

Appendix 4.2-B Air Quality Analysis

URBEMIS 2002 For Windows 7.4.2

File Name: S:\Clients\Cotati\CEQA\DSP EIR\Admin Draft EIR\References\Air Quality\cotati air run_Revised Build
 Project Name: Downtown Plan - Cotati - First Run
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
 (Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	16.31	0.01	0.86	0.00	0.00
TOTALS (lbs/day, mitigated)	16.31	0.01	0.86	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	21.37	16.21	180.02	0.41	61.95
TOTALS (lbs/day, mitigated)	19.55	14.66	163.07	0.37	56.20

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	37.67	16.22	180.88	0.41	61.96
TOTALS (lbs/day, mitigated)	35.86	14.67	163.93	0.37	56.21

URBEMIS 2002 For Windows 7.4.2

File Name: S:\Clients\Cotati\CEQA\DSP EIR\Admin Draft EIR\References\Air Quality\cotati air run_Revised Build
 Project Name: Downtown Plan - Cotati - First Run
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)					
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.00	0.00	0.00	-	0.00
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.11	0.01	0.86	0.00	0.00
Consumer Prdcts	16.19	-	-	-	-
TOTALS(lbs/day,unmitigated)	16.31	0.01	0.86	0.00	0.00

AREA SOURCE EMISSION ESTIMATES					
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.00	0.00	0.00	-	0.00
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.11	0.01	0.86	0.00	0.00
Consumer Prdcts	16.19	-	-	-	-
TOTALS (lbs/day, mitigated)	16.31	0.01	0.86	0.00	0.00

Area Source Mitigation Measures

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments low rise	6.23	4.72	55.29	0.13	20.27
City park	0.26	0.23	2.58	0.01	0.94
Strip mall	14.88	11.25	122.15	0.27	40.75
TOTAL EMISSIONS (lbs/day)	21.37	16.21	180.02	0.41	61.95

Includes correction for passby trips.

Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Apartments low rise	6.29 trips / dwelling units	331.00	2,081.99
City park	50.00 trips / acres	3.03	151.50
Strip mall	40.00 trips / 1000 sq. ft.	237.00	9,480.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.70	0.00	99.40	0.60
Light Truck 3,751- 5,750	16.50	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.50	0.00	98.70	1.30
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.80	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	40.00	60.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.00	0.00	90.00	10.00

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments low rise	6.02	4.50	52.69	0.13	19.31
City park	0.23	0.21	2.29	0.01	0.83
Strip mall	13.30	9.95	108.09	0.24	36.06
TOTAL EMISSIONS (lbs/day)	19.55	14.66	163.07	0.37	56.20

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Apartments low rise	6.29 trips / dwelling units	331.00	2,081.99
City park	50.00 trips / acres	3.03	151.50
Strip mall	40.00 trips / 1000 sq. ft.	237.00	9,480.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.70	0.00	99.40	0.60
Light Truck 3,751- 5,750	16.50	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.50	0.00	98.70	1.30
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.80	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	40.00	60.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.00	0.00	90.00	10.00

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0

ENVIRONMENTAL FACTORS APPLICABLE TO THE PROJECT

Pedestrian Environment

2.0 Side Walks/Paths: Most Destinations Covered
1.0 Street Trees Provide Shade: Moderate Coverage
3.0 Pedestrian Circulation Access: Most Destinations
3.0 Visually Interesting Uses: Moderate Number and Variety
2.0 Street System Enhances Safety: Most Streets
1.0 Pedestrian Safety from Crime: Moderate Degree of Safety
2.0 Visually Interesting Walking Routes: High Level

14.0 <- Pedestrian Environmental Credit
14.0 /19 = 0.7 <- Pedestrian Effectiveness Factor

Transit Service

12.0 Transit Service: 31-60 Minute Bus within 1/4 Mile

12.0 <- Transit Effectiveness Credit
14.0 <- Pedestrian Factor
26.0 <-Total
26.0 /110 = 0.2 <-Transit Effectiveness Factor

Bicycle Environment

3.0 Interconnected Bikeways: Moderate Coverage
2.0 Bike Routes Provide Paved Shoulders: Some Routes
1.0 Safe Vehicle Speed Limits: Some Destinations
0.0 Safe School Routes: No Schools
0.0 Uses w/in Cycling Distance: No Uses w/in Cycling Distance
0.0 Bike Parking Ordinance: No Ordinance or Unenforceable

6.0 <- Bike Environmental Credit
6.0 /20 = 0.3 <- Bike Effectiveness Factor

MITIGATION MEASURES SELECTED FOR THIS PROJECT

(All mitigation measures are printed, even if
the selected land uses do not constitute a mixed use.)

Transit Infrastructure Measures

% Trips Reduced	Measure
15.0	Credit for Existing or Planned Community Transit Service
0.5	Provide Street Lighting
0.5	Provide Route Signs and Displays
16.0	<- Totals

Pedestrian Enhancing Infrastructure Measures (Residential)

% Trips Reduced	Measure
2.0	Credit for Surrounding Pedestrian Environment
2.0	<- Totals

Pedestrian Enhancing Infrastructure Measures (Non-Residential)

% Trips Reduced	Measure
2.0	Credit for Surrounding Pedestrian Environment
1.0	Mixed Use Project (Commercial Oriented)
1.0	Provide Wide Sidewalks and Onsite Pedestrian Facilities
1.0	Project Uses Parking Structures/Small Dispersed Lots
0.5	Provide Street Lighting
0.5	Project Provides Shade Trees to Shade Sidewalks
0.5	Project Provides Street Art and/or Street Furniture
0.5	Project Uses Zero Bldg. Setback with Entrance on Street
0.5	Provide Pedestrian Safety Designs/Infrastructure at Crossings
0.3	Articulated Storefront(s) Display Windows with Visual Interest
0.3	No Long Uninterrupted Walls Along Pedestrian Walkways
8.0	<- Totals

Bicycle Enhancing Infrastructure Measures (Residential)

% Trips Reduced	Measure
7.0	Credit for Surrounding Bicycle Environment
7.0	<- Totals

Bike Enhancing Infrastructure Measures (Non-Residential)

% Trips Reduced	Measure
5.0	Credit for Surrounding Area Bike Environment
2.0	Provide Bike Lanes/Paths Connecting to Bikeway System
7.0	<- Totals

Operational Measures (Applying to Commute Trips)

% Trips Reduced	Measure
0.0	<- Totals

Operational Measures (Applying to Employee Non-Commute Trips)

% Trips Reduced	Measure
0.0	<- Totals

Operational Measures (Applying to Customer Trips)

% Trips Reduced	Measure
0.0	<- Totals

Measures Reducing VMT (Non-Residential)

VMT Reduced	Measure
0.0	Park and Ride Lots
0.0	<- Totals

Measures Reducing VMT (Residential)

VMT Reduced	Measure
0.0	<- Totals

Total Percentage Trip Reduction with Environmental Factors and Mitigation Measures				
Travel Mode	Home-Work Trips	Home-Shop Trips	Home-Other Trips	
Pedestrian	0.16	0.65	0.65	
Transit	3.78	0.83	1.02	
Bicycle	2.10	2.10	2.10	
Totals	0.00	0.00	0.00	
Travel Mode	Work Trips	Employee Trips	Customer Trips	
Pedestrian	0.65	5.89	5.89	
Transit	3.78	0.08	3.78	
Bicycle	2.10	2.10	2.10	
Other	0.00	0.00	0.00	
Totals	0.00	0.00	0.00	

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The natural gas option switch changed from on to off.
 The area source mitigation measure option switch changed from off to on.
 The landscape year changed from 2004 to 2007.

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2025.
 The double counting internal work trip limit changed from to 197.175.
 The double counting shopping trip limit changed from to 98.5875.
 The double counting other trip limit changed from to 1072.22485.
 The travel mode environment settings changed from both to: both
 The default/noddefault travel setting changed from nodefault to: nodefault

Side Walks/Paths: No Sidewalks
 changed to: Side Walks/Paths: Most Destinations Covered

Street Trees Provide Shade: No Coverage
 changed to: Street Trees Provide Shade: Moderate Coverage

Pedestrian Circulation Access: No Destinations
 changed to: Pedestrian Circulation Access: Most Destinations

Visually Interesting Uses: No Uses Within Walking Distance
 changed to: Visually Interesting Uses: Moderate Number and Variety

Street System Enhances Safety: No Streets
 changed to: Street System Enhances Safety: Most Streets

Pedestrian Safety from Crime: No Degree of Safety
 changed to: Pedestrian Safety from Crime: Moderate Degree of Safety

Visually Interesting Walking Routes: No Visual Interest
 changed to: Visually Interesting Walking Routes: High Level

Transit Service: Dial-A-Ride or No Transit Service
 changed to: Transit Service: 31-60 Minute Bus within 1/4 Mile

Interconnected Bikeways: No Bikeway Coverage
 changed to: Interconnected Bikeways: Moderate Coverage

Bike Routes Provide Paved Shoulders: No Routes
 changed to: Bike Routes Provide Paved Shoulders: Some Routes

Safe Vehicle Speed Limits: No Routes Provided
 changed to: Safe Vehicle Speed Limits: Some Destinations

Mitigation measure Provide Street Lighting:0.5
 has been changed from off to on.

Mitigation measure Provide Route Signs and Displays:0.5
 has been changed from off to on.

Mitigation measure Mixed Use Project (Commercial Oriented):1
 has been changed from off to on.

Mitigation measure Provide Wide Sidewalks and Onsite Pedestrian Facilities:1
 has been changed from off to on.

Mitigation measure Project Uses Parking Structures/Small Dispersed Lots:1
 has been changed from off to on.

Mitigation measure Provide Street Lighting:0.5
 has been changed from off to on.

Mitigation measure Project Provides Shade Trees to Shade Sidewalks:0.5
 has been changed from off to on.

Mitigation measure Project Provides Street Art and/or Street Furniture:0.5
 has been changed from off to on.

Mitigation measure Project Uses Zero Bldg. Setback with Entrance on Street:0.5
 has been changed from off to on.

Mitigation measure Provide Pedestrian Safety Designs/Infrastructure at Crossings:0.5
 has been changed from off to on.

Mitigation measure Articulated Storefront(s) Display Windows with Visual Interest:0.25
 has been changed from off to on.

Mitigation measure No Long Uninterrupted Walls Along Pedestrian Walkways:0.25
 has been changed from off to on.

Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
 has been changed from off to on.