

Estrella Substation and Paso Robles Area Reinforcement Project - San Luis Obispo County, Annual

3.25 230-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	2.0000e-004	3.1500e-003	6.4500e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.8711	0.8711	2.8000e-004	0.0000	0.8782
Total	2.0000e-004	3.1500e-003	6.4500e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.8711	0.8711	2.8000e-004	0.0000	0.8782

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	7.0000e-005	2.0100e-003	6.3000e-004	1.0000e-005	2.1000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.7412	0.7412	3.0000e-005	0.0000	0.7420
Worker	1.8000e-004	1.4000e-004	1.2700e-003	0.0000	4.4000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3358	0.3358	1.0000e-005	0.0000	0.3360
Total	2.5000e-004	2.1500e-003	1.9000e-003	1.0000e-005	6.5000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	1.0770	1.0770	4.0000e-005	0.0000	1.0780

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Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	2.0000e-004	3.1500e-003	6.4500e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.8711	0.8711	2.8000e-004	0.0000	0.8782
Total	2.0000e-004	3.1500e-003	6.4500e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.8711	0.8711	2.8000e-004	0.0000	0.8782

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	7.0000e-005	2.0100e-003	6.3000e-004	1.0000e-005	2.1000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.7412	0.7412	3.0000e-005	0.0000	0.7420
Worker	1.8000e-004	1.4000e-004	1.2700e-003	0.0000	4.4000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3358	0.3358	1.0000e-005	0.0000	0.3360
Total	2.5000e-004	2.1500e-003	1.9000e-003	1.0000e-005	6.5000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	1.0770	1.0770	4.0000e-005	0.0000	1.0780

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3.26 230-kV Substation Testing and Commissioning - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	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
Total	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

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.4500e-003	0.0436	0.0138	1.7000e-004	4.5900e-003	1.0000e-004	4.6900e-003	1.3300e-003	1.0000e-004	1.4200e-003	0.0000	16.0596	16.0596	6.6000e-004	0.0000	16.0761
Worker	4.1000e-004	3.0000e-004	2.8400e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.6946	0.6946	2.0000e-005	0.0000	0.6951
Total	1.8600e-003	0.0439	0.0166	1.8000e-004	5.5000e-003	1.1000e-004	5.6000e-003	1.5700e-003	1.1000e-004	1.6700e-003	0.0000	16.7542	16.7542	6.8000e-004	0.0000	16.7713

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3.26 230-kV Substation Testing and Commissioning - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	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
Total	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

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.4500e-003	0.0436	0.0138	1.7000e-004	4.5900e-003	1.0000e-004	4.6900e-003	1.3300e-003	1.0000e-004	1.4200e-003	0.0000	16.0596	16.0596	6.6000e-004	0.0000	16.0761
Worker	4.1000e-004	3.0000e-004	2.8400e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.6946	0.6946	2.0000e-005	0.0000	0.6951
Total	1.8600e-003	0.0439	0.0166	1.8000e-004	5.5000e-003	1.1000e-004	5.6000e-003	1.5700e-003	1.1000e-004	1.6700e-003	0.0000	16.7542	16.7542	6.8000e-004	0.0000	16.7713

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3.27 70-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	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
Total	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

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.0000e-004	3.0200e-003	9.5000e-004	1.0000e-005	3.2000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.1118	1.1118	5.0000e-005	0.0000	1.1130
Worker	2.4000e-004	1.8000e-004	1.6900e-003	0.0000	5.4000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130
Total	3.4000e-004	3.2000e-003	2.6400e-003	1.0000e-005	8.6000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.5000e-004	0.0000	1.5245	1.5245	6.0000e-005	0.0000	1.5259

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3.27 70-kV Substation Cable Installation and Termination - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	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
Total	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

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.0000e-004	3.0200e-003	9.5000e-004	1.0000e-005	3.2000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.1118	1.1118	5.0000e-005	0.0000	1.1130
Worker	2.4000e-004	1.8000e-004	1.6900e-003	0.0000	5.4000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130
Total	3.4000e-004	3.2000e-003	2.6400e-003	1.0000e-005	8.6000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.5000e-004	0.0000	1.5245	1.5245	6.0000e-005	0.0000	1.5259

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3.28 70-kV Power Line Site Development Mobilization - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					9.5400e-003	0.0000	9.5400e-003	1.0300e-003	0.0000	1.0300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9100e-003	0.0465	0.0219	7.0000e-005		1.5800e-003	1.5800e-003		1.4600e-003	1.4600e-003	0.0000	6.0531	6.0531	1.9600e-003	0.0000	6.1021
Total	3.9100e-003	0.0465	0.0219	7.0000e-005	9.5400e-003	1.5800e-003	0.0111	1.0300e-003	1.4600e-003	2.4900e-003	0.0000	6.0531	6.0531	1.9600e-003	0.0000	6.1021

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	2.2000e-004	6.7100e-003	2.1200e-003	3.0000e-005	7.1000e-004	2.0000e-005	7.2000e-004	2.0000e-004	1.0000e-005	2.2000e-004	0.0000	2.4707	2.4707	1.0000e-004	0.0000	2.4733
Worker	3.2000e-004	2.4000e-004	2.2700e-003	1.0000e-005	7.7000e-004	0.0000	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5859	0.5859	2.0000e-005	0.0000	0.5863
Total	5.4000e-004	6.9500e-003	4.3900e-003	4.0000e-005	1.4800e-003	2.0000e-005	1.5000e-003	4.1000e-004	1.0000e-005	4.3000e-004	0.0000	3.0566	3.0566	1.2000e-004	0.0000	3.0595

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3.28 70-kV Power Line Site Development Mobilization - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					3.7200e-003	0.0000	3.7200e-003	4.0000e-004	0.0000	4.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9100e-003	0.0465	0.0219	7.0000e-005		1.5800e-003	1.5800e-003		1.4600e-003	1.4600e-003	0.0000	6.0531	6.0531	1.9600e-003	0.0000	6.1021
Total	3.9100e-003	0.0465	0.0219	7.0000e-005	3.7200e-003	1.5800e-003	5.3000e-003	4.0000e-004	1.4600e-003	1.8600e-003	0.0000	6.0531	6.0531	1.9600e-003	0.0000	6.1021

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	2.2000e-004	6.7100e-003	2.1200e-003	3.0000e-005	7.1000e-004	2.0000e-005	7.2000e-004	2.0000e-004	1.0000e-005	2.2000e-004	0.0000	2.4707	2.4707	1.0000e-004	0.0000	2.4733
Worker	3.2000e-004	2.4000e-004	2.2700e-003	1.0000e-005	7.7000e-004	0.0000	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5859	0.5859	2.0000e-005	0.0000	0.5863
Total	5.4000e-004	6.9500e-003	4.3900e-003	4.0000e-005	1.4800e-003	2.0000e-005	1.5000e-003	4.1000e-004	1.0000e-005	4.3000e-004	0.0000	3.0566	3.0566	1.2000e-004	0.0000	3.0595

Estrella Substation and Paso Robles Area Reinforcement Project - San Luis Obispo County, Annual

3.29 Reconductoring Segment Clean-up and Restoration - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e-003	0.0256	0.0143	4.0000e-005		9.1000e-004	9.1000e-004		8.3000e-004	8.3000e-004	0.0000	3.4369	3.4369	1.1100e-003	0.0000	3.4647
Total	2.1800e-003	0.0256	0.0143	4.0000e-005	2.3900e-003	9.1000e-004	3.3000e-003	2.6000e-004	8.3000e-004	1.0900e-003	0.0000	3.4369	3.4369	1.1100e-003	0.0000	3.4647

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.1000e-004	3.3600e-003	1.0600e-003	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.2354	1.2354	5.0000e-005	0.0000	1.2366
Worker	2.5000e-004	1.9000e-004	1.7500e-003	0.0000	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4463	0.4463	1.0000e-005	0.0000	0.4466
Total	3.6000e-004	3.5500e-003	2.8100e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.5000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	1.6817	1.6817	6.0000e-005	0.0000	1.6833

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3.29 Reconductoring Segment Clean-up and Restoration - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e-003	0.0256	0.0143	4.0000e-005		9.1000e-004	9.1000e-004		8.3000e-004	8.3000e-004	0.0000	3.4369	3.4369	1.1100e-003	0.0000	3.4647
Total	2.1800e-003	0.0256	0.0143	4.0000e-005	9.3000e-004	9.1000e-004	1.8400e-003	1.0000e-004	8.3000e-004	9.3000e-004	0.0000	3.4369	3.4369	1.1100e-003	0.0000	3.4647

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.1000e-004	3.3600e-003	1.0600e-003	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.2354	1.2354	5.0000e-005	0.0000	1.2366
Worker	2.5000e-004	1.9000e-004	1.7500e-003	0.0000	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4463	0.4463	1.0000e-005	0.0000	0.4466
Total	3.6000e-004	3.5500e-003	2.8100e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.5000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	1.6817	1.6817	6.0000e-005	0.0000	1.6833

Estrella Substation and Paso Robles Area Reinforcement Project - San Luis Obispo County, Annual

3.30 70-kV Power Line Pole Tower Installation - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.2259	1.7600	1.6673	5.5700e-003		0.0685	0.0685		0.0630	0.0630	0.0000	489.3626	489.3626	0.1583	0.0000	493.3193
Total	0.2259	1.7600	1.6673	5.5700e-003		0.0685	0.0685		0.0630	0.0630	0.0000	489.3626	489.3626	0.1583	0.0000	493.3193

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	6.5800e-003	0.1980	0.0624	7.5000e-004	0.0208	4.6000e-004	0.0213	6.0200e-003	4.4000e-004	6.4500e-003	0.0000	72.8857	72.8857	3.0100e-003	0.0000	72.9609
Worker	0.0124	9.3100e-003	0.0873	2.5000e-004	0.0292	1.9000e-004	0.0294	7.7700e-003	1.7000e-004	7.9400e-003	0.0000	22.2316	22.2316	6.1000e-004	0.0000	22.2468
Total	0.0190	0.2073	0.1497	1.0000e-003	0.0501	6.5000e-004	0.0507	0.0138	6.1000e-004	0.0144	0.0000	95.1174	95.1174	3.6200e-003	0.0000	95.2077

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3.30 70-kV Power Line Pole Tower Installation - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.2259	1.7600	1.6673	5.5700e-003		0.0685	0.0685		0.0630	0.0630	0.0000	489.3620	489.3620	0.1583	0.0000	493.3187
Total	0.2259	1.7600	1.6673	5.5700e-003		0.0685	0.0685		0.0630	0.0630	0.0000	489.3620	489.3620	0.1583	0.0000	493.3187

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	6.5800e-003	0.1980	0.0624	7.5000e-004	0.0208	4.6000e-004	0.0213	6.0200e-003	4.4000e-004	6.4500e-003	0.0000	72.8857	72.8857	3.0100e-003	0.0000	72.9609
Worker	0.0124	9.3100e-003	0.0873	2.5000e-004	0.0292	1.9000e-004	0.0294	7.7700e-003	1.7000e-004	7.9400e-003	0.0000	22.2316	22.2316	6.1000e-004	0.0000	22.2468
Total	0.0190	0.2073	0.1497	1.0000e-003	0.0501	6.5000e-004	0.0507	0.0138	6.1000e-004	0.0144	0.0000	95.1174	95.1174	3.6200e-003	0.0000	95.2077

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3.31 70-kV Substation Install Yard Rock - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	4.3200e-003	0.0358	0.0414	1.1000e-004		1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	9.6994	9.6994	3.1400e-003	0.0000	9.7778
Total	4.3200e-003	0.0358	0.0414	1.1000e-004		1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	9.6994	9.6994	3.1400e-003	0.0000	9.7778

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	3.6000e-004	0.0107	3.3900e-003	4.0000e-005	1.1300e-003	2.0000e-005	1.1600e-003	3.3000e-004	2.0000e-005	3.5000e-004	0.0000	3.9531	3.9531	1.6000e-004	0.0000	3.9572
Worker	2.1000e-004	1.6000e-004	1.5200e-003	0.0000	5.3000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4030	0.4030	1.0000e-005	0.0000	0.4032
Total	5.7000e-004	0.0109	4.9100e-003	4.0000e-005	1.6600e-003	2.0000e-005	1.7000e-003	4.7000e-004	2.0000e-005	4.9000e-004	0.0000	4.3561	4.3561	1.7000e-004	0.0000	4.3604

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3.31 70-kV Substation Install Yard Rock - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	4.3200e-003	0.0358	0.0414	1.1000e-004		1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	9.6993	9.6993	3.1400e-003	0.0000	9.7778
Total	4.3200e-003	0.0358	0.0414	1.1000e-004		1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	9.6993	9.6993	3.1400e-003	0.0000	9.7778

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	3.6000e-004	0.0107	3.3900e-003	4.0000e-005	1.1300e-003	2.0000e-005	1.1600e-003	3.3000e-004	2.0000e-005	3.5000e-004	0.0000	3.9531	3.9531	1.6000e-004	0.0000	3.9572
Worker	2.1000e-004	1.6000e-004	1.5200e-003	0.0000	5.3000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4030	0.4030	1.0000e-005	0.0000	0.4032
Total	5.7000e-004	0.0109	4.9100e-003	4.0000e-005	1.6600e-003	2.0000e-005	1.7000e-003	4.7000e-004	2.0000e-005	4.9000e-004	0.0000	4.3561	4.3561	1.7000e-004	0.0000	4.3604

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3.32 230-kV Substation Cleanup and Restoration - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1200e-003	0.0208	0.0281	4.0000e-005		1.1100e-003	1.1100e-003		1.0200e-003	1.0200e-003	0.0000	3.3654	3.3654	1.0900e-003	0.0000	3.3927
Total	2.1200e-003	0.0208	0.0281	4.0000e-005	0.0000	1.1100e-003	1.1100e-003	0.0000	1.0200e-003	1.0200e-003	0.0000	3.3654	3.3654	1.0900e-003	0.0000	3.3927

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	9.7000e-004	0.0292	9.2000e-003	1.1000e-004	3.0700e-003	7.0000e-005	3.1400e-003	8.9000e-004	6.0000e-005	9.5000e-004	0.0000	10.7476	10.7476	4.4000e-004	0.0000	10.7586
Worker	1.8000e-004	1.3000e-004	1.2400e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3125	0.3125	1.0000e-005	0.0000	0.3128
Total	1.1500e-003	0.0293	0.0104	1.1000e-004	3.4800e-003	7.0000e-005	3.5500e-003	1.0000e-003	6.0000e-005	1.0600e-003	0.0000	11.0601	11.0601	4.5000e-004	0.0000	11.0714

Estrella Substation and Paso Robles Area Reinforcement Project - San Luis Obispo County, Annual

3.32 230-kV Substation Cleanup and Restoration - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1200e-003	0.0208	0.0281	4.0000e-005		1.1100e-003	1.1100e-003		1.0200e-003	1.0200e-003	0.0000	3.3654	3.3654	1.0900e-003	0.0000	3.3927
Total	2.1200e-003	0.0208	0.0281	4.0000e-005	0.0000	1.1100e-003	1.1100e-003	0.0000	1.0200e-003	1.0200e-003	0.0000	3.3654	3.3654	1.0900e-003	0.0000	3.3927

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	9.7000e-004	0.0292	9.2000e-003	1.1000e-004	3.0700e-003	7.0000e-005	3.1400e-003	8.9000e-004	6.0000e-005	9.5000e-004	0.0000	10.7476	10.7476	4.4000e-004	0.0000	10.7586
Worker	1.8000e-004	1.3000e-004	1.2400e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3125	0.3125	1.0000e-005	0.0000	0.3128
Total	1.1500e-003	0.0293	0.0104	1.1000e-004	3.4800e-003	7.0000e-005	3.5500e-003	1.0000e-003	6.0000e-005	1.0600e-003	0.0000	11.0601	11.0601	4.5000e-004	0.0000	11.0714

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3.33 70-kV Cleanup and Restoration - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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
Total	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

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	0.0000
Worker	1.5000e-004	1.2000e-004	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2754	0.2754	1.0000e-005	0.0000	0.2756
Total	1.5000e-004	1.2000e-004	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2754	0.2754	1.0000e-005	0.0000	0.2756

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3.33 70-kV Cleanup and Restoration - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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
Total	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

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	0.0000
Worker	1.5000e-004	1.2000e-004	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2754	0.2754	1.0000e-005	0.0000	0.2756
Total	1.5000e-004	1.2000e-004	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2754	0.2754	1.0000e-005	0.0000	0.2756

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3.34 70-kV Substation Testing and Commissioning - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	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
Total	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

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.9000e-004	5.8200e-003	1.8300e-003	2.0000e-005	6.1000e-004	1.0000e-005	6.3000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	2.1413	2.1413	9.0000e-005	0.0000	2.1435
Worker	8.2000e-004	6.2000e-004	5.7800e-003	2.0000e-005	1.9500e-003	1.0000e-005	1.9700e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.4844	1.4844	4.0000e-005	0.0000	1.4854
Total	1.0100e-003	6.4400e-003	7.6100e-003	4.0000e-005	2.5600e-003	2.0000e-005	2.6000e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	3.6256	3.6256	1.3000e-004	0.0000	3.6289

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3.34 70-kV Substation Testing and Commissioning - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	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
Total	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

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.9000e-004	5.8200e-003	1.8300e-003	2.0000e-005	6.1000e-004	1.0000e-005	6.3000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	2.1413	2.1413	9.0000e-005	0.0000	2.1435
Worker	8.2000e-004	6.2000e-004	5.7800e-003	2.0000e-005	1.9500e-003	1.0000e-005	1.9700e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.4844	1.4844	4.0000e-005	0.0000	1.4854
Total	1.0100e-003	6.4400e-003	7.6100e-003	4.0000e-005	2.5600e-003	2.0000e-005	2.6000e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	3.6256	3.6256	1.3000e-004	0.0000	3.6289

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3.35 70-kV Power Line Conductor Installation - 2023

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.0639	0.5478	0.4287	1.4000e-003		0.0226	0.0226		0.0208	0.0208	0.0000	122.7593	122.7593	0.0397	0.0000	123.7519
Total	0.0639	0.5478	0.4287	1.4000e-003		0.0226	0.0226		0.0208	0.0208	0.0000	122.7593	122.7593	0.0397	0.0000	123.7519

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	9.7000e-004	0.0291	9.1700e-003	1.1000e-004	3.0600e-003	7.0000e-005	3.1300e-003	8.8000e-004	6.0000e-005	9.5000e-004	0.0000	10.7064	10.7064	4.4000e-004	0.0000	10.7174
Worker	2.2000e-003	1.6700e-003	0.0156	4.0000e-005	5.2800e-003	3.0000e-005	5.3100e-003	1.4000e-003	3.0000e-005	1.4300e-003	0.0000	4.0078	4.0078	1.1000e-004	0.0000	4.0106
Total	3.1700e-003	0.0308	0.0248	1.5000e-004	8.3400e-003	1.0000e-004	8.4400e-003	2.2800e-003	9.0000e-005	2.3800e-003	0.0000	14.7142	14.7142	5.5000e-004	0.0000	14.7280

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3.35 70-kV Power Line Conductor Installation - 2023

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.0639	0.5478	0.4287	1.4000e-003		0.0226	0.0226		0.0208	0.0208	0.0000	122.7592	122.7592	0.0397	0.0000	123.7517
Total	0.0639	0.5478	0.4287	1.4000e-003		0.0226	0.0226		0.0208	0.0208	0.0000	122.7592	122.7592	0.0397	0.0000	123.7517

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	9.7000e-004	0.0291	9.1700e-003	1.1000e-004	3.0600e-003	7.0000e-005	3.1300e-003	8.8000e-004	6.0000e-005	9.5000e-004	0.0000	10.7064	10.7064	4.4000e-004	0.0000	10.7174
Worker	2.2000e-003	1.6700e-003	0.0156	4.0000e-005	5.2800e-003	3.0000e-005	5.3100e-003	1.4000e-003	3.0000e-005	1.4300e-003	0.0000	4.0078	4.0078	1.1000e-004	0.0000	4.0106
Total	3.1700e-003	0.0308	0.0248	1.5000e-004	8.3400e-003	1.0000e-004	8.4400e-003	2.2800e-003	9.0000e-005	2.3800e-003	0.0000	14.7142	14.7142	5.5000e-004	0.0000	14.7280

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3.35 70-kV Power Line Conductor Installation - 2024

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.0321	0.2634	0.2192	7.3000e-004		0.0107	0.0107		9.8400e-003	9.8400e-003	0.0000	63.7556	63.7556	0.0206	0.0000	64.2711
Total	0.0321	0.2634	0.2192	7.3000e-004		0.0107	0.0107		9.8400e-003	9.8400e-003	0.0000	63.7556	63.7556	0.0206	0.0000	64.2711

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	4.8000e-004	0.0146	4.5300e-003	6.0000e-005	1.5900e-003	3.0000e-005	1.6200e-003	4.6000e-004	3.0000e-005	4.9000e-004	0.0000	5.5287	5.5287	2.3000e-004	0.0000	5.5345
Worker	1.0800e-003	7.8000e-004	7.4500e-003	2.0000e-005	2.7400e-003	2.0000e-005	2.7600e-003	7.3000e-004	2.0000e-005	7.4000e-004	0.0000	2.0002	2.0002	5.0000e-005	0.0000	2.0014
Total	1.5600e-003	0.0154	0.0120	8.0000e-005	4.3300e-003	5.0000e-005	4.3800e-003	1.1900e-003	5.0000e-005	1.2300e-003	0.0000	7.5289	7.5289	2.8000e-004	0.0000	7.5360

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3.35 70-kV Power Line Conductor Installation - 2024

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.0321	0.2634	0.2192	7.3000e-004		0.0107	0.0107		9.8400e-003	9.8400e-003	0.0000	63.7556	63.7556	0.0206	0.0000	64.2711
Total	0.0321	0.2634	0.2192	7.3000e-004		0.0107	0.0107		9.8400e-003	9.8400e-003	0.0000	63.7556	63.7556	0.0206	0.0000	64.2711

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	4.8000e-004	0.0146	4.5300e-003	6.0000e-005	1.5900e-003	3.0000e-005	1.6200e-003	4.6000e-004	3.0000e-005	4.9000e-004	0.0000	5.5287	5.5287	2.3000e-004	0.0000	5.5345
Worker	1.0800e-003	7.8000e-004	7.4500e-003	2.0000e-005	2.7400e-003	2.0000e-005	2.7600e-003	7.3000e-004	2.0000e-005	7.4000e-004	0.0000	2.0002	2.0002	5.0000e-005	0.0000	2.0014
Total	1.5600e-003	0.0154	0.0120	8.0000e-005	4.3300e-003	5.0000e-005	4.3800e-003	1.1900e-003	5.0000e-005	1.2300e-003	0.0000	7.5289	7.5289	2.8000e-004	0.0000	7.5360

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3.36 70-kV Power Line Clean-up and Restoration - 2024

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0300e-003	0.0231	0.0142	4.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	3.4360	3.4360	1.1100e-003	0.0000	3.4638
Total	2.0300e-003	0.0231	0.0142	4.0000e-005	2.3900e-003	8.1000e-004	3.2000e-003	2.6000e-004	7.4000e-004	1.0000e-003	0.0000	3.4360	3.4360	1.1100e-003	0.0000	3.4638

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.5000e-004	4.5400e-003	1.4100e-003	2.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.4000e-004	1.0000e-005	1.5000e-004	0.0000	1.7201	1.7201	7.0000e-005	0.0000	1.7219
Worker	2.5000e-004	1.8000e-004	1.7500e-003	1.0000e-005	6.5000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.4754	0.4754	1.0000e-005	0.0000	0.4757
Total	4.0000e-004	4.7200e-003	3.1600e-003	3.0000e-005	1.1400e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.3000e-004	0.0000	2.1955	2.1955	8.0000e-005	0.0000	2.1976

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3.36 70-kV Power Line Clean-up and Restoration - 2024

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0300e-003	0.0231	0.0142	4.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	3.4360	3.4360	1.1100e-003	0.0000	3.4638
Total	2.0300e-003	0.0231	0.0142	4.0000e-005	9.3000e-004	8.1000e-004	1.7400e-003	1.0000e-004	7.4000e-004	8.4000e-004	0.0000	3.4360	3.4360	1.1100e-003	0.0000	3.4638

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/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	1.5000e-004	4.5400e-003	1.4100e-003	2.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.4000e-004	1.0000e-005	1.5000e-004	0.0000	1.7201	1.7201	7.0000e-005	0.0000	1.7219
Worker	2.5000e-004	1.8000e-004	1.7500e-003	1.0000e-005	6.5000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.4754	0.4754	1.0000e-005	0.0000	0.4757
Total	4.0000e-004	4.7200e-003	3.1600e-003	3.0000e-005	1.1400e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.3000e-004	0.0000	2.1955	2.1955	8.0000e-005	0.0000	2.1976

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	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
Category	tons/yr										MT/yr					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
General Light Industry	13.00	5.00	5.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.588806	0.027737	0.198305	0.114471	0.022249	0.005748	0.012759	0.019721	0.002316	0.001163	0.004776	0.000758	0.001192

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	62.3482	62.3482	2.8200e-003	5.8000e-004	62.5924
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	62.3482	62.3482	2.8200e-003	5.8000e-004	62.5924
NaturalGas Mitigated	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699
NaturalGas Unmitigated	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	142880	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699
Total		7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	142880	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699
Total		7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	214320	62.3482	2.8200e-003	5.8000e-004	62.5924
Total		62.3482	2.8200e-003	5.8000e-004	62.5924

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	214320	62.3482	2.8200e-003	5.8000e-004	62.5924
Total		62.3482	2.8200e-003	5.8000e-004	62.5924

6.0 Area Detail

6.1 Mitigation Measures Area

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	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
Category	tons/yr										MT/yr					
Mitigated	27.9120	1.0900e-003	0.1202	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.2340	0.2340	6.1000e-004	0.0000	0.2493
Unmitigated	27.9120	1.0900e-003	0.1202	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.2340	0.2340	6.1000e-004	0.0000	0.2493

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	27.9009					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0111	1.0900e-003	0.1202	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.2340	0.2340	6.1000e-004	0.0000	0.2493
Total	27.9120	1.0900e-003	0.1202	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.2340	0.2340	6.1000e-004	0.0000	0.2493

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7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	4.00	13	402	0.38	Diesel
Off-Highway Trucks	1	4.00	12	402	0.38	Diesel
Other General Industrial Equipment	1	8.00	2	400	0.34	Diesel

UnMitigated/Mitigated

	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
Equipment Type	tons/yr										MT/yr					
Off-Highway Trucks	3.1100e-003	0.0208	0.0203	8.0000e-005		7.5000e-004	7.5000e-004		6.9000e-004	6.9000e-004	0.0000	7.2595	7.2595	2.3500e-003	0.0000	7.3182
Other General Industrial Equipment	3.8000e-004	2.7700e-003	2.6600e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.0291	1.0291	3.3000e-004	0.0000	1.0374
Total	3.4900e-003	0.0236	0.0230	9.0000e-005		8.4000e-004	8.4000e-004		7.8000e-004	7.8000e-004	0.0000	8.2886	8.2886	2.6800e-003	0.0000	8.3556

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

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Comment J-336: Attachment 4.

Revised Helicopter Noise Analysis

MEMORANDUM

Date: February 22, 2021
To: California Public Utilities Commission (CPUC)
From: Pacific Gas and Electric Company (PG&E)
Subject: Estrella DEIR Comments Attachment 4 – Revised Helicopter Noise Analysis

HELICOPTER OPERATION ASSUMPTIONS

The following are revised assumptions for helicopter use during construction for the Estrella Substation and Paso Robles Area Reinforcement Project, which are based on assumptions provided to the CPUC for the Fulton-Fitch Mountain Reconductoring Project.

- One light/medium lift helicopters will be used to install new conductor on the new 70 kV power line segment and one heavy lift helicopter will be used to replace at most 10 poles along the bluff areas near South and North River Road on the reconductoring segment. Helicopters will not be used to replace conductor on the reconductoring segment. It is anticipated that construction of the reconductoring segment will occur before installation of the new 70 kV power line; therefore, the heavy lift helicopter and the light/medium lift helicopters will not operate at the same time.
 - The light/medium helicopter will be used to transport tools and most project materials weighing less than 5,000 pounds. The light/medium helicopter will be used to pull in the sock line that will be used to pull conductor. The light duty helicopter will be similar to the MD (McDonnell Douglas) 520N with the Notar System (no tail rotor) or Aerospatial SD-350.
 - The heavy lift helicopter will be used to transport the heaviest project materials weighing between 5,000 and 20,000 pounds, such as rock/gravel (if native soil is not adequate), soil (if soil cannot be spread along the pole line), new light-duty steel poles, and old poles. The heavy lift helicopters could also be used to remove old pole stubs from the ground. The heavy duty helicopter will be similar to the Sikorsky S92A or Sikorsky S70.

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- Construction in the new 70 kV power line segment will be focused between pull-and-tension sites (“pull spans”) in areas where driving along the power line is not possible (due to terrain, vineyards, etc.) until all poles and conductor are completely replaced along the section of the line. After construction is completed in each pull span, construction will transition to the next pull span and it is unlikely helicopters will return to the area for the remainder of construction. Construction will progress from west to east along the following pull spans:
 - **Pull Span 1:** Pole 96 to 101 (6 poles)
 - **Pull Span 2:** Pole 92 to 96 (5 poles)
 - **Pull Span 3:** Pole 71 to 92 (22 poles)
 - **Pull Span 10:** Pole 17 to 28 (12 poles)
 - **Pull Span 11:** Pole 11 to 17 (7 poles)
 - **Pull Span 12:** Pole 7 to 11 (4 poles)
- Helicopter operation in each pull span will be supported by the use of one or two landing zones, which will typically be the closest available locations on either end. Landing zones located between pull spans could be used to support helicopter activities in both pull spans.
- The planned landing zone south of State Route (SR-) 46 along the reconductoring segment is now occupied by a home. Therefore, a new landing zone / staging area has been identified west of North River Road approximately 0.2 mile north of Union Road to support pole replacement work south of SR-46. See Figure 1.

The following tables provide estimates for daily helicopter trips, as well as the duration of time helicopters will hover at poles and landing zones during each trip. **Table 1** lists the maximum daily helicopter trips and hovering times at poles and landing zones. **Table 2** lists the maximum daily helicopter operation based on the trips and hovering times listed in **Table 1**. **Table 3** summarizes the maximum daily helicopter operations that could occur at a single pole location / pull span.

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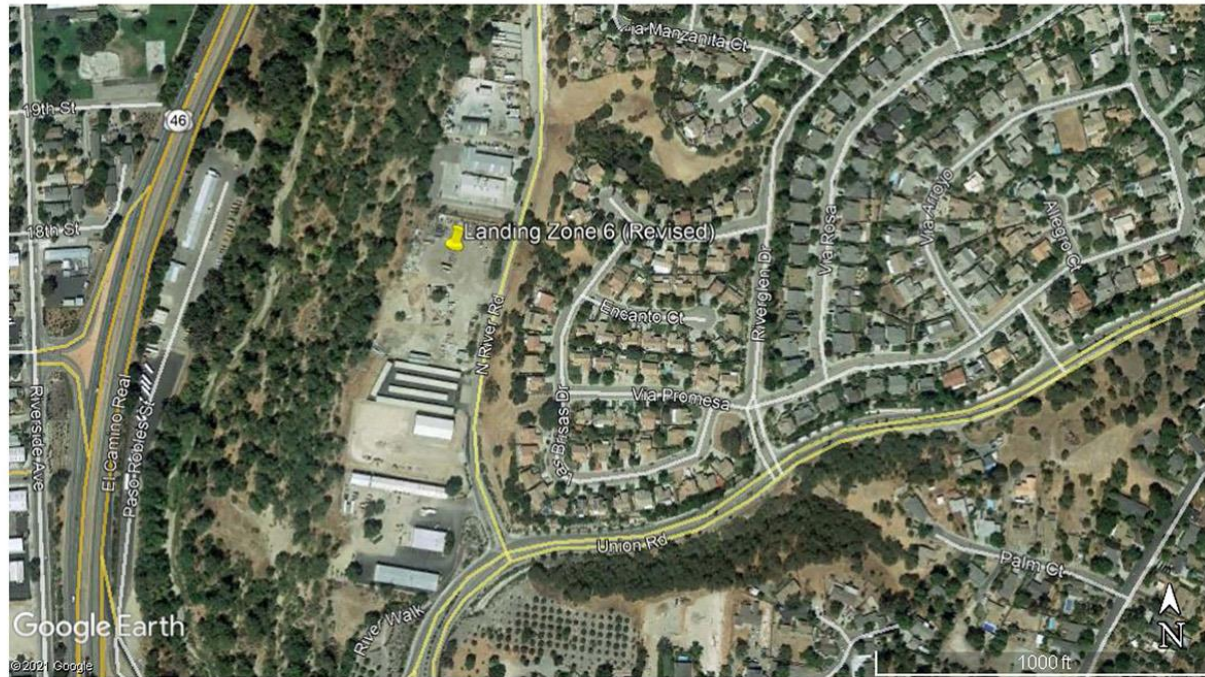


Figure 1: Landing Zone 6 (Revised)

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Table 1 Maximum Daily Helicopter Trips and Hovering Times

Construction Activity	Days/ Activity	Helicopter Size	Maximum Poles Accessed/Day	Trips/Pole or Pull Span			Total Trips/ Landing Zone ^a	Hovering Time/Trip (minutes)	
				Workers	Tools/Materials	Total		Pole	Landing Zone
Pole Installation/Transfer Distribution/Pole Removal (Reconductoring Segment)	5 ^b	Heavy	2 ^b	0	6 (LDSPs) ^c	6	14 ^d	1 ^e	2 ^f
Install Sock Line (New 70 kV Power Line)	6 ^g	Light/Medium	22 ^h	0	8 ⁱ	8	10 ⁱ	--	2 ^f

Notes:

- ^a Includes morning arrival and evening departure trip (one round trip for light/medium lift and one round trip for heavy lift each way), one round trip for fueling, and all pole/pull span trips per day.
- ^b Up to 10 LDSPs will require the use of a helicopter. One crew can install one LDSP per day, and two crews will be conducting the pole replacements, so two LDSPs will be installed per day; therefore, 5 days will be required to install all 10 LDSPs.
- ^c Each LDSP will require six total helicopter trips: one to deliver and set the new pole, one to deliver back-fill rock, one to remove unused soil that can't be spread in the area, two to remove the old pole pieces, and one to help raise the old conductor to the new arm position on the new poles.
- ^d Two LDSPs will be installed per day and each LDSP will require 6 trips; therefore, 12 round trips from the landing zone to the pole locations will be required per day. In addition, one round trip for morning arrival and evening departure and one round trip for fueling will be required, resulting in a total of 14 round trips from the landing zone per day.
- ^e The helicopter hover time at the pole site for each delivery or removal will be approximately 1 minute.
- ^f The hovering time at each landing zone will be approximately 2 minutes per trip.
- ^g Six pull spans will require the use of a helicopter, and one pull span will be completed per day; therefore, 6 days will be required to install sock lines along all six pull spans.
- ^h The longest span contains 22 poles; therefore, the maximum poles accessed in a day will be 22.
- ⁱ There will be a total of eight sock lines that need to be installed in each pull span: six sock lines for the conductors, one sock line for a common neutral conductor, and one sock line for an ADSS fiber cable. Each sock line will require one trip and one pull span will be completed per day; therefore, eight round trips from the landing zone to each pull span will be required per day. In addition, one round trip for morning arrival and evening departure and one round trip for fueling will be required, resulting in a total of 10 round trips from the landing zone per day.

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Table 2 Maximum Daily Helicopter Operation

Construction Activity	Days/ Activity	Helicopter Lift/Size	Single Pole / Pull Span		All Poles / Pull Spans		Landing Zones		Flight Paths (Traveling) ^a		Total Time Operating	
			Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours
Pole Installation/Transfer Distribution/Pole Removal (Reconductoring Segment)	5 ^b	Heavy	6 ^c (LDSPs) ^c	0.1	12 ^d	0.2	28 ^e	0.5	112 ^f	1.9	152	2.5
Install Sock Line (New 70 kV Power Line)	6 ^g	Light/Medium	160 ^h	2.7	160 ^h	2.7	20 ⁱ	0.3	80 ⁱ	1.3	260	4.3

Notes:

- ^a Values for flight paths represent the period traveling from the landing zone to the pole or pull span, which is an average of 2 miles (one way). At an average speed of 30 miles per hour, approximately 8 minutes of flight time will be required per round trip.
- ^b Up to 10 LDSPs will require the use of a helicopter. One crew can install one LDSP per day, and two crews will be conducting the pole replacements, so two LDSPs will be installed per day; therefore, 5 days will be required to install all 10 LDSPs.
- ^c The helicopter hover time at each pole will be six trips per day with 1 minute per pole hover time for a total of 6 minutes.
- ^d Up to two poles will be installed per day with 6 minutes of hover time at each pole for a total 12 minutes of hover time per day.
- ^e Fourteen round trips per day (12 to the poles, one for morning arrival/evening departure and one for refueling) at 2 minutes of hover time per trip will result in approximately 28 minutes of hover time per day at the landing zone.
- ^f Fourteen round trips per day at 8 minutes per trip flight time will result in approximately 112 minutes of flight time per day.
- ^g Six pull spans will require the use of a helicopter, and one pull span will be completed per day; therefore, 6 days will be required to install sock lines along all six pull spans.
- ^h Each of the eight sock lines will take approximately 20 minutes to fly into the travelers connected to each pole, for each pull section, so this will take approximately 160 minutes per day.
- ⁱ There will be a total of eight sock lines that need to be installed in each pull span section, six sock lines for the conductors, one sock line for a common neutral conductor, and one sock line for an ADSS fiber cable. Ten round trips will be required per pull section (eight for the sock lines, one for morning arrival/evening departure, and one for refueling). Each round trip is assumed to require approximately 2 minutes of hover time at the landing zone for a total of 20 minutes per day.
- ^j Ten helicopter trips per pole with one pole span per day at 8 minutes per trip flight time will result in approximately 80 minutes of flight time per day.

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Table 3 Maximum Daily Helicopter Operation – Single Pole / Pull Span

Helicopter Lift/Size	Measurement Period	Pole / Pull Span		Landing Zone		Flight Path ^a	
		Minutes	Hours	Minutes	Hours	Minutes	Hours
Heavy	Entire Day	6 (LDSPs) ^b	0.1	16 ^c	0.3	64 ^d	1.1
	Single Hour	4 (LDSPs) ^e	0.1	8 ^e	0.1	32 ^e	0.5
Light/Medium	Entire Day	160 ^f	2.7	20 ^g	0.3	80 ^h	1.3
	Single Hour	40 ⁱ	0.7	4 ⁱ	0.1	16 ⁱ	0.3

Notes:

- ^a Values for flight path represent the period traveling from the landing zone to the pole or pull span, which is an average of 2 miles (one way). At an average speed of 30 miles per hour, approximately 8 minutes of flight time will be required per round trip.
- ^b The helicopter hover time at each pole will be six trips per day with 1 minute per pole hover time for a total of 6 minutes.
- ^c Each pole will require six trips per day, plus one trip for morning arrival/evening departure, and one trip for refueling, for a total of eight trips per pole per day. Landing zone hover time per trip is approximately 2 minutes; therefore, 16 minutes of hover time at the landing zone will be required.
- ^d Eight helicopter trips per pole at 8 minutes per trip flight time will result in approximately 64 minutes of flight time per day.
- ^e The most helicopter trips per hour will be 4 round trips during removal activities. This will equate to 4 minutes for pole hover time (4 trips at 1 minute per trip), 8 minutes for landing zone hovering time (4 trips at 2 minutes per trip), and 32 minutes for flight time (4 trips at 8 minutes per trip).
- ^f Each of the eight sock lines will take approximately 20 minutes to fly into the travelers connected to each pole, for each pull section, so this will take approximately 160 minutes per day.
- ^g Ten round trips will be required per pull section (eight for the sock lines, one for morning arrival/evening departure, and one for refueling). Each round trip is assumed to require approximately 2 minutes of hover time at the landing zone for a total of 20 minutes per day.
- ^h Ten helicopter trips per pole with one pole span per day at 8 minutes per trip flight time will result in approximately 80 minutes of flight time per day.
- ⁱ Two sock line pulls per hour is the maximum that will be accomplished. This equates to 40 minutes per hour for the flight time along the pull span (2 sock line pulls at 20 minutes per pull), 4 minutes of landing zone hover time (2 trips at 2 minutes per trip), and 16 minutes per hour for the flight time (2 trips at 8 minutes per trip).

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CONCLUSION

Based on these assumptions, SWCA Environmental Consultants has recalculated the helicopter noise levels. The noise levels for the heavy lift helicopter were calculated using the same methodology described in the Draft Environmental Impact Report (DEIR), as shown in Appendix A. The noise levels for the light/medium lift helicopter were calculated using FAA's AEDT Version 3c model, as shown in Appendix B.

Table 4 shows the estimated helicopter noise levels associated with construction of the Proposed Project in terms of the distance to the Federal Transit Administration's (FTA's) 90 A-weighted decibel (dBA) equivalent sound level metric normalized over a one-hour time period ($L_{eq(1hr)}$) threshold presented by the CPUC in the DEIR.¹

Table 4 Helicopter Noise Levels and Distance to Threshold

Helicopter Lift/Size	Helicopter Activity	Distance to 90 dBA $L_{eq(1hr)}$ (feet)
Heavy	Approaching landing zone or installation site	39.0 (Note 1)
	Hovering at the landing zone	76.4
	Cumulative - Landing Zone	85.4
	Hovering at pole installation site	69.9
	Ground level idling	7.5
	Level flight	857.8 (Note 2)
Light/Medium	All activities	(Note 3)

Notes:

No adjustments were made for lateral attenuation, source noise, or lateral directivity of the helicopters as adequate information was not readily available to make these adjustments.

¹ Approaching produced higher noise levels than departing, so departing noise levels is not shown.

² Appropriate hovering noise data is not readily available and is highly dependent on how close the helicopter is to the ground.

³ Light/medium helicopter activities are all below 90 dBA at all distances.

¹ FTA Transit Noise and Vibration Impact Assessment Manual, which contains guidelines for the evaluation of the significance of construction noise impacts, is for transit projects and should not be used to determine significance of the proposed utility project.

Appendix A: Heavy Lift Helicopter Noise

Heavy Lift Helicopter Noise

NPD Table for Sikorsky 70

Helicopter	NOISE_TYPE	OP_MODE	SIDE_TYPE	L_200	L_400	L_630	L_1000	L_2000	L_4000	L_6300	L_10000	L_16000	L_25000
S70	S	A	L	94.9	91.4	89	85.3	81.9	78.9	73.1	68.6	64.6	60.2
S70	S	A	C	97.6	94.3	92	89.7	85.8	81.4	75	71.1	67.5	63.2
S70	S	A	R	100	96.7	94.4	92	88.1	83.5	79.9	75.6	71.8	67.6
S70	S	D	L	91.3	87.5	84.7	81.7	78.6	75.8	72.6	69.9	67.5	65.9
S70	S	D	C	89.5	85.7	83.1	80.2	77.4	74.9	72.6	70.8	69.6	68.9
S70	S	D	R	92.1	88.4	85.8	82.9	79.2	75.8	72.8	70.1	67.9	66.2
S70	M	G	S	73.7	66.5	61.8	56.9	49.7	42.5	37.8	33.9	30.2	27.4
S70	M	I	S	90.8	83.6	78.9	74	68.8	64.5	60.8	57.5	54.5	51.5
S70	S	L	L	100.6	97.1	94.6	91.8	87.1	81.4	77	72	67.4	62.5
S70	S	L	C	98	94.4	91.9	89	84.2	78.4	73.9	69.7	64	58.9
S70	S	L	R	101	97.2	94.5	91.6	86.6	80.8	76.4	71.2	66.5	61.5

Maximum Daily Helicopter Operation Single Hour

Flight Phase/Area	Duration (minutes)			Acoustic Utilization Factor (%/hour)		
	Pole	Landing zone	Flight Path	Pole	Landing zone	Flight Path
Approaching	0	1	0	0.0	1.7	0.0
Departing	0	1	0	0.0	1.7	0.0
Ground Idling	0	1	0	0.0	1.7	0.0
Hover Above Ground	4	5	0	6.7	8.3	0.0
Level Flight	0	0	32	0.0	0.0	53.3
Total Duration	44			73.3		

NPD Adjusted for Acoustic Factor - Pole

Helicopter	NOISE_TYPE	OP_MODE	SIDE_TYPE	L_200	L_400	L_630	L_1000	L_2000	L_4000	L_6300	L_10000	L_16000	L_25000
S70	S	A	R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	S	D	R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	M	G	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	M	I	S	79.0	71.8	67.1	62.2	55.0	47.8	43.1	38.2	33.5	28.7
S70	S	L	L	0	0	0	0	0	0	0	0	0	0
Total Noise Level (1-hr LAeq) from pole or pull span				79.0	71.8	67.1	62.2	55.0	47.8	43.1	38.2	33.5	28.7

NPD Adjusted for Acoustic Factor - Landing Zone

Helicopter	NOISE_TYPE	OP_MODE	SIDE_TYPE	L_200	L_400	L_630	L_1000	L_2000	L_4000	L_6300	L_10000	L_16000	L_25000
S70	S	A	R	82.2	78.9	76.6	74.2	70.3	65.7	62.1	57.8	54.0	49.8
S70	S	D	R	74.3	70.6	68.0	65.1	60.4	55.0	51.0	46.3	42.1	37.5
S70	M	G	S	55.9	48.7	44.0	39.1	31.9	24.7	20.0	15.0	10.1	4.7
S70	M	I	S	80.0	72.8	68.1	63.2	56.0	48.8	44.1	39.2	34.5	29.7
S70	S	L	L	0	0	0	0	0	0	0	0	0	0
Total Noise Level (1-hr LAeq) from Landing Zone				84.7	80.4	77.7	75.0	70.9	66.2	62.5	58.2	54.3	50.1

NPD Adjusted for Acoustic Factor - Flight Path

Helicopter	NOISE_TYPE	OP_MODE	SIDE_TYPE	L_200	L_400	L_630	L_1000	L_2000	L_4000	L_6300	L_10000	L_16000	L_25000
S70	S	A	R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	S	D	R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	M	G	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	M	I	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	S	L	L	97.9	94.4	91.9	89.1	84.4	78.7	74.3	69.3	64.7	59.8
Total Noise Level (1-hr LAeq) from Flight Path				97.9	94.4	91.9	89.1	84.4	78.7	74.3	69.3	64.7	59.8

Helicopter Noise Levels and Distance to Threshold - Flight Path

Activity	Ld1	Ld2	d1	d2	d	Ld
Level Flight	91.9	89.1	630	1000	857.78	90.0

$$L_d = L_{d1} + \frac{(L_{d2} - L_{d1}) \times (\log_{10} d - \log_{10} d_1)}{(\log_{10} d_2 - \log_{10} d_1)}$$