

# **APPENDIX C**

## **AIR QUALITY AND GREENHOUSE GAS EMISSIONS CALEEMOD REPORT**

Newark Gateway Mixed Use - Alameda County, Winter

**Newark Gateway Mixed Use**  
Alameda County, Winter

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	146.00	Room	1.19	106,080.00	0
Supermarket	8.30	1000sqft	0.19	8,300.00	0

**1.2 Other Project Characteristics**

Urbanization      Urban      Wind Speed (m/s)      2.2      Precipitation Freq (Days)      63

Climate Zone      5      Operational Year      2020

Utility Company      Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr)      405      CH4 Intensity (lb/MWhr)      0      N2O Intensity (lb/MWhr)      0

**1.3 User Entered Comments & Non-Default Data**

Newark Gateway Mixed Use - Alameda County, Winter

Project Characteristics - GHG Intensity Factors based on 2015 PG&E Inventory

Land Use - 8,300 sqft grocery and 146 room hotel on 1.38 acres

Construction Phase - Construction schedule based on info provided by Villa Developers

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Typical Utilities equipment

Grading -

Vehicle Trips - Fehr & Peers 2017

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation - Exceed 2016 Title 24 by 15%

Water Mitigation - CALGreen

Waste Mitigation - AB341

Architectural Coating - Low-VOC Coatings

Area Coating -

Trips and VMT -

Energy Use - PG&E 2017

Newark Gateway Mixed Use - Alameda County, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	50.00
tblConsdDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConsdDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	10.00	21.00
tblConstructionPhase	NumDays	200.00	219.00
tblConstructionPhase	NumDays	4.00	43.00
tblConstructionPhase	NumDays	10.00	20.00
tblLandUse	BuildingSpaceSquareFeet	211,992.00	106,080.00
tblLandUse	LandUseSquareFeet	211,992.00	106,080.00
tblLandUse	LotAcrage	4.87	1.19
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Underground Utilities
tblOffRoadEquipment	PhaseName		Underground Utilities
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	641.35	405
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblProjectCharacteristics	OperationalYear	2018	2020
tblVehicleTrips	ST_TR	8.19	8.15
tblVehicleTrips	ST_TR	177.59	20.48
tblVehicleTrips	SU_TR	5.85	8.15
tblVehicleTrips	SU_TR	166.44	20.48
tblVehicleTrips	WD_TR	8.17	8.15
tblVehicleTrips	WD_TR	102.24	20.48

Newark Gateway Mixed Use - Alameda County, Winter

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Year	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2018	2,5085	20,1573	16,1013	0.0312	4,8801	1,0792	5,7753	2,5431	1,0417	3,2748	0.0000	2,987,771 <sup>3</sup>	2,987,771 <sup>3</sup>	0.4590	0.0000	2,979,245 <sup>6</sup>
2019	44,4833	16,5567	15,4797	0.0310	0.5148	0.9342	1,4490	0.1395	0.9020	1,0415	0.0000	2,939,862 <sup>8</sup>	2,939,862 <sup>8</sup>	0.4350	0.0000	2,950,737 <sup>4</sup>
Maximum	44,4833	20,1573	16,1013	0.0312	4,9801	1,0792	5,7753	2,5431	1,0417	3,2748	0.0000	2,987,771 <sup>3</sup>	2,987,771 <sup>3</sup>	0.4590	0.0000	2,979,245 <sup>9</sup>

Mitigated Construction

Year	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2018	2,9085	20,1573	16,1013	0.0312	2,2772	1,0792	3,0724	1,1540	1,0417	1,8855	0.0000	2,967,771 <sup>5</sup>	2,967,771 <sup>3</sup>	0.4590	0.0000	2,879,245 <sup>9</sup>
2019	44,4833	16,5567	15,4797	0.0310	0.5148	0.9342	1,4490	0.1395	0.9020	1,0415	0.0000	2,939,862 <sup>8</sup>	2,939,862 <sup>9</sup>	0.4350	0.0000	2,880,737 <sup>4</sup>
Maximum	44,4833	20,1573	16,1013	0.0312	2,2772	1,0792	3,0724	1,1540	1,0417	1,8855	0.0000	2,967,771 <sup>5</sup>	2,967,771 <sup>3</sup>	0.4590	0.0000	2,879,245 <sup>9</sup>



Newark Gateway Mixed Use - Alameda County, Winter

**2.2 Overall Operational  
Unmitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Area	2.7760	1.5300e-004	0.0159	0.0000	6.0000e-005	6.0000e-005	6.0000e-005	6.0000e-005	6.0000e-005	6.0000e-005	0.0338	0.0338	9.0000e-005			0.0360
Energy	0.1241	1.1278	0.9474	6.7700e-003	0.0857	0.0857	0.0857	0.0857	0.0857	0.0857	1.353.391	1.353.391	0.0259	0.0248		1.361.434
Mobile	2.1580	13.5636	23.2481	0.0595	5.2357	0.0558	5.3213	1.4030	0.0608	1.4338	7,048.559	7,048.559	0.3717			7,055.851
<b>Total</b>	<b>5.0581</b>	<b>14.7115</b>	<b>24.2113</b>	<b>0.0762</b>	<b>5.2357</b>	<b>0.1714</b>	<b>5.4071</b>	<b>1.4030</b>	<b>0.1655</b>	<b>1.6695</b>	<b>8,399.964</b>	<b>8,399.964</b>	<b>0.3977</b>	<b>0.0248</b>		<b>8,417.321</b>

**Mitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Area	2.7750	1.5000e-004	0.0159	0.0000	6.0000e-005	6.0000e-005	6.0000e-005	6.0000e-005	6.0000e-005	6.0000e-005	0.0338	0.0338	9.0000e-005			0.0360
Energy	0.0858	0.7800	0.6552	4.6800e-003	0.0593	0.0593	0.0593	0.0593	0.0593	0.0593	936.0375	936.0375	0.0175	0.0172		941.5965
Mobile	1.8537	10.6700	16.6766	0.0416	2.8559	0.0515	2.9175	0.7890	0.0485	0.8165	4,228.281	4,228.281	0.2903			4,235.558
<b>Total</b>	<b>4.7155</b>	<b>11.4502</b>	<b>17.3477</b>	<b>0.0463</b>	<b>2.8559</b>	<b>0.1109</b>	<b>2.9768</b>	<b>0.7680</b>	<b>0.1079</b>	<b>0.8759</b>	<b>5,164.352</b>	<b>5,164.352</b>	<b>0.3083</b>	<b>0.0172</b>		<b>5,177.174</b>

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Percent Reduction	ROG	MOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	MSio-CO2	Total CO2	GHG	N2O	CO2e
	6.77	22.17	28.36	39.24	46.26	36.31	44.95	45.28	36.21	44.20	0.00	38.52	38.52	22.46	30.63	38.49

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2018	2/28/2018	5	43	
2	Underground Utilities	Trenching	3/1/2018	3/30/2018	6	22	
3	Building Construction	Building Construction	3/31/2018	1/31/2019	5	219	
4	Paving	Paving	2/1/2019	2/28/2019	5	20	
5	Architectural Coating	Architectural Coating	3/1/2019	3/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 16.13

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 171,570; Non-Residential Outdoor: 57,190; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment



Newark Gateway Mixed Use - Alameda County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Underground Utilities	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Underground Utilities	Trenchers	1	7.00	78	0.50
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.36
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	47.00	19.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Newark Gateway Mixed Use - Alameda County, Winter

- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					4.9144	0.0000	4.9144	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311		1,421,260 <sup>5</sup>	1,421,260 <sup>5</sup>	0.4425		1,432.321 <sup>9</sup>
<b>Total</b>	<b>1.4972</b>	<b>17.0666</b>	<b>6.7630</b>	<b>0.0141</b>	<b>4.9144</b>	<b>0.7947</b>	<b>5.7091</b>	<b>2.5256</b>	<b>0.7311</b>	<b>3.2568</b>		<b>1,421,260<sup>5</sup></b>	<b>1,421,260<sup>5</sup></b>	<b>0.4425</b>		<b>1,432.321<sup>9</sup></b>

Newark Gateway Mixed Use - Alameda County, Winter

3.2 Grading - 2018

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0370	0.0289	0.2714	6.8000e-004	0.0857	4.8000e-004	0.0862	0.0174	4.3000e-004	0.0179		65.3722	65.3722	2.0800e-003		65.4242	
<b>Total</b>	<b>0.0370</b>	<b>0.0289</b>	<b>0.2714</b>	<b>6.8000e-004</b>	<b>0.0857</b>	<b>4.8000e-004</b>	<b>0.0862</b>	<b>0.0174</b>	<b>4.3000e-004</b>	<b>0.0179</b>		<b>65.3722</b>	<b>65.3722</b>	<b>2.0800e-003</b>		<b>65.4242</b>	

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Fugitive Dust					2.2115	0.0000	2.2115	1.1365	0.0000	1.1365						0.0000	
Off-Road	1.4972	17.0656	6.7630	0.0141	0.7947	0.7947	0.7947	0.7311	0.7311	0.7311	0.0000	1,421,260 <sup>5</sup>	1,421,260 <sup>5</sup>	0.4425		1,432,321 <sup>9</sup>	
<b>Total</b>	<b>1.4972</b>	<b>17.0656</b>	<b>6.7630</b>	<b>0.0141</b>	<b>2.2115</b>	<b>0.7947</b>	<b>3.0062</b>	<b>1.1365</b>	<b>0.7311</b>	<b>1.8677</b>	<b>0.0000</b>	<b>1,421,260<sup>5</sup></b>	<b>1,421,260<sup>5</sup></b>	<b>0.4425</b>		<b>1,432,321<sup>9</sup></b>	

Newark Gateway Mixed Use - Alameda County, Winter

3.2 Grading - 2018

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10			Exhaust PM10			PM10 Total	Fugitive PM2.5			Exhaust PM2.5			PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
					PM10	PM10	PM10	PM10	PM10	PM2.5		PM2.5	PM2.5	PM2.5	PM2.5	PM2.5	PM2.5							
lb/day																								
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	0.0370	0.0289	0.2714	6.5000e-004	0.0557	4.5000e-004	0.0552	0.0174	4.3000e-004	0.0179	0.0174	4.3000e-004	0.0179	65.3722	66.3722	2.0600e-003	65.4242							
<b>Total</b>	<b>0.0370</b>	<b>0.0289</b>	<b>0.2714</b>	<b>6.5000e-004</b>	<b>0.0557</b>	<b>4.5000e-004</b>	<b>0.0552</b>	<b>0.0174</b>	<b>4.3000e-004</b>	<b>0.0179</b>	<b>0.0174</b>	<b>4.3000e-004</b>	<b>0.0179</b>	<b>65.3722</b>	<b>66.3722</b>	<b>2.0600e-003</b>	<b>65.4242</b>							

3.3 Underground Utilities - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10			Exhaust PM10			PM10 Total	Fugitive PM2.5			Exhaust PM2.5			PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
					PM10	PM10	PM10	PM10	PM10	PM2.5		PM2.5	PM2.5	PM2.5	PM2.5	PM2.5									
lb/day																									
Off-Road	0.8618	8.1622	6.4094	8.3900e-003				0.5968	0.5968	0.5968				0.5491	0.5491	0.5491				844.5062	844.5062	0.2629			851.0759
<b>Total</b>	<b>0.8618</b>	<b>8.1622</b>	<b>6.4094</b>	<b>8.3900e-003</b>				<b>0.5968</b>	<b>0.5968</b>	<b>0.5968</b>				<b>0.5491</b>	<b>0.5491</b>	<b>0.5491</b>				<b>844.5062</b>	<b>844.5062</b>	<b>0.2629</b>			<b>851.0759</b>

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**3.3 Underground Utilities - 2018**  
**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	lb/day					lb/day							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0370	0.0289	0.2714	6.6000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.3000e-004	0.0179	0.0179	65.3722	65.3722	65.3722	2.0800e-003	65.4242	
<b>Total</b>	<b>0.0370</b>	<b>0.0289</b>	<b>0.2714</b>	<b>6.6000e-004</b>	<b>0.0657</b>	<b>4.6000e-004</b>	<b>0.0662</b>	<b>0.0174</b>	<b>4.3000e-004</b>	<b>0.0179</b>	<b>0.0179</b>	<b>65.3722</b>	<b>65.3722</b>	<b>65.3722</b>	<b>2.0800e-003</b>	<b>65.4242</b>	

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	lb/day					lb/day							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Off-Road	0.8618	8.1622	6.4094	8.3900e-003	0.5968	0.5968	0.5968	0.5491	0.5491	0.5491	0.0000	844.5062	844.5062	844.5062	0.2629	851.0789	
<b>Total</b>	<b>0.8618</b>	<b>8.1622</b>	<b>6.4094</b>	<b>8.3900e-003</b>	<b>0.5968</b>	<b>0.5968</b>	<b>0.5968</b>	<b>0.5491</b>	<b>0.5491</b>	<b>0.5491</b>	<b>0.0000</b>	<b>844.5062</b>	<b>844.5062</b>	<b>844.5062</b>	<b>0.2629</b>	<b>851.0789</b>	

Newark Gateway Mixed Use - Alameda County, Winter

3.3 Underground Utilities - 2018

Mitigated Construction Off-Site

Category	ROG	NOX	CO	SO2	lb/day					lb/day							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0370	0.0289	0.2714	6.5000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.3000e-004	0.0179	65.3722	65.3722	2.0800e-003	65.4242		65.4242	
<b>Total</b>	<b>0.0370</b>	<b>0.0289</b>	<b>0.2714</b>	<b>6.5000e-004</b>	<b>0.0657</b>	<b>4.5000e-004</b>	<b>0.0662</b>	<b>0.0174</b>	<b>4.3000e-004</b>	<b>0.0179</b>	<b>65.3722</b>	<b>65.3722</b>	<b>2.0800e-003</b>	<b>65.4242</b>		<b>65.4242</b>	

3.4 Building Construction - 2018

Unmitigated Construction On-Site

Category	ROG	NOX	CO	SO2	lb/day					lb/day							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Off-Road	2.5819	17.4250	13.8766	0.0220	1.0580	1.0580	1.0580	1.0216	1.0216	1.0216	2,030.8389	2,030.8389	0.4088	2,041.0588		2,041.0588	
<b>Total</b>	<b>2.5819</b>	<b>17.4250</b>	<b>13.8766</b>	<b>0.0220</b>	<b>1.0580</b>	<b>1.0580</b>	<b>1.0580</b>	<b>1.0216</b>	<b>1.0216</b>	<b>1.0216</b>	<b>2,030.8389</b>	<b>2,030.8389</b>	<b>0.4088</b>	<b>2,041.0588</b>		<b>2,041.0588</b>	

Newark Gateway Mixed Use - Alameda County, Winter

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day					Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0970	2.5597	0.5300	5.2500e-003	0.1287	0.0194	0.1472	0.0371	0.0176	0.0547	552.8706	552.8706	552.8706	0.0379	553.8190				553.8190	
Worker	0.2176	0.1698	1.5947	3.8600e-003	0.3861	2.7100e-003	0.3888	0.1024	2.5000e-003	0.1049	384.0816	384.0816	384.0816	0.0122	384.3673				384.3673	
<b>Total</b>	<b>0.3146</b>	<b>2.7293</b>	<b>2.2247</b>	<b>9.1100e-003</b>	<b>0.5148</b>	<b>0.0211</b>	<b>0.5360</b>	<b>0.1395</b>	<b>0.0201</b>	<b>0.1596</b>	<b>936.9324</b>	<b>936.9324</b>	<b>936.9324</b>	<b>0.0502</b>	<b>938.1863</b>				<b>938.1863</b>	

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day					Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4						
Off-Road	2.5919	17.4280	13.8766	0.0220	1.0580	1.0580	1.0580	1.0216	1.0216	1.0216	0.0000	2,030.8389	2,030.8389	2,030.8389	0.4088	2,041.0596			2,041.0596	
<b>Total</b>	<b>2.5919</b>	<b>17.4280</b>	<b>13.8766</b>	<b>0.0220</b>	<b>1.0580</b>	<b>1.0580</b>	<b>1.0580</b>	<b>1.0216</b>	<b>1.0216</b>	<b>1.0216</b>	<b>0.0000</b>	<b>2,030.8389</b>	<b>2,030.8389</b>	<b>2,030.8389</b>	<b>0.4088</b>	<b>2,041.0596</b>			<b>2,041.0596</b>	

Newark Gateway Mixed Use - Alameda County, Winter

**3.4 Building Construction - 2018**

**Mitigated Construction Off-Site**

Category	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0970	2.5597	0.9300	5.2500e-003	0.1287	0.0184	0.1472	0.0371	0.0176	0.0547		552.8708	552.8708	0.0379		553.8190
Worker	0.2178	0.1896	1.5947	3.8500e-003	0.3861	2.7100e-003	0.3898	0.1024	2.5000e-003	0.1049		384.0616	384.0616	0.0122		384.3673
<b>Total</b>	<b>0.3148</b>	<b>2.7293</b>	<b>2.2247</b>	<b>9.1100e-003</b>	<b>0.5148</b>	<b>0.0214</b>	<b>0.5360</b>	<b>0.1395</b>	<b>0.0201</b>	<b>0.1596</b>		<b>936.9324</b>	<b>936.9324</b>	<b>0.0502</b>		<b>938.1663</b>

**3.4 Building Construction - 2019**

**Unmitigated Construction On-Site**

Category	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Off-Road	2.2721	15.9902	13.4570	0.0220		0.9158	0.9158		0.8846	0.8846		2,018.0224	2,018.0224	0.3879		2,027.7210
<b>Total</b>	<b>2.2721</b>	<b>15.9902</b>	<b>13.4570</b>	<b>0.0220</b>		<b>0.9158</b>	<b>0.9158</b>		<b>0.8846</b>	<b>0.8846</b>		<b>2,018.0224</b>	<b>2,018.0224</b>	<b>0.3879</b>		<b>2,027.7210</b>



Newark Gateway Mixed Use - Alameda County, Winter

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

Category	lb/day											lb/day				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Vendor	0.0980	2.4276	0.5792	5.2100e-003	0.1287	0.0157	0.1444	0.0371	0.0150	0.0521	549.0124	549.0124	549.0124	0.0358		549.9190
Worker	0.1984	0.1489	1.4134	3.7400e-003	0.3861	2.5500e-003	0.3887	0.1024	2.4400e-003	0.1049	372.8290	372.8260	372.8260	0.0708		373.0974
<b>Total</b>	<b>0.2844</b>	<b>2.5765</b>	<b>1.9926</b>	<b>8.9500e-003</b>	<b>0.5148</b>	<b>0.0183</b>	<b>0.5331</b>	<b>0.1395</b>	<b>0.0174</b>	<b>0.1569</b>	<b>921.8404</b>	<b>921.8404</b>	<b>921.8404</b>	<b>0.0470</b>		<b>923.0164</b>

Mitigated Construction On-Site

Category	lb/day											lb/day				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846	0.0000	2,018.0224	2,018.0224	0.3879		2,027.7210
<b>Total</b>	<b>2.2721</b>	<b>15.9802</b>	<b>13.4870</b>	<b>0.0220</b>		<b>0.9158</b>	<b>0.9158</b>		<b>0.8846</b>	<b>0.8846</b>	<b>0.0000</b>	<b>2,018.0224</b>	<b>2,018.0224</b>	<b>0.3879</b>		<b>2,027.7210</b>

Newark Gateway Mixed Use - Alameda County, Winter

3.4 Building Construction - 2019

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day					CH4	N2O	CO2e
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0860	2.4276	0.5792	5.2100E-003	0.1267	0.0157	0.1444	0.0371	0.0150	0.0521	549.0124	549.0124	0.0363	549.9790			
Worker	0.1964	0.1489	1.4134	3.7400E-003	0.3661	2.5900E-003	0.3667	0.1024	2.4400E-003	0.1049	372.8280	372.8280	0.0108	373.0874			
<b>Total</b>	<b>0.2844</b>	<b>2.5765</b>	<b>1.9926</b>	<b>8.9500E-003</b>	<b>0.5148</b>	<b>0.0183</b>	<b>0.5331</b>	<b>0.1395</b>	<b>0.0174</b>	<b>0.1569</b>	<b>921.8404</b>	<b>921.8404</b>	<b>0.0470</b>	<b>923.0164</b>			

3.5 Paving - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day					CH4	N2O	CO2e
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2				
Off-Road	0.9038	9.1743	8.9025	0.0135	0.5225	0.5225	0.5225	0.4815	0.4815	0.4815	1,325.0953	1,325.0953	0.4112	1,335.3751			
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
<b>Total</b>	<b>0.9038</b>	<b>9.1743</b>	<b>8.9025</b>	<b>0.0135</b>	<b>0.5225</b>	<b>0.5225</b>	<b>0.5225</b>	<b>0.4815</b>	<b>0.4815</b>	<b>0.4815</b>	<b>1,325.0953</b>	<b>1,325.0953</b>	<b>0.4112</b>	<b>1,335.3751</b>			

Newark Gateway Mixed Use - Alameda County, Winter

3.5 Paving - 2019

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day					CH4	N2O	CO2e
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	0.0543	0.0412	0.3910	1.0400e-003	0.1068	7.3000e-004	0.1075	0.0283	5.8000e-004	0.0290	0.0000	103.1226	103.1226	2.9800e-003		103.1972	
<b>Total</b>	<b>0.0543</b>	<b>0.0412</b>	<b>0.3910</b>	<b>1.0400e-003</b>	<b>0.1068</b>	<b>7.3000e-004</b>	<b>0.1075</b>	<b>0.0283</b>	<b>5.8000e-004</b>	<b>0.0290</b>	<b>0.0000</b>	<b>103.1226</b>	<b>103.1226</b>	<b>2.9800e-003</b>		<b>103.1972</b>	

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day					CH4	N2O	CO2e
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2				
Off-Road	0.9036	9.1743	8.9025	0.0136	0.5225	0.5225	0.4815	0.4815	0.0000	1,325.095 <sup>3</sup>	1,325.095 <sup>3</sup>	0.4112			1,336.375 <sup>1</sup>		
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000		
<b>Total</b>	<b>0.9036</b>	<b>9.1743</b>	<b>8.9025</b>	<b>0.0136</b>	<b>0.5225</b>	<b>0.5225</b>	<b>0.4815</b>	<b>0.4815</b>	<b>0.0000</b>	<b>1,325.095<sup>3</sup></b>	<b>1,325.095<sup>3</sup></b>	<b>0.4112</b>			<b>1,336.375<sup>1</sup></b>		

Newark Gateway Mixed Use - Alameda County, Winter

3.5 Paving - 2019

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0543	0.0412	0.3910	1.0400e-003	0.1068	7.3000e-004	0.1075	0.0283	5.5000e-004	0.0290	103.1226	103.1226	2.9800e-003			103.1972	
<b>Total</b>	<b>0.0543</b>	<b>0.0412</b>	<b>0.3910</b>	<b>1.0400e-003</b>	<b>0.1068</b>	<b>7.3000e-004</b>	<b>0.1075</b>	<b>0.0283</b>	<b>5.5000e-004</b>	<b>0.0290</b>	<b>103.1226</b>	<b>103.1226</b>	<b>2.9800e-003</b>			<b>103.1972</b>	

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	lb/day					lb/day							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Archit. Coating	44.1793				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000	
Off-Road	0.2664	1.8354	1.8413	2.5700e-003	0.1288	0.1288	0.1288	0.1288	0.1288	0.1288	281.4481	281.4481	0.0238			282.0423	
<b>Total</b>	<b>44.4457</b>	<b>1.8354</b>	<b>1.8413</b>	<b>2.5700e-003</b>	<b>0.1288</b>	<b>0.1288</b>	<b>0.1288</b>	<b>0.1288</b>	<b>0.1288</b>	<b>0.1288</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0238</b>			<b>282.0423</b>	

Newark Gateway Mixed Use - Alameda County, Winter

**3.6 Architectural Coating - 2019**  
**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Biogenic CO2	Non-Biogenic CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0376	0.0285	0.2707	7.2000e-004	0.0739	5.1000e-004	0.0744	0.0196	4.7000e-004	0.0201		71.3926	71.3926	2.0600e-003		71.4442
<b>Total</b>	<b>0.0376</b>	<b>0.0285</b>	<b>0.2707</b>	<b>7.2000e-004</b>	<b>0.0739</b>	<b>5.1000e-004</b>	<b>0.0744</b>	<b>0.0196</b>	<b>4.7000e-004</b>	<b>0.0201</b>		<b>71.3926</b>	<b>71.3926</b>	<b>2.0600e-003</b>		<b>71.4442</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Biogenic CO2	Non-Biogenic CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Archit. Coating	44.1793					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2864	1.8354	1.2413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
<b>Total</b>	<b>44.4457</b>	<b>1.8354</b>	<b>1.2413</b>	<b>2.9700e-003</b>		<b>0.1288</b>	<b>0.1288</b>		<b>0.1288</b>	<b>0.1288</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0238</b>		<b>282.0423</b>

Newark Gateway Mixed Use - Alameda County, Winter

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

Category	RCS	NOx	CO	SO2	lb/day					lb/day							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NR-CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0376	0.0285	0.2707	7.2000e-004	0.0739	5.1000e-004	0.0744	0.0198	4.7000e-004	0.0201	71.3926	71.3926	71.3926	2.0600e-003		71.4442	
<b>Total</b>	<b>0.0376</b>	<b>0.0285</b>	<b>0.2707</b>	<b>7.2000e-004</b>	<b>0.0739</b>	<b>5.1000e-004</b>	<b>0.0744</b>	<b>0.0198</b>	<b>4.7000e-004</b>	<b>0.0201</b>	<b>71.3926</b>	<b>71.3926</b>	<b>71.3926</b>	<b>2.0600e-003</b>		<b>71.4442</b>	

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

- Increase Diversity
- Improve Walkability Design
- Increase Transit Accessibility
- Improve Pedestrian Network
- Limit Parking Supply

Newark Gateway Mixed Use - Alameda County, Winter

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	3-to-CO2	NB-to-CO2	Total CO2	CH4	N2O	CO2e
Mitigated	1.8537	10.6700	16.6786	0.0418	2.8656	0.0515	2.9175	0.7690	0.0486	0.8165	4.228,281	4	4,228,281	0.2503		4,235,538
Unmitigated	2.1580	13.5836	23.2481	0.0695	5.2357	0.0856	5.3213	1.4030	0.0808	1.4838	7,046,558	4	7,046,558	0.3717		7,055,881

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Hotel	1,189.90	1,189.90	1,189.90	2,260,728	1,237,483
Supermarket	169.98	169.98	169.98	183,347	105,835
Total	1,359.88	1,359.88	1,359.88	2,454,075	1,343,318

4.3 Trip Type Information

Land Use	Miles						Trip %						Trip Purpose %					
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by			
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4									
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36									

4.4 Fleet Mix

Land Use	LDA	LD1	LD2	MDV	LHD1	LHD2	WHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759
Supermarket	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759





Newark Gateway Mixed Use - Alameda County, Winter

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	NaturalGas Use kBtu/yr	ROG	NOx	CO	SO2	Fugitive PM10		Exhaust PM10		PM10 Total	Fugitive PM2.5		Exhaust PM2.5		PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
						lb/day	lb/day	lb/day	lb/day		lb/day	lb/day	lb/day	lb/day							
Hotel	10654.5	0.1148	1.0446	0.8774	6.2700e-003			0.0794	0.0794	0.0794			0.0794	0.0794	0.0794			1.253,470	0.0240	0.0230	1,260,919
Supermarket	849,329	8.7500e-003	0.0833	0.0698	5.0000e-004			6.3300e-003	6.3300e-003	6.3300e-003			6.3300e-003	6.3300e-003	6.3300e-003			99,921.0	1.9200e-003	1.8300e-003	100,5148
<b>Total</b>		<b>0.1241</b>	<b>1.1278</b>	<b>0.9474</b>	<b>6.2700e-003</b>			<b>0.0857</b>	<b>0.0857</b>	<b>0.0857</b>			<b>0.0857</b>	<b>0.0857</b>	<b>0.0857</b>			<b>1,353,391</b>	<b>0.0269</b>	<b>0.0248</b>	<b>1,361,434</b>

Mitigated

Land Use	NaturalGas Use kBtu/yr	ROG	NOx	CO	SO2	Fugitive PM10		Exhaust PM10		PM10 Total	Fugitive PM2.5		Exhaust PM2.5		PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
						lb/day	lb/day	lb/day	lb/day		lb/day	lb/day	lb/day	lb/day							
Hotel	7,32457	0.0790	0.7181	0.6032	4.3100e-003			0.0546	0.0546	0.0546			0.0546	0.0546	0.0546			861,7136	0.0165	0.0158	866,8343
Supermarket	631,753	6.8100e-003	0.0619	0.0620	3.7000e-004			4.7100e-003	4.7100e-003	4.7100e-003			4.7100e-003	4.7100e-003	4.7100e-003			74,3239	1.4200e-003	1.3500e-003	74,7556
<b>Total</b>		<b>0.0858</b>	<b>0.7800</b>	<b>0.6652</b>	<b>4.6900e-003</b>			<b>0.0593</b>	<b>0.0593</b>	<b>0.0593</b>			<b>0.0593</b>	<b>0.0593</b>	<b>0.0593</b>			<b>936,0375</b>	<b>0.0179</b>	<b>0.0172</b>	<b>941,5999</b>

6.0 Area Detail

6.1 Mitigation Measures Area

Newark Gateway Mixed Use - Alameda County, Winter

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Biogenic CO2	Non-Biogenic CO2	Total CO2	CH4	N2O	CO2e
Mitigated	2.7760	1.5000e-004	0.0159	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
Unmitigated	2.7750	1.5000e-004	0.0159	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Biogenic CO2	Non-Biogenic CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.3269					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4477					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4900e-003	1.5000e-004	0.0159	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0338	0.0338	9.0000e-005		0.0360
<b>Total</b>	<b>2.7760</b>	<b>1.5000e-004</b>	<b>0.0159</b>	<b>0.0000</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>0.0338</b>	<b>0.0338</b>	<b>9.0000e-005</b>		<b>0.0360</b>

Newark Gateway Mixed Use - Alameda County, Winter

6.2 Area by SubCategory

Mitigated

SubCategory	CO2	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	3lb-CO2	Nlb-CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.3268				0.0000	0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4477				0.0000	0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscape	1.4900e-003	1.5000e-004	0.0159	0.0000	6.0000e-005	6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005			0.0338	0.0338	9.0000e-005	0.0350
<b>Total</b>	<b>2.7760</b>	<b>1.5000e-004</b>	<b>0.0159</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>			<b>0.0338</b>	<b>0.0338</b>	<b>9.0000e-005</b>	<b>0.0360</b>

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

Newark Gateway Mixed Use - Alameda County, Winter

### 10.0 Stationary Equipment

#### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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#### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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#### User Defined Equipment

Equipment Type	Number
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### 11.0 Vegetation

Newark Gateway Mixed Use - Alameda County, Annual

**Newark Gateway Mixed Use**  
Alameda County, Annual

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Flood Surface Area	Population
Hotel	148.00	Room	1.19	109,080.00	0
Supermarket	8.30	1000sqft	0.19	8,300.00	0

**1.2 Other Project Characteristics**

Urbanization      Urban      Wind Speed (m/s)      2.2      Precipitation Freq (Days)      63

Climate Zone      5                     Operational Year      2020

Utility Company      Pacific Gas & Electric Company

CO2 Intensity      405      CH4 Intensity      0      N2O Intensity      0  
(lb/MWhr)      (lb/MWhr)      (lb/MWhr)

**1.3 User Entered Comments & Non-Default Data**

Newark Gateway Mixed Use - Alameda County, Annual

Project Characteristics - GHG Intensity Factors based on 2015 PG&E inventory

Land Use - 8,300 sqft grocery and 146 room hotel on 1.38 acres

Construction Phase - Construction schedule based on info provided by Villa Developers

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Typical Utilities equipment

Grading -

Vehicle Trips - Fehr & Peers 2017

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation - Exceed 2016 Title 24 by 15%

Water Mitigation - CALGreen

Waste Mitigation - AB341

Architectural Coating - Low-VOC Coatings

Area Coating -

Trips and VMT -

Energy Use - PG&E 2017

Newark Gateway Mixed Use - Alameda County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	50.00
tblConstructDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstructDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	10.00	21.00
tblConstructionPhase	NumDays	200.00	219.00
tblConstructionPhase	NumDays	4.00	43.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	BuildingSpacesSquareFeet	211,992.00	106,080.00
tblLandUse	LandUseSquareFeet	211,992.00	106,080.00
tblLandUse	LotAcres	4.87	1.19
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Underground Utilities
tblOffRoadEquipment	PhaseName		Underground Utilities
tblProjectCharacteristics	CH4IntensityFactor	0.028	0
tblProjectCharacteristics	CO2IntensityFactor	641.35	405
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblProjectCharacteristics	OperationalYear	2018	2020
tblVehicleTrips	ST_TR	8.19	8.15
tblVehicleTrips	ST_TR	177.59	20.48
tblVehicleTrips	SU_TR	5.95	8.15
tblVehicleTrips	SU_TR	166.44	20.48
tblVehicleTrips	WD_TR	8.17	8.15
tblVehicleTrips	WD_TR	102.24	20.48

Newark Gateway Mixed Use - Alameda County, Annual

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2018	0.3253	2.4317	1.7929	3.4800e-003	0.1554	0.1294	0.2858	0.0881	0.1239	0.1918	0.0000	302.9928	302.9928	0.0519	0.0000	304.2913
2019	0.5057	0.3249	0.2920	5.4000e-004	7.4500e-003	0.0173	0.0248	2.0200e-003	0.0155	0.0196	0.0000	47.1240	47.1240	8.5200e-003	0.0000	47.3371
Maximum	0.5057	2.4317	1.7929	3.4800e-003	0.1554	0.1294	0.2858	0.0881	0.1239	0.1919	0.0000	302.9928	302.9928	0.0519	0.0000	304.2913

Mitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2018	0.3253	2.4317	1.7929	3.4800e-003	0.0953	0.1254	0.2277	0.0382	0.1239	0.1621	0.0000	302.9926	302.9926	0.0519	0.0000	304.2910
2019	0.5057	0.3249	0.2920	5.4000e-004	7.4500e-003	0.0173	0.0248	2.0200e-003	0.0156	0.0188	0.0000	47.1240	47.1240	8.5200e-003	0.0000	47.3370
Maximum	0.5057	2.4317	1.7929	3.4800e-003	0.0953	0.1294	0.2277	0.0382	0.1239	0.1621	0.0000	302.9926	302.9926	0.0519	0.0000	304.2910



Newark Gateway Mixed Use - Alameda County, Annual

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NEio-CO2	Total CO2	CH4	N2O	CO2e
0.00	0.00	0.00	0.00	35.47	0.00	18.71	42.60	0.00	14.19	0.00	0.00	0.00	0.00	0.00	0.00
Percent Reduction															

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOx (tons/quarter)	Maximum Mitigated ROG + NOx (tons/quarter)
1	1-1-2018	3-31-2018	0.4008	0.4008
2	4-1-2018	6-30-2018	0.7470	0.7470
3	7-1-2018	9-30-2018	0.7552	0.7552
4	10-1-2018	12-31-2018	0.7578	0.7578
5	1-1-2019	3-31-2019	0.8155	0.8155
		Highest		0.8155

2.2 Overall Operational Unmitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NEio-CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Area	0.5055	1.0000e-005	1.4300e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	2.7500e-003	2.7500e-003	1.0000e-005	0.0000	2.9400e-003
Energy	0.0228	0.2058	0.1729	1.2300e-003	0.0156	0.0156	0.0156	0.0156	0.0156	0.0156	0.0000	444.2722	444.2722	4.2800e-003	4.1100e-003	445.5037
Mobile	0.3954	2.4468	3.5804	0.0128	0.9179	0.0155	0.9334	0.2468	0.0145	0.2514	0.0000	1,178,749	1,178,749	0.0588	0.0000	1,178,221
Waste					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25,7291	0.0000	25,7291	1.5205	0.0000	53,7428
Water					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,4996	4.9334	6,4829	0.1540	3.6400e-003	11,4171
Total	0.9245	2.6526	4.1547	0.0140	0.9179	0.0311	0.9490	0.2468	0.0302	0.2770	27,2287	1,626,007	1,653,238	1,7377	7,7500e-003	1,688,987
MT/yr																

Newark Gateway Mixed Use - Alameda County, Annual

2.2 Overall Operational

Mitigated Operational

Category	tons/yr														MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e				
Area	0.5066	1.0000e-006	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7500e-003	2.7500e-003	1.0000e-005	0.0000	2.9400e-005				
Energy	0.0157	0.1424	0.1196	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	356.1735	356.1735	2.9700e-003	2.8400e-003	357.0544				
Mobile	0.3405	1.9345	2.7945	7.6900e-003	0.5024	9.2700e-003	0.5117	0.1351	6.7300e-003	0.1438	0.0000	709.3630	709.3630	0.0454	0.0000	710.4982				
Waste						0.0000	0.0000		0.0000	0.0000	6.4323	0.0000	6.4323	0.3601	0.0000	15.9357				
Water						0.0000	0.0000		0.0000	0.0000	1.1996	3.9867	5.1963	0.1232	2.9100e-003	8.1337				
Total	0.8628	2.0769	2.9153	8.5400e-003	0.5024	0.0201	0.5225	0.1351	6.0196	0.1546	7.6319	1,069.5259	1,077.1579	0.5518	5.7600e-003	1,092.6650				
Percent Reduction	6.70	21.70	29.83	39.04	45.26	35.41	44.94	45.26	35.32	44.18	71.97	34.22	34.85	68.25	25.81	35.59				

3.0 Construction Detail

Construction Phase

Newark Gateway Mixed Use - Alameda County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2018	2/28/2018	5	43	
2	Underground Utilities	Trenching	3/1/2018	3/30/2018	5	22	
3	Building Construction	Building Construction	3/31/2018	1/31/2019	5	219	
4	Paving	Paving	2/1/2019	2/28/2019	5	20	
5	Architectural Coating	Architectural Coating	3/1/2019	3/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 16.13

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 171,570; Non-Residential Outdoor: 57,190; Striped Parking Area: 0  
 (Architectural Coating – sqft)

OffRoad Equipment

Newark Gateway Mixed Use - Alameda County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Underground Utilities	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Underground Utilities	Trenchers	1	7.00	78	0.50
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	47.00	19.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Newark Gateway Mixed Use - Alameda County, Annual

- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Biogenic CO2	Non-Biogenic CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					0.1057	0.0000	0.1057	0.0543	0.0000	0.0543	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0322	0.3669	0.1454	3.0000e-004		0.0171	0.0171		0.0157	0.0157	0.0000	27.7209	27.7209	6.6300e-003	0.0000	27.9367
Total	0.0322	0.3669	0.1454	3.0000e-004	0.1057	0.0171	0.1228	0.0543	0.0157	0.0700	0.0000	27.7209	27.7209	6.6300e-003	0.0000	27.9367
MT/yr																

Newark Gateway Mixed Use - Alameda County, Annual

3.2 Grading - 2018

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	5.7000e-004	5.8500e-003	1.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.8000e-004	1.0000e-005	3.7000e-004	0.0000	1.2851	1.2851	4.0000e-005	0.0000	1.2851
<b>Total</b>	<b>7.2000e-004</b>	<b>5.7000e-004</b>	<b>5.8500e-003</b>	<b>1.0000e-005</b>	<b>1.3600e-003</b>	<b>1.0000e-005</b>	<b>1.3700e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>1.2851</b>	<b>1.2851</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.2851</b>

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.0476	0.0000	0.0476	0.0244	0.0000	0.0244	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0322	0.3889	0.1454	3.0000e-004	0.0171	0.0171	0.0171	0.0157	0.0000	0.0157	0.0000	27.7209	27.7209	8.6300e-003	0.0000	27.9367
<b>Total</b>	<b>0.0322</b>	<b>0.3889</b>	<b>0.1454</b>	<b>3.0000e-004</b>	<b>0.0476</b>	<b>0.0171</b>	<b>0.0646</b>	<b>0.0244</b>	<b>0.0157</b>	<b>0.0402</b>	<b>0.0000</b>	<b>27.7209</b>	<b>27.7209</b>	<b>8.6300e-003</b>	<b>0.0000</b>	<b>27.9367</b>

Newark Gateway Mixed Use - Alameda County, Annual

3.2 Grading - 2018

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	tons/yr					MT/yr								
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NRG-CO2	Total CO2	CH4	N2O	CO2e		
Hauling	0.0000e+000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	5.7000e-004	3.6500e-003	1.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2851	1.2851	4.0000e-005	0.0000	0.0000	1.2851	1.2851
<b>Total</b>	<b>7.2000e-004</b>	<b>5.7000e-004</b>	<b>3.6500e-003</b>	<b>1.0000e-005</b>	<b>1.3600e-003</b>	<b>1.0000e-005</b>	<b>1.3700e-003</b>	<b>3.6000e-004</b>	<b>1.0000e-005</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>1.2851</b>	<b>1.2851</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.2851</b>	<b>1.2851</b>

3.3 Underground Utilities - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	tons/yr					MT/yr								
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NRG-CO2	Total CO2	CH4	N2O	CO2e		
Off-Road	9.4600e-003	0.0898	0.0705	9.0000e-005	6.5700e-003	6.5700e-003	6.5700e-003	6.0400e-003	6.0400e-003	6.0400e-003	0.0000	8.4274	8.4274	2.5200e-003	0.0000	0.0000	8.4929	8.4929
<b>Total</b>	<b>9.4600e-003</b>	<b>0.0898</b>	<b>0.0705</b>	<b>9.0000e-005</b>	<b>6.5700e-003</b>	<b>6.5700e-003</b>	<b>6.5700e-003</b>	<b>6.0400e-003</b>	<b>6.0400e-003</b>	<b>6.0400e-003</b>	<b>0.0000</b>	<b>8.4274</b>	<b>8.4274</b>	<b>2.5200e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.4929</b>	<b>8.4929</b>

Newark Gateway Mixed Use - Alameda County, Annual

**3.3 Underground Utilities - 2018**  
**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000
Vendor	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000	0.000e-000
Worker	3.7000e-004	2.9000e-004	2.8900e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.0000e-004	1.9000e-004	0.000e-000	1.9000e-004	0.000e-000	0.6575	0.6575	2.0000e-005	0.000e-000	0.6580
<b>Total</b>	<b>3.7000e-004</b>	<b>2.9000e-004</b>	<b>2.8900e-003</b>	<b>1.0000e-005</b>	<b>7.0000e-004</b>	<b>1.0000e-005</b>	<b>7.0000e-004</b>	<b>1.9000e-004</b>	<b>0.000e-000</b>	<b>1.9000e-004</b>	<b>0.000e-000</b>	<b>0.6575</b>	<b>0.6575</b>	<b>2.0000e-005</b>	<b>0.000e-000</b>	<b>0.6580</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Off-Road	9.4800e-003	0.0698	0.0705	9.0000e-005	8.5700e-003	5.5700e-003	6.0400e-003	6.0400e-003	0.000e-000	6.0400e-003	0.000e-000	8.4273	8.4273	2.9200e-003	0.000e-000	8.4929
<b>Total</b>	<b>9.4800e-003</b>	<b>0.0698</b>	<b>0.0705</b>	<b>9.0000e-005</b>	<b>8.5700e-003</b>	<b>5.5700e-003</b>	<b>6.0400e-003</b>	<b>6.0400e-003</b>	<b>0.000e-000</b>	<b>6.0400e-003</b>	<b>0.000e-000</b>	<b>8.4273</b>	<b>8.4273</b>	<b>2.9200e-003</b>	<b>0.000e-000</b>	<b>8.4929</b>



Newark Gateway Mixed Use - Alameda County, Annual

3.3 Underground Utilities - 2018

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	tons/yr					MT/yr								
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	2.8900e-003	1.0000e-005	7.6000e-004	1.0000e-005	7.6000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6575	0.6575	2.0000e-005	0.0000	0.0000	0.9580	0.9580
Total	3.7000e-004	2.9000e-004	2.8900e-003	1.0000e-005	7.6000e-004	1.0000e-005	7.6000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6575	0.6575	2.0000e-005	0.0000	0.0000	0.9580	0.9580

3.4 Building Construction - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	tons/yr					MT/yr								
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e		
Off-Road	0.2540	1.7079	1.3599	2.1800e-003	0.1037	0.1037	0.1001	0.1001	0.0000	180.5499	180.5499	0.0364	0.0000	0.0000	0.0000	0.0000	181.4586	181.4586
Total	0.2540	1.7079	1.3599	2.1600e-003	0.1037	0.1037	0.1001	0.1001	0.0000	180.5499	180.5499	0.0364	0.0000	0.0000	0.0000	0.0000	181.4586	181.4586

Newark Gateway Mixed Use - Alameda County, Annual

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	tons/yr					MT/yr							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.2500e-003	0.2510	0.0573	5.2000e-004	0.0122	1.7900e-003	0.0140	3.5400e-003	1.7100e-003	5.2500e-003	0.0000	49.9389	49.9389	3.2000e-003	0.0000	50.0788	
Worker	0.0193	0.0152	0.1512	3.8000e-004	0.0364	2.7000e-004	0.0367	9.6900e-003	2.5000e-004	9.9300e-003	0.0000	34.4132	34.4132	1.0800e-003	0.0000	34.4402	
<b>Total</b>	<b>0.0286</b>	<b>0.2661</b>	<b>0.2086</b>	<b>9.0000e-004</b>	<b>0.0487</b>	<b>2.0600e-003</b>	<b>0.0507</b>	<b>0.0132</b>	<b>1.9600e-003</b>	<b>0.0152</b>	<b>0.0000</b>	<b>84.3521</b>	<b>84.3521</b>	<b>4.2800e-003</b>	<b>0.0000</b>	<b>84.4590</b>	

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	tons/yr					MT/yr							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Off-Road	0.2540	1.7079	1.3599	2.1600e-003	0.1037	0.1037	0.1037	0.1001	0.1001	0.1001	0.0000	180.5497	180.5497	0.0364	0.0000	181.4584	
<b>Total</b>	<b>0.2540</b>	<b>1.7079</b>	<b>1.3599</b>	<b>2.1600e-003</b>	<b>0.1037</b>	<b>0.1037</b>	<b>0.1037</b>	<b>0.1001</b>	<b>0.1001</b>	<b>0.1001</b>	<b>0.0000</b>	<b>180.5497</b>	<b>180.5497</b>	<b>0.0364</b>	<b>0.0000</b>	<b>181.4584</b>	

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3.4 Building Construction - 2018

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
MTHr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.2500e-003	0.2610	0.0573	5.2000e-004	0.0122	1.7900e-003	0.0140	3.5400e-003	1.7100e-003	5.2500e-003	0.0000	49.9389	49.9389	3.2000e-003	0.0000	50.0188
Worker	0.0193	0.0152	0.1512	3.8000e-004	0.0364	2.7000e-004	0.0367	9.5800e-003	2.5000e-004	9.9300e-003	0.0000	34.4132	34.4132	1.0800e-003	0.0000	34.4402
<b>Total</b>	<b>0.0286</b>	<b>0.2661</b>	<b>0.2086</b>	<b>9.0000e-004</b>	<b>0.0487</b>	<b>2.0600e-003</b>	<b>0.0507</b>	<b>0.0132</b>	<b>1.9600e-003</b>	<b>0.0152</b>	<b>0.0000</b>	<b>84.3521</b>	<b>84.3521</b>	<b>4.2800e-003</b>	<b>0.0000</b>	<b>84.4590</b>

3.4 Building Construction - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
MTHr																
Off-Road	0.0261	0.1638	0.1551	2.5000e-004		0.0105	0.0105		0.0102	0.0102	0.0000	21.0533	21.0533	4.0500e-003	0.0000	21.1545
<b>Total</b>	<b>0.0261</b>	<b>0.1638</b>	<b>0.1551</b>	<b>2.5000e-004</b>		<b>0.0105</b>	<b>0.0105</b>		<b>0.0102</b>	<b>0.0102</b>	<b>0.0000</b>	<b>21.0533</b>	<b>21.0533</b>	<b>4.0500e-003</b>	<b>0.0000</b>	<b>21.1545</b>

Newark Gateway Mixed Use - Alameda County, Annual

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	tons/yr					MT/yr							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000e+000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.8000e-004	0.0279	6.1800e-003	8.0000e-005	1.4300e-003	1.8000e-004	1.8100e-003	4.2000e-004	1.7000e-004	5.9000e-004	0.0000	5.8203	5.8203	3.8000e-004	0.0000	5.8293	5.8293
Worker	2.0500e-003	1.5500e-003	0.0158	4.0000e-005	4.2700e-003	3.0000e-005	4.3000e-003	1.1400e-003	3.0000e-005	1.1600e-003	0.0000	3.9202	3.9202	1.1000e-004	0.0000	3.9230	3.9230
<b>Total</b>	<b>3.0300e-003</b>	<b>0.0295</b>	<b>0.0219</b>	<b>1.0000e-004</b>	<b>5.7000e-003</b>	<b>2.1000e-004</b>	<b>5.9100e-003</b>	<b>1.5600e-003</b>	<b>2.0000e-004</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>9.7405</b>	<b>9.7405</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>9.7523</b>	<b>9.7523</b>

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	tons/yr					MT/yr							
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Off-Road	0.0281	0.1838	0.1551	2.5000e-004	0.0105	0.0105	0.0105	0.0102	0.0102	0.0102	0.0000	21.0532	21.0532	4.0500e-003	0.0000	21.1544	21.1544
<b>Total</b>	<b>0.0281</b>	<b>0.1838</b>	<b>0.1551</b>	<b>2.5000e-004</b>	<b>0.0105</b>	<b>0.0105</b>	<b>0.0105</b>	<b>0.0102</b>	<b>0.0102</b>	<b>0.0102</b>	<b>0.0000</b>	<b>21.0532</b>	<b>21.0532</b>	<b>4.0500e-003</b>	<b>0.0000</b>	<b>21.1544</b>	<b>21.1544</b>

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3.4 Building Construction - 2019

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	tons/yr			tons/yr			Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total						
M T/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.8200e-004	0.0279	6.1800e-003	5.0000e-005	1.4300e-003	1.8000e-004	1.6100e-003	4.2000e-004	1.7000e-004	5.9000e-004	0.0000	5.8203	5.8203	3.6000e-004	0.0000	5.8293
Worker	2.0500e-003	1.5600e-003	0.0152	4.0000e-005	4.2700e-003	3.0000e-005	4.3000e-003	1.1400e-003	3.0000e-005	1.1500e-003	0.0000	3.9202	3.9202	1.1000e-004	0.0000	3.9230
<b>Total</b>	<b>3.0300e-003</b>	<b>0.0295</b>	<b>0.0219</b>	<b>1.0000e-004</b>	<b>5.7000e-003</b>	<b>2.1000e-004</b>	<b>5.9100e-003</b>	<b>1.5600e-003</b>	<b>2.0000e-004</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>9.7405</b>	<b>9.7405</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>9.7523</b>

3.5 Paving - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	tons/yr			tons/yr			Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total						
M T/yr																
Off-Road	9.0400e-003	0.0917	0.0690	1.4000e-004	5.2200e-003	5.2200e-003	5.2200e-003	4.8200e-003	4.8200e-003	4.8200e-003	0.0000	12.0211	12.0211	3.7500e-003	0.0000	12.1145
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>9.0400e-003</b>	<b>0.0917</b>	<b>0.0690</b>	<b>1.4000e-004</b>	<b>5.2200e-003</b>	<b>5.2200e-003</b>	<b>5.2200e-003</b>	<b>4.8200e-003</b>	<b>4.8200e-003</b>	<b>4.8200e-003</b>	<b>0.0000</b>	<b>12.0211</b>	<b>12.0211</b>	<b>3.7500e-003</b>	<b>0.0000</b>	<b>12.1143</b>

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3.5 Paving - 2019

Unmitigated Construction Off-Site

Category	RDG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.8000e-004	3.7900e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9429	0.9429	3.0000e-005	0.0000	0.0436
<b>Total</b>	<b>4.9000e-004</b>	<b>3.8000e-004</b>	<b>3.7900e-003</b>	<b>1.0000e-005</b>	<b>1.0300e-003</b>	<b>1.0000e-005</b>	<b>1.0400e-003</b>	<b>2.7000e-004</b>	<b>1.0000e-005</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>0.9429</b>	<b>0.9429</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.0436</b>

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Off-Road	9.0400e-003	0.0917	0.0890	1.4000e-004	5.2200e-003	5.2200e-003	5.2200e-003	4.8200e-003	4.8200e-003	4.8200e-003	0.0000	12.0211	12.0211	3.7300e-003	0.0000	12.1143
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>9.0400e-003</b>	<b>0.0917</b>	<b>0.0890</b>	<b>1.4000e-004</b>	<b>5.2200e-003</b>	<b>5.2200e-003</b>	<b>5.2200e-003</b>	<b>4.8200e-003</b>	<b>4.8200e-003</b>	<b>4.8200e-003</b>	<b>0.0000</b>	<b>12.0211</b>	<b>12.0211</b>	<b>3.7300e-003</b>	<b>0.0000</b>	<b>12.1143</b>

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3.5 Paving - 2019

Mitigated Construction Off-Site

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.8000e-004	3.7900e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9429	0.9429	3.0000e-005	0.0000	0.9438
<b>Total</b>	<b>4.5000e-004</b>	<b>3.8000e-004</b>	<b>3.7900e-003</b>	<b>1.0000e-005</b>	<b>1.0300e-003</b>	<b>1.0000e-005</b>	<b>1.0400e-003</b>	<b>2.7000e-004</b>	<b>1.0000e-005</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>0.9429</b>	<b>0.9429</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.9436</b>

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Archit Coating	0.4639					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005	1.3500e-003	1.3500e-003	1.3500e-003	1.3500e-003	1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6868
<b>Total</b>	<b>0.4667</b>	<b>0.0193</b>	<b>0.0193</b>	<b>3.0000e-005</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>0.0000</b>	<b>2.6809</b>	<b>2.6809</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>2.6866</b>

Newark Gateway Mixed Use - Alameda County, Annual

**3.6 Architectural Coating - 2019**  
**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
MTH/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	3.6000e-004	2.7000e-004	2.7600e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.5000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.5854	0.6854	2.0000e-005	0.0000	0.5859
<b>Total</b>	<b>3.6000e-004</b>	<b>2.7000e-004</b>	<b>2.7600e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.5854</b>	<b>0.6854</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5859</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
MTH/yr																
Archit. Coating	0.4839					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005	1.3500e-003	1.3500e-003	1.3500e-003	1.3500e-003	1.3500e-003	1.3500e-003	0.0000	2.8909	2.8909	2.3000e-004	0.0000	2.8968
<b>Total</b>	<b>0.4867</b>	<b>0.0193</b>	<b>0.0193</b>	<b>3.0000e-005</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>1.3500e-003</b>	<b>0.0000</b>	<b>2.8909</b>	<b>2.8909</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>2.8966</b>



Newark Gateway Mixed Use - Alameda County, Annual

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	tons/yr			MT/yr									
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Biogenic CO2	Non-Biogenic CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.7000e-004	2.7500e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.5000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.6854	0.6854	2.0000e-005	0.0000	0.0000	0.6855
<b>Total</b>	<b>3.5000e-004</b>	<b>2.7000e-004</b>	<b>2.7500e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.6854</b>	<b>0.6854</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.6855</b>

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

- Increase Diversity
- Improve Walkability Design
- Increase Transit Accessibility
- Improve Pedestrian Network
- Limit Parking Supply

Newark Gateway Mixed Use - Alameda County Annual

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.3405	1.9345	2.7943	7.6900e-003	0.5024	9.2700e-003	0.5117	0.1351	8.7300e-003	0.1438	0.0000	709.3590	709.3630	0.0454	0.0000	710.4992
Unmitigated	0.3994	2.4458	3.3804	0.0128	0.5179	0.0155	0.9334	0.2468	0.0148	0.2814	0.0000	1,178,749.3	1,178,749.3	0.0689	0.0000	1,178,221.0

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Hotel	1,189.90	1,189.90	1,189.90	2,260,728	1,237,483
Supermarket	169.98	169.98	169.98	193,347	105,835
Total	1,359.88	1,359.88	1,359.88	2,454,075	1,343,318

4.3 Trip Type Information

Land Use	Miles						Trip %						Trip Purpose %					
	H-W or C-W	H-S or C-C	H-D or C-NW	H-W or C-W	H-S or C-C	H-D or C-NW	Primary	Diverted	Pass-By	H-W or C-W	H-S or C-C	H-D or C-NW	Primary	Diverted	Pass-By			
Hotel	9.50	7.30	7.30	19.40	61.80	19.00	58	38	4	9.50	7.30	7.30	34	30	36			
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36	9.50	7.30	7.30	34	30	36			

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHH	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022858	0.042795	0.002118	0.002805	0.005589	0.000308	0.000759
Supermarket	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022858	0.042795	0.002118	0.002805	0.005589	0.000308	0.000759

Newark Gateway Mixed Use - Alameda County, Annual

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	201.2020	201.2020	0.0000	0.0000	201.2020
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	220.2030	220.2030	0.0000	0.0000	220.2030
Natural Gas Mitigated	0.0157	0.1424	0.1196	8.5000e-004	0.0108	0.0108	0.0108	0.0109	0.0108	0.0000	154.9715	154.9715	2.9700e-003	2.8400e-003	156.8924	
Natural Gas Unmitigated	0.0228	0.2058	0.1729	1.2900e-003	0.0156	0.0156	0.0156	0.0156	0.0156	0.0000	224.0692	224.0692	4.2900e-003	4.1100e-003	225.4007	

Newark Gateway Mixed Use - Alameda County, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	tons/yr				MT/yr				Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
						Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2						
Hotel	3,888,896 +006	0.0210	0.1908	0.1801	1.1400E-003	0.0145	0.0145	0.0145	0.0145	0.0145	0.0145	0.0000	207,5261	207,5261	3,990,000E-003	3,800,000E-003	208,7584		
Supermarket	310,005	1.6700E-003	0.0152	0.0128	9.0000E-005	1.1500E-003	1.1500E-003	1.1500E-003	1.1500E-003	1.1500E-003	1.1500E-003	0.0000	18,5431	18,5431	3,200,000E-004	3,000,000E-004	16,8414		
<b>Total</b>		<b>0.0226</b>	<b>0.2058</b>	<b>0.1729</b>	<b>1.2300E-003</b>	<b>0.0156</b>	<b>0.0156</b>	<b>0.0156</b>	<b>0.0156</b>	<b>0.0156</b>	<b>0.0156</b>	<b>0.0000</b>	<b>224,0692</b>	<b>224,0692</b>	<b>4,300,000E-003</b>	<b>4,100,000E-003</b>	<b>226,4007</b>		

Mitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	tons/yr				MT/yr				Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
						Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2						
Hotel	2,673,476 +006	0.0144	0.1311	0.1101	7.9000E-004	9.9600E-003	9.9600E-003	9.9600E-003	9.9600E-003	9.9600E-003	9.9600E-003	0.0000	142,8664	142,8664	2,750,000E-003	2,620,000E-003	143,5147		
Supermarket	230,590	1.2400E-003	0.0113	9.4900E-003	7.0000E-005	8.6000E-004	8.6000E-004	8.6000E-004	8.6000E-004	8.6000E-004	8.6000E-004	0.0000	12,3052	12,3052	2,400,000E-004	2,300,000E-004	12,5783		
<b>Total</b>		<b>0.0157</b>	<b>0.1424</b>	<b>0.1196</b>	<b>8.6000E-004</b>	<b>0.0108</b>	<b>0.0108</b>	<b>0.0108</b>	<b>0.0108</b>	<b>0.0108</b>	<b>0.0108</b>	<b>0.0000</b>	<b>154,9715</b>	<b>154,9715</b>	<b>2,970,000E-003</b>	<b>2,850,000E-003</b>	<b>155,8924</b>		

Newark Gateway Mixed Use - Alameda County, Annual

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

Land Use	Electricity Use kWh/yr	Total CO2	MT/yr		
			CH4	N2O	CO2e
Hotel	885768	182,7199	0.0000	0.0000	182,7199
Supermarket	312910	57,4831	0.0000	0.0000	57,4831
<b>Total</b>		<b>220,2030</b>	<b>0.0000</b>	<b>0.0000</b>	<b>220,2030</b>

**Mitigated**

Land Use	Electricity Use kWh/yr	Total CO2	MT/yr		
			CH4	N2O	CO2e
Hotel	791514	145,4050	0.0000	0.0000	145,4050
Supermarket	303732	55,7970	0.0000	0.0000	55,7970
<b>Total</b>		<b>201,2020</b>	<b>0.0000</b>	<b>0.0000</b>	<b>201,2020</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

Newark Gateway Mixed Use - Alameda County, Annual

Category	ROG	NOx	CO	SO2	tons/yr					MT/yr								
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e		
Mitigated	0.5065	1.0000e-005	1.4300e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	2.7600e-003	2.7600e-003	1.0000e-005	0.0000	0.0000	2.9400e-003
Unmitigated	0.5065	1.0000e-005	1.4300e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	2.7600e-003	2.7600e-003	1.0000e-005	0.0000	0.0000	2.9400e-003

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	tons/yr					MT/yr								
					Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e		
Architectural Coating	0.0596				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4467				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.4300e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	2.7600e-003	2.7600e-003	1.0000e-005	0.0000	0.0000	2.9400e-003
<b>Total</b>	<b>0.5065</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.7600e-003</b>	<b>2.7600e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.9400e-003</b>

Newark Gateway Mixed Use - Alameda County, Annual

6.2 Area by SubCategory  
Mitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Biogenic CO2	NBiogenic CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Architectural Coatings	0.0598					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4467					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.5000e-004	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7600e-003	2.7600e-003	1.0000e-005	0.0000	2.9400e-003
<b>Total</b>	<b>0.5065</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.7600e-003</b>	<b>2.7600e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.9400e-003</b>

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Newark Gateway Mixed Use - Alameda County, Annual

Category	Total CO2	CH4	N2O	CO2e
	MTYr			
Mitigated	5,1863	0.1232	2.9100e-003	8,1337
Unmitigated	6,4829	0.1540	3.6400e-003	11,4171

**7.2 Water by Land Use**  
**Unmitigated**

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MTYr			
Hotel	3,70357 0.411506	5,1210	0.1207	2.8500e-003	8,9871
Supermarket	1,02318 0.0816481	1,3620	0.0333	7.8000e-004	2,4300
<b>Total</b>		<b>6,4829</b>	<b>0,1540</b>	<b>3,6400e-003</b>	<b>11,4171</b>



Newark Gateway Mixed Use - Alameda County Annual

7.2 Water by Land Use

Mitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Hotel	2.96284 / 0.329204	4.0968	0.0966	2.2900e-003	7.1897
Supermarket	1.818501 / 0.0258145	1.0896	0.0267	6.3000e-004	1.9440
<b>Total</b>		<b>5.1863</b>	<b>0.1232</b>	<b>2.9100e-003</b>	<b>9.1337</b>

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Newark Gateway Mixed Use - Alameda County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	987797			
Mitigated	6.4323	0.3801	0.0000	15.9357
Unmitigated	25.7291	1.5208	0.0000	63.7428

**8.2 Waste by Land Use**

Unmitigated

Land Use	Waste Disposed Tons	Total CO2	CH4	N2O	CO2e
		WTFYF			
Hotel	79.94	18.2271	0.9590	0.0000	40.2020
Supermarket	48.81	9.5020	0.5516	0.0000	23.5408
<b>Total</b>		<b>26.7291</b>	<b>1.5205</b>	<b>0.0000</b>	<b>63.7428</b>



Newark Gateway Mixed Use - Alameda County, Annual

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# **APPENDIX D**

## **TRAFFIC TECHNICAL MEMORANDUM AND TRANSPORTATION DEMAND MANAGEMENT PLAN**



## DRAFT MEMORANDUM

Date: March 7, 2017  
To: Dave Claycomb, HELIX Environmental Planning, Inc.  
From: Francisco Martin and Lee Reis, Fehr & Peers  
Subject: **Transportation Evaluation of the Newark Gateway Mixed-Use Development Project**

OK17-0159

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This memorandum presents the findings of the transportation evaluation prepared for the Newark Gateway Mixed-Use Development Project in Newark, CA. The Project proposes construction of an 8,300 square foot grocery store and a 146-room hotel on a currently vacant parcel at the southwest corner of the Enterprise Drive/Willow Street intersection. The Project site is part of a larger development area addressed in the *Dumbarton Transit Oriented Development Specific Plan Final Environmental Impact Report (SP EIR)* (Final EIR – July 2011).

The Project's transportation evaluation is divided into two parts:

- 1) A trip generation estimate that confirms that the Project along with all other approved and planned developments in the SP area would generate fewer trips than the land uses assumed in the SP EIR, and
- 2) A parking analysis that determines that the proposed parking supply would not meet City code requirements and would not accommodate the estimated peak parking demand.

The transportation evaluation is summarized below.

### BACKGROUND

The Project site was originally designated for medium/high density residential uses in the SP EIR. An Initial Study/Mitigated Negative Declaration was subsequently prepared for the SHH/FMC site



in 2014, which proposed a 75-unit senior housing facility, 88 condominiums, and a 15,000 foot grocery store. The senior housing facility and condominiums were proposed on the SHH portion of the site, which have since been approved. The 15,000 square foot grocery store was planned for the FMC portion of the site, which is the same as the current Project site; however, the current Project is now proposing a different development as described below.

## PROJECT DESCRIPTION

The 1.38-acre Project site is currently proposing an 8,300 square foot grocery store and a 146-room hotel, with a total of 118 shared parking spaces. The hotel would also provide three meeting rooms, a rooftop restaurant, and lounge. Although the SP EIR does not specifically address hotels within the Dumbarton TOD plan area, hotels are a conditional use within the Form-Based Code (FBC) for the SP area.

## PROJECT TRIP GENERATION

Trip generation is the process of estimating the number of vehicles that would likely access the Project. The trip generation for both the proposed Project and the SP EIR were estimated using the methods, formulas, and rates presented by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, 9<sup>th</sup> Edition* and *Trip Generation Manual, 8<sup>th</sup> Edition*, respectively. Consistent with the SP EIR, this analysis assumes that 80 percent of the traffic generated by the grocery store component of the Project would remain internal to the SP area. Internalization reductions were not applied to the proposed hotel since it's expected that the trips generated by the hotel would start or end at a location external to the SP area.

The proposed Project would be located less than a half-mile from the future Dumbarton Rail Transit Station. Considering, the proximity of the project to the future Dumbarton Rail Transit Station, it would be reasonable to assume that some Project trips would shift to transit. However, the future of the Dumbarton Rail line is uncertain due to funding constraints. Therefore, as a reasonable worst-case scenario, no transit reductions were assumed in the trip generation estimates, which is consistent with the trip generation estimates in the SP EIR. **Table 1** presents the trip generation summary for the Project. The Project is estimated to generate 1,360 daily, 90 AM peak hour, and 103 PM peak hour external vehicle trips.

**TABLE 1  
 NEWARK GATEWAY PROJECT TRIP GENERATION SUMMARY**

Land Use	Units <sup>1</sup>	CUE Code	Daily	AM Peak Hour		PM Peak Hour			
				In	Out	In	Out		
<b>New Uses</b>									
Hotel	146 Rooms	310 <sup>2</sup>	1,190	42	36	52	37	89	89
Grocery Store	8.3 KSF	850 <sup>3</sup>	850	31	28	36	33	69	69
<b>Total</b>			<b>2,040</b>	<b>73</b>	<b>64</b>	<b>88</b>	<b>70</b>	<b>158</b>	<b>158</b>
<b>Reductions</b>									
Internalization <sup>4</sup>			-680	-25	-22	-29	-26	-55	-55
<b>Net External Project Trips</b>			<b>1,360</b>	<b>48</b>	<b>42</b>	<b>59</b>	<b>44</b>	<b>103</b>	<b>103</b>

**Notes:**

1. KSF = 1,000 square feet.
2. ITE Trip Generation (9th Edition) land use category 312 (Hotel):  
 Daily: T = 8.17 \* (X)  
 AM Peak Hour: In (T) = 0.85 \* (X) - 0.12 (54% in, 46% out)  
 PM Peak Hour: T = 0.61 \* (X) (58% in, 42% out)
3. ITE Trip Generation (9th Edition) land use category 850 (Supermarket):  
 Daily: T = 102.24 \* (X)  
 AM Peak Hour: T = 7.07 \* (X) (52% in, 48% out)  
 PM Peak Hour: T = 8.57 \* (X) (52% in, 48% out)
4. As in the SP ER, the following is assumed: 80 percent of the traffic generated by the grocery store land use would be internal to the SP area.  
 Source: ITE Trip Generation Manual, 9th Edition; Fehr and Peers, 2017.





## CUMULATIVE SPECIFIC PLAN AREA TRIP GENERATION

The City of Newark has approved or is reviewing the following developments within the SP area:

- Trumark site – 244 single-family units
- Torian site – 547 townhomes/condos
- SHH site – 88 condos and 75 senior housing units
- Gateway Station West – 321 single-family units and 268 apartments

**Table 2** summarizes the trip generation for all approved and pending developments within the SP area. Consistent with the SP EIR, this analysis assumes that nine percent of the vehicle trips generated by the approved and pending developments would be internal to the SP area. The proposed Project combined with all other approved and pending projects in the SP area would generate about 10,810 daily, 795 AM peak hour, and 985 PM peak hour external vehicle trips. This corresponds to about 76 percent of daily, 68 percent of the AM peak hour and 75 percent of PM peak hour trips assumed in the SP EIR. Considering that the trip generation of the Project combined with all other approved and pending projects in the SP area is less than that of the SP EIR, we do not anticipate that the proposed Project would cause off-site transportation impacts that were not addressed in the SP EIR.



**TABLE 2  
 SPECIFIC PLAN AREA TRIP GENERATION SUMMARY**

Land Use	Units <sup>1</sup>	ITE Code	Daily	AM Peak Hour	PM Peak Hour
<b>Approved/Pending Developments in SP Area Excluding Newark Gateway Project</b>					
Single-Family Homes	565 DU	210 <sup>2</sup>	5,640	429	565
Apartments	268 DU	220 <sup>3</sup>	1,710	134	158
Townhomes/Condos	635 DU	230 <sup>4</sup>	2,790	184	222
Senior Housing	75 DU	252 <sup>5</sup>	750	28	24
	Total External and Internal Trips		10,390	775	969
	Internalization Reductions (-9%) <sup>6</sup>		-940	-70	-87
	<b>Total External Trips</b>		<b>9,450</b>	<b>705</b>	<b>882</b>
<b>Newark Gateway Project</b>					
	Total External Trips		1,360	90	103
	<b>Total External Trips For Approved/Pending Projects Including Newark Gateway Project</b>		<b>10,810</b>	<b>795</b>	<b>985</b>
<b>SP EIR Trip Generation Assumptions</b>					
	Total External Trips <sup>7</sup>		14,131	1,165	1,320
	<b>Percentage of Approved/Pending Projects External Trips to SP EIR Total External Trips</b>		<b>76%</b>	<b>68%</b>	<b>75%</b>

Notes:

1. XSF = 1,000 square feet.
2. ITE Trip Generation (8th Edition) land use category 210 (Single Family Housing):  
 Daily:  $T = 9.98 * (X)$ ; AM Peak Hour:  $T = 0.76 * (X)$ ; PM Peak Hour:  $T = 1.00 * (X)$
3. ITE Trip Generation (8th Edition) land use category 220 (Apartments):  
 Daily:  $T = 6.35 * (X)$ ; AM Peak Hour:  $T = 0.50 * (X)$ ; PM Peak Hour:  $T = 0.59 * (X)$
4. ITE Trip Generation (8th Edition) land use category 230 (Condominium/Townhouse):  
 Daily:  $T = 4.39 * (X)$ ; AM Peak Hour:  $T = 0.29 * (X)$ ; PM Peak Hour:  $T = 0.35 * (X)$
5. ITE Trip Generation (9th Edition) land use category 252 (Senior Adult Housing - Attached):  
 Daily:  $T = 2.98 * (X) + 21.05$ ; AM Peak Hour:  $\ln(T) = 0.84 * \ln(X) - 0.30$   
 PM Peak Hour:  $\ln(T) = 0.99 * \ln(X) - 1.11$
6. As in the SP EIR, the following is assumed: 9 percent of traffic generated by residential uses would be internal to the SP area.
7. Based on Table 4.14-6 on page 4.14-37 of the *Dumbarton TOD Specific Plan Draft EIR* (RBF, May 2011).  
 Source: ITE Trip Generation Manual, 8th and 9th Editions; Fair and Peers, 2017.



## PARKING ANALYSIS

Fehr & Peers conducted an analysis to determine the amount of parking required for the site uses, 146 hotel rooms and 8,300 square-feet of grocery store. City of Newark Municipal Code establishes parking requirements, but these may not accurately reflect demand, especially for mixed-use developments. This section includes the parking required by City code and the estimated parking demand.

### PROJECT PARKING SUPPLY

The Project proposes 118 off-street parking spaces, which would be shared between the grocery store and hotel. A total of 31 parking spaces are proposed on the ground floor parking lot, and 87 spaces are proposed in the second floor parking structure. On-street parking on Enterprise Drive and Willow Street would be prohibited in the vicinity of the Project site, therefore all grocery store patrons/employees and hotel guests/employees are expected to park in the 118 off-street parking spaces proposed by the Project.

### PARKING REQUIRED PER CITY CODE

The City of Newark Municipal Code defines general parking regulations by establishing basic ratios for required vehicle parking spaces for various lands uses. **Table 3** summarizes the minimum off-street parking requirement for the proposed project, using the code requirements for hotel and general retail uses. As shown in Table 3, City code requires 181 off-street parking spaces while the project proposes 118 off-street spaces, therefore the proposed off-street supply would be 63 spaces less than required by the City code. Overall, the project is proposing about 35 percent fewer parking spaces than required by City code.



**TABLE 3  
 CITY OF NEWARK MUNICIPAL CODE PARKING REQUIREMENTS**

Land Use	Size	Parking Code Requirement		Total Spaces	Parking Supply	Parking Deficit
		Rate				
Hotel	146 Rooms	1 per room-	146 spaces			
		1 per employee	10 spaces			
Grocery Store	8.3 KSF <sup>2</sup>	3 per KSF	25 spaces		<b>118 spaces</b>	<b>-63 spaces</b>
<b>Total</b>				<b>181 spaces</b>		

Notes:  
 1. Assumes average of two beds per room; requirement is one parking space for each guest room; or for each two beds, whichever is greater.  
 2. KSF = Thousand Square Feet.  
 Sources: City of Newark Municipal Code, Chapter 17.37 – Form Based Codes and Chapter 17.69 – Off-Street Parking and Loading.



### **Bicycle Parking Requirements**

The SP includes policies that encourage the provision of secure bicycle parking racks, including Street Network Policy C-13 and Bicycle Circulation Policy C-28. Policy C-13 recommends bicycle parking as part of a transportation demand management program while Policy C-28 encourages the adoption of minimum bicycle parking requirements for both residential and commercial projects. The SP EIR also recommends secure bicycle parking of at least one space per 20 vehicle spaces within retail components of the SP area. According to SP policies, the site should provide a minimum of six bicycle parking spaces, which corresponds to one space per 20 vehicle spaces based on the current plans. The Project proposes 10 bicycle parking spaces, which is adequate for the site.

### **PARKING DEMAND EVALUATION**

Weekday and weekend peak parking demand for the proposed Project was estimated using ITE *Parking Generation, 4<sup>th</sup> Edition*, and Urban Land Institute (ULI) *Shared Parking, 2nd Edition*. **Table 4** presents peak parking demand on a typical weekday and Saturday for the proposed Project. The parking demand for the hotel assumes full occupancy of the hotel. Since the ITE *Parking Generation* rates are primarily based on data collected at suburban single-use, freestanding sites, we adjusted the ITE-based parking demand by applying the U.S. Environmental Protection Agency (EPA)'s Mixed-Use Trip Generation (MXD) tool<sup>1</sup>. It is estimated that about four percent of the proposed project trips would be by non-auto travel modes. Thus, the parking demand for the project is estimated to be 155 weekday and 200 weekend spaces, assuming that each use would have its own designated parking supply.

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<sup>1</sup> Trip Generation Tool for Mixed-Use Developments (2017). [www.epa.gov/dced/mxd\\_tripgeneration.html](http://www.epa.gov/dced/mxd_tripgeneration.html). Travel survey data was gathered from 239 mixed-use developments (MXDs) in six major metropolitan regions, and correlated with the characteristics of the sites and their surroundings. The findings indicate that the mix of employment and residents, overall size and density of development, internal connectivity for walking or driving among land uses, availability of transit service, and surrounding trip destinations within the immediate area outside the Project site all affect the external traffic generated and parking demand.

**TABLE 4  
 NEWARK GATEWAY PROJECT PARKING DEMAND EVALUATION**

Land Use	Size	Parking Supply	Weekday Automobile Parking Demand			Weekend Automobile Parking Demand		
			Demand Rate	Total Demand	Parking Deficit	Demand Rate	Total Demand	Parking Deficit
Hotel	146 Rooms		0.89 per OR <sup>3</sup>	130 spaces		1.2 per OR <sup>3</sup>	175 spaces	
Grocery Store	8.3 KSF	118 spaces	3.78 per KSF	31 spaces	--	3.92 per KSF	33 spaces	--
Subtotal		118 spaces	161 Spaces	-43 spaces	208 Spaces	-90 spaces		
Walk/Bike Reduction <sup>5</sup>		--	-6 spaces	--	-8 spaces	--		
<b>Total Without Shared Parking</b>		<b>118 spaces</b>	<b>155 spaces</b>	<b>-37 spaces</b>	<b>200 spaces</b>	<b>-82 spaces</b>		
Shared Parking Reduction <sup>6</sup>		--	-28 spaces	--	-28 spaces	--		
<b>Total Assuming Shared Parking</b>		<b>118 spaces</b>	<b>127 spaces</b>	<b>-9 spaces</b>	<b>172 spaces</b>	<b>-54 spaces</b>		
Transit Reduction <sup>5</sup>		--	-6 spaces	--	-9 spaces	--		
<b>Total Assuming Shared Parking and Transit</b>		<b>118 spaces</b>	<b>121 spaces</b>	<b>-3 spaces</b>	<b>163 spaces</b>	<b>-45 spaces</b>		

Notes:  
 1. Based on ITE Parking Generation, Fourth Edition: suburban, weekday, average demand (Hotel) - ITE 310, 100% occupancy; Grocery Store - ITE 850).  
 2. Based on ITE Parking Generation, Fourth Edition: suburban, Saturday, average demand (Hotel) - ITE 310, 100% occupancy; Grocery Store - ITE 850).  
 3. OR = Occupied Rooms.  
 4. KSF = Thousand Square Feet.  
 5. Reductions assumed: 4% for walk/bike and 5% for transit.  
 6. Shared parking reductions assumed due to time of day adjustments: 18% for weekdays and 14% for weekends.  
 Source: ITE Parking Generation, Fourth Edition and UU Shared Parking, Second Edition.



Shared Parking is defined as the ability to share parking spaces due to variations in the accumulation of vehicles by hour, by day, or by season at individual land uses. According to the ULI shared parking methodology, parking demand for a grocery store generally peaks during the day and parking demand for a hotel peaks at night. Assuming that the project would not provide designated spaces for either use, sharing parking between the grocery store and hotel would reduce the overall parking supply for the project by about 18 percent for weekdays and 14 percent for weekends.

Accounting for shared parking, the Project is expected to generate a parking demand of 127 spaces during a typical weekday and 172 spaces during a typical weekend; which would result in an off-street parking deficit of nine spaces on weekdays and 54 spaces on weekends.

Construction of the Dumbarton Rail Transit Station can potentially reduce peak parking demand by about five percent. As shown in Table 4, the project is expected to generate a peak parking demand of 121 spaces during a typical weekday and 163 spaces during a typical weekend accounting for shared parking and completion of the Dumbarton Rail Transit Station; which would result in an off-street parking deficit of three spaces on weekdays and 45 spaces on weekends.

In conclusion, the total off-street parking supply proposed by the Project is less than both the City code requirement and the estimated peak weekday and weekend parking demand. Parking demand for the Project is expected to be highest on weekends. To minimize potential parking impacts, Fehr & Peers recommends the following:

- Increase proposed off-street parking supply by 54 spaces to meet the estimated peak parking demand
- Implement valet parking during peak parking demand periods
- Develop and implement a Transportation Demand Management (TDM) Plan for the Project to reduce the parking demand by incentivizing people to access the Project site via walking, bicycling or transit

Please contact Francisco Martin if you have any questions or comments on the information presented in this memorandum.



HEXAGON TRANSPORTATION CONSULTANTS, INC.



# Newark Gateway Mixed-Use Development



## Transportation Demand Management (TDM) Plan

Prepared for:

**Cord Associates**

April 7, 2017



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# 1.

## Introduction

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Hexagon Transportation Consultants, Inc. has prepared this transportation demand management (TDM) plan for the proposed mixed-use development at the southwest corner of the Willow Street and Enterprise Drive intersection in Newark, California (see Figure 1). The project proposes to construct an 8,300 square-foot grocery store and a 146-room hotel on a 1.38-acre vacant site. Figure 2 shows the proposed site plan. Access to the project site will be provided via driveways along Willow Street and Enterprise Drive.

The project proposes to provide 118 parking spaces when 181 spaces are required in the Newark Code or Ordinances. For this reason, a TDM plan is required to identify TDM measures that can be implemented by the project to reduce parking demand.

This TDM plan includes free shuttle services, an on-site car-share program, an on-site bicycle share program, a transit subsidy program for employees, financial incentives for employees who bike or walk to work, and an on-site TDM coordinator.

### Scope of TDM Study

Transportation demand management (TDM) is a combination of services, incentives, facilities, and actions that reduce single-occupant vehicle (SOV) trips to help relieve traffic congestion, parking demand, and air pollution problems. The purpose of TDM is to (1) reduce the amount of traffic generated by new development; (2) promote more efficient utilization of existing transportation facilities and ensure that new development is designed to maximize the potential for alternative transportation usage; (3) reduce the parking demand generated by new development and allow for a reduction in parking supply; and (4) establish an ongoing monitoring and enforcement program to guarantee the desired trip and parking reductions are achieved.

The main goal of the proposed TDM plan for the mixed-use project is to achieve a reduction in parking demand through a combination of appropriate measures to promote alternative forms of transportation. As outlined in Section 17.76.070 of the Newark Code of Ordinances, the planning commission may grant a variance to the required number of off-street parking spaces for a project if (1) the project generated traffic will not require strict or literal interpretation and enforcement of off-street parking requirements; (2) the parking reduction will not result in parking on public streets that would adversely affect the traffic flow on surrounding streets; and (3) the parking reduction will not create a safety hazard.



**LEGEND**



-  = Site Location
-  = City of Newark

Figure 1  
Project Location



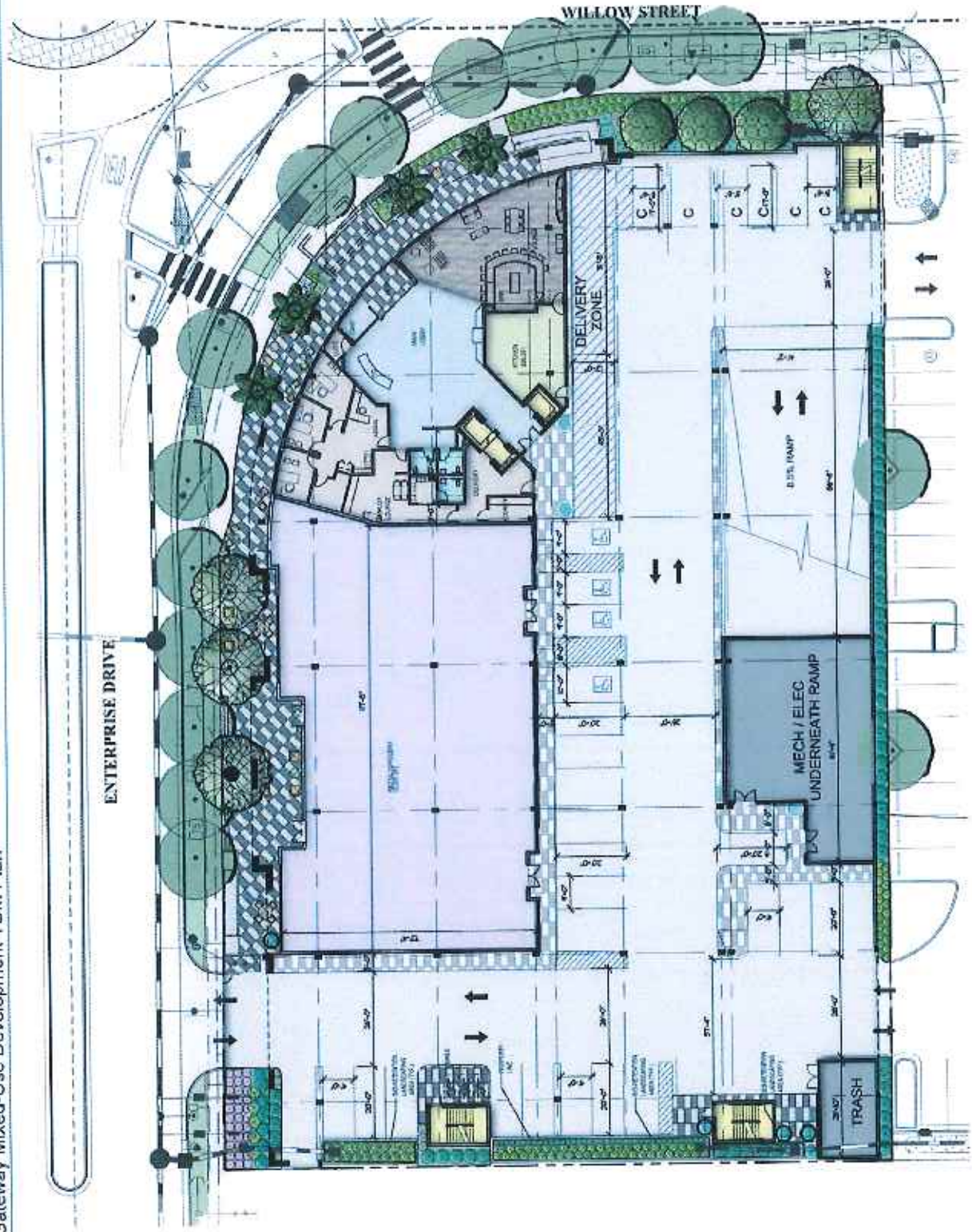


Figure 2  
Proposed Site Plan

## 2. Existing Transportation Facilities and Services

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Transportation facilities and services that support sustainable modes of transportation include commuter rail, buses and shuttle buses, bicycle facilities, and pedestrian facilities. This chapter describes existing facilities and services near the project site that will support the TDM measures contained in this plan.

### Transit Services

#### AC Transit Bus Service

Existing transit service in Newark is provided by Alameda-Contra Costa (AC) Transit. There is currently no scheduled bus route serving the project area. Instead, AC Transit provides a Flex bus service for customers in Newark to get to and from the Union City BART station upon request. Pick up and drop off locations are at selected bus stops within the service zone, including the Union City BART station. Newark Flex departs the Union City BART station every hour at the :10 and the :40 minute mark from 6:00 AM to 8:00 PM between Monday and Friday. The nearest bus stops to the project are located at the Enterprise Drive and Wells Avenue intersection, about 1,300 feet east of the project site.

#### Planned Transit Improvements

The project site is located in the Dumbarton Transit Oriented Development (TOD) Specific Plan area. A future Dumbarton transit station is to be located on Enterprise Drive near the project site. The transit station would provide commuter rail service from the Union City BART station across the Dumbarton rail bridge to Menlo Park, and connect riders in east bay cities to Caltrain on the Peninsula. There is no identified schedule for the completion of the commuter rail service.

#### Pedestrian Facilities

Pedestrian facilities consist of sidewalks and crosswalks. Because most of the land in the Specific Plan area has not been developed, there are minimal pedestrian connections and amenities in the Specific Plan area. Sidewalks exist along the north side of Enterprise Drive west of Willow Street. There is no sidewalk on Willow Street or Enterprise Drive along the project frontage. There is no crosswalk at the Willow Street/Enterprise Drive intersection.

The Specific Plan area, when built out, would include a mix of residential, office, retail, public/quasi-public, and park and open space uses developed in close proximity to planned regional public transit facilities. Under the plan, streets in the area would accommodate all users including drivers, bicyclists, pedestrians, persons with disabilities, and transit users. Therefore, it is expected that as the area is

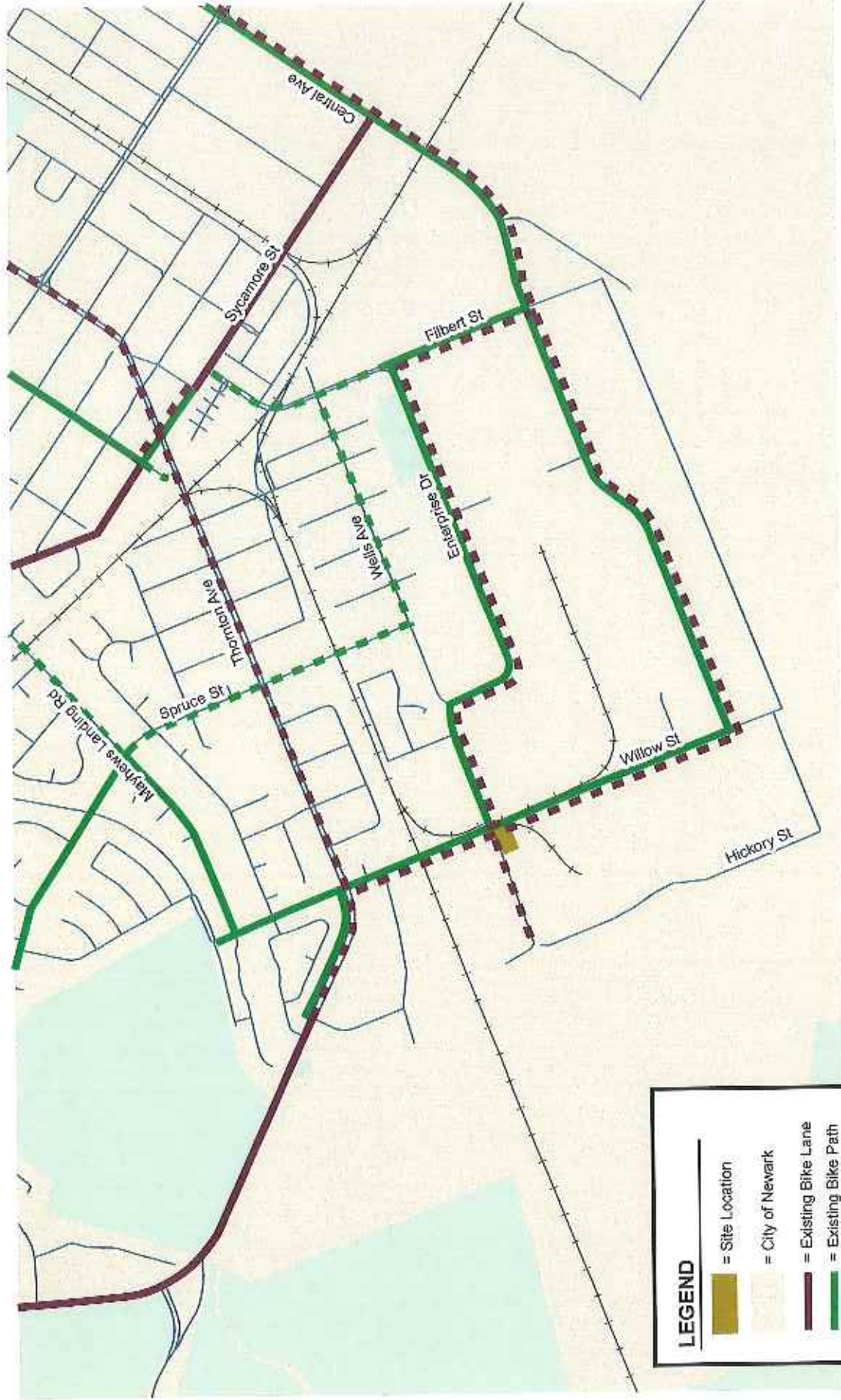
developed, pedestrian facilities, including sidewalks and crosswalks, would be installed along the existing streets (Enterprise Drive, Hickory Street, Central Avenue, Willow Street) and new neighborhood streets within the Specific Plan area.

## **Bicycle Facilities**

Bicycle facilities include bike paths (Class I), bike lanes (Class II) and bike routes (Class III). Bike paths are paved multi-use trails that are separated from roadways and are shared between pedestrians and bicyclists. Bike lanes are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes are existing streets that accommodate bicycles but are not separate from the existing travel lanes. Routes are typically designated only with signs.

In the project vicinity, bike lanes exist along Thornton Avenue between the northern City limit and Hickory Street. Bike routes exist along Thornton Avenue between Hickory Street and Willow Street, along Willow Street from Cedar Boulevard to Central Avenue, and along Enterprise Drive between Willow Street and Filbert Street (see Figure 3)

According to the 2017 Draft Pedestrian and Bicycle Master Plan, bike lanes are proposed on Thornton Avenue, Enterprise Drive, and Willow Street in the project vicinity.



**LEGEND**

- = Site Location
- = City of Newark
- = Existing Bike Lane
- = Existing Bike Path
- = Proposed Bike Lane
- = Proposed Bike Path

Figure 3  
Existing and Proposed Bicycle Facilities



### 3. Parking

The project would construct an 8,300 square-foot grocery store and a 146-room hotel on a 1.38-acre vacant site. The project proposes to provide 118 parking spaces shared between the retail and hotel uses.

#### City of Newark Required Parking

Vehicular parking requirements for the project are specified in the City Code Section 17.37.100 for the retail use and in the City Code Section 17.60.090 for the hotel use. Table 1 summarizes the required parking spaces for each individual use. The project is required to provide a total of 181 vehicular parking spaces, with each proposed use treated separately.

**Table 1**  
Required Parking Spaces

Land Use	Size	Parking Requirement	Required Spaces
Grocery Store	8,300 Sq. ft.	3 spaces per 1,000 sq. ft. <sup>1</sup>	25
Hotel	146 rooms	1 space per room or each two beds, whichever is greater, plus 1 space per employee <sup>2</sup>	146
<b>Total Required Spaces with each use treated separately</b>			<b>181</b>
<u>Notes:</u>			
1. City Code Section 17.37.100.			
2. City Code Section 17.60.090. Assumes average of two beds per room and 10 employees.			

#### Project Proposed Parking

As stated above, the project is required to provide a total of 181 vehicle parking spaces based on the City's parking requirements. The project proposes to provide 118 parking spaces on site, which is less than the City's parking requirement. The project requests a reduction in the parking requirement for the retail and hotel uses based on shared parking and based on the implementation of a TDM plan.



A shared parking analysis was performed to evaluate the overall parking demand with parking spaces shared among retail and hotel uses without any TDM reductions (see Table 2). The parking demands for the retail and hotel uses throughout the day were calculated based on the time-of-day trend data published in the Urban Land Institute (ULI) Shared Parking report. The results show that, without a TDM reduction, the maximum parking demand would be 154 spaces, which would occur at 11 PM.

**Table 2**  
**Shared Parking without a TDM Reduction**

Hour of Day	Retail		Hotel Guest		Hotel Employee		Total	
	Wkdy	Wknd	Wkdy	Wknd	Wkdy	Wknd	Wkdy	Wknd
6 a.m.	1	1	139	139	1	1	140	140
7 a.m.	2	2	131	131	3	3	136	136
8 a.m.	5	4	117	117	9	9	131	130
9 a.m.	11	10	102	102	9	9	122	121
10 a.m.	17	14	88	88	10	10	115	112
11 a.m.	22	18	88	88	10	10	119	115
Noon	24	21	80	80	10	10	114	111
1 p.m.	25	23	80	80	10	10	115	113
2 p.m.	24	25	88	88	10	10	122	123
3 p.m.	23	25	88	88	10	10	121	123
4 p.m.	23	24	95	95	9	9	127	128
5 p.m.	24	23	102	102	7	8	133	132
6 p.m.	24	20	110	110	4	6	137	136
7 p.m.	24	19	110	110	2	6	135	134
8 p.m.	21	17	117	117	2	6	139	139
9 p.m.	14	13	124	124	2	6	140	143
10 p.m.	8	9	139	139	2	5	149	152
11 p.m.	3	4	146	146	1	5	150	154
Midnight	0	0	146	146	1	3	147	149
<b>Parking Demand by Each Use</b>							<b>Max. Demand</b>	
	25	25	146	146	10	10	150	154

Time of Day parking rates based on Urban Land Institute (ULI) *Shared Parking, 2nd Edition, 2005*.

The shared parking analysis indicates that the peak parking demand would happen from 9 PM to 6 AM, when the parking demand for the retail use and hotel employees would be extremely low. The parking demand for hotel guests would peak during this midnight period. Therefore, the TDM plan focus on the hotel guests. The TDM plan can also apply to the hotel employees. However, because the parking demand for the hotel employees peaks during the midday, the parking reduction from the hotel employees would not reduce the peak parking demand at night. In order to reduce the parking demand to match the provision of 118 parking spaces on site, it will be necessary for the TDM Plan to reduce the hotel guest parking by about 25 percent (see Table 3).

**Table 3**  
**Shared Parking with a TDM Reduction**

Hour of Day	Retail		Hotel Guest <sup>1</sup>		Hotel Employee		Total	
	Wkdy	Wknd	Wkdy	Wknd	Wkdy	Wknd	Wkdy	Wknd
6 a.m.	1	1	105	105	1	1	106	106
7 a.m.	2	2	99	99	3	3	104	104
8 a.m.	5	4	88	88	9	9	102	101
9 a.m.	11	10	77	77	9	9	97	96
10 a.m.	17	14	66	66	10	10	93	90
11 a.m.	22	18	66	66	10	10	98	94
Noon	24	21	61	61	10	10	95	92
1 p.m.	25	23	61	61	10	10	96	94
2 p.m.	24	25	66	66	10	10	100	101
3 p.m.	23	25	66	66	10	10	99	101
4 p.m.	23	24	72	72	9	9	104	105
5 p.m.	24	23	77	77	7	8	108	107
6 p.m.	24	20	83	83	4	6	110	109
7 p.m.	24	19	83	83	2	6	108	107
8 p.m.	21	17	88	88	2	6	111	110
9 p.m.	14	13	94	94	2	6	109	112
10 p.m.	8	9	105	105	2	5	<b>115</b>	<b>118</b>
11 p.m.	3	4	110	110	1	5	114	118
Midnight	0	0	110	110	1	3	111	113
<b>Parking Demand by Each Use</b>							<b>Max. Demand</b>	
	<b>25</b>	<b>25</b>	<b>110</b>	<b>110</b>	<b>10</b>	<b>10</b>	<b>115</b>	<b>118</b>

Time of Day parking rates based on Urban Land Institute (ULI) *Shared Parking, 2nd Edition, 2005*.

1. A 25% TDM reduction was applied to the required hotel guest parking spaces, which results in a reduction of 36 spaces.

## 4. TDM Plan

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This chapter describes the TDM plan for the project, which includes TDM measures developed to meet the 25 percent parking reduction for hotel guests and an ongoing monitoring and enforcement program to guarantee the desired parking reduction is achieved.

### Proposed TDM Measures

The TDM measures to be implemented for the proposed hotel include design features, programs, and services that promote sustainable modes of transportation and reduce the vehicle traffic and parking demand that would be generated by the project. Such measures encourage use of transit and shuttle services, biking, and walking. For the proposed project, these include the following:

#### Loading Zone

The project will include a 96-foot loading/delivery zone in the parking garage next to the hotel entrance. This design would facilitate the use of taxis and rideshare services (e.g., Uber, Lyft, and Wingz) for hotel guests to access the site without cars. With the option of accessing the hotel through these ridesharing services and without a car, the need for a parking space would be reduced.

#### Bicycle Parking

The Dumbarton TOD Specific Plan includes policies that encourage the provision of bicycle parking spaces. Policy C-13 recommends bicycle parking as part of a transportation demand management program while Policy C-28 encourages the adoption of minimum bicycle parking requirements for both residential and commercial projects. The Specific Plan EIR also recommends secure bicycle parking of at least one space per 20 vehicle spaces within retail components of the Specific Plan area. According to SP policies, the site should provide a minimum of six bicycle parking spaces, based on the 118 provide vehicle parking spaces and one bicycle space per 20 vehicle spaces. The project proposes 10 bicycle parking spaces for retail employees, hotel employees, and hotel guests, which is adequate for the site.

#### Free Shuttle Services for Guests and Employees

The proposed hotel will offer free shuttles to guests and employees. The shuttle destinations would be determined based on guest preferences. It is initially thought that shuttles would serve Newark, Union City, northern Fremont, and the San Jose International Airport. Since the proposed project is a hotel, a portion of the guests would likely be traveling through the airport. With the option of using the free

shuttle, the need for a car and a parking space would be reduced. San Jose International Airport is approximately 20 miles driving distance from the proposed project.

The free shuttles will also be offered to the hotel employees between the hotel and major bus stops/transit stations within the service area.

### **On-Site Car-Share Program for Guests**

The proposed hotel will provide on-site access to a car-sharing service such as Zipcars for hotel guests. Vehicles will be located on-site allowing hotel guests to come and go at their convenience. Vehicles can be reserved prior to visiting the hotel.

### **On-Site Bicycle Share Program for Guests**

The proposed hotel will provide on-site bicycles for hotel guests to use. The bicycles will be stored in a secured common space that can be checked out by guests. Inclusion of a bike share program would likely reduce the need for guests to use a car.

### **Employee Subsidized or Free Transit Passes**

The proposed hotel will offer subsidies or free transit passes (AC Transit, ACE, or BART) for their employees. There are a number of ways to structure a financial incentive for transit. The hotel can cover the total monthly cost of transit for those employees who take transit through a pre-tax benefit, or purchase transit passes themselves and distribute them to employees.

### **Employee Financial Incentives for Biking or Walking to Work**

The project will provide the hotel employees with financial incentives to utilize carpooling, biking, or walking when commuting to and from the project site. Offering financial incentives can have a measurable impact on encouraging employees to try modes other than driving alone to work. Daily, weekly, or monthly financial incentives could be offered to those employees who use a bike, carpooling, or walking as their primary mode of travel to work.

### **On-Site TDM Coordinator and Services**

The proposed hotel will provide an on-site TDM coordinator, who will be responsible for implementing and managing the TDM plan. The TDM coordinator will be a point of contact for guests and employees should TDM-related questions arise, and will be responsible for ensuring that guests are aware of all transportation options and how to fully utilize the TDM plan. The TDM coordinator will provide the following services and functions to ensure the TDM plan runs smoothly:

- Provide guests information at the time of check-in. The process will include information about public transit services, ridesharing services (e.g., Uber, Lyft, and Wingz), bicycle maps, the on-site bicycle-share program, the on-site car-sharing program, and the guest shuttle.
- Manage the on-site bicycle-share program to ensure the bicycles remain in good condition.
- Manage the on-site car-share program to ensure the vehicles are used in the manner intended by the car-sharing service.
- Provide information to employees about subsidized transit passes and the financial incentive programs for employees who bike or walk to work.
- Conduct parking surveys annually to track actual parking demand and determine whether additional TDM measures, or another parking solution, is needed.

## TDM Implementation and Monitoring

As previously stated, the primary purpose of the TDM plan is to reduce the parking demand from the hotel guests by 25 percent. Monitoring will be necessary to ensure that the TDM measures are effective and continue to be successfully implemented.

The future hotel operator will be responsible for ensuring that the TDM measures are implemented.

The TDM plan will need to be re-evaluated annually for the life of the project. An annual parking count and TDM report should be prepared by an independent consultant and reported to the City. The report will include findings of the parking counts and effectiveness of the TDM measures offered to guests and employees. If it is determined that the 25 percent parking reduction is not being achieved (i.e., the on-site parking garage reaches full capacity), additional TDM measures would need to be introduced to ensure that the parking demand is being addressed by the project without the burden being placed on outside entities.

## Conclusions

The TDM measures to be implemented by the project include planning and design measures related to the attributes of the site location, the site design, and on-site amenities. Such measures encourage use of transit and shuttle services, biking, and walking. The TDM plan includes the following measures:

- Passenger loading zone
- Bicycle parking spaces
- Free shuttle services for guests and employees
- On-site car share program for guests
- On-site bicycle share program for guests
- Employee subsidized or free transit passes
- Employee financial incentives for bike or walk to work
- On-site TDM coordinator and services