, 2013

To: Honorable Mayor and Members of the City Council

From: Christine Daniel, City Manager

Subject: Update on AC Transit Line 51 Corridor Delay Reduction

and Sustainability Project

Several Councilmembers have requested an update on the status of the AC Transit Line 51 proposed changes. This memorandum provides information on the project to date, as well as the proposed schedule moving forward.

At the November 21, 2013 Transportation Commission meeting AC Transit presented an update of their proposals for grant funded improvements to the Line 51 Transit corridor. The goal of the project is to reduce delay and increase reliability of service. Although 35% concept drawings were provided, there was not yet sufficient detail or technical analysis to evaluate many project elements, so AC Transit proposed a phasing plan (attached) that would allow simple or non-controversial elements of the project to continue with technical review and approval, while projects in need of more public review or technical evaluation would follow a more rigorous review and approval process.

The Commission voted to split the project elements into two categories according to significance and the corresponding process they would like to see. Several project elements such as coordination or detection upgrades at existing signals were deemed noncontroversial and the Commission both supported the concepts and felt comfortable with staff approving the plans administratively provided they pass our technical review. These were labeled "Phase 1" project elements and would not need to return to the Commission or Council for further review.

The remainder of the AC Transit proposals were labeled "Phase 2" project elements. The Commission wishes to see status reports on those, as well as have them presented to Council, possibly in January (pending completion of the technical peer review in time to submit the Council report). Phase 2 includes consideration of any significant geometric modification or new traffic signal (College at Bancroft or College at Russell). While new traffic control devices, including signals, are generally within the approval authority of the City Traffic Engineer, staff's administrative policy is to follow a public

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Re: Update on AC Transit Line 51 Corridor Delay Reduction and Sustainability Project

process culminating in Council action if there is any doubt of public support. This is the same process staff would follow for a major encroachment permit. Part of the discussion before the Commission concerned Phase 2 projects coming to Council in groups or sub-phases if necessary to ensure a thorough and efficient public process and project schedule. Some Phase 2 elements may also be dropped entirely if appropriate.

The only new signal that the Transportation Commission left in Phase 1 is proposed for Bancroft at Dana where there is an existing pedestrian beacon. There has long been a consensus that upgrading this to a traffic signal would significantly benefit pedestrians and traffic, as well as eliminating a source of delay to the bus.

Attachment:

1. Line 51 CDRS Berkeley Improvements Phasing Plan DRAFT revised 111413 530.pdf

cc: William Rogers, Deputy City Manager
Mark Numainville, City Clerk
Ann-Marie Hogan, City Auditor
Andrew Clough, Public Works Director
Farid Javandel, Transportation Manager
Matthai Chakko, Assistant to the City Manager

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				-	lementa Timeline						Ri	uses: Redu	ces Delays	and Impro	ves Relia	hility				All T	raffic	Pedestri	ans			(sea)		aces)		
On Street		Existing Stop Control	Types of Improvements	Phase 1 (to begin as scheduled)	Phase 2 (as soon as possible)	Element eliminated from project	By allowing bus to stop after signal	alls I	need to merge into/	By allowing for more "green time"	Allows bus to request an early/extended "green phase" upon approach to signalized intersections	e of TSP at intersection	Provides bus with separate phase to allow bus to jump ahead of adjacent vehicle queue	By avoiding vehicle queues and right turning vehicles	By reducing vehicle queues at intersections	thicle queues o pull e PM peak	By minimizing continuous pedestrian movements in front of bus	By allowing bus to stop flush to curb which can speed alighting	By providing additional room to add Shared Bus/RT-turn travel lanes or Q- Bypass lanes	Improves traffic flow along corridor	Improves efficiency of signal operations	Improves visibility for pedestrians crossing the intersection Reduces pedestrian crossing distances	Provides additional protection for pedestrians	Metered (spaces)	Non-metered (spaces)	Specialty Zones (Yellow, White, Blue) (spa		Non-metered (spaces) Specialty Zones- Yellow, White, Blue (spac	Additional Comments	Estimated Bus Travel Time Savings (Seconds)
rine 218-	Northbound Direc	SIGNALIZED	Near Side to Far Side Bus Stop Relocation				Х	х				х										х							Changes will be implemented as part of Safeway Project	
			Signal Coordination/Upgrades/Actuation/TSP	х					:	х	х										х								Saleway Floject	
	ALCATRAZ AV	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP							х	х				х						х									
Avenue	ASHBY AV	SIGNALIZED STOP-SIGN	New Signal	Х											х					х	х		х							
College Av	RUSSELL ST	CONTROLLED STOP-SIGN	Q-Jump Bypass Lane/RT lane (Near side of Russell-All day)		X									х						х							_			
	RUSSELL ST	CONTROLLED STOP-SIGN CONTROLLED	Signal Coordination/Upgrades/Actuation/TSP		X				;	х	х				х					х	х			-5			-5			50
Northbound-	RUSSELL ST DERBY ST	UNCONTROLLED	Near Side to Far Side Bus Stop Relocation		^	х		х														х			-1			-1	Net loss of 1 parking space; improved pedestrian visibility.	
Š	DWIGHT WAY	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х					:	х	х				х					х	х								pedestrian visionity.	
	HASTE ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х						х	х				х					х	х									
	CHANNING WY	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х					2	х	х				х					х	х									
	COLLEGE AVE	STOP-SIGN CONTROLLED	Bus Bulb		х				х															-3			-3		Bulb out designed to accommodate multiple buses. 3 parking spaces eliminated.	
	COLLEGE AVE	STOP-SIGN CONTROLLED	New Signal ('T' Int.)		х												х			х	х		х						Met with owner of Strada Café. To better understand his concerns.	
Avenue	COLLEGE AVE	STOP-SIGN CONTROLLED	Signal Coordination/Upgrades/Actuation/TSP		х				:	х	х				х					х	х									
Bancroft A	TELEGRAPH AVE	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х						х	x				х					х	х									
d- Ban	MID BLOCK X-ING	SIGNALIZED	Signal Coordination/Upgrades	х											х					х										
Westbound-	DANA ST	UNCONTROLLED	New Signal ('T' Int)	х													x			х	x		x							
We	DANA ST	UNCONTROLLED	Signal Coordination/Upgrades/Actuation/TSP	х						х	x									х	х									75
	FULTON ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х					:	х	х				х					х	х									
	SHATTUCK AVE	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х						x	х				х					х	х									
ttuck	KITTREDGE ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation	х					7	х					Х					х	Х									
d- Shat nue	ALLSTON WY	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х						х	х				Х					х	Х									
rthbound- Shattuck Avenue	CENTER ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х						х	x				х					х	х									
Nort	ADDISON WY	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х					2	х	x				х					х	х									

														Benefits									et Parkir acts (4-7	-	lm	Parking pacts I- 4PM)		
				-	lementa Timeline					В	uses: Red	duces Delays	and Impro	ves Reliability				All T	raffic	Pede	strians			aces)		ices)		
On Stree	et Cross Street	Existing Stop Control	Types of Improvements	Phase 1 (to begin as scheduled)	Phase 2 (as soon as possible)	Element eliminated from project	By allowing bus to stop after signal	By allowing pedestrians to cross behind the bus By eliminating need to merge into/ out of traffic	By allowing for more "green time"	Allows bus to request an early/extended "green phase" upon approach to signalized intersections	Allows for use of TSP at intersection	Provides bus with separate phase to allow bus to jump ahead of adjacent vehicle queue	By avoiding vehicle queues and right turning vehicles	By reducing vehicle queues at intersections Allow bus to bypass long vehicle queues as well as eliminate need to pull into/out of traffic during the PM peak period	By minimizing continuous pedestrian movements in front of bus	By allowing bus to stop flush to curb which can speed alighting	By providing additional room to add Shared Bus/RT-turn travel lanes or Q- Bypass lanes	Improves traffic flow along corridor	Improves efficiency of signal operations	Improves visibility for pedestrians crossing the intersection	Reduces pedestrian crossing distances Provides additional protection for pedestrians	Metered (spaces)	Non-metered (spaces)	Specialty Zones (Yellow, White, Blue) (sp	Metered (spaces)	Non-metered (spaces) Specialty Zones- Yellow, White, Blue (spac	Additional Comments	Estimated Bus Travel Time Savings (Seconds)
	UNIVERSITY AV	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х					X	х				х				х	Х									
	SHATTUCK AV	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х					Х	х				х				х	х									
	MILVIA ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х					X	х				x				x	х									
	MLK JR WY	SIGNALIZED	Shared Bus Lane with RT-Turns (Bonita to MLK-Peak Hour)		х									х								-2		-2			Two yellow zones impacted.	
	MLK JR WY	SIGNALIZED	Q-Jump Bypass Lane/RT lane (Near side of MLK-All day)		х								х									-4			-4		.,	
	MLK JR WY	SIGNALIZED	Roadway Widening		х												х					-						
	MLK JR WY	SIGNALIZED	Signal Coordination/Upgrades/Actuation	х					Х				х	х				х	х]
	MLK JR WY	SIGNALIZED	Q-Jump Transit Signal	х							x	x																
Avenue	GRANT ST	UNCONTROLLED	Near Side to Far Side Bus Stop Relocation		х			х												x		1		-1	1	-1	Yellow zone impacted. Loss of 2 MPS and Loading zone on far side. 3 MPS gained on near side. Former Café Venezia location is on the far side. Near side stop at uncontrolled intersection could be improved.	r
rersity	GRANT ST	UNCONTROLLED	Roadway Widening		Х												Х											
d- Unix	MCGEE ST	UNCONTROLLED	Remove bus stop		х																	2			2			
tboun	MCGEE ST	UNCONTROLLED	Shared Bus Lane with RT-Turns (Grant to McGee-Peak Hour)		х									х								-16						
Wes	MCGEE ST	UNCONTROLLED	Roadway Widening		х												х											
	JEFFERSON AVE	UNCONTROLLED	Shared Bus Lane with RT-Turns (McGee to Jefferson-Peak Hour)		х									х								-3						
	JEFFERSON AVE	UNCONTROLLED	Roadway Widening		х												х											
	CALIFORNIA ST	SIGNALIZED	Shared Bus Lane (Jefferson to California-Peak Hour)		х									х								-2					Includes reclaimed parking from bus stop move	150
	CALIFORNIA ST	SIGNALIZED	Q-Jump Bypass Lane/RT lane (Near side of California-All day)		х								х									-7			-7			1
			Roadway Widening		х												х								-1			
	CALIFORNIA ST	SIGNALIZED	Near Side to Far Side Bus Stop Relocation		х		х	х			х									х		4					Not loss of 4 production	
	CALIFORNIA ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	x					х	х				х				х	х			-1			-1		Net loss of 1 parking space	
	CALIFORNIA ST	SIGNALIZED	Shared Bus Lane with RT-Turns (California to Sacramento- Peak Hour)	X	,,									х														
	SACRAMENTO ST	SIGNALIZED	Q-Jump Bypass Lane/RT lane (Near side of Sacramento-All		X								х									-10		-1				
	SACRAMENTO ST	SIGNALIZED	day)	L	Х	<u> </u>	<u> </u>			<u> </u>						<u> </u>	<u> </u>		ļ		ļ	-2			-2			

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				Implemen Timeli					Ru	icas: Dad	luces Delays	and Impro	wes Pelia	hility				All Traffic	Pa	lestrians			ces)		aces)		
				Timen	ine	pind	ont		Би	ises. Reu		una impro	lves kellu	sanes ye			_	suo	Pe	S			Blue) (spa		(sb		
On Stre	t Cross Street	Existing Stop Control	Types of Improvements	Phase 1 (to begin as scheduled) Phase 2 (as soon as possible)	minated from	By allowing bus to stop after signal By allowing pedestrians to cross beh the bus	By eliminating need to merge into/ of traffic	By allowing for more "green time"	Allows bus to request an early/extended "green phase" upon approach to signalized intersections	Allows for use of TSP at intersection	Provides bus with separate phase to allow bus to jump ahead of adjacent vehicle queue	By avoiding vehicle queues and right turning vehicles	By reducing vehicle queues at intersections	Allow bus to bypass long vehicle que as well as eliminate need to pull into/out of traffic during the PM peaperiod	By minimizing continuous pedestriar movements in front of bus	By allowing bus to stop flush to curb which can speed alighting	By providing additional room to add Shared Bus/RT-turn travel lanes or Q. Bypass lanes	Improves traffic flow along corridor Improves efficiency of signal operati	Improves visibility for pedestrians crossing the intersection	Reduces pedestrian crossing distance Provides additional protection for	Metered (spaces)	Non-metered (spaces)	Specialty Zones (Yellow, White, Blue	_	Non-metered (spaces) Specialty Zones- Yellow, White, Blue	Additional Comments	Estimated Bus Travel Time Savings (Seconds)
	SACRAMENTO ST	SIGNALIZED	Near Side to Far Side Bus Stop Relocation	x		x				x									x		-1			-1		Existing stop is sub standard. Existing near side stop only has 21' wide landing. Concerns about proximity to senior	
			Signal Coordination/Upgrades/TSP	х					х				х					х			-1			-1		housing. Loss of parking space on FS.	1
	SACRAMENTO ST	SIGNALIZED	Near Side to Far Side Bus Stop Relocation			хх				х									х								
	ACTON ST	SIGNALIZED	Shared Bus Lane (Sacramento to Acton-Peak Hour)	X										х							0			0		Parking impacts are neutral	-
	ACTON ST	SIGNALIZED	Q-Jump Bypass Lane/RT lane (Near side of Acton-All day)	х								х									-8		-2			Two Yellow zones impacted.	
	ACTON ST	SIGNALIZED	Roadway Widening	x													x				-6			-6			_
	ACTON ST	SIGNALIZED		^				х	v				v					хх									1
	ACTON ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	Х				^	Х				Х					^ ^									-
	BONAR ST	SIGNALIZED	Dedicated Bus Lane (Ohlone to Bonar-Peak Hour)	Х									<u> </u>	Х				V V			-5						
anne	BONAR ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation Shared Bus Lane with RT-Turn (Bonar to Chestnut-Peak	Х				Х					Х					х х									
sity Ave	CHESTNUT ST	UNCONTROLLED		Х										Х							-4						
iver	CHESTNUT ST	UNCONTROLLED	Roadway Widening	Х													х										
nd-bn	CURTIS ST	UNCONTROLLED	Shared Bus Lane (Chestnut to Curtis-Peak Hour)	х										х							-10						
estbou	CURTIS ST	UNCONTROLLED	Roadway Widening	х													х										
×	CURTIS ST	UNCONTROLLED	Remove bus stop	х																	2			2			
	SAN PABLO AV	SIGNALIZED	Shared Bus Lane with RT-Turn (Curtis to San Pablo-Peak Hour)	х								х									-10		-3			Yellow, White and Blue zone impacted.	
	SAN PABLO AV	SIGNALIZED	Q-Jump Bypass Lane/RT lane (Near side of San Pablo-All day)																		-3			-3			
	SAN PABLO AV	SIGNALIZED	Roadway Widening	х													х										
	SAN PABLO AV	SIGNALIZED	Signal Coordination/Upgrades/TSP	х					х				х					х									
	10TH ST		Shared Bus Lane with RT-Turn (San Pablo to 10th-Peak Hour-)	х								х									-4		-1			Yellow zone impacted	1
	10TH ST	UNCONTROLLED	Roadway Widening	х													х										75
	9th Street	SIGNALIZED	Near Side to Far Side Bus Stop Relocation	х		хх				х									х		-1			-1		Net loss of 1 parking space	1
	9th Street	SIGNALIZED	Shared Bus Lane with RT-Turn (10th to 9th-Peak Hour)	х										х							-6					The state of a parting space	1
	9th Street		Q-Jump Bypass Lane/RT lane (Near side of 9th-All day)	х								х									-2		-1	-2	-1	Yellow zone impacted	1

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															Benefits								t Parking cts (4-7pm		ll day Pari Impacts (7PM- 4PI	5		
				Imj	plementa	ation																	10001			(S)		
					Timeline	e 		ъ	٦.		В	uses: Red	uces Delays	and Impro	ves Reliability ຊາ	T T			All Traffic ∽	Pe	destrians					(space		
On Street	Cross Street	Existing Stop Control	Types of Improvements	Phase 1 (to begin as scheduled)	Phase 2 (as soon as possible)	Element eliminated from project	By allowing bus to stop after signal	By allowing pedestrians to cross behin the bus	By eliminating need to merge into/out of traffic	By allowing for more "green time"	Allows bus to request an early/extended "green phase" upon approach to signalized intersections	Allows for use of TSP at intersection	Provides bus with separate phase to allow bus to jump ahead of adjacent vehicle queue	By avoiding vehicle queues and right turning vehicles	By reducing vehicle queues at intersections Allow bus to bypass long vehicle queue as well as eliminate need to pull into/out of traffic during the PM peak period	nuous per	flush to cu	By providing additional room to add Shared Bus/RT-turn travel lanes or Q- Bypass lanes	Improves traffic flow along corridor Improves efficiency of signal operation	Improves visibility for pedestrians crossing the intersection	Reduces pedestrian crossing distances Provides additional protection for pedestrians	Metered (spaces)	Non-metered (spaces)	aces)	9	Specialty Zones- Yellow, White, Blue (s	Additional Comments	Estimated Bus Travel Time Savings (Seconds)
	9th Street	SIGNALIZED	Roadway Widening		х													x										
Avenue	9th Street	SIGNALIZED	Signal Coordination/Upgrades/TSP	х							х				х				х									1
rsity Av	8TH ST	UNCONTROLLED	Shared Bus Lane (9th to 8th)			х																					Pedestrian bulbs at 8th impact proposed lane	
Unive	7TH ST	UNCONTROLLED	Shared Bus Lane (8th to 7th-Peak Hour)		х										х							-10						
n-pun			Roadway Widening (7th to 6th)		х													х				-10						1
Westbo	6TH ST	SIGNALIZED	Signal Coordination/Upgrades												х				х									1
>	6TH ST	SIGNALIZED	Q-Jump Transit Signal	Х								х	х															-
Line E1D	6тн sт Southbound Direc	SIGNALIZED	Q-jump transit signar	Х								^	^															
LINE SID-	5TH ST	UNCONTROLLED	Q-Jump Bypass Lane/RT lane (Near side of 6th)		Х									Х								-5		-5				
	6TH ST	SIGNALIZED																										7
	CTILCT		Signal Coordination/Upgrades/TSP	Х	V			1			Х				Х				Х	1				_				-
	6TH ST 6TH ST	SIGNALIZED SIGNALIZED	Signal Coordination/Upgrades/TSP Signal Mod. Roadway Widening	Х	X						X				X			Х	X									
		SIGNALIZED	Signal Mod.	X							X				X				X								Pedestrian bulbs at 8th impact proposed lane	
	6TH ST	SIGNALIZED SIGNALIZED	Signal Mod. Roadway Widening	X							X				X				X									
	6TH ST 7TH ST 8TH ST 9th Street	SIGNALIZED SIGNALIZED UNCONTROLLED UNCONTROLLED SIGNALIZED	Signal Mod. Roadway Widening Shared Bus Lane (6th to 7th-Peak Hour) Shared Bus Lane (7th to 8th Peak Hour) Signal Coordination/Upgrades/TSP	X	X	x					X				X			х	X								proposed lane Pedestrian bulbs at 8th impact	
	6TH ST 7TH ST 8TH ST	SIGNALIZED SIGNALIZED UNCONTROLLED UNCONTROLLED	Signal Mod. Roadway Widening Shared Bus Lane (6th to 7th-Peak Hour) Shared Bus Lane (7th to 8th Peak Hour) Signal Coordination/Upgrades/TSP Shared Bus Lane (8th to 9th-Peak Hour)		X	x												х				-2					proposed lane Pedestrian bulbs at 8th impact	
	6TH ST 7TH ST 8TH ST 9th Street	SIGNALIZED SIGNALIZED UNCONTROLLED UNCONTROLLED SIGNALIZED	Signal Mod. Roadway Widening Shared Bus Lane (6th to 7th-Peak Hour) Shared Bus Lane (7th to 8th Peak Hour) Signal Coordination/Upgrades/TSP Shared Bus Lane (8th to 9th-Peak Hour) Q-Jump Bypass Lane/RT lane (Near side of 9th-All day)		X X X	x								x	X X			х				-2 -2		-2		-1	proposed lane Pedestrian bulbs at 8th impact	85
	6TH ST 7TH ST 8TH ST 9th Street 9th Street 9th Street	SIGNALIZED SIGNALIZED UNCONTROLLED UNCONTROLLED SIGNALIZED SIGNALIZED SIGNALIZED UNCONTROLLED	Signal Mod. Roadway Widening Shared Bus Lane (6th to 7th-Peak Hour) Shared Bus Lane (7th to 8th Peak Hour) Signal Coordination/Upgrades/TSP Shared Bus Lane (8th to 9th-Peak Hour) Q-Jump Bypass Lane/RT lane (Near side of 9th-All day) Shared Bus Lane with RT-Turn (9th to 10th-Peak Hour)		X X X	x								Х	X			х					-			-1	proposed lane Pedestrian bulbs at 8th impact proposed lane	85
ər	6TH ST 7TH ST 8TH ST 9th Street 9th Street	SIGNALIZED SIGNALIZED UNCONTROLLED UNCONTROLLED SIGNALIZED SIGNALIZED SIGNALIZED UNCONTROLLED SIGNALIZED	Signal Mod. Roadway Widening Shared Bus Lane (6th to 7th-Peak Hour) Shared Bus Lane (7th to 8th Peak Hour) Signal Coordination/Upgrades/TSP Shared Bus Lane (8th to 9th-Peak Hour) Q-Jump Bypass Lane/RT lane (Near side of 9th-All day) Shared Bus Lane with RT-Turn (9th to 10th-Peak Hour) Q-Jump Transit Signal		X X X	x						X	X	X	X X			х				-2				-1	proposed lane Pedestrian bulbs at 8th impact proposed lane Yellow zone impacted	85
venue	6TH ST 7TH ST 8TH ST 9th Street 9th Street 10TH ST SAN PABLO AV SAN PABLO AV	SIGNALIZED SIGNALIZED UNCONTROLLED UNCONTROLLED SIGNALIZED SIGNALIZED SIGNALIZED UNCONTROLLED SIGNALIZED SIGNALIZED SIGNALIZED SIGNALIZED SIGNALIZED	Signal Mod. Roadway Widening Shared Bus Lane (6th to 7th-Peak Hour) Shared Bus Lane (7th to 8th Peak Hour) Signal Coordination/Upgrades/TSP Shared Bus Lane (8th to 9th-Peak Hour) Q-Jump Bypass Lane/RT lane (Near side of 9th-All day) Shared Bus Lane with RT-Turn (9th to 10th-Peak Hour)	X	X X X	x						X	X	x	x x			х	X			-2 -5		1		-1	proposed lane Pedestrian bulbs at 8th impact proposed lane Yellow zone impacted	85
ity Avenue	8TH ST 9th Street 9th Street 9th Street SAN PABLO AV SAN PABLO AV CURTIS ST	SIGNALIZED SIGNALIZED UNCONTROLLED UNCONTROLLED SIGNALIZED SIGNALIZED UNCONTROLLED SIGNALIZED SIGNALIZED SIGNALIZED SIGNALIZED SIGNALIZED UNCONTROLLED SIGNALIZED UNCONTROLLED	Signal Mod. Roadway Widening Shared Bus Lane (6th to 7th-Peak Hour) Shared Bus Lane (7th to 8th Peak Hour) Signal Coordination/Upgrades/TSP Shared Bus Lane (8th to 9th-Peak Hour) Q-Jump Bypass Lane/RT lane (Near side of 9th-All day) Shared Bus Lane with RT-Turn (9th to 10th-Peak Hour) Q-Jump Transit Signal Signal Coordination/Upgrades Shared Bus Lane with RT-Turn (10th to San Pablo-All day) Remove bus stop	X	X X X X X X	x						X	x		x x			X	X			-2				-1	proposed lane Pedestrian bulbs at 8th impact proposed lane Yellow zone impacted	85
ersity Avenue	8TH ST 9th Street 9th Street 9th Street 10TH ST SAN PABLO AV SAN PABLO AV CURTIS ST CURTIS ST	SIGNALIZED SIGNALIZED UNCONTROLLED SIGNALIZED SIGNALIZED SIGNALIZED SIGNALIZED UNCONTROLLED SIGNALIZED SIGNALIZED UNCONTROLLED SIGNALIZED UNCONTROLLED UNCONTROLLED UNCONTROLLED	Signal Mod. Roadway Widening Shared Bus Lane (6th to 7th-Peak Hour) Shared Bus Lane (7th to 8th Peak Hour) Signal Coordination/Upgrades/TSP Shared Bus Lane (8th to 9th-Peak Hour) Q-Jump Bypass Lane/RT lane (Near side of 9th-All day) Shared Bus Lane with RT-Turn (9th to 10th-Peak Hour) Q-Jump Transit Signal Signal Coordination/Upgrades Shared Bus Lane with RT-Turn (10th to San Pablo-All day) Remove bus stop Roadway Widening	X	x x x x x x x x x x x x x x x x x x x	x						X	x		x x			X	X			-2 -5		1		-1	proposed lane Pedestrian bulbs at 8th impact proposed lane Yellow zone impacted	85
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On Street	Cross Street GRANT ST	Existing Stop Control UNCONTROLLED	Types of Improvements Q-Jump Bypass Lane/RT lane (Near side of Grant)	Phase 1 (to begin as scheduled)	× Phase 2 (as soon as possible)	Element eliminated from project		the bus By eliminating need to merge into/ ou of traffic	By allowing for more "green time"	Allows bus to request an early/extended "green phase" upon approach to signalized intersections	Allows for use of TSP at intersection	Provides bus with separate phase to allow bus to jump ahead of adjacent vehicle queue	By avoiding vehicle queues and right turning vehicles	By reducing vehicle queues at intersections	Allow bus to bypass long vehicle queu as well as eliminate need to pull into/out of traffic during the PM peak period	By minimizing continuous pedestrian movements in front of bus	By allowing bus to stop flush to curb which can speed alighting	By providing additional room to add Shared Bus/RT-turn travel lanes or Q- Bypass lanes	Improves traffic flow along corridor	Improves efficiency of signal operation	Improves visibility for pedestrians crossing the intersection	Reduces pedestrian crossing distances Provides additional protection for	pedestrians b Metered (spaces)	Non-metered (spaces)	Specialty Zones (Yellow, White, Blu	ered (s	Specialty Zones- Yellow, White, Blue (Additional Comments	Estimated Bus Travel Time Savings (Seconds)
Φ			Lengthen Bus Stop		х												х											Net loss of 1 parking space. No room to pull bus out of stop after wheelchair	
y Av	GRANT ST	UNCONTROLLED	O lump Dunges Long / DT long / Near side of MIX All day)				-						v						-				-1	+ +		1		deployment.	-
Eastbound- University Ave	MLK JR WY MLK JR WY	SIGNALIZED SIGNALIZED	Q-Jump Bypass Lane/RT lane (Near side of MLK-All day) Signal Coordination/Upgrades/Actuation/TSP	X			+		Х	Х			Х	Х					х	х	\dashv		-	+		\perp		Additional "Bus Excepted" signage only	
East	MLK JR WY	SIGNALIZED	Roadway Widening (median narrowing)		Х				^	Α								Х	^	^									<u> </u>
~5	MILVIA ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	х					Х	X				х					Х	Х									<u> </u>
	SHATTUCK AV SHATTUCK AV	SIGNALIZED SIGNALIZED	Signal Coordination/Upgrades/Actuation Lengthen Bus Stop	Х	Х				Х					Х			Х		Х	Х			-1	+ +	-	1		1 parking space eliminated	-
ę s	UNIVERSITY AV	SIGNALIZED	Signal Coordination/Upgrades/Actuation	Х					х					Х			^		Х	Χ								1 parking space cilimitated	
Southbound- Shattuck Ave	ADDISON WY	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	Х			+		v	X				X					X	X				+ +					-
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S S	KITTREDGE ST	SIGNALIZED	Signal Coordination/Opgrades/Actuation/TSP	X					X	Х				X					X	X									
	SHATTUCK AVE SHATTUCK AVE	SIGNALIZED SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP Lengthen Left Turn Pocket	Х	Х				Х	Х				Х					Х	Х									-
	SHATTUCK AVE	SIGNALIZED	Lengthen Bus Stop		X												Х						-3		-:	3		3 parking spaces eliminated	<u> </u>
	FULTON ST ELLSWORTH ST	SIGNALIZED SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP Signal Coordination/Upgrades/Actuation/TSP	X				+	X	X X				X					X	X				+ +					-
Ave			Near Side to Far Side Bus Stop Relocation	_^	х)	x x		^		х			^						^	х							Net neutral parking impact. White zone	1
aut,	ELLSWORTH ST DANA ST	SIGNALIZED SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	Х	^		^		Х	х	^			Х					Х	Х	^				-1		-1	also impacted.	125
Durant	DANA ST	SIGNALIZED	Bus Bulb		Χ			х	^										^	^		Х							<u> </u>
-punoq	DANA ST	SIGNALIZED	Near Side to Far Side Bus Stop Relocation		х	>	x														х		-4			4		4 parking spaces eliminated. Near side stop to remain for buses turning right onto Dana Street.	
East	TELEGRAPH AVE	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	Х	v			-	Х	Х				Х					Х	Х		х							-
	TELEGRAPH AVE	SIGNALIZED	Bus Bulb		Х		-	Х									1					^	-	+		_		Parking change is neutral if bus bulb is	
	TELEGRAPH AVE	SIGNALIZED	Near Side to Far Side Bus Stop Relocation		Х	>	X				Х										Х							built .	<u> </u>
	COLLEGE AVE	SIGNALIZED SIGNALIZED	Signal Coordination/Upgrades/Actuation Bus Bulb	X			-	Х	Х					Х				1	Х	Х		Х		+ -	_			No parking eliminated by bus bulb	-
		SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	X				1	Х	х				Х				† †	х	х								parange communica by bus build	
	CHANNING WY HASTE ST	SIGNALIZED	Signal Coordination/Upgrades/Actuation	X			\pm		Х			<u> </u>		X						Х									<u> </u>
	HASTE ST DWIGHT WAY	SIGNALIZED SIGNALIZED	Lengthen Bus Stop Signal Coordination/Upgrades/Actuation/TSP	Х	Х				Х	Х				Х			Х		х	Х			-2		-:	2		2 parking spaces eliminated	
	PARKER ST (WEST OF	SIGNALIZED		^			х		^					^					^	^	х			† †			1		
ine	COLLEGE)	UNCONTROLLED	Near Side to Far Side Bus Stop Relocation		х																^		-1			1		Net loss of 1 parking space.]
Aven	DERBY ST	UNCONTROLLED STOP-SIGN	Near Side to Far Side Bus Stop Relocation			Х																						Net loss of 2 parking spaces	4
	RUSSELL ST	CONTROLLED			х									Х					Х	Х		х							<u> </u>
College	RUSSELL ST	STOP-SIGN CONTROLLED	Signal Coordination/Upgrades/Actuation/TSP	х					Х	х				х					х	х									55
뉱	RUSSELL ST	STOP-SIGN CONTROLLED STOP-SIGN	Q-Jump Bypass Lane/RT lane (Near side of Russell-All day)		х								х										-6			6		Lane takes 6 parking spaces after bus stop relocated to far side.	- 33
Southbou	RUSSELL ST	CONTROLLED	Roadway Widening (sidewalk narrowing)		Х													Х											
S	RUSSELL ST ASHBY AV	STOP-SIGN CONTROLLED SIGNALIZED	Near Side to Far Side Bus Stop Relocation Signal Coordination/Upgrades/Actuation/TSP	Х	х		х		х	Х	х			х					х	Х	х		-1			1		Net loss of 1 parking space.	
	WOOLSEY ST	UNCONTROLLED	Lengthen Bus Stop		Х						Х													-1		-1			<u> </u>
	ALCATRAZ AV	SIGNALIZED	Signal Coordination/Upgrades/Actuation/TSP	Х					Х	Х				Х					Х	Х								Changes will be implemented as part of	
	ALCATRAZ AV	SIGNALIZED	Near Side to Far Side Bus Stop Relocation	Х			X														Х							Safeway Project	

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