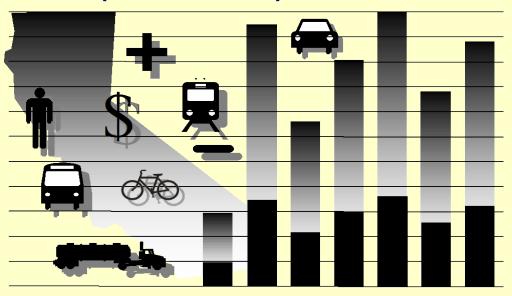


California Active Transportation Benefit/Cost Analysis Model for 2022 INFRA/RAISE Applications

(Cal-B/C AT) Version 8.1



Office of Transportation Economics Division of Transportation Planning

March 2022

For questions and comments, please contact:

Transportation Economics Branch

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Definitions

Several definitions require clarification in evaluating facility use, either improved existing or new facilities. This section provides definitions for terms that are used in this tool with respect to "trip types" and "user types). In addition, not all users benefit from projects in the same way. Definitions about benefit categories are elaborated upon below. Relevance of benefit categories depends on trip purpose and type of project (i.e., existing facility upgrade and new construction).

Trip Types	Definitions				
Trips	One-way travel to a destination for commuting, or other purposes and is assumed to counted for both directions of travel (and subsequently modeled) for a specific location.				
Roundtrips	Most trips have a return journey using the same mode and some can include other unlinked side trips. This "roundtrip" measure divides Trips by the average number of unlinked trips to determine the is used to identify the number of users that take trips.				
Existing Trips	Baseline trips, either on an existing facility or unmarked street, where the project will create a new facility with specific improvements				
Induced Trips	Additional trips above the baseline that arise because of the improvements to existing or new facilities				
Trip Forecasts	Forecasts are developed for existing facilities and new locations (if applicable), model users determine numbers of current and induced trips, and other characteristics (e.g., roundtrip probability, purpose, distance, etc.)				
Trip Purposes	Definitions				
Commute to Work	Users who are taking the facility to or from work. These users are primarily adult or young-adult aged. Use by college students would be classified under "other destinations"				
Safe Route to School	Users who are school-aged, i.e. 18 or under years old, and taking the facility to or from school.				
Other Destinations	Users who are taking the facility to reach a variety of other destinations besides work, such as shopping, meeting friends, college classes, etc. These are trips that would be otherwise taken by some type of motor vehicle				
Recreational	Users who are taking the facility purely as a loop-trip for exercise purposes. These trips would not be otherwise taken by motor vehicle since the purpose is for fitness and recreation.				
Benefit Categories	Definitions				
Journey Quality	Improvements in the quality of the trip for pedestrians and cyclists that arise from a greater feeling of safety, comfort, aesthetics, and other types of improvements. Improvements to existing and new facilities can generate benefits for current trips and induced trips. Benefits to induced users are estimated using "rule of half" approximation. Journey quality is assumed to have a zero value for existing users along routes where there is no existing facility. The value of journey quality includes the perception of safety improvement and thus, to avoid double counting, additional accident reduction value along the routes is excluded. However, safety improvements at intersections along existing facilities generate additional benefits that are discussed below.				
Intersection Delay (Time Savings from Improved Intersections on Existing Facilities)	Traffic. Time savings benefits can arise for existing and induced pedestrians and cyclists at each intersection that they cross. The number of intersections crossed by users of a facility on each trip is determined by the total length of the existing facility the average distance traveled per user type, and the number of intersections with				
Intersection Safety (Accident Reduction at Improved Intersections of Existing Facilities)	cyclists at each intersection crossed. The number of intersections crossed per trip is determined by the total length of the existing facility, the average distance traveled per trip is determined by the percent reduction in existing accidents due to specific safety.				
	Some of the induced pedestrian and cycling trips entail diversions from auto use. Benefits from reduced auto use include reduced frequency of accidents and level of auto emissions. Benefits are estimated for each diverted auto trip by using standard methods and data for estimating the value of auto use externalities.				
	Health benefits related to reduced absenteeism are generated by induced walking and cycling commuters. The benefits are monetized by higher productivity due to fewer sick days. Benefits to these induced users are not estimated using "rule of half" approximation since the value is observed by the employer.				

Health Benefits - Reduced Mortality Risk

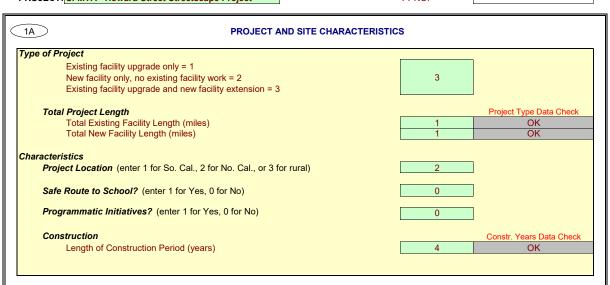
Health benefits related to improved long-term health and reduced risk of disease and early death. These benefits are derived from parameters established by the World Health Organization (WHO) and formalized in their online HEAT tool and documentation. Benefits are derived from reduced mortality risk in populations that range from 20-64 for cyclists and 20-74 for pedestrians. Reduced mortality risk depends on the amount of cycling (average distance) undertaken over a one year period.

Benefit Categories by Facility Type

The matrix below indicates the applicability of benefits by to different types of trips and projects. Projects include existing facility improvements and new construction. Trips differ between current trips already being taken and new, induced trips that arise because of improvements.

	Existing Fac	ility Improvement	New C	onstruction
Benefit Categories by Facility Type	Existing Trips	Induced Trips	Existing Trips	Induced Trips
Journey Quality	Yes	Yes	Yes	Yes
Intersection Delay (Time Savings from Improved Intersections on Existing Facilities)		Yes		
Intersection Safety (Accident Reduction at Improved Intersections of Existing Facilities)	Yes	Yes		
Auto Accident Costs and Auto Emissions		Yes		Yes
Health Benefits - Reduced Absenteeism of Commuters		Yes (Commuters, only)		Yes (Commuters, only)
Health Benefits - Reduced Mortality Risk		Yes (Age dependent)		Yes (Age dependent)

District: 4		
	EA:	
PROJECT: SFMTA - Howard Street Streetscape Project	PPNO:	



nprovement Characteristics				
Existing Facility Length, if Applicable	Class	No Build	Build	Project Length Data Check
Bike Paths (miles)	1	0	0	OK
Bike Lanes (miles)	II	0	0	
Bike Route (miles)	III	0	0	
Separated Bikeways, Cycle Tracks (miles)	IV	1	1	
Total		1	1	
Pedestrian Improvements		Yes =1 or No=0	Yes =1 or No=0	
Street Lighting		0	1	
Curb Level		0	1	
Crowding		0	1	
Pavement Evenness		0	1	
Information Panels		0	1	
Benches		0	1	
Directional Signage		0	1	
rip Data - Adults				
Cycling				
Daily Trips - Current		1,030		
Projected Annual Growth Rates from Year 1 (%)		4%	4%]

Pedestrian	
Daily Trips - Current	7,389
Projected Annual Growth Rates from Year 1 (%)	5% 5%
Daily Trips - Year 1 (post-construction)	8,981 8,981
Daily Trips - Year 20 (post-construction)	23,830 23,830
Trip Data - Children - SRTS	
Cycling	
Daily Trips - Current	0
Projected Annual Growth Rates from Year 1 (%)	
Daily Trips - Year 1 (post-construction)	0 0
Daily Trips - Year 20 (post-construction)	0 0
Pedestrian	
Daily Trips - Current	0
Projected Annual Growth Rates from Year 1 (%)	
Daily Trips - Year 1 (post-construction)	0 0
Daily Trips - Year 20 (post-construction)	0 0
, , , , , , , , , , , , , , , , , , , ,	

educed Delay Due to Intersection Improvements			
Time Savings Parameters			
Number of Improved Intersections		8	
Time Savings per Improved Intersection (min.)		0	
Intersection improvements on SRTS? (enter 1 for Yes, 0 for N	No)	0	
ccident Rate - Current Conditions			
Cyclists	Count (No.)	Rate per Year	
Number of Years of Data	6.00		
Existing Conditions			
Total Number of Accidents (Tot)	34	5.7	
Number of Fatal Accidents (Fat)	2	0.3	
Number of Injury Accidents (Inj)	1	0.2	
Number of \Property Damage Only (PDO) Accidents	31	5.2	
Annual Growth Rate in Accidents (%/year)	2.7%	0.0045	
Pedestrians	Count (No.)	Rate per Year	
Number of Years of Data	6.00		
Existing Conditions			
Total Number of Accidents (Tot)	41	6.8	
Number of Fatal Accidents (Fat)	1	0.2	
Number of Injury Accidents (Inj)	2	0.3	
Number of \Property Damage Only (PDO) Accidents	38	6.3	
Annual Growth Rate in Accidents (%/year)	5.5%	0.009166667	
afety Countermeasures (improvements to existing facilities only)			
Signalized Intersection		Yes =1	
Pedestrian Countdown Signal Heads		1	

Pedestrian Crossing	1	
Advance Stop Bar before Crosswalk	1	
Install Overpass/Underpass	0	
Unsignalized Intersection	·	
Raised Medians/Refuge Islands	0	
Pedestrian Crossing (new signs and markings only)	1	
Pedestrian Crossing (safety features/curb extensions)	1	
Pedestrian Signals	0	
Roadways - relevant for pedestrian improvements, such as sidewalks	·	
Sidewalk/Pathway (to avoid walking along roadway)	1	
Pedestrian Crossing (with enhanced safety features)	1	
Pedestrian Crossing	1	
Other Reduction Factor Countermeasures	1	

1D GENERAL USER CHARACTERISTICS	S (BASED ON PROJECT	LOCATION)
Cycling		
Trip Purpose	No Build	Build
Commuting Trip Purpose (%)	19%	19%
Recreational Trip Purpose (%)	46%	46%
Other Destinations Trip Purpose (%)	35%	35%
General Trip Characteristics		
Overall Average Distance Traveled / Trip (mi)	2.29	2.29
Children - SRTS - Distance Traveled / Trip (mi)	0.99	0.99
Pedestrian		
Trip Purpose		
Commuting Trip Purpose (%)	5%	5%
Recreational Trip Purpose (%)	55%	55%
Other Destination Trip Purpose (%)	40%	40%
General Trip Characteristics		
Overall Average Distance Traveled / Trip (mi)	0.68	0.68
Children - SRTS - Distance Traveled / Trip (mi)	0.63	0.63

Improvement Characteristics				
New Facility Length	Class	No Build	Build	Project Length
No Facility	0	1		OK
Bike Paths (miles)	l I		0	
Bike Lanes (miles)	ll ll		0	
Bike Route (miles)	III		0	
Separated Bikeways, Cycle Tracks (miles)	IV		1	
Total		1	1	
Pedestrian Improvements			Yes =1	
Street Lighting			0	1
Curb Level			0	
Crowding			0	
Pavement Evenness			0	
Information Panels			0	
Benches			0	-
Directional Signage			0	
Trip Data - Adults				
Cycling		No Build	Build	
Daily Trips - Current		0	Dalla	
Projected Annual Growth Rates from Year 1 (%)		0%	4%	1
, (13)				1
Daily Trips - Year 1 (post-construction)		0	0	
Daily Trips - Year 20 (post-construction)		0	0	

Pedestrian			
Daily Trips - Current		0	
Projected Annual Gro	wth Rates from Year 1 (%)		
Daily Trips - Year 1 (post-construction)	0	0
Daily Trips - Year 20	(post-construction)	0	0
Trip Data - Children - SRTS			
Cycling		No Build	Build
Daily Trips - Current		0	
Projected Annual Gro	owth Rates from Year 1 (%)		
Daily Trips - Year 1 (post construction)	0	0
Daily Trips - Year 20	•	0	0
Daily Trips - Teal 20	(post-construction)	U	U
Pedestrian			
Daily Trips - Current		0	
Projected Annual Gro	owth Rates from Year 1 (%)		
Daily Trips - Year 1 (post-construction)	0	0

Enter all project and program costs (in today's dollars) in the two tables shown below. Costs during construction should be entered in the first row. Project costs (including maintenance and operating costs) should be net of costs without project.

1F)											
Col. no.											
		DIRECT PROJECT COSTS							TOTAL COSTS (in dollars)		
			INITIAL COST	rs	SUBSEQUENT	COSTS					
Year	Construction	Project			Maint./			Constant	Present		
	Years	Support	R/W	Construction	Op.	Rehab.		Dollars	Value		
	ire Program Costs	4070.0						4070.000	****		
1	0	\$650.0		40	< Must ente	r a cost		\$650,000	\$650,000		
2	1	\$4,200.0		\$25,000.0				29,200,000	27,289,720		
3	1			\$2,900.0				2,900,000	2,532,972		
4	1			\$16,000.0				16,000,000	13,060,766		
5	1			\$1,100.0				1,100,000	839,185		
6	0							0	0		
7	0							0	0		
8	0							0	0		
nnual Infr	astructure O&M Co	sts									
1					\$168			\$167,500	\$127,785		
2					\$168			167,500	119,425		
3					\$168			167,500	111,612		
4					\$168			167,500	104,311		
5					\$168			167,500	97,487		
6					\$168			167,500	91,109		
7					\$168			167,500	85,149		
8					\$168			167,500	79,578		
9					\$168			167,500	74,372		
10					\$168			167,500	69,507		
11				Į.	\$168			167,500	64,959		
12				Į.	\$168			167,500	60,710		
13	4				\$168			167,500	56,738		
14	4				\$168			167,500	53,026		
15	4			ļ.	\$168			167,500	49,557		
16	-			Į.	\$168			167,500	46,315		
17	4			ļ.	\$168			167,500	43,285		
18 19	-			Į.	\$168			167,500	40,453		
19 20	4			ļ.	\$168			167,500	37,807		
		¢4.050	\$0	£45,000	\$168			167,500	35,334		
Total		\$4,850	\$0	\$45,000	\$3,350	\$0		\$53,200,000	\$45,821,16		
				ATD DECUEO	TED FUNDS						
Total				ATP REQUES	IED FUNDS						
Total											

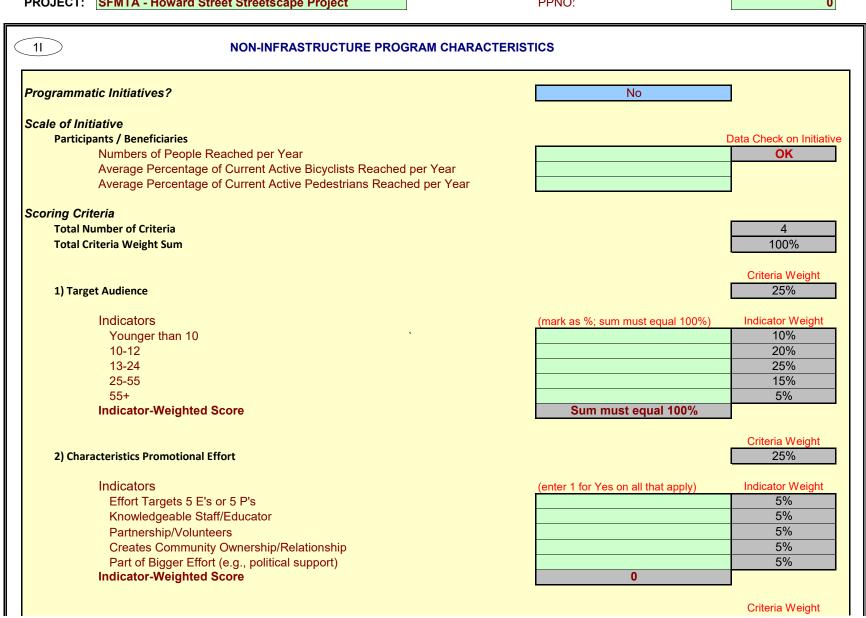
1G PROGRAM COSTS AND REQUESTED FUNDS (enter in thousands of dollars)

ſ			DIRECT PROJECT COSTS						
١				INITIAL COS	STS	SUBSEQUENT COSTS		TOTAL COST	ΓS (in dollars)
١	Year	Construction	Project			Maint./		Constant	Present
ı		Years	Support	R/W	Construction	Op.	Rehab.	Dollars	Value

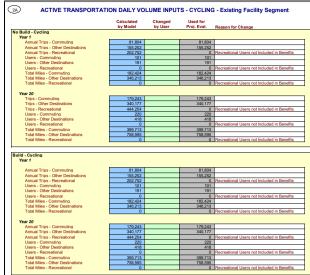
Non-Intras	structure Program Costs							
1				< Must ente	er a cost		\$0	\$0
2							0	0
3							0	0
4							0	0
5							0	0
6							0	0
7							0	0
8							0	0
Annual No	on-Infrastructure O&M Costs							
1	-						\$0	\$0
2	_						0	0
3	╡						0	0
<u>4</u> 5	-						0	0
6	╡						0	0
7							0	0
8	1						0	0
9	1						0	0
10	1						0	0
11	1						0	0
12	1						0	0
13							0	0
14	1						0	0
15	1						0	0
16	1						0	0
17	1					1	0	0
18	╡					1	0	0
19	1					1	0	0
20	-						0	0
Total		\$0 \$0	\$0	\$0	\$0		\$0	\$0
			•		**		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	**
			ATP REQUE	STED FUNDS				
Total								
Total		ψ0 φ0		STED FUNDS	φ	U		

	DATA CHECKS - PRO	DJECT LENGTH, DAILY TRI	PS
		No Build Project Length	Build Project Length
	Existing Facility Length Check	OK	OK
1	New Facility Length Check		OK
	Friedrice Footballere	Cycling Daily Trips per Mile	Pedestrian Daily Trips per
	Existing Facility Users New Facility Users	,	7,389
	Existing Facility Characteristics	Safety Measures - Existing o	

District:	4		
		EA:	0
DDO IECT:	SEMTA - Howard Stroot Strootscano Project	DDNO:	0



Indicators	(enter 1 for Yes on all that apply) Indicator \	Neig
Outreach is Hands-on (self-efficacy)	5%	
Overcome Barriers (e.g., dist., time, etc.)	5%	
Eliminates Hazards/Threats (speed, crime, etc.)	5%	
Connected or Addresses Connectivity Challenges	5%	
Creating Value in Using Active Transportation	5%	
Indicator-Weighted Score	0	
A) Franciscope of Outroock Effort	Criteria W	
4) Frequency of Outreach Effort	25%	0
Indicators	(enter 1 for Yes for only one option) Indicator V	
One Day	5%	
One Month	10%	6
One Year	15%	
Multiple Years	20%	
Continuous Effort	25%	6
Indicator-Weighted Score	0	
Projected New Active Transportation Cyclists		
Number of Potential New Facility Users	0	
Weighted Impact Score of Outreach Program Impact Score		
Years of Outreach	0.0	
Multi-year Program Impact Score		
Cost Effectiveness		
Total Discounted Cost	\$0	
Cost per Program Impact Score		
Projected New Active Transportation Pedestrians		
Number of Potential New Facility Users	0	
Weighted Impact Score of Outreach		
Program Impact Score		
Years of Outreach	0.0	
Multi-year Program Impact Score		
Cost Effectiveness		
Total Discounted Cost	\$0	
Cost per Program Impact Score		



ACTIVE TRANSPOR	TATION DAILY VOLUM	EINDLITE CYCLII	NG - New Facility Segment
ACTIVE TRANSFOR	TATION DAILT VOLUM	E INFOTO - CTCLI	40 - New Facility Segment
	Calculated	Used for	
Build - Cycling	by Model	Proj. Eval.	Reason for Change
Year 1			
Annual Trips - Commuting	0	0	
Annual Trips - Other Destinations	0	0	
Annual Trips - Recreational	0		Recreational Users not Included in Benefits
Users - Commuting	0	0	
Users - Other Destinations	0	0	
Users - Recreational	0		Recreational Users not Included in Benefits
Total Miles - Commuting	0	0	
Total Miles - Other Destinations Total Miles - Recreational	0	0	Recreational Users not Included in Benefits
i otal Miles - Recreational	0		Recreational Users not included in Benefits
Year 20			
Trips - Commuting	0	0	
Trips - Other Destinations	0	0	
Trips - Recreational	0	0	Recreational Users not Included in Benefits
Users - Commuting	0	0	
Users - Other Destinations	0	0	
Users - Recreational	0		Recreational Users not Included in Benefits
Total Miles - Commuting	0	0	
Total Miles - Other Destinations	0	0	
Total Miles - Recreational	0	0	Recreational Users not Included in Benefits
ild - Cycling			
Year 1			
Annual Trips - Commuting	0	0	
Annual Trips - Other Destinations	0	0	
Annual Trips - Recreational Users - Commuting	0	0	Recreational Users not Included in Benefits
Users - Other Destinations	0	0	
Users - Recreational	0		Recreational Users not Included in Benefits
Total Miles - Commuting	0	0	
Total Miles - Other Destinations	0	ŏ	
Total Miles - Recreational	0		Recreational Users not Included in Benefits
			· ·
Year 20			
Annual Trips - Commuting	0	0	
Annual Trips - Other Destinations	0	0	
Annual Trips - Recreational	0		Recreational Users not Included in Benefits
Users - Commuting Users - Other Destinations	0	0	
Users - Other Destinations Users - Recreational	0		Recreational Users not Included in Benefits
	0	0	
Total Miles - Commuting			

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
lo Build - Cycling		-,	,	reason for onlyinge
Year 1				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
Year 20				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
Build - Cycling				
Year 1				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
rotal filles - Ortro				
Year 20				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	ň		ı o	

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
Build - Cycling				
Year 1				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
Year 20				
Annual Trins - SRTS	0		0	
SRTS Users	0		n n	
Total Miles - SRTS	0		0	
ld - Cvclina Year 1				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
Year 20				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
PORTIONS OF SRTS IN TOTAL BE				

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
o Build - Pedestrian				
Year 1				
Annual Trips - Commuting	170,467		170,467	
Annual Trips - Other Destinations Annual Trips - Recreational	1.304.724		1.304.724	
Annual Trips - Recreational Users - Commuting	1,803,011		222	Recreational Users not Included in Benefits
Users - Other Destinations	1,702		1,702	
Users - Recreational	1,702			Recreational Users not Included in Benefits
Total Miles - Commuting	243 426		243.426	Recreational Users not included in benefits
Total Miles - Other Destinations	1 883 147		1 863 147	
Total Miles - Recreational	1,003,147			Recreational Users not Included in Benefits
Total Miles - Teed customs				Treer case of all orders and a second an order of
Year 20				
Annual Trips - Commuting	452 298		452 298	
Annual Trips - Other Destinations	3.461.822		3.461.822	
Annual Trips - Recreational	4.783.925		0	Recreational Users not Included in Benefits
Users - Commuting	590		590	
Users - Other Destinations	4,516		4,516	
Users - Recreational	0		0	Recreational Users not Included in Benefits
Total Miles - Commuting	645.882		645.882	
Total Miles - Other Destinations	4,943,482		4,943,482	
Total Miles - Recreational	0			Recreational Users not Included in Benefits
				Recreational Users not included in benefits
uild - Pedestrian Year 1				recressional Users not included in Benelits
	170,467		170,467	(recressions) Users not included in denetits
Year 1	170,467 1,304,724			recressional Users not included in deneits
Year 1 Annual Trips - Commuting			170,467	Recreational Users not included in Benefits
Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Recreational Users - Commuting	1,304,724 1,803,011 222		170,467 1,304,724 0 222	
Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Recreational	1,304,724 1,803,011		170,467 1,304,724 0	
Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Recreational Users - Commuting Users - Commuting Users - Other Destinations Users - Recreational	1,304,724 1,803,011 222 1,702 0		170,467 1,304,724 0 222 1,702	
Year 1 Annual Trips - Commuling Annual Trips - Other Destinations Annual Trips - Recreational Users - Commuling Users - Commuling Users - Other Destinations Users - Recreational Total Miles - Commuling	1,304,724 1,803,011 222 1,702 0 243,426		170,467 1,304,724 0 222 1,702 0 243,426	Recreational Users not included in Benefits
Year 1 Annual Trips - Commusing Annual Trips - Other Destinations Annual Trips - Recreational Users - Commusing Users - Other Destinations Users - Recreational Total Miles - Commusing Total Miles - Commusing Total Miles - Other Destinations	1,304,724 1,803,011 222 1,702 0 243,426 1,863,147		170,467 1,304,724 0 222 1,702 0 243,426 1,863,147	Recreational Users not included in Benefits Recreational Users not included in Benefits
Year 1 Annual Trips - Commuling Annual Trips - Other Destinations Annual Trips - Recreational Users - Commuling Users - Commuling Users - Other Destinations Users - Recreational Total Miles - Commuling	1,304,724 1,803,011 222 1,702 0 243,426		170,467 1,304,724 0 222 1,702 0 243,426	Recreational Users not included in Benefits
Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Recreational Users - Communiting Users - Other Destinations Users - Communiting Users - Recreational Total Miles - Other Destinations Total Miles - Chief Destinations Total Miles - Recreational	1,304,724 1,803,011 222 1,702 0 243,426 1,863,147		170,467 1,304,724 222 1,702 0 243,426 1,883,147	Recreational Users not included in Benefits Recreational Users not included in Benefits
Year 1 Annual Trips - Commuling Annual Trips - Other Destinations Annual Trips - Recreational Users - Other Destinations Users - Other Destinations Users - Recreational Total Miles - Commuling Total Miles - Commuling Total Miles - Commuling Year 20 Year 20 Annual Trips - Commuling	1,304,724 1,803,011 222 1,702 0 243,426 1,863,147 0		170,487 1,304,724 0 2222 1,702 0 243,426 1,883,147 0	Recreational Users not included in Benefits Recreational Users not included in Benefits
Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Recreational Users - Communication Users - Communication Users - Recreational Users - Recreational Total Miles - Other Destinations Total Miles - Recreational	1,304,724 1,803,011 222 1,702 0 243,426 1,863,147		170,467 1,304,724 222 1,702 0 243,426 1,883,147	Recreational Users not included in Benefits Recreational Users not included in Benefits
Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Recreational Livers - Other Destinations Users - Recreational Total Miles - Commuting Total Miles - Commuting Total Miles - Other Destinations Total Miles - Other Destinations Total Miles - Other Destinations Total Miles - Recreational Total Miles - Recreational	1,304,724 1,803,011 222 1,702 0 243,426 1,863,147 0		170,467 1,304,724 0 2222 1,702 0 243,426 1,863,147 0	Recreational Users not included in Benefits Recreational Users not included in Benefits
Year 1 Annual Trips - Commuting Annual Trips - Chert Destinations Annual Trips - Chert Destinations Users - Commuting Users - Commuting Users - Commuting Users - Recreational Users - Recreational Total Miles - Commuting Year 20 Year 20 Annual Trips - Commuting Annual Trips - Recreational Users - Commuting Users - Commuting Annual Trips - Recreational Users - Commuting Users	1,304,724 1,803,011 222 1,702 0 243,426 1,863,147 0 452,298 3,461,822 4,783,925 590		170,467 1,304,724 0 222 1,702 0 243,426 1,863,147 0 452,298 3,461,822 0 590	Recreational Users not Included in Benefits Recreational Users not Included in Benefits Recreational Users not Included in Benefits
Year 1 Annual Trips - Communicy Annual Trips - College Communicy Annual Trips - College College Users - Communicy Users - Communicy Users - Communicy Total Miles - Communicy Total Miles - Communicy Total Miles - College Total Miles - College Annual Trips - Communicy Annual Trips - College Annual Trips - College Annual Trips - College Users - Colleg	1,304,724 1,803,011 222 1,702 0 243,426 1,863,147 0 452,298 3,461,822 4,783,925		170,467 1,304,724 0 0 2222 1,702 0 243,426 1,863,147 0 452,298 3,461,822	Recreational Users not included in Benefits
Year 1 Annual Trips - Commuting Annual Trips - Chert Destinations Annual Trips - Chert Destinations Users - Commuting Users - Commuting Users - Commuting Users - Recreational Users - Recreational Total Miles - Commuting Year 20 Year 20 Annual Trips - Commuting Annual Trips - Recreational Users - Commuting Users - Commuting Annual Trips - Recreational Users - Commuting Users	1,304,724 1,803,011 222 1,702 0 243,426 1,863,147 0 452,298 3,461,822 4,783,925 590		170,467 1,304,724 0 222 1,702 0 243,426 1,863,147 0 452,298 3,461,822 0 590	Recreational Users not Included in Benefits Recreational Users not Included in Benefits Recreational Users not Included in Benefits
Year 1 Annual Tics - Commelina Annual Tics - Commelina Annual Tics - Commelina Incomplete Community Libers - Commelina Libers - Community Libers - Recreational Libers - Recreational Total Miles - Recreational Total Miles - Recreational Year 20 Annual Tics - Community Annual Tics - Community Annual Tics - Community Libers - Community	1,304,724 1,803,011 222 1,702 1,702 243,426 1,883,147 0 452,298 3,461,822 4,783,925 590 4,516 0 645,882		170,457 1,304,724 0 222 1,702 0 243,426 1,863,147 1,863,147 0 3,461,822 590 4,516 0 645,882	Recreational Users not included in Benefits
Year 1 Annual Trips - Commuting Annual Trips - Commuting Annual Trips - Come Destrations Annual Trips - Come Destrations Users - Come Destrations Users - Commuting Users - Commuting Total Miles - Commuting Total Miles - Commuting Total Miles - Commuting Total Miles - Repressional Total Miles - Repressional Total Miles - Repressional Annual Trips - Commuting Annual Trips - Commuting Annual Trips - Commuting Libers - Other Destinations Users - Repressional Users - Other Destinations Users - Repressional	1,304,724 1,803,011 222 1,702 0 0 243,426 1,863,147 0 0 452,298 3,461,822 4,783,925 590 4,516 0		170,467 1,304,724 222 1,702 0 23,436 1,863,147 0 452,298 3,461,822 0 5930 4,516 0 645,882 4,943,882	Recreational Users not included in Benefits

	Calculated by Model	Used for Proj. Eval.	Reason for Change
Build - Pedestrian Year 1			
Annual Trips - Commuting	0	0	Γ
Annual Trips - Other Destinations	0	0	
Annual Trips - Recreational	0		Recreational Users not Included in Benefits
Users - Commuting	0	0	Treereasonal outra not areaded in Develo
Users - Other Destinations	0	0	
Users - Recreational	0	0	Recreational Users not Included in Benefits
Total Miles - Commuting	0	0	Treatment out of the standed in Dentality
Total Miles - Other Destinations	0	Û	
Total Miles - Recreational	0	0	Recreational Users not Included in Benefits
	· · ·		
Year 20			
Annual Trips - Commuting	0	0	
Annual Trips - Other Destinations	0	0	
Annual Trips - Recreational	0		Recreational Users not Included in Benefits
Users - Commuting	0	0	
Users - Other Destinations	0		
Users - Recreational	0		Recreational Users not Included in Benefits
Total Miles - Commuting	0	0	
Total Miles - Other Destinations	0		
Total Miles - Recreational	0		Recreational Users not Included in Benefits
Total Miles - Recreational uilid - Pedestrian Year 1 Annual Trips - Commuling Annual Trips - Other Destinations Annual Trips - Recreational	0 0 0	0 0	Recreational Users not included in Benefits
uild - Pedestrian Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Recreational Users - Commuting	0 0 0 0 0	0 0 0 0 0	
uild - Pedestrian Year 1 Annual Trips - Commuling Annual Trips - Other Destinations Annual Trips - Recreational Users - Commuling Users - Other Destinations	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	Recreational Users not included in Benefits
sild - Pedestrian Year 1 Annual Trips - Commuling Annual Trips - Other Destinations Annual Trips - Recreational Users - Community Users - Other Destinations Users - Other Destinations	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
uild - Pedestrian Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Recreational Users - Commuting Users - Commuting Users - Recreational Total Miles - Commuting	0 0 0 0 0 0	0 0 0 0 0 0	Recreational Users not included in Benefits
uild - Pedestrian Year 1 Annual Trips - Commulinq Annual Trips - Other Destrations Annual Trips - Recreational Lusers - Other Destrations Lusers - Recreational Total Miles - Commuling Total Miles - Commuling Total Miles - Commuling	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits Recreational Users not included in Benefits
uild - Pedestrian Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Recreational Users - Commuting Users - Commuting Users - Recreational Total Miles - Commuting	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits
ilid - Pedestrian Year 1 Year 1 Annual Trips - Communion Annual Trips - Other Destinations Annual Trips - Other Destinations Users - Communion Users - Other Destinations Users - Communion Total Mises - Other Destinations Total Mises - Communion Total Mises - Communion Total Mises - Pedestrianons Total Mises - Pedestrianons	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits Recreational Users not included in Benefits
ilid - Pedestrian Year 1 Annual Tips - Commuting Annual Tips - Other Destinations Annual Tips - Other Destinations Annual Tips - Other Destinations Users - Commuting Total Miles - Other Destinations Total Miles - Commuting Total Miles - Commuting Year 20 Annual Tips - Commuting	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits Recreational Users not included in Benefits
ilid - Pedestrian Year 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Other Destinations Users - Other Destinations Users - Commuting Users - Commuting Users - Recreational Total Miles - Commuting Total Miles - Recreational Total Miles - Recreational Total Miles - Recreational Annual Trips - Commuting Annual Trips - Other Destination	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits Recreational Users not included in Benefits Recreational Users not included in Benefits
ilid - Pedestrian Year 1 Annual Tipe - Communiting Annual Tipe - Other Destinations Annual Tipe - Other Destinations Annual Tipe - Other Destinations Users - Communiting Users - Communiting Total Miles - Communiting Annual Tipe - Communiting Annual Tipe - Other Destinations Annual Tipe - Other Destinations Annual Tipe - Other Destinations	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits Recreational Users not included in Benefits
Jild - Pedestrian Year 1 Annual Trips - Communing Annual Trips - Other Destinations Annual Trips - Other Destinations Annual Trips - Rice restonal Users - Ricerational Users - Ricerational Total Miles - Communing Total Miles - Communing Total Miles - Communing Total Miles - Communing Total Miles - Recreational Total Miles - Communing Annual Trips - Other Destinations Users - Community - Total Miles - Total Miles - Recreations Total Miles - Miles - Total Mil	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits Recreational Users not included in Benefits Recreational Users not included in Benefits
ilid - Pedestrian Year 1 Annual Trips - Commuting Annual Trips - Other Destreations Annual Trips - Other Destreations Users - Other Destreations Users - Other Destreations Users - Recreational Users - Other Destreations Total Miles - Other Destinations Total Miles - Recreational Annual Trips - Commuting Annual Trips - Other Destreations Annual Trips - Other Destreations Annual Trips - Other Destreations Less - Other Destreations	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits
Bid - Pedestrian Tear 1 Annual Trips - Commuting Annual Trips - Other Destinations Annual Trips - Other Destinations Annual Trips - Other Destinations Commuting Commuting Total Miles - Commuting Total Miles - Commuting Total Miles - Other Destinations Total Miles - Commuting Total Miles - Commuting Annual Trips - Other Destinations Annual Trips - Other Destinations Annual Trips - Other Destinations Users - Coher Destinations Users - Other Destinations Users - Recreational	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits Recreational Users not included in Benefits Recreational Users not included in Benefits
Jild - Pedestrian Year 1 Annual Trips - Commuting Annual Trips - Other Destrations Annual Trips - Other Destrations Users - Other Destrations Users - Commuting Users - Commuting Users - Recreational Total Miles - Other Destrations Total Miles - Other Destrations Annual Trips - Commuting Annual Trips - Other Destrations Annual Trips - Other Destrations Less - Other Destrations	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recreational Users not included in Benefits

	Calculated by Model	Changed by User	Used for Proi, Eval.	Reason for Change
Build - Pedestrian	by model	by osci	rioj. Eval.	Reason for Change
Year 1		ľ		
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
Year 20				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
uild - Pedestrian				
Year 1				
Annual Trips - SRTS	0		n	
SRTS Users	0		U	
Total Miles - SRTS	0		0	
Total Miles - SRTS	0		0	
Year 20				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	

	Calculated by Model	Changed by User	Used for Proi, Eval.	Reason for Change
o Build - Pedestrian				
Year 1				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
Year 20				
Annual Trins - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	
uild - Pedestrian				
Year 1 Annual Trips - SRTS	0		0	
SRTS Heers	0		0	
Total Miles - SRTS	0		0	
Total Wiles - SK 13	-			
Year 20				
Annual Trips - SRTS	0		0	
SRTS Users	0		0	
Total Miles - SRTS	0		0	

District: 4

PROJECT: SFMTA - Howard Street Streetscape Project

EA:	
PPNO:	

3

INVESTMENT ANALYSIS

SUMMARY RESULTS

Life-Cycle Costs (mil. \$)	\$45.8
Life-Cycle Benefits (mil. \$)	\$53.4
Net Present Value (mil. \$)	\$7.5
Benefit / Cost Ratio:	1.2
Rate of Return on Investment:	8.8%
Payback Period:	10 years

NON-INFRASTRUCTURE IMPLEMENTA	ATION COST
Per Bike Program Impact Score	N/A
Per Ped Program Impact Score	N/A

	Total Over	Average
ITEMIZED BENEFITS (mil. \$)	20 Years	Annual
Journey Quality	\$4.7	\$0.2
Additional Delay Savings	\$0.0	\$0.0
Additional Safety Benefits	\$48.7	\$2.4
Health Benefits	\$0.0	\$0.0
Emission Cost Savings	\$0.0	\$0.0
TOTAL BENEFITS	\$53.4	\$2.7
SRTS-SPECIFIC BENEFITS (mil. \$)		
Journey Quality	N/A	N/A
Additional Delay Savings	N/A	N/A
Additional Safety Benefits	N/A	N/A
TOTAL SRTS BENEFITS	N/A	N/A

and Performance Measu	res	
Safe Route to School	No	
Intersection Improvements on SRTS No		
Programmatic Initiatives	No	
Recreational Benefits 0		
(enter 1 for Yes, 0 for No)		

Factors that Differentiate Benefits

	<u>Tons</u>		Value (mil. \$)	
	Total Over	Average	Total Over	Average
EMISSIONS REDUCTION	20 Years	Annual	20 Years	Annual
CO Emissions Saved	0	0	\$0.0	\$0.0
CO ₂ Emissions Saved	0	0	\$0.0	\$0.0
NO _X Emissions Saved	0	0	\$0.0	\$0.0
PM _{2.5} Emissions Saved	0	0	\$0.0	\$0.0
SO _X Emissions Saved	0	0	\$0.0	\$0.0
VOC Emissions Saved	0	0	\$0.0	\$0.0
			Ψ0.0	Ψ0.0



Existing Facility

Year	Constant Dollars	Present Value
1	\$330,030	\$251,778
20	\$875,667	\$184,719

-		
1	\$330,030	\$251,778
2	\$358,747	\$255,782
3	\$387,465	\$258,184
4	\$416,183	\$259,178
5	\$444,901	\$258,936
6	\$473,619	\$257,617
7	\$502,336	\$255,362
8	\$531,054	\$252,300
9	\$559,772	\$248,545
10	\$588,490	\$244,202
11	\$617,207	\$239,364
12	\$645,925	\$234,113
13	\$674,643	\$228,525
14	\$703,361	\$222,666
15	\$732,078	\$216,596
16	\$760,796	\$210,366
17	\$789,514	\$204,025
18	\$818,232	\$197,614
19	\$846,949	\$191,168
20	\$875,667	\$184,719

Total	\$4,671,041

New Facility

Year	Constant Dollars	Present Value
1	\$0	\$0
20	\$0	\$0

1	\$0	\$0
2	\$0	\$0
3	\$0	\$0
4	\$0	\$0
5	\$0	\$0

_		
6	\$0	\$0
7	\$0	\$0
8	\$0	\$0
9	\$0	\$0
10	\$0	\$0
11	\$0	\$0
12	\$0	\$0
13	\$0	\$0
14	\$0	\$0
15	\$0	\$0
16	\$0	\$0
17	\$0	\$0
18	\$0	\$0
19	\$0	\$0
20	\$0	\$0

Total	\$0



Existing SRTS Facility

Year	Constant Dollars	Present Value
1	\$0	\$0

1	\$0	\$0
2	\$0	\$0
3	\$0	\$0
4	\$0	\$0
5	\$0	\$0
6	\$0	\$0
7	\$0	\$0
8	\$0	\$0
9	\$0	\$0
10	\$0	\$0
11	\$0	\$0
12	\$0	\$0
13	\$0	\$0
14	\$0	\$0
15	\$0	\$0
16	\$0	\$0
17	\$0	\$0
18	\$0	\$0
19	\$0	\$0
20	\$0	\$0

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TOTAL

New SRTS Facility

Year	Constant Dollars	Present Value
1	\$0	\$0
20	\$0	\$0

1	\$0	\$0
2	\$0	\$0
3	\$0	\$0
4	\$0	\$0
5	\$0	\$0
6	\$0	\$0
7	\$0	\$0
8	\$0	\$0
9	\$0	\$0
10	\$0	\$0
11	\$0	\$0
12	\$0	\$0
13	\$0	\$0
14	\$0	\$0
15	\$0	\$0
16	\$0	\$0
17	\$0	\$0
18	\$0	\$0
19	\$0	\$0
20	\$0	\$0

Total	\$0

Existing Facility

Year	Constant Dollars	Present Value
1	\$0	\$0
20	\$0	\$0

1	\$0	\$0
2	\$0	\$0
3	\$0	\$0
4	\$0	\$0
5	\$0	\$0
6	\$0	\$0
7	\$0	\$0
8	\$0	\$0
9	\$0	\$0
10	\$0	\$0
11	\$0	\$0
12	\$0	\$0
13	\$0	\$0
14	\$0	\$0
15	\$0	\$0
16	\$0	\$0
17	\$0	\$0
18	\$0	\$0
19	\$0	\$0
20	\$0	\$0

Total	\$0



TOTAL

Existing Facility

Year	Constant Dollars	Present Value
1	\$0	\$0
20	\$0	\$0

1	\$0	\$0

_		
2	\$0	\$0
3	\$0	\$0
4	\$0	\$0
5	\$0	\$0
6	\$0	\$0
7	\$0	\$0
8	\$0	\$0
9	\$0	\$0
10	\$0	\$0
11	\$0	\$0
12	\$0	\$0
13	\$0	\$0
14	\$0	\$0
15	\$0	\$0
16	\$0	\$0
17	\$0	\$0
18	\$0	\$0
19	\$0	\$0
20	\$0	\$0

Total	\$0





SRTS Benefits Share

Existing Facility

	Dollars	Value
1	\$4,207,016	\$3,209,513
20	\$8,581,644	\$1,810,271

1	\$4,207,016	\$3,209,513
2	\$4,361,146	\$3,109,437
3	\$4,521,668	\$3,012,978
4	\$4,688,875	\$2,919,996
5	\$4,863,079	\$2,830,356
6	\$5,044,605	\$2,743,931
7	\$5,233,794	\$2,660,596
8	\$5,431,006	\$2,580,232
9	\$5,636,616	\$2,502,725
10	\$5,851,022	\$2,427,966
11	\$6,074,639	\$2,355,850
12	\$6,307,903	\$2,286,274
13	\$6,551,274	\$2,219,143
14	\$6,805,234	\$2,154,363
15	\$7,070,291	\$2,091,844
16	\$7,346,976	\$2,031,500
17	\$7,635,850	\$1,973,249
18	\$7,937,502	\$1,917,011
19	\$8,252,550	\$1,862,709
20	\$8,581,644	\$1,810,271

Total	\$48,699,943
lotai	\$40,033,343

Existing Facility

	Share of Cycling Benefits	Share of Ped Benefits	Sum of Benefits
	0.00%	0.00%	
Year	SRTS Cycling Benefits - Present Value	Benefits - Present Value	
1	\$0.0	\$0.0	\$0.0
20	\$0.0	\$0.0	\$0.0
4	CO O	# 0.0	¢ 0.0
2	\$0.0	\$0.0	\$0.0
3	\$0.0 \$0.0	\$0.0 \$0.0	\$0.0 \$0.0
4	\$0.0	\$0.0	\$0.0
5	\$0.0	\$0.0	\$0.0
6	\$0.0	\$0.0	\$0.0
7	\$0.0	\$0.0	\$0.0
8	\$0.0	\$0.0	\$0.0
9	\$0.0	\$0.0	\$0.0
10	\$0.0	\$0.0	\$0.0
11	\$0.0	\$0.0	\$0.0
12	\$0.0	\$0.0	\$0.0
13	\$0.0	\$0.0	\$0.0
14	\$0.0	\$0.0	\$0.0
15	\$0.0	\$0.0	\$0.0
16	\$0.0	\$0.0	\$0.0
17	\$0.0	\$0.0	\$0.0
18	\$0.0	\$0.0	\$0.0
19	\$0.0	\$0.0	\$0.0
20	\$0.0	\$0.0	\$0.0



REDUCED ACCIDENT BENEFITS - HIGHWAY USERS

Total

	AVERAGE ANN	NUAL VOLUME	REDUCED VMT	ACCIDENT BENEFITS		
	(trip-mi	iles/yr.)	(veh-miles/yr.)	(\$/yr.)		
Year	Induced Trips, Cycling	Induced Trips, Pedestrians	Induced Trips, Cyclists, Pedestrians	Induced Trips	Constant Dollars	Present Value
1	0	0	0	\$0	\$0	\$0
20	0	0	0	\$0	\$0	\$0
1	0	0	0	\$0	\$0	\$0
2	0	0	0	\$0	\$0	\$0
3	0	0	0	\$0	\$0	\$0
4	0	0	0	\$0	\$0	\$0
5	0	0	0	\$0	\$0	\$0
6	0	0	0	\$0	\$0	\$0
7	0	0	0	\$0	\$0	\$0
8	0	0	0	\$0	\$0	\$0
9	0	0	0	\$0	\$0	\$0
10	0	0	0	\$0	\$0	\$0
11	0	0	0	\$0	\$0	\$0
12	0	0	0	\$0	\$0	\$0
13	0	0	0	\$0	\$0	\$0
14	0	0	0	\$0	\$0	\$0
15	0	0	0	\$0	\$0	\$0
16	0	0	0	\$0	\$0	\$0
17	0	0	0	\$0	\$0	\$0
18	0	0	0	\$0	\$0	\$0
19	0	0	0	\$0	\$0	\$0
20	0	0	0	\$0	\$0	\$0

T -	-1-1	CO
10	otal State of the Control of the Con	\$0



Total

Year	Constant Dollars	Present Value
1	\$0	\$0
20	\$0	\$0

1	\$0	\$0
2	\$0	\$0
3	\$0	\$0
4	\$0	\$0
5	\$0	\$0
6	\$0	\$0
7	\$0	\$0
8	\$0	\$0
9	\$0	\$0
10	\$0	\$0
11	\$0	\$0
12	\$0	\$0
13	\$0	\$0
14	\$0	\$0
15	\$0	\$0
16	\$0	\$0
17	\$0	\$0
18	\$0	\$0
19	\$0	\$0
20	\$0	\$0

Total	\$0

Existing

Year	Constant Dollars	Present Value
1	\$0	\$0
20	\$0	\$0

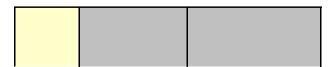
1	\$0	\$0
2	\$0	\$0
3	\$0	\$0
4	\$0	\$0
5	\$0	\$0
6	\$0	\$0
7	\$0	\$0
8	\$0	\$0
9	\$0	\$0
10	\$0	\$0
11	\$0	\$0
12	\$0	\$0
13	\$0	\$0
14	\$0	\$0
15	\$0	\$0
16	\$0	\$0
17	\$0	\$0
18	\$0	\$0
19	\$0	\$0
20	\$0	\$0

Total	\$0
Total	Ψ

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TOTAL

New



Year	Constant Dollars	Present Value
1	\$0	\$0
20	\$0	\$0

1	\$0	\$0
2	\$0	\$0
3	\$0	\$0
4	\$0	\$0
5	\$0	\$0
6	\$0	\$0
7	\$0	\$0
8	\$0	\$0
9	\$0	\$0
10	\$0	\$0
11	\$0	\$0
12	\$0	\$0
13	\$0	\$0
14	\$0	\$0
15	\$0	\$0
16	\$0	\$0
17	\$0	\$0
18	\$0	\$0
19	\$0	\$0
20	\$0	\$0

Total	\$0

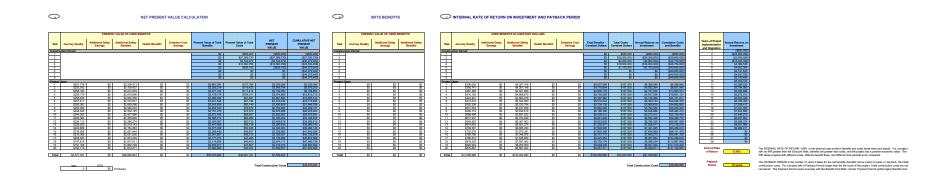


REDUCED EMISSIONS BENEFITS

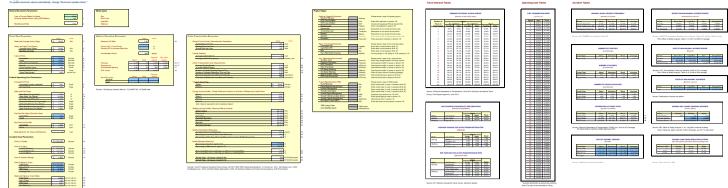
Total

		NUAL VOLUME	REDUCED VMT	AVERAGE SPEED	RUNNING EMISSIONS		
	(trip-mi	iles/yr.)	(veh-miles/yr.)	(mph)	(\$/yr.)		
Year Induced Trips, Induced Trips, Pedestrians		Induced Trips	Induced Trips	Induced Trips	Constant Dollars	Present Value	
1	0	0	0	25	\$0	\$0	\$0
20	0	0	0	25	\$0	\$0	\$0
1	0	0	0	25	\$0	\$0	\$0
2	0	0	0	25	\$0	\$0	\$0
3	0	0	0	25	\$0	\$0	\$0
4	0	0	0	25	\$0	\$0	\$0
5	0	0	0	25	\$0	\$0	\$0
6	0	0	0	25	\$0	\$0	\$0
7	0	0	0	25	\$0	\$0	\$0
8	0	0	0	25	\$0	\$0	\$0
9	0	0	0	25	\$0	\$0	\$0
10	0	0	0	25	\$0	\$0	\$0
11	0	0	0	25	\$0	\$0	\$0
12	0	0	0	25	\$0	\$0	\$0
13	0	0	0	25	\$0	\$0	\$0
14	0	0	0	25	\$0	\$0	\$0
15	0	0	0	25	\$0	\$0	\$0
16	0	0	0	25	\$0	\$0	\$0
17	0	0	0	25	\$0	\$0	\$0
18	0	0	0	25	\$0	\$0	\$0
19	0	0	0	25	\$0	\$0	\$0
20	0 0		0	25	\$0	\$0	
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Total							\$0

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Transvert Offer size 3, (Innex of Later Section (I.A.) (I.A.) (I.A.) (I.A.) (I.A.) (Injuryment Contribute (I.A.) (I.A.) (Injuryment Contribute (I.A.) (I.A.) (Injuryment Contribute (I.A.) (I.A.) (Injuryment of Transportation (I.A.) (I



Emissions Tables

	Г				nicrosor da	essons i	actine y	-				Γ			-	Germany dis	named and the	wcrons ;	-		
	ĺ	_	-	-56	-	-	-	-	-	-	1	1	_	-	- 64	-	-	-	100	-	
	ı	2.00	1	1.0462	TRAPAS SELECT	0.0068	0.0000	0.000W 0.000W	0.3000 0.0868	6.008 6.008	1	1	Auto	1	0.0000	*0.2000	0.000	0.300A 0.300A	0.0006	6.1461 6.6349	0.300 A
	ĺ			1.000	633 a754 635 2754	0.0007	0.000E	2000 2000	0010 0017	6 000E	1	1	1	1	0.0004	-	9626	0.00% 0.00%	0.0004	6.690 6.690	0.30+0. 0.30+0
			1	1.0007	601.6760 601.6760	0.0867	00047	64000 64000	0.0647	1000		ı		1 :	0.0000	******	0024	0.000	0.0000	6440	0.300 h
	ĺ		0.0	1.000	#53 GROS #267-24	0.0804	0-000M	640M 640M	0.0518 0.0478	6-00M	1	1	1	13	96679		0.03W 0.01W	0.00m	0.000	6040	0.30×1 0.30×2
1			- 12	11100	#04.000H 887.08x8	0.0748 0.0721	0-00EE	6-00MB 6-00MB	0-2438 0-2496	6.00M 6.00M		ı		12	0-0+04 0-0062	******	001E	0.3000 0.3000	0-000E 0-000E	6.0-GH 6.0-GH	0.3000 0.3000
			16	1.0062	367.81116 366.7616	0.0006	0-0627 0-0626	0.000M 0.000M	0.0044	6-06E		ı		*6	0.000	******	00/N	0.3008 0.3008	0.0008	6.040	0.3004 0.3004
			-	1 1267	MARKETON	0.074A	00004	0.000M	0.0000	6 000K		ı		12	0.0411		001E	0.300E	0.0004	1040	0.000A
			20	1.1904	262 Gene 2012/0-0	0.0724	0.0023	0.000K	0.0000	6-06E		ı		20	0-0808 0-0810	******	9624	8 2007 8 2007	0.0005	6.0-0H	9.0007
			20	11496	MANAGEM MANAGEM	0.0724	0.0624	6-900K	0.0076	6-062H		ı		20	0.0044	******	9626	0.300F	0.0005	6-00M	9.3005
			2	11400	8313864 8313864	00718	00018	64000	1100	E-00-W		ı		26	00427	*****	0020	0.300E	0.0005	6-00K	9.3004
			20	1.1964	ALL SERO	0.0700	99945 99945	64600 64600		6.00-C		ı		27	00101		1442		0.0004	1000	2 2004
			20	1.060	BHALLINGS BOWNINGS	0.0680	0-001E	6-990H 6-990H	0-000M 0-0+96	6-00-K		ı		30	04040	******	0.653K	0.300E 0.300E	0.0004	6.00% 6.00%	9 300 G 9 300 G
			2H 30	1.0681	864.80=6 866.6067	0.0670	00018 00018	6.0000 6.0000	0.0+00 0.0+M	6.00% 6.00%		ı		24 30	0.0424 0.0042	******	045ED 045EB	0.300E 0.300E	0.0004 0.0004	6.00% 6.00%	0.3004 0.3004
			20	1.0421	266.6079 265.6171	0.0671 0.0667	0-001X 0-001X	6.000W 6.000W	00+38 00+39	6.00-G		ı		20	0-0000 0-0677	******	662-G	0.300E 0.300E	0.0008	6.00KG	9 300 G 9 300 G
			-	1 0000	247 x40's	0.0664	00042	0.000M	221E	6460		ı		-	0.0724	******	00211	0.000m	0.0000	6.000	0.0004
			in in	0.0485	2847600 2836001	0-245E 0-245E	0-0011 0-0011	0.000W 0.000W	00+M 00+D	6.00H		ı		3A 20	0.0000	******	0420E	0.300M 0.300M	0.0000	6-0000 6-0000	0.300m 0.300m
			-	0.062	September September	0.0649	00011	0.000W	00146	6.00**		ı		-	0.0304	*****	0.00K	0.300M	0.0000	6.000	0.000m
1			- 5	99967	263.20% 263.20%	DOSES.	0.0010			5 00 G		ı		- 22	0.6268		0.020A		1000	6 0000 6 0000	0.3064 0.3064
			45	0.0000	265.46°C 266.46CG	0.0647 0.0643	0.0010	6100W	0.0+38 0.0+38	6 00 G		ı		45	0.0112	******	0.6200	0.300m 0.300m	0.0000	6 000 B	0.3004 0.3004
			-	0.8814	Des Sons	0.06a% 0.06a7	00010	6.0000 6.0000	001 H	5.00-G		ı		40	0.0001		0.030K	0.300M	0.0008	6.00A	0.000m
			-	0.8676	247 2-95 305 5877	0.0452	0.0010	6.0000 6.0000	001 IF	5 00 W		ı		-	0.4961	******	1440	0.000m	0.0004	6 00m	0.000m
			0	0.8607 0.8607	MATERIA MET THEM	0.0450	00010	64000	0.0130	6.00-G		ı		60	0.4013	******	962H	0.300M 0.300M	0.0004	6.000 6.000	0.3004 0.3004
1			66	0.8308	2+1.4680 2+6.4866 2+6.7566	0.06671	0.0040	6-960H 6-960H	00140	5 00 0 5 00 0		ı		44	0.4842	******	042-6	0.000M 0.000M	0.0006	6.0001	0.3004 0.3004
	ĺ		0	0.8008 0.7862	2+64000 3213000	0.068A 0.068A	20010 20011	64600 64600 64600	00144	5.00-0 5.00-0	1	1	1	8	0.4768 0.4768		0458 0458	0.000E	0.0000	6 0000 6 0000	0.000m 0.000m
	ĺ		8	0.7600 0.75a0	824 20ws 824 20ws	0.0682	0-0011 0-0011	6.0000 6.0000	0014E 0014E	6.00+1 6.00+1	1	1	1	=	0.0000	******	0448 0448	0.300a 0.300a	0.0027	6.00X 6.00Z	0.3004 0.3004 0.3004
	ĺ		90	0.7490 0.7400	221.1077 221.0077	0.0684 0.0684	0.0011 0.0012	0.0000 0.0000	0.0+M 0.0+M	E-0010 E-0010	1	1	1	- 2	0.8808		0.028	0.000M 0.000M	0.0007 0.0008	6-0000 6-0000	0.000m 0.000m
	ĺ		66 65	0.7490 0.7401	\$36,500G \$36,500G	04710	60042 60042	6.0000 6.0000	00+8E 00+71	5.000 5.000	1	1	1	#	0.4316 0.6271	-	0426 0426	0.300E 0.300E	0.0008	6.000 6.000	9 3004 9 3004
	ĺ		50	0.7960 0.7960 0.7574	100 000W 100 0000	0.0750	0.0043 0.0043	0.000m 0.000m	00178 00178	5 66 6 5 66 6 5 66 6	1	1	1	:	0.4300 0.4320	******	0428 0420	0.000E 0.000E 0.000E	0.0008	6.00K	4 3004 9 3004 9 3007
	ĺ		76	0.7948 0.7967	halanni han birni	00710 00710	0.00+3 0.00+3	0.000m 0.000m	00176 00178	6 00 G	1	1	1	80 70	0.8167		0000	9 300E	0.0008	6.000 6.000	9 300 G 9 300 G
	ĺ	Trus			11309M	10065	0.0004	64601	0.0708		1	1	The same	:		5.1006	6.76W	0.0000	0.0004	6.680	0.3000
	ĺ		1	22436		22000	00443	60161	0.2481	1110	1	1	1	÷	0.0625		1000	0.000E	0.0068	1145	9.0000
	ĺ		1	2 +366 2 0 e80		22760 23676	0.0410	60164 60161	0.2546 0.2566	5 6 8 6 5 6 8 6 5 6 8 6	1	1	1	:	0.0000	******	0.040	0.00MF 0.00MM	0.0040	5.0401 5.0400	0.3087 0.3084 0.3084
1			3	- 100		2,000		*****				ı		- 11	0.000	=		1 100	0.00M	1100	a series a series
			3	1.500	0000	1256	95805	1000	9178	5500		ı		10	1596	*****	9374 9378	2 2002	2.0020	5590	2,0074
1			-	1,2400	*******	18286	0.6261	Same.	0.1404	6.6201		ı		12	0.6332	*****	66700	0.0002	0.0000	6.620	0.0002
			-	1 1267		18819	6620	60110	0.1204	6420		ı			0.0044	*****	64748	9.3000	0.0004	6400	9.3055
			25	1.0154		16214	0.0190	1000	2 + 140	5.0+W		ı		21	0.2407		0450	2.300	0.0062	4.620	0.00E+
			24	0.8068	00000000 004.0075	1,6161	0010	6.0007 6.0000	Crana 20000	6.01E		ı		26	0.2705	******	9459 K	0.3000 0.3000	0-0007 0-0086	1604	0.3050 0.3080
			20	0.8967 0.7677	674 Block 964 Block	1,0001	00480 00470	6.0000 6.0000	0-0476 0-0476	6.0×80 6.0×70		ı		20	0.2410	******	GARK GARK	0.30m2 0.30m6	0.0054	6.680	0.00m7 0.00m5
			2	0.7074	Security Security	12684	001E	0.00MB	94117 94119	644D 644B		ı		20	0.2496		0.4324 0.4175	0.0000 0.0000	0.000	60-60	0.00m* 0.0000
			20	0.6276 0.6462	6412716 646.6020	12171	00121 00121	0.00MB	0.04A2 0.0436	6.612F		ı		24 20	0.2048 0.1042	******	0.0101	0.300M 0.300M	0.000	6040	0.305A 0.305A
			10	0.5506 0.5506	961 ADM 964 ADM 962 SMG	1.700E 1.7001	00-06 00-00 00-11			604B 604B		ı		in in	0.1870 0.1800 0.1788	-	0.800		0-0052 0-0052	5.0-08 5.0-08	0.3000 0.3000 0.3000
			36 30	0.5365 0.5369	967.6196 673.7906	1.186B 1.1820	00112	6.000H 6.000H	0-0+M2 0-0+M2	641G		ı		24 27	0.1088	******	0.386	0.300E 0.300E	0.0054	6.0-00 6.0+6	9.3084 9.3087
			3	0.0000	\$83.80~0 \$89.000~	11136	00106	0.0000 0.0000	0.0007	6.010K		ı		20	0.1001		0.309	0.000M	0-00M	50-05	9.300A
			#1 #2	0.4800	684.5077 676.6672	10004	00105	64660 64660	0.0042	6-0+0K 6-0+0K		ı		40	01470	******	036N	0.00m2 0.00m2	0-0007 0-0007	6-00M	0.00m2 0.00m4
			=	0.4751	676.600s 996.600s	10070	0010E	6.000m		644F		ı		**	0.1360		0.33W	1100	0.000	1000	9.3053
			5	0.4762 0.4800	616 200N 801 200N	10001		6.00M7 6.00MH	0.00M 0.00M	6416 6410		ı		48 47	0.1300 0.1278	******	0.240k	0.305k 0.305E	0-0007 0-0006	6.000 6.000	0.30Ea 0.30EE
			8	0.8905	801 EGAK 820 2000 704 cook	10000	9944E 99443	6.000PH 6.000PH		64+0 64+0		ı		-	0.1284		021D		0.0002	6.040 6.040	9 3067 9 3067
			61	0.8801	MALEUMAN MARKED	10629	00130	6460W 6460W1	0-1+25 0-1+25	644X		ı		6	0.1106	******	020m	0.306a 0.3070	0.0051	6.0401 6.00M	0.30E4 0.30F0
1			5	0.4071	STATES	1050	00182	0.00ME	22286	501E		ı		5	01100		0.300 0.300		0.000	6.00m	0.0004
			86	0.8100		10800	99400 99496	6.000K	0.004E 0.004E	6.0+D 6.0+M		ı		68 67	0.1045	******	0.0048	0.0-00 0.0-17	0.0064	6.00K	0.0-00 0.0-11
			-	0.3718	******	14790	0000	60°05		6.01N		ı		=	COOR		0.000	1200	0.0074	6.00W	22-27
			61 82	0.3504	*********	1.1266 1.1760	0.6206 0.6219	6011B 60101	0.0000 0.0004	6.620K 6.620K		ı		41 40	0.0048 0.0067	******	0-5801 0-6901	0.0100 0.0100	0.0060	6.00% 6.00%	0.040
			8	0.3263		12000	04047	60-06 60-06	9-300H	1400		ı		=	0.0896		0.74D	0.0-00°	0.0065	6-00M	0.040
The content of the	ĺ			0.3121		<3680 <3665	0.0044	60-07	0.0000	6 6396 6 6396	1	1	1	42	0.0806		0.01% 0.62%	930-9 930-6	0.0007	6.000	0.30×5 0.30×6
1	ĺ		68 79	0.3120		1,278A 1,286E	0.6274 0.6278	60-00 60-00		6.667s	1	1	1	40 70	0.0842		0.8360 0.8460	8.3000 9.3000	0.00M 0.00M	6.00K	0.0000 0.0000
	ĺ	-		1764	132018	8.6367	0.0001	64601	0.0815	6.000*	1	1	844		0.7690	50000	0.068	0.000	0.0004	4480	0.000+
	ĺ			20 0626 26 0626	00000	8.8720 3.8720	0.0364	60-60 Chicks Chicks		0.000 0.000 0.000	1	1	1		2 0 6 6 2 2 2 0 6 6 2 2	******	0.768 0.768	0.000 0.000 0.000	0.0059	0.000 a 0.000 a 0.000 a	0.3083 0.3089
	ı		1	24.326s 24.6824		3.3663 3.3637	0.0000 0.0000	Sarah Sarah	0.2158 0.2636	6 6 8 M	1	1	1	:	1,8216		64704 64466	1300	0.0007 0.0007	6660	0.0002 0.0000
	ı		2.0	21 A400 20 A400		24844	210210 010210 010210	60100 60100	0.2000 0.1810	5 62 W	1	1	1	3	1,2740		0.000 0.440	0.0000 0.0000	0.0000 0.0000	5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.0000 0.0000
	ı		2	10.4800		21880	00102 00102	60-00 60-116	0.1006 0.1010	6.0×8 6.0×0	1	1	1	12	0.0088	-	0.000	0.3006 0.3008	0.000 0.000	6.62-9 6.0-96	0.3004 0.3004
	ı		3	10 1133 21 0138		1,5586 1,5586	00-00 00000	0.0000 0.0000	0.1048 0.1048	6.000 6.000	1	1	1	18	0.0040		0.244E	0.0000 0.0000	0.000E 0.000F	6000	0.00+0 0.00+0
	ı		3	24.1281 24.1262		1,700	600E78	0.000E	99176 99884	6.00% 6.000	1	1	1	3	0240		0148 0158	0.0000 0.0007	0.0004 0.0047	6-0000 6-0000	0.3000 0.3007
	ı		21	21 A276 16 2584		0.0662	0.00EA 0.00EA	0.0000 0.0000		6 00G	1	1	1	5	0.1005 0.2467		01100 01100	2.200F 2.200F	0.0048 0.0004	6.000 6.000	0.0000 0.0000
	ı		20	9 A 300 9 A 300		1,000	0.0004 0.0004	6460°E 64660°	0.0644 0.0678	6.00% 6.000	1	1	1	100	0.3400		0.000 0.000 0.000	0.00m 0.00m	0.0007	6.00%	0.30** 0.30**
			26	7 x 380 7 x 380		1,6000 1,6000 1,0000	0.0106 0.0108	6.0000 6.0000		6.010 6.010	1	ı		24	0.000		0.2745 0.2549	1.00-E 1.00-F	0.0048 0.0048	6.000 6.000	0.300 T 0.300 T
	ĺ		20	7 6076		13212	0.0400 0.0067	6-100K 6-100K	0.0406	5.000 5.000	1	1	1	24 20	0.3001 0.3748	-	0.24W 0.24W	9.30-7 9.30-6	0.0000	6.00H 6.007	0.30x7 0.30x6
	ı		20	6.6762 6.6664		12018	0.000E	6.0000 6.0000 6.0000	0.0676 0.0684	6.000K	1	1	1	100	0.3620 0.3367	******	0.3340 0.2480	0.3046 0.3046	0.0008	6.00°s 6.00°s	0.30+6 0.30+6
	ı		ž.	6.1306 6.1306		17900	0.0006 0.0006 0.0007	0.0088 0.0088	0.0436 0.0426	5 000F	1	1	1	ii.	0.3004		0300 0300	0.00-7 0.00-7	0.000M 0.000M	6 0000 6 0000	0.007 0.007
	ı		16	6.000E 6.7942		costa costa	0.0067 0.0066	64687 64687	0.0610	5.000 5.000	1	1	1	#	62078 62678		0.100	0.00-F	0.0007	6-00KK	0.30+7 0.30+8
	ı		100	5.1400 5.1400		1.148E 1.127E	20101 20101 20102	0.0000 0.0000 0.0000		6.010 6.010	1	1	1	10	02478		0 180 0 180	0.3000 0.3000	0.0000 0.0000	6.000 6.000	0.3000 0.3000
	ı		2	5.0125 8.8804		11368 11368	00108 00108	6.00M2 0.00M2	nonti nonti	6.010 6.010	1	1	1		0.3368	-	0.1766 0.1766	8.3000 9.3000	0-00er 0-00er	6.000 6.000	9.3000 9.3000
	ı		100	x.0200 x.0200	00000	11300	00405 00405	0.00007 0.00007	00427 00427	644K 644K	1	1	1	1	62-09 62-07 62-07	******	0.036 0.036	0.0000 0.0000 0.0000	0.000	6.000 6.000	0.0000 0.0000 0.0000
			-	A 3262		11538 11480	00106	0.0088 0.0088	0.0400	6.010K	1	ı		-	0204		0100	0.300E 0.300E	0.0044	6.000 6.000	9 3004 9 3004
	ĺ		-	4.2000 4.2000 8.17**	*******	11342 11345	00104	0.0000 0.0000	90000 90000 7000	6.010E 6.010E	1	1	1	42	0.1067		0+09 0+00 0140	0.000F 0.000F	0.0048 0.0045 0.0047	6-0000 6-0000 5-0000	0.0007 0.0004 0.0007
	ı		6	A 1210 A 0585		1.1148 1.1142	0.0100 0.0102	0.0000 0.0000 0.0000	0.0000 0.0021	504B 504B	1	1	1	5	0.1000		0140 0140	0.0000 0.0000	20000 20000 20000	6-000x	0.0000 0.0000
	ı		9	3-0601 3-0048		11100	00104	6 000M	0.0676 0.0676	6440K	1	1	1	8	0.2015		0.106	0.000E	0.0048	6-0000 6-0000	0.0000 0.0000
			65 68	3.7962 3.6600		11200	0.0100 0.0113	60°00	0.047M 0.04M0	644B 641B	1	ı		=	0.2006 0.1067	*****	0.160	0.3000 0.3000	0.000 0.000	6 0000 6 0000	0.0000 0.0000
	ı		8	3-6368 3-8811		11300	00101 10100	60-06 60-08	0.0042 0.0044	6440 6440	1	1	1	8	0.1040	-	0.46% 0.2181	0.30M 0.30M	0-0000 0-0000	6.000 6.000	0.30aA 0.3063
0	ı		-	1.16G 1.16G	00000	11180	00130 00130	60115 60115	0.00M 0.00M	644K 644K	1	1	1	1 :	0.1778 0.1778	******	6260 6200	\$3065 3806.0 706.0	0.0060	6.00°	0.3080 0.3085
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