
**CALINE4 CO Emissions Calculations With
Hayward Extension**

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title:	CSU Hayward Campus Master Plan-Hayward Connection
Intersection:	Carlos Bee Blvd./Hayward Blvd
Analysis Condition:	Cumulative Plus Project
Nearest Air Monitoring Station measuring CO:	40733 Chapel Way in Fremont

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title: CSU Hayward Campus Master Plan-Hayward Connection
 Intersection: Carlos Bee Blvd./West Loop Rd
 Analysis Condition: Cumulative Plus Project
 Nearest Air Monitoring Station measuring CO: 40733 Chapel Way in Fremont
 Background 1-hour CO Concentration (ppm): 2.9
 Background 8-hour CO Concentration (ppm): 1.8
 Persistence Factor: 0.7
 Analysis Year: 2030

	Roadway Type	No. of Lanes	Approach/Departure Speed	
			A.M.	P.M.
North-South Roadway: West Loop Road	AT GRADE	2	5	5
East-West Roadway: Carlos Bee	AT GRADE	4	5	5

EMFAC2007 COMPOSITE EMISSION FACTORS FOR CO

Air Basin: San Francisco Bay Area County: All
 Assumes lowest mean wintertime temperature of 40 degrees F and 30% humidity.

Year	Average Speed (miles per hour)										
	4	5	8	11	14	17	20	23	26	29	32
2007	4	5								4	5
2008	4	5				5	5	5	5	4	4
2009	5	5				5	5	5		5	

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title: CSU Hayward Campus Master Plan-Hayward Connection
 Intersection: Harder Rd./West Loop Rd
 Analysis Condition: Cumulative Plus Project
 Nearest Air Monitoring Station measuring CO: 40733 Chapel Way in Fremont
 Background 1-hour CO Concentration (ppm): 2.9
 Background 8-hour CO Concentration (ppm): 1.8
 Persistence Factor: 0.7
 Analysis Year: 2030

	Roadway Type	No. of Lanes	Approach/Departure Speed	
			A.M.	P.M.
North-South Roadway: West Loop Road	AT GRADE	2	5	5
East-West Roadway: Harder Road	AT GRADE	4	5	5

EMFAC2007 COMPOSITE EMISSION FACTORS FOR CO

Air Basin: San Francisco Bay Area County: All
 Assumes lowest mean wintertime temperature of 40 degrees F and 30% humidity.

Year	Average Speed (miles per hour)										
	4	5	8	11	14	17	20	23	26	29	32
2007	4	5	8	11	14	17	20	23	26	29	32
2008	4	5	8	11	14	17	20	23	26	29	32
2009	4	5	8	11	14	17	20	23	26	29	32
2010	4	5	8	11	14	17	20	23	26	29	32
2011	4	5	8	11	14	17	20	23	26	29	32
2012	4	5	8	11	14	17	20	23	26	29	32
2013	4	5	8	11	14	17	20	23	26	29	32
2014	4	5	8	11	14	17	20	23	26	29	32
2015	4	5	8	11	14	17	20	23	26	29	32
2020	4	5	8	11	14	17	20	23	26	29	32
2025	4	5	8	11	14	17	20	23	26	29	32
2030	4	5	8	11	14	17	20	23	26	29	32

PEAK HOUR TURNING VOLUMES

A.M. Peak					P.M. Peak				
N		A.M. Peak			N		P.M. Peak		
W	<	v	>	E	W	<	v	>	E
	155	2	114			402	2	93	

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title:	CSU Hayward Campus Master Plan-Hayward Connection
Intersection:	Foothill Blvd./Grove Way
Analysis Condition:	Cumulative Plus Project
Nearest Air Monitoring Station measuring CO:	40733 Chapel Way in Fremont
Background 1-hour CO Concentration (ppm):	2.9

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title: CSU Hayward Campus Master Plan-Hayward Connection
 Intersection: Foothill Blvd./A St
 Analysis Condition: Cumulative Plus Project
 Nearest Air Monitoring Station measuring CO: 40733 Chapel Way in Fremont
 Background 1-hour CO Concentration (ppm): 2.9
 Background 8-hour CO Concentration (ppm): 1.8
 Persistence Factor: 0.7
 Analysis Year: 2030

North-South Roadway:	East-West Roadway:	Foothill Blvd	A Street	Roadway Type	No. of Lanes	Approach/Departure Speed	
						A.M.	P.M.
				AT GRADE	4	5	5
				AT GRADE	2	5	5

EMFAC2007 COMPOSITE EMISSION FACTORS FOR CO

Air Basin: San Francisco Bay Area County: All
 Assumes lowest mean wintertime temperature of 40 degrees F and 30% humidity.

Year	Average Speed (miles per hour)										
	4	5	8	11	14	17	20	23	26	29	32
2007	4	5	4	5	4	5	4	5	4	5	4
2008	5	4	5	4	5	4	5	4	5	4	5
2009	5	4	5	4	5	4	5	4	5	4	5
2010	5	4	5	4	5	4	5	4	5	4	5
2011	4	5	4	5	4	5	4	5	4	5	4
2012	4	5	4	5	4	5	4	5	4	5	4
2013	5	4	5	4	5	4	5	4	5	4	5
2014	4	5	4	5	4	5	4	5	4	5	4
2015	4	5	4	5	4	5	4	5	4	5	4

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title:

CSU Hayward Campus Master Plan-Hayward Connection

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title: CSU Hayward Campus Master Plan-Hayward Connection
 Intersection: Foothill Blvd./Mission Blvd./Jackson St./E St
 Analysis Condition: Cumulative Plus Project
 Nearest Air Monitoring Station measuring CO: 40733 Chapel Way in Fremont
 Background 1-hour CO Concentration (ppm): 2.9
 Background 8-hour CO Concentration (ppm): 1.8
 Persistence Factor: 0.7
 Analysis Year: 2030

	Roadway Type	No. of Lanes	Approach/Departure Speed	
			A.M.	P.M.
North-South Roadway: Mission Blvd	AT GRADE	4	5	5
East-West Roadway: Jackson/Foothill	AT GRADE	2	5	5

EMFAC2007 COMPOSITE EMISSION FACTORS FOR CO

Air Basin: San Francisco Bay Area County: All
 Assumes lowest mean wintertime temperature of 40 degrees F and 30% humidity.

Year	Average Speed (miles per hour)										
	4	5	8	11	14	17	20	23	26	29	32
2007	4	5	4	5	4	5	4	5	4	5	4
2008	5	4	5	4	5	4	5	4	5	4	5
2009	5	4	5	4	5	4	5	4	5	4	5
2010	5	4	5	4	5	4	5	4	5	4	5
2011	4	5	4	5	4	5	4	5	4	5	4
2012	4	5	4	5	4	5	4	5	4	5	4
2013	5	4	5	4	5	4	5	4	5	4	5
2014	4	5	4	5	4	5	4	5	4	5	4
2015	4	5	4	5	4	5	4	5	4	5	4

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title:	CSU Hayward Campus Master Plan-Hayward Connection
Intersection:	Mission Blvd./Highland Blvd
Analysis Condition:	Cumulative Plus Project
Nearest Air Monitoring Station measuring CO:	40733 Chapel Way in Fremont

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title: CSU Hayward Campus Master Plan-Hayward Connection
 Intersection: Mission Blvd./Harder Rd
 Analysis Condition: Cumulative Plus Project
 Nearest Air Monitoring Station measuring CO: 40733 Chapel Way in Fremont
 Background 1-hour CO Concentration (ppm): 2.9
 Background 8-hour CO Concentration (ppm): 1.8
 Persistence Factor: 0.7
 Analysis Year: 2030

	Roadway Type	No. of Lanes	Approach/Departure Speed	
			A.M.	P.M.
North-South Roadway: Mission Blvd	AT GRADE	4	5	5
East-West Roadway: Highland Blvd	AT GRADE	4	5	5

EMFAC2007 COMPOSITE EMISSION FACTORS FOR CO

Air Basin: San Francisco Bay Area County: All
 Assumes lowest mean wintertime temperature of 40 degrees F and 30% humidity.

Year	Average Speed (miles per hour)									
	5	8	11	14	17	20	23	26	29	32
2007	5		5		5		55	5	5	5
2008	5	4	54		55	45	55	54	5	5
2009	5		54	5	54	54	54	54	5	5
2010			5	54	44	5		5	44	54
2011	4	4	54	44	454		4	5	44	54
2012		54	44	44	454		4	5		55
2013	55	44	44	4	5				4	44
2014	4	4	5	5	5			4	5	44
2015	5		4				5		4	5
2020	44		4		5		444	54	4	55
2025		5	4	5	5					5
2030	5					5		5		5

PEAK HOUR TURNING VOLUMES

N	175	2,394	115	E
W	<	v	>	
	202			83
	423			255
	308			451
S	<	^	>	
	571	2,165	804	

N	170	2,283	207	E
W	<	v	>	
	249			93
	436			351
	512			657
S	<	^	>	
	449	2,635	679	

Representative Traffic Volumes (Vehicles per Hour)

N-S Road 6,693 N-S Road 7,215

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title: CSU Hayward Campus Master Plan-Hayward Connection
 Intersection: Mission Blvd./Tennyson Rd
 Analysis Condition: Cumulative Plus Project
 Nearest Air Monitoring Station measuring CO: 40733 Chapel Way in Fremont
 Background 1-hour CO Concentration (ppm): 2.9
 Background 8-hour CO Concentration (ppm): 1.8
 Persistence Factor: 0.7
 Analysis Year: 2030

	Roadway Type	No. of Lanes	Approach/Departure Speed	
			A.M.	P.M.
North-South Roadway: Mission Blvd	AT GRADE	4	5	5
East-West Roadway: Highland Blvd	AT GRADE	4	5	5

EMFAC2007 COMPOSITE EMISSION FACTORS FOR CO

Air Basin: San Francisco Bay Area County: All
 Assumes lowest mean wintertime temperature of 40 degrees F and 30% humidity.

Year	Average Speed (miles per hour)									
	5	8	11	14	17	20	23	26	29	32
2007	5		5		5		5		5	
2008	5	4	5	4	5	4	5	4	5	4
2009	5		5		5		5		5	
2010	5		5		5		5		5	
2011	5	4	5	4	5	4	5	4	5	4
2012	5		5		5		5		5	
2013	5	4	5	4	5	4	5	4	5	4
2014	5		5		5		5		5	
2015	5	4	5	4	5	4	5	4	5	4
2020	5		5		5		5		5	
2025	5	4	5	4	5	4	5	4	5	4
2030	5		5		5		5		5	

PEAK HOUR TURNING VOLUMES

A.M. Peak			
N	v		E
W	610	2,570	40
658 ^			155
41 >			135
247 v			18
S	571	2,231	9

P.M. Peak			
N	v		E
W	476	2,433	208
763 ^			100
269 >			41
378 v			9
S	419	3,058	19

Representative Traffic Volumes (Vehicles per Hour)

N-S Road 6,264 N-S Road 7,038

BAY AREA AQMD SIMPLIFIED CALINE ANALYSIS UPDATED WITH EMFAC200

Project Title: CSU Hayward Campus Master Plan-Hayward Connection
 Intersection: Jackson St./Santa Clara St./Harder Rd
 Analysis Condition: Cumulative Plus Project
 Nearest Air Monitoring Station measuring CO: 40733 Chapel Way in Fremont
 Background 1-hour CO Concentration (ppm): 2.9
 Background 8-hour CO Concentration (ppm): 1.8
 Persistence Factor: 0.7
 Analysis Year: 2030

	Roadway Type	No. of Lanes	Approach/Departure Speed	
			A.M.	P.M.
North-South Roadway: Jackson Street	AT GRADE	6	5	5
East-West Roadway: Harder Road	AT GRADE	4	5	5

EMFAC2007 COMPOSITE EMISSION FACTORS FOR CO

Air Basin: San Francisco Bay Area County: All
 Assumes lowest mean wintertime temperature of 40 degrees F and 30% humidity.

Year	Average Speed (miles per hour)										
	4	5	8	11	14	17	20	23	26	29	32
2007	4	5								4	5
2008	4	5								4	5
200	5									5	

2800

2800

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