3.4 Fine Grading 1 - 2018

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	2.7963	31.1387	17.5159	0.0317		1.5152	1.5152		1.3940	1.3940	0.0000	3,194.8307	3,194.8307	0.9946		3,219.6956
Total	**2.7963**	**31.1387**	**17.5159**	**0.0317**	**3.3826**	**1.5152**	**4.8978**	**1.4026**	**1.3940**	**2.7966**	**0.0000**	**3,194.8307**	**3,194.8307**	**0.9946**		**3,219.6956**

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	lb/day										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	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892
Total	**0.0442**	**0.0334**	**0.4321**	**1.0100e-003**	**0.0894**	**8.0000e-004**	**0.0902**	**0.0237**	**7.4000e-004**	**0.0245**		**100.2952**	**100.2952**	**3.7600e-003**		**100.3892**

3.4 Fine Grading 1 - 2019

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	2.6084	28.6925	17.2539	0.0317		1.3707	1.3707		1.2610	1.2610		3,140.3905	3,140.3905	0.9936		3,165.2302
Total	**2.6084**	**28.6925**	**17.2539**	**0.0317**	**8.6733**	**1.3707**	**10.0440**	**3.5965**	**1.2610**	**4.8575**		**3,140.3905**	**3,140.3905**	**0.9936**		**3,165.2302**

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	lb/day										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	0.0400	0.0294	0.3857	9.7000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		97.0362	97.0362	3.3300e-003		97.1196
Total	**0.0400**	**0.0294**	**0.3857**	**9.7000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**97.0362**	**97.0362**	**3.3300e-003**		**97.1196**

3.4 Fine Grading 1 - 2019

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	2.6084	28.6925	17.2539	0.0317		1.3707	1.3707		1.2610	1.2610	0.0000	3,140.3905	3,140.3905	0.9936		3,165.2302
Total	**2.6084**	**28.6925**	**17.2539**	**0.0317**	**3.3826**	**1.3707**	**4.7533**	**1.4026**	**1.2610**	**2.6636**	**0.0000**	**3,140.3905**	**3,140.3905**	**0.9936**		**3,165.2302**

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	lb/day										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	0.0400	0.0294	0.3857	9.7000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		97.0362	97.0362	3.3300e-003		97.1196
Total	**0.0400**	**0.0294**	**0.3857**	**9.7000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**97.0362**	**97.0362**	**3.3300e-003**		**97.1196**

3.4 Fine Grading 1 - 2020

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	2.4643	26.6934	17.0411	0.0317		1.2572	1.2572		1.1566	1.1566		3,071.8350	3,071.8350	0.9935		3,096.6724
Total	**2.4643**	**26.6934**	**17.0411**	**0.0317**	**8.6733**	**1.2572**	**9.9305**	**3.5965**	**1.1566**	**4.7531**		**3,071.8350**	**3,071.8350**	**0.9935**		**3,096.6724**

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	lb/day										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	0.0368	0.0262	0.3503	9.4000e-004	0.0894	7.5000e-004	0.0902	0.0237	6.9000e-004	0.0244		94.0890	94.0890	2.9700e-003		94.1632
Total	**0.0368**	**0.0262**	**0.3503**	**9.4000e-004**	**0.0894**	**7.5000e-004**	**0.0902**	**0.0237**	**6.9000e-004**	**0.0244**		**94.0890**	**94.0890**	**2.9700e-003**		**94.1632**

3.4 Fine Grading 1 - 2020

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	2.4643	26.6934	17.0411	0.0317		1.2572	1.2572		1.1566	1.1566	0.0000	3,071.8350	3,071.8350	0.9935		3,096.6724
Total	**2.4643**	**26.6934**	**17.0411**	**0.0317**	**3.3826**	**1.2572**	**4.6398**	**1.4026**	**1.1566**	**2.5592**	**0.0000**	**3,071.8350**	**3,071.8350**	**0.9935**		**3,096.6724**

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	lb/day										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	0.0368	0.0262	0.3503	9.4000e-004	0.0894	7.5000e-004	0.0902	0.0237	6.9000e-004	0.0244		94.0890	94.0890	2.9700e-003		94.1632
Total	**0.0368**	**0.0262**	**0.3503**	**9.4000e-004**	**0.0894**	**7.5000e-004**	**0.0902**	**0.0237**	**6.9000e-004**	**0.0244**		**94.0890**	**94.0890**	**2.9700e-003**		**94.1632**

3.4 Fine Grading 1 - 2021

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	2.3323	24.9943	16.8691	0.0317		1.1526	1.1526		1.0604	1.0604		3,071.2204	3,071.2204	0.9933		3,096.0528
Total	**2.3323**	**24.9943**	**16.8691**	**0.0317**	**8.6733**	**1.1526**	**9.8259**	**3.5965**	**1.0604**	**4.6569**		**3,071.2204**	**3,071.2204**	**0.9933**		**3,096.0528**

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	lb/day										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	0.0343	0.0236	0.3222	9.1000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.7000e-004	0.0244		91.1016	91.1016	2.6800e-003		91.1687
Total	**0.0343**	**0.0236**	**0.3222**	**9.1000e-004**	**0.0894**	**7.2000e-004**	**0.0901**	**0.0237**	**6.7000e-004**	**0.0244**		**91.1016**	**91.1016**	**2.6800e-003**		**91.1687**

3.4 Fine Grading 1 - 2021

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	2.3323	24.9943	16.8691	0.0317		1.1526	1.1526		1.0604	1.0604	0.0000	3,071.2204	3,071.2204	0.9933		3,096.0528
Total	**2.3323**	**24.9943**	**16.8691**	**0.0317**	**3.3826**	**1.1526**	**4.5352**	**1.4026**	**1.0604**	**2.4630**	**0.0000**	**3,071.2204**	**3,071.2204**	**0.9933**		**3,096.0528**

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	lb/day										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	0.0343	0.0236	0.3222	9.1000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.7000e-004	0.0244		91.1016	91.1016	2.6800e-003		91.1687
Total	**0.0343**	**0.0236**	**0.3222**	**9.1000e-004**	**0.0894**	**7.2000e-004**	**0.0901**	**0.0237**	**6.7000e-004**	**0.0244**		**91.1016**	**91.1016**	**2.6800e-003**		**91.1687**

3.4 Fine Grading 1 - 2022

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.9864	20.9565	16.2899	0.0317		0.9366	0.9366		0.8617	0.8617		3,070.8227	3,070.8227	0.9932		3,095.6519
Total	**1.9864**	**20.9565**	**16.2899**	**0.0317**	**8.6733**	**0.9366**	**9.6100**	**3.5965**	**0.8617**	**4.4582**		**3,070.8227**	**3,070.8227**	**0.9932**		**3,095.6519**

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	lb/day										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	0.0321	0.0213	0.2973	8.8000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		87.8970	87.8970	2.4300e-003		87.9576
Total	**0.0321**	**0.0213**	**0.2973**	**8.8000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**87.8970**	**87.8970**	**2.4300e-003**		**87.9576**

3.4 Fine Grading 1 - 2022

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.9864	20.9565	16.2899	0.0317		0.9366	0.9366		0.8617	0.8617	0.0000	3,070.8227	3,070.8227	0.9932		3,095.6519
Total	**1.9864**	**20.9565**	**16.2899**	**0.0317**	**3.3826**	**0.9366**	**4.3192**	**1.4026**	**0.8617**	**2.2644**	**0.0000**	**3,070.8227**	**3,070.8227**	**0.9932**		**3,095.6519**

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	lb/day										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	0.0321	0.0213	0.2973	8.8000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		87.8970	87.8970	2.4300e-003		87.9576
Total	**0.0321**	**0.0213**	**0.2973**	**8.8000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**87.8970**	**87.8970**	**2.4300e-003**		**87.9576**

3.4 Fine Grading 1 - 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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.7482	17.9488	15.7771	0.0317		0.7749	0.7749		0.7129	0.7129		3,071.2201	3,071.2201	0.9933		3,096.0525
Total	**1.7482**	**17.9488**	**15.7771**	**0.0317**	**8.6733**	**0.7749**	**9.4483**	**3.5965**	**0.7129**	**4.3094**		**3,071.2201**	**3,071.2201**	**0.9933**		**3,096.0525**

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	lb/day										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	0.0302	0.0193	0.2738	8.5000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		84.6786	84.6786	2.1900e-003		84.7332
Total	**0.0302**	**0.0193**	**0.2738**	**8.5000e-004**	**0.0894**	**6.8000e-004**	**0.0901**	**0.0237**	**6.3000e-004**	**0.0243**		**84.6786**	**84.6786**	**2.1900e-003**		**84.7332**

3.4 Fine Grading 1 - 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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.7482	17.9488	15.7771	0.0317		0.7749	0.7749		0.7129	0.7129	0.0000	3,071.2201	3,071.2201	0.9933		3,096.0525
Total	**1.7482**	**17.9488**	**15.7771**	**0.0317**	**3.3826**	**0.7749**	**4.1575**	**1.4026**	**0.7129**	**2.1156**	**0.0000**	**3,071.2201**	**3,071.2201**	**0.9933**		**3,096.0525**

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	lb/day										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	0.0302	0.0193	0.2738	8.5000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		84.6786	84.6786	2.1900e-003		84.7332
Total	**0.0302**	**0.0193**	**0.2738**	**8.5000e-004**	**0.0894**	**6.8000e-004**	**0.0901**	**0.0237**	**6.3000e-004**	**0.0243**		**84.6786**	**84.6786**	**2.1900e-003**		**84.7332**

3.5 Utilities 1 - 2019

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	lb/day										lb/day					
Off-Road	0.5448	5.5175	5.9014	8.5300e-003		0.3311	0.3311		0.3046	0.3046		844.6570	844.6570	0.2672		851.3380
Total	**0.5448**	**5.5175**	**5.9014**	**8.5300e-003**		**0.3311**	**0.3311**		**0.3046**	**0.3046**		**844.6570**	**844.6570**	**0.2672**		**851.3380**

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	lb/day										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	0.0550	0.0404	0.5304	1.3400e-003	0.1230	1.0600e-003	0.1240	0.0326	9.8000e-004	0.0336		133.4248	133.4248	4.5800e-003		133.5394
Total	**0.0550**	**0.0404**	**0.5304**	**1.3400e-003**	**0.1230**	**1.0600e-003**	**0.1240**	**0.0326**	**9.8000e-004**	**0.0336**		**133.4248**	**133.4248**	**4.5800e-003**		**133.5394**

3.5 Utilities 1 - 2019

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	lb/day										lb/day					
Off-Road	0.5448	5.5175	5.9014	8.5300e-003		0.3311	0.3311		0.3046	0.3046	0.0000	844.6570	844.6570	0.2672		851.3380
Total	**0.5448**	**5.5175**	**5.9014**	**8.5300e-003**		**0.3311**	**0.3311**		**0.3046**	**0.3046**	**0.0000**	**844.6570**	**844.6570**	**0.2672**		**851.3380**

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	lb/day										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	0.0550	0.0404	0.5304	1.3400e-003	0.1230	1.0600e-003	0.1240	0.0326	9.8000e-004	0.0336		133.4248	133.4248	4.5800e-003		133.5394
Total	**0.0550**	**0.0404**	**0.5304**	**1.3400e-003**	**0.1230**	**1.0600e-003**	**0.1240**	**0.0326**	**9.8000e-004**	**0.0336**		**133.4248**	**133.4248**	**4.5800e-003**		**133.5394**

3.5 Utilities 1 - 2020

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	lb/day										lb/day					
Off-Road	0.4980	4.9672	5.8704	8.5300e-003		0.2873	0.2873		0.2643	0.2643		826.2416	826.2416	0.2672		832.9222
Total	**0.4980**	**4.9672**	**5.8704**	**8.5300e-003**		**0.2873**	**0.2873**		**0.2643**	**0.2643**		**826.2416**	**826.2416**	**0.2672**		**832.9222**

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	lb/day										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	0.0506	0.0360	0.4816	1.3000e-003	0.1230	1.0300e-003	0.1240	0.0326	9.5000e-004	0.0336		129.3724	129.3724	4.0800e-003		129.4744
Total	**0.0506**	**0.0360**	**0.4816**	**1.3000e-003**	**0.1230**	**1.0300e-003**	**0.1240**	**0.0326**	**9.5000e-004**	**0.0336**		**129.3724**	**129.3724**	**4.0800e-003**		**129.4744**

3.5 Utilities 1 - 2020

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	lb/day										lb/day					
Off-Road	0.4980	4.9672	5.8704	8.5300e-003		0.2873	0.2873		0.2643	0.2643	0.0000	826.2416	826.2416	0.2672		832.9222
Total	**0.4980**	**4.9672**	**5.8704**	**8.5300e-003**		**0.2873**	**0.2873**		**0.2643**	**0.2643**	**0.0000**	**826.2416**	**826.2416**	**0.2672**		**832.9222**

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	lb/day										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	0.0506	0.0360	0.4816	1.3000e-003	0.1230	1.0300e-003	0.1240	0.0326	9.5000e-004	0.0336		129.3724	129.3724	4.0800e-003		129.4744
Total	**0.0506**	**0.0360**	**0.4816**	**1.3000e-003**	**0.1230**	**1.0300e-003**	**0.1240**	**0.0326**	**9.5000e-004**	**0.0336**		**129.3724**	**129.3724**	**4.0800e-003**		**129.4744**

3.6 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	lb/day										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	0.1672	4.9995	1.3099	0.0122	0.3009	0.0235	0.3244	0.0866	0.0225	0.1091		1,302.0161	1,302.0161	0.0795		1,304.0024
Worker	1.2057	0.8578	11.4715	0.0309	2.9285	0.0245	2.9530	0.7767	0.0226	0.7992		3,081.4157	3,081.4157	0.0972		3,083.8445
Total	**1.3729**	**5.8573**	**12.7815**	**0.0431**	**3.2294**	**0.0480**	**3.2774**	**0.8633**	**0.0451**	**0.9084**		**4,383.4318**	**4,383.4318**	**0.1766**		**4,387.8469**

3.6 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	lb/day										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	0.1672	4.9995	1.3099	0.0122	0.3009	0.0235	0.3244	0.0866	0.0225	0.1091		1,302.0161	1,302.0161	0.0795		1,304.0024
Worker	1.2057	0.8578	11.4715	0.0309	2.9285	0.0245	2.9530	0.7767	0.0226	0.7992		3,081.4157	3,081.4157	0.0972		3,083.8445
Total	**1.3729**	**5.8573**	**12.7815**	**0.0431**	**3.2294**	**0.0480**	**3.2774**	**0.8633**	**0.0451**	**0.9084**		**4,383.4318**	**4,383.4318**	**0.1766**		**4,387.8469**

3.6 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	lb/day										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	0.1429	4.5632	1.1929	0.0121	0.3009	9.3300e-003	0.3102	0.0866	8.9200e-003	0.0956		1,291.9390	1,291.9390	0.0761		1,293.8418
Worker	1.1231	0.7720	10.5527	0.0300	2.9285	0.0237	2.9522	0.7767	0.0218	0.7985		2,983.5770	2,983.5770	0.0879		2,985.7748
Total	**1.2659**	**5.3352**	**11.7456**	**0.0420**	**3.2294**	**0.0330**	**3.2624**	**0.8633**	**0.0307**	**0.8940**		**4,275.5160**	**4,275.5160**	**0.1640**		**4,279.6166**

3.6 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	lb/day										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	0.1429	4.5632	1.1929	0.0121	0.3009	9.3300e-003	0.3102	0.0866	8.9200e-003	0.0956		1,291.9390	1,291.9390	0.0761		1,293.8418
Worker	1.1231	0.7720	10.5527	0.0300	2.9285	0.0237	2.9522	0.7767	0.0218	0.7985		2,983.5770	2,983.5770	0.0879		2,985.7748
Total	**1.2659**	**5.3352**	**11.7456**	**0.0420**	**3.2294**	**0.0330**	**3.2624**	**0.8633**	**0.0307**	**0.8940**		**4,275.5160**	**4,275.5160**	**0.1640**		**4,279.6166**

3.6 Building Construction - 2022

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	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	lb/day										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	0.1341	4.3395	1.1287	0.0120	0.3009	8.1600e-003	0.3091	0.0866	7.8000e-003	0.0944		1,280.6837	1,280.6837	0.0735		1,282.5210
Worker	1.0520	0.6973	9.7360	0.0289	2.9285	0.0229	2.9515	0.7767	0.0211	0.7978		2,878.6263	2,878.6263	0.0795		2,880.6126
Total	**1.1861**	**5.0368**	**10.8647**	**0.0409**	**3.2295**	**0.0311**	**3.2605**	**0.8633**	**0.0289**	**0.8922**		**4,159.3099**	**4,159.3099**	**0.1529**		**4,163.1336**

3.6 Building Construction - 2022

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	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	lb/day										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	0.1341	4.3395	1.1287	0.0120	0.3009	8.1600e-003	0.3091	0.0866	7.8000e-003	0.0944		1,280.6837	1,280.6837	0.0735		1,282.5210
Worker	1.0520	0.6973	9.7360	0.0289	2.9285	0.0229	2.9515	0.7767	0.0211	0.7978		2,878.6263	2,878.6263	0.0795		2,880.6126
Total	**1.1861**	**5.0368**	**10.8647**	**0.0409**	**3.2295**	**0.0311**	**3.2605**	**0.8633**	**0.0289**	**0.8922**		**4,159.3099**	**4,159.3099**	**0.1529**		**4,163.1336**

3.6 Building Construction - 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	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	lb/day										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	0.0995	3.2927	1.0194	0.0116	0.3009	3.8000e-003	0.3047	0.0866	3.6400e-003	0.0903		1,240.3649	1,240.3649	0.0651		1,241.9931
Worker	0.9879	0.6309	8.9660	0.0278	2.9285	0.0223	2.9508	0.7767	0.0205	0.7972		2,773.2228	2,773.2228	0.0716		2,775.0137
Total	**1.0874**	**3.9235**	**9.9853**	**0.0394**	**3.2295**	**0.0261**	**3.2555**	**0.8633**	**0.0242**	**0.8875**		**4,013.5877**	**4,013.5877**	**0.1368**		**4,017.0068**

3.6 Building Construction - 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	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	lb/day										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	0.0995	3.2927	1.0194	0.0116	0.3009	3.8000e-003	0.3047	0.0866	3.6400e-003	0.0903		1,240.3649	1,240.3649	0.0651		1,241.9931
Worker	0.9879	0.6309	8.9660	0.0278	2.9285	0.0223	2.9508	0.7767	0.0205	0.7972		2,773.2228	2,773.2228	0.0716		2,775.0137
Total	**1.0874**	**3.9235**	**9.9853**	**0.0394**	**3.2295**	**0.0261**	**3.2555**	**0.8633**	**0.0242**	**0.8875**		**4,013.5877**	**4,013.5877**	**0.1368**		**4,017.0068**

3.6 Building Construction - 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	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	lb/day										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	0.0971	3.2801	0.9883	0.0115	0.3009	3.7600e-003	0.3047	0.0866	3.5900e-003	0.0902		1,235.3312	1,235.3312	0.0642		1,236.9362
Worker	0.9345	0.5753	8.3584	0.0270	2.9285	0.0220	2.9505	0.7767	0.0202	0.7969		2,687.2771	2,687.2771	0.0657		2,688.9201
Total	**1.0316**	**3.8554**	**9.3467**	**0.0385**	**3.2295**	**0.0257**	**3.2552**	**0.8633**	**0.0238**	**0.8871**		**3,922.6083**	**3,922.6083**	**0.1299**		**3,925.8563**

3.6 Building Construction - 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	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	lb/day										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	0.0971	3.2801	0.9883	0.0115	0.3009	3.7600e-003	0.3047	0.0866	3.5900e-003	0.0902		1,235.3312	1,235.3312	0.0642		1,236.9362
Worker	0.9345	0.5753	8.3584	0.0270	2.9285	0.0220	2.9505	0.7767	0.0202	0.7969		2,687.2771	2,687.2771	0.0657		2,688.9201
Total	**1.0316**	**3.8554**	**9.3467**	**0.0385**	**3.2295**	**0.0257**	**3.2552**	**0.8633**	**0.0238**	**0.8871**		**3,922.6083**	**3,922.6083**	**0.1299**		**3,925.8563**

3.6 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0946	3.2523	0.9629	0.0115	0.3009	3.7000e-003	0.3046	0.0866	3.5300e-003	0.0902		1,228.5245	1,228.5245	0.0633		1,230.1069
Worker	0.8874	0.5264	7.7630	0.0259	2.9285	0.0215	2.9500	0.7767	0.0198	0.7965		2,583.1496	2,583.1496	0.0600		2,584.6484
Total	**0.9820**	**3.7787**	**8.7260**	**0.0374**	**3.2295**	**0.0252**	**3.2547**	**0.8633**	**0.0233**	**0.8866**		**3,811.6741**	**3,811.6741**	**0.1233**		**3,814.7553**

3.6 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0946	3.2523	0.9629	0.0115	0.3009	3.7000e-003	0.3046	0.0866	3.5300e-003	0.0902		1,228.5245	1,228.5245	0.0633		1,230.1069
Worker	0.8874	0.5264	7.7630	0.0259	2.9285	0.0215	2.9500	0.7767	0.0198	0.7965		2,583.1496	2,583.1496	0.0600		2,584.6484
Total	**0.9820**	**3.7787**	**8.7260**	**0.0374**	**3.2295**	**0.0252**	**3.2547**	**0.8633**	**0.0233**	**0.8866**		**3,811.6741**	**3,811.6741**	**0.1233**		**3,814.7553**

3.7 Architectural Coating - 2020

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**11.7261**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	lb/day										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	0.2393	0.1702	2.2768	6.1400e-003	0.5812	4.8600e-003	0.5861	0.1542	4.4800e-003	0.1586		611.5787	611.5787	0.0193		612.0607
Total	**0.2393**	**0.1702**	**2.2768**	**6.1400e-003**	**0.5812**	**4.8600e-003**	**0.5861**	**0.1542**	**4.4800e-003**	**0.1586**		**611.5787**	**611.5787**	**0.0193**		**612.0607**

3.7 Architectural Coating - 2020

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**11.7261**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	lb/day										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	0.2393	0.1702	2.2768	6.1400e-003	0.5812	4.8600e-003	0.5861	0.1542	4.4800e-003	0.1586		611.5787	611.5787	0.0193		612.0607
Total	**0.2393**	**0.1702**	**2.2768**	**6.1400e-003**	**0.5812**	**4.8600e-003**	**0.5861**	**0.1542**	**4.4800e-003**	**0.1586**		**611.5787**	**611.5787**	**0.0193**		**612.0607**

3.7 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**11.7028**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										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	0.2229	0.1532	2.0944	5.9400e-003	0.5812	4.7000e-003	0.5859	0.1542	4.3300e-003	0.1585		592.1603	592.1603	0.0175		592.5965
Total	**0.2229**	**0.1532**	**2.0944**	**5.9400e-003**	**0.5812**	**4.7000e-003**	**0.5859**	**0.1542**	**4.3300e-003**	**0.1585**		**592.1603**	**592.1603**	**0.0175**		**592.5965**

3.7 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**11.7028**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										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	0.2229	0.1532	2.0944	5.9400e-003	0.5812	4.7000e-003	0.5859	0.1542	4.3300e-003	0.1585		592.1603	592.1603	0.0175		592.5965
Total	**0.2229**	**0.1532**	**2.0944**	**5.9400e-003**	**0.5812**	**4.7000e-003**	**0.5859**	**0.1542**	**4.3300e-003**	**0.1585**		**592.1603**	**592.1603**	**0.0175**		**592.5965**

3.7 Architectural Coating - 2022

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**11.6884**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	lb/day										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	0.2088	0.1384	1.9323	5.7300e-003	0.5812	4.5500e-003	0.5858	0.1542	4.1900e-003	0.1583		571.3304	571.3304	0.0158		571.7246
Total	**0.2088**	**0.1384**	**1.9323**	**5.7300e-003**	**0.5812**	**4.5500e-003**	**0.5858**	**0.1542**	**4.1900e-003**	**0.1583**		**571.3304**	**571.3304**	**0.0158**		**571.7246**

3.7 Architectural Coating - 2022

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**11.6884**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	lb/day										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	0.2088	0.1384	1.9323	5.7300e-003	0.5812	4.5500e-003	0.5858	0.1542	4.1900e-003	0.1583		571.3304	571.3304	0.0158		571.7246
Total	**0.2088**	**0.1384**	**1.9323**	**5.7300e-003**	**0.5812**	**4.5500e-003**	**0.5858**	**0.1542**	**4.1900e-003**	**0.1583**		**571.3304**	**571.3304**	**0.0158**		**571.7246**

3.7 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**11.6756**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	lb/day										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	0.1961	0.1252	1.7795	5.5200e-003	0.5812	4.4200e-003	0.5857	0.1542	4.0700e-003	0.1582		550.4106	550.4106	0.0142		550.7661
Total	**0.1961**	**0.1252**	**1.7795**	**5.5200e-003**	**0.5812**	**4.4200e-003**	**0.5857**	**0.1542**	**4.0700e-003**	**0.1582**		**550.4106**	**550.4106**	**0.0142**		**550.7661**

3.7 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**11.6756**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	lb/day										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	0.1961	0.1252	1.7795	5.5200e-003	0.5812	4.4200e-003	0.5857	0.1542	4.0700e-003	0.1582		550.4106	550.4106	0.0142		550.7661
Total	**0.1961**	**0.1252**	**1.7795**	**5.5200e-003**	**0.5812**	**4.4200e-003**	**0.5857**	**0.1542**	**4.0700e-003**	**0.1582**		**550.4106**	**550.4106**	**0.0142**		**550.7661**

3.7 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**11.6647**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	lb/day										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	0.1855	0.1142	1.6589	5.3500e-003	0.5812	4.3600e-003	0.5856	0.1542	4.0100e-003	0.1582		533.3527	533.3527	0.0130		533.6788
Total	**0.1855**	**0.1142**	**1.6589**	**5.3500e-003**	**0.5812**	**4.3600e-003**	**0.5856**	**0.1542**	**4.0100e-003**	**0.1582**		**533.3527**	**533.3527**	**0.0130**		**533.6788**

3.7 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**11.6647**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	lb/day										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	0.1855	0.1142	1.6589	5.3500e-003	0.5812	4.3600e-003	0.5856	0.1542	4.0100e-003	0.1582		533.3527	533.3527	0.0130		533.6788
Total	**0.1855**	**0.1142**	**1.6589**	**5.3500e-003**	**0.5812**	**4.3600e-003**	**0.5856**	**0.1542**	**4.0100e-003**	**0.1582**		**533.3527**	**533.3527**	**0.0130**		**533.6788**

3.7 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1761	0.1045	1.5408	5.1400e-003	0.5812	4.2700e-003	0.5855	0.1542	3.9300e-003	0.1581		512.6862	512.6862	0.0119		512.9837
Total	**0.1761**	**0.1045**	**1.5408**	**5.1400e-003**	**0.5812**	**4.2700e-003**	**0.5855**	**0.1542**	**3.9300e-003**	**0.1581**		**512.6862**	**512.6862**	**0.0119**		**512.9837**

3.7 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1761	0.1045	1.5408	5.1400e-003	0.5812	4.2700e-003	0.5855	0.1542	3.9300e-003	0.1581		512.6862	512.6862	0.0119		512.9837
Total	**0.1761**	**0.1045**	**1.5408**	**5.1400e-003**	**0.5812**	**4.2700e-003**	**0.5855**	**0.1542**	**3.9300e-003**	**0.1581**		**512.6862**	**512.6862**	**0.0119**		**512.9837**

3.7 Architectural Coating - 2026

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1681	0.0963	1.4408	4.9600e-003	0.5812	4.1200e-003	0.5854	0.1542	3.7900e-003	0.1579		494.8734	494.8734	0.0109		495.1462
Total	**0.1681**	**0.0963**	**1.4408**	**4.9600e-003**	**0.5812**	**4.1200e-003**	**0.5854**	**0.1542**	**3.7900e-003**	**0.1579**		**494.8734**	**494.8734**	**0.0109**		**495.1462**

3.7 Architectural Coating - 2026

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1681	0.0963	1.4408	4.9600e-003	0.5812	4.1200e-003	0.5854	0.1542	3.7900e-003	0.1579		494.8734	494.8734	0.0109		495.1462
Total	**0.1681**	**0.0963**	**1.4408**	**4.9600e-003**	**0.5812**	**4.1200e-003**	**0.5854**	**0.1542**	**3.7900e-003**	**0.1579**		**494.8734**	**494.8734**	**0.0109**		**495.1462**

3.7 Architectural Coating - 2027

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1602	0.0888	1.3512	4.8000e-003	0.5812	3.9000e-003	0.5851	0.1542	3.5800e-003	0.1577		479.1051	479.1051	0.0100		479.3556
Total	**0.1602**	**0.0888**	**1.3512**	**4.8000e-003**	**0.5812**	**3.9000e-003**	**0.5851**	**0.1542**	**3.5800e-003**	**0.1577**		**479.1051**	**479.1051**	**0.0100**		**479.3556**

3.7 Architectural Coating - 2027

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1602	0.0888	1.3512	4.8000e-003	0.5812	3.9000e-003	0.5851	0.1542	3.5800e-003	0.1577		479.1051	479.1051	0.0100		479.3556
Total	**0.1602**	**0.0888**	**1.3512**	**4.8000e-003**	**0.5812**	**3.9000e-003**	**0.5851**	**0.1542**	**3.5800e-003**	**0.1577**		**479.1051**	**479.1051**	**0.0100**		**479.3556**

3.8 Utilities 2 - 2025

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	lb/day										lb/day					
Off-Road	0.3235	2.9189	5.7890	8.5600e-003		0.1261	0.1261		0.1160	0.1160		828.3372	828.3372	0.2679		835.0347
Total	**0.3235**	**2.9189**	**5.7890**	**8.5600e-003**		**0.1261**	**0.1261**		**0.1160**	**0.1160**		**828.3372**	**828.3372**	**0.2679**		**835.0347**

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	lb/day										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	0.0271	0.0161	0.2370	7.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.0000e-004	0.0243		78.8748	78.8748	1.8300e-003		78.9206
Total	**0.0271**	**0.0161**	**0.2370**	**7.9000e-004**	**0.0894**	**6.6000e-004**	**0.0901**	**0.0237**	**6.0000e-004**	**0.0243**		**78.8748**	**78.8748**	**1.8300e-003**		**78.9206**

3.8 Utilities 2 - 2025

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	lb/day										lb/day					
Off-Road	0.3235	2.9189	5.7890	8.5600e-003		0.1261	0.1261		0.1160	0.1160	0.0000	828.3372	828.3372	0.2679		835.0347
Total	**0.3235**	**2.9189**	**5.7890**	**8.5600e-003**		**0.1261**	**0.1261**		**0.1160**	**0.1160**	**0.0000**	**828.3372**	**828.3372**	**0.2679**		**835.0347**

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	lb/day										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	0.0271	0.0161	0.2370	7.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.0000e-004	0.0243		78.8748	78.8748	1.8300e-003		78.9206
Total	**0.0271**	**0.0161**	**0.2370**	**7.9000e-004**	**0.0894**	**6.6000e-004**	**0.0901**	**0.0237**	**6.0000e-004**	**0.0243**		**78.8748**	**78.8748**	**1.8300e-003**		**78.9206**

3.8 Utilities 2 - 2026

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	lb/day										lb/day					
Off-Road	0.3235	2.9189	5.7890	8.5600e-003		0.1261	0.1261		0.1160	0.1160		828.3372	828.3372	0.2679		835.0347
Total	**0.3235**	**2.9189**	**5.7890**	**8.5600e-003**		**0.1261**	**0.1261**		**0.1160**	**0.1160**		**828.3372**	**828.3372**	**0.2679**		**835.0347**

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	lb/day										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	0.0259	0.0148	0.2217	7.6000e-004	0.0894	6.3000e-004	0.0901	0.0237	5.8000e-004	0.0243		76.1344	76.1344	1.6800e-003		76.1763
Total	**0.0259**	**0.0148**	**0.2217**	**7.6000e-004**	**0.0894**	**6.3000e-004**	**0.0901**	**0.0237**	**5.8000e-004**	**0.0243**		**76.1344**	**76.1344**	**1.6800e-003**		**76.1763**

3.8 Utilities 2 - 2026

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	lb/day										lb/day					
Off-Road	0.3235	2.9189	5.7890	8.5600e-003		0.1261	0.1261		0.1160	0.1160	0.0000	828.3372	828.3372	0.2679		835.0347
Total	**0.3235**	**2.9189**	**5.7890**	**8.5600e-003**		**0.1261**	**0.1261**		**0.1160**	**0.1160**	**0.0000**	**828.3372**	**828.3372**	**0.2679**		**835.0347**

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	lb/day										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	0.0259	0.0148	0.2217	7.6000e-004	0.0894	6.3000e-004	0.0901	0.0237	5.8000e-004	0.0243		76.1344	76.1344	1.6800e-003		76.1763
Total	**0.0259**	**0.0148**	**0.2217**	**7.6000e-004**	**0.0894**	**6.3000e-004**	**0.0901**	**0.0237**	**5.8000e-004**	**0.0243**		**76.1344**	**76.1344**	**1.6800e-003**		**76.1763**

3.9 Fine Grading 2 - 2025

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790		3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**8.6733**	**0.6294**	**9.3027**	**3.5965**	**0.5790**	**4.1755**		**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0677	0.0402	0.5926	1.9800e-003	0.2236	1.6400e-003	0.2252	0.0593	1.5100e-003	0.0608		197.1870	197.1870	4.5800e-003		197.3014
Total	**0.0677**	**0.0402**	**0.5926**	**1.9800e-003**	**0.2236**	**1.6400e-003**	**0.2252**	**0.0593**	**1.5100e-003**	**0.0608**		**197.1870**	**197.1870**	**4.5800e-003**		**197.3014**

3.9 Fine Grading 2 - 2025

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790	0.0000	3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**3.3826**	**0.6294**	**4.0120**	**1.4026**	**0.5790**	**1.9817**	**0.0000**	**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0677	0.0402	0.5926	1.9800e-003	0.2236	1.6400e-003	0.2252	0.0593	1.5100e-003	0.0608		197.1870	197.1870	4.5800e-003		197.3014
Total	**0.0677**	**0.0402**	**0.5926**	**1.9800e-003**	**0.2236**	**1.6400e-003**	**0.2252**	**0.0593**	**1.5100e-003**	**0.0608**		**197.1870**	**197.1870**	**4.5800e-003**		**197.3014**

3.9 Fine Grading 2 - 2026

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790		3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**8.6733**	**0.6294**	**9.3027**	**3.5965**	**0.5790**	**4.1755**		**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0646	0.0370	0.5542	1.9100e-003	0.2236	1.5900e-003	0.2251	0.0593	1.4600e-003	0.0608		190.3359	190.3359	4.2000e-003		190.4409
Total	**0.0646**	**0.0370**	**0.5542**	**1.9100e-003**	**0.2236**	**1.5900e-003**	**0.2251**	**0.0593**	**1.4600e-003**	**0.0608**		**190.3359**	**190.3359**	**4.2000e-003**		**190.4409**

3.9 Fine Grading 2 - 2026

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790	0.0000	3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**3.3826**	**0.6294**	**4.0120**	**1.4026**	**0.5790**	**1.9817**	**0.0000**	**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0646	0.0370	0.5542	1.9100e-003	0.2236	1.5900e-003	0.2251	0.0593	1.4600e-003	0.0608		190.3359	190.3359	4.2000e-003		190.4409
Total	**0.0646**	**0.0370**	**0.5542**	**1.9100e-003**	**0.2236**	**1.5900e-003**	**0.2251**	**0.0593**	**1.4600e-003**	**0.0608**		**190.3359**	**190.3359**	**4.2000e-003**		**190.4409**

3.9 Fine Grading 2 - 2027

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790		3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**8.6733**	**0.6294**	**9.3027**	**3.5965**	**0.5790**	**4.1755**		**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0616	0.0342	0.5197	1.8500e-003	0.2236	1.5000e-003	0.2251	0.0593	1.3800e-003	0.0607		184.2712	184.2712	3.8500e-003		184.3675
Total	**0.0616**	**0.0342**	**0.5197**	**1.8500e-003**	**0.2236**	**1.5000e-003**	**0.2251**	**0.0593**	**1.3800e-003**	**0.0607**		**184.2712**	**184.2712**	**3.8500e-003**		**184.3675**

3.9 Fine Grading 2 - 2027

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790	0.0000	3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**3.3826**	**0.6294**	**4.0120**	**1.4026**	**0.5790**	**1.9817**	**0.0000**	**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0616	0.0342	0.5197	1.8500e-003	0.2236	1.5000e-003	0.2251	0.0593	1.3800e-003	0.0607		184.2712	184.2712	3.8500e-003		184.3675
Total	**0.0616**	**0.0342**	**0.5197**	**1.8500e-003**	**0.2236**	**1.5000e-003**	**0.2251**	**0.0593**	**1.3800e-003**	**0.0607**		**184.2712**	**184.2712**	**3.8500e-003**		**184.3675**

3.10 Building Construction 2 - 2026

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0374	1.3025	0.3814	4.6000e-003	0.1217	1.4700e-003	0.1231	0.0350	1.4000e-003	0.0364		493.9952	493.9952	0.0252		494.6259
Worker	0.4234	0.2425	3.6297	0.0125	1.4643	0.0104	1.4747	0.3883	9.5600e-003	0.3979		1,246.7003	1,246.7003	0.0275		1,247.3876
Total	**0.4608**	**1.5450**	**4.0111**	**0.0171**	**1.5859**	**0.0119**	**1.5978**	**0.4234**	**0.0110**	**0.4343**		**1,740.6956**	**1,740.6956**	**0.0527**		**1,742.0135**

3.10 Building Construction 2 - 2026

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0374	1.3025	0.3814	4.6000e-003	0.1217	1.4700e-003	0.1231	0.0350	1.4000e-003	0.0364		493.9952	493.9952	0.0252		494.6259
Worker	0.4234	0.2425	3.6297	0.0125	1.4643	0.0104	1.4747	0.3883	9.5600e-003	0.3979		1,246.7003	1,246.7003	0.0275		1,247.3876
Total	**0.4608**	**1.5450**	**4.0111**	**0.0171**	**1.5859**	**0.0119**	**1.5978**	**0.4234**	**0.0110**	**0.4343**		**1,740.6956**	**1,740.6956**	**0.0527**		**1,742.0135**

3.10 Building Construction 2 - 2027

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0367	1.2908	0.3751	4.5800e-003	0.1217	1.4400e-003	0.1231	0.0350	1.3800e-003	0.0364		491.6310	491.6310	0.0249		492.2526
Worker	0.4036	0.2237	3.4040	0.0121	1.4643	9.8100e-003	1.4741	0.3883	9.0300e-003	0.3974		1,206.9763	1,206.9763	0.0252		1,207.6073
Total	**0.4403**	**1.5145**	**3.7791**	**0.0167**	**1.5859**	**0.0113**	**1.5972**	**0.4234**	**0.0104**	**0.4338**		**1,698.6073**	**1,698.6073**	**0.0501**		**1,699.8599**

3.10 Building Construction 2 - 2027

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0367	1.2908	0.3751	4.5800e-003	0.1217	1.4400e-003	0.1231	0.0350	1.3800e-003	0.0364		491.6310	491.6310	0.0249		492.2526
Worker	0.4036	0.2237	3.4040	0.0121	1.4643	9.8100e-003	1.4741	0.3883	9.0300e-003	0.3974		1,206.9763	1,206.9763	0.0252		1,207.6073
Total	**0.4403**	**1.5145**	**3.7791**	**0.0167**	**1.5859**	**0.0113**	**1.5972**	**0.4234**	**0.0104**	**0.4338**		**1,698.6073**	**1,698.6073**	**0.0501**		**1,699.8599**

3.10 Building Construction 2 - 2028

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0360	1.2810	0.3700	4.5600e-003	0.1217	1.4200e-003	0.1231	0.0350	1.3500e-003	0.0364		489.6008	489.6008	0.0245		490.2140
Worker	0.3832	0.2068	3.2065	0.0118	1.4643	9.1000e-003	1.4734	0.3883	8.3700e-003	0.3967		1,171.8026	1,171.8026	0.0233		1,172.3852
Total	**0.4192**	**1.4878**	**3.5766**	**0.0163**	**1.5859**	**0.0105**	**1.5965**	**0.4234**	**9.7200e-003**	**0.4331**		**1,661.4034**	**1,661.4034**	**0.0478**		**1,662.5992**

3.10 Building Construction 2 - 2028

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0360	1.2810	0.3700	4.5600e-003	0.1217	1.4200e-003	0.1231	0.0350	1.3500e-003	0.0364		489.6008	489.6008	0.0245		490.2140
Worker	0.3832	0.2068	3.2065	0.0118	1.4643	9.1000e-003	1.4734	0.3883	8.3700e-003	0.3967		1,171.8026	1,171.8026	0.0233		1,172.3852
Total	**0.4192**	**1.4878**	**3.5766**	**0.0163**	**1.5859**	**0.0105**	**1.5965**	**0.4234**	**9.7200e-003**	**0.4331**		**1,661.4034**	**1,661.4034**	**0.0478**		**1,662.5992**

4.0 Operational Detail - Mobile

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	lb/day										lb/day					
Mitigated	28.6141	132.7080	419.9395	1.8773	181.4944	1.2559	182.7503	48.5535	1.1664	49.7200		191,856.5884	191,856.5884	7.9469		192,055.2601
Unmitigated	28.6141	132.7080	419.9395	1.8773	181.4944	1.2559	182.7503	48.5535	1.1664	49.7200		191,856.5884	191,856.5884	7.9469		192,055.2601

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1,398.80	1,398.80	1398.80	400,762	400,762
Elementary School	1,017.36	0.00	0.00	2,504,438	2,504,438
Government (Civic Center)	40.04	40.04	40.04	123,649	123,649
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	14,784.00	15,345.00	13365.00	70,658,702	70,658,702
Single Family Housing	1,478.40	1,534.50	1336.50	7,065,870	7,065,870
Total	18,718.60	18,318.34	16,140.34	80,753,422	80,753,422

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
City Park	1.07	1.07	1.07	33.00	48.00	19.00	66	28	6
Elementary School	16.60	8.40	6.90	65.00	30.00	5.00	63	25	12
Government (Civic Center)	16.60	8.40	6.90	75.00	20.00	5.00	50	34	16
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	13.24	13.24	13.24	100.00	0.00	0.00	100	0	0
Single Family Housing	13.24	13.24	13.24	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Elementary School	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Government (Civic Center)	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Other Asphalt Surfaces	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Single Family Housing	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Northlake Creek Avoidance Alternative - Los Angeles-South Coast County, Summer

	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	lb/day										lb/day					
NaturalGas Mitigated	1.5030	12.8602	5.5842	0.0820		1.0385	1.0385		1.0385	1.0385		16,396.5999	16,396.5999	0.3143	0.3006	16,494.0367
NaturalGas Unmitigated	1.5030	12.8602	5.5842	0.0820		1.0385	1.0385		1.0385	1.0385		16,396.5999	16,396.5999	0.3143	0.3006	16,494.0367

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	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	1495.97	0.0161	0.1467	0.1232	8.8000e-004		0.0112	0.0112		0.0112	0.0112		175.9969	175.9969	3.3700e-003	3.2300e-003	177.0428
Government (Civic Center)	1254.9	0.0135	0.1230	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003		147.6358	147.6358	2.8300e-003	2.7100e-003	148.5131
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12420	0.1339	1.1446	0.4871	7.3100e-003		0.0925	0.0925		0.0925	0.0925		1,461.1788	1,461.1788	0.0280	0.0268	1,469.8619
Single Family Housing	124200	1.3394	11.4459	4.8706	0.0731		0.9254	0.9254		0.9254	0.9254		14,611.7884	14,611.7884	0.2801	0.2679	14,698.6190
Total		**1.5030**	**12.8602**	**5.5842**	**0.0820**		**1.0385**	**1.0385**		**1.0385**	**1.0385**		**16,396.5999**	**16,396.5999**	**0.3143**	**0.3006**	**16,494.0367**

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	1.49597	0.0161	0.1467	0.1232	8.8000e-004		0.0112	0.0112		0.0112	0.0112		175.9969	175.9969	3.3700e-003	3.2300e-003	177.0428
Government (Civic Center)	1.2549	0.0135	0.1230	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003		147.6358	147.6358	2.8300e-003	2.7100e-003	148.5131
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12.42	0.1339	1.1446	0.4871	7.3100e-003		0.0925	0.0925		0.0925	0.0925		1,461.1788	1,461.1788	0.0280	0.0268	1,469.8619
Single Family Housing	124.2	1.3394	11.4459	4.8706	0.0731		0.9254	0.9254		0.9254	0.9254		14,611.7884	14,611.7884	0.2801	0.2679	14,698.6190
Total		**1.5030**	**12.8602**	**5.5842**	**0.0820**		**1.0385**	**1.0385**		**1.0385**	**1.0385**		**16,396.5999**	**16,396.5999**	**0.3143**	**0.3006**	**16,494.0367**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	80.1354	16.8192	156.1000	0.1043		2.0508	2.0508		2.0508	2.0508	0.0000	19,540.3794	19,540.3794	0.6280	0.3533	19,661.3607
Unmitigated	80.1354	16.8192	156.1000	0.1043		2.0508	2.0508		2.0508	2.0508	0.0000	19,540.3794	19,540.3794	0.6280	0.3533	19,661.3607

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	lb/day										lb/day					
Architectural Coating	6.0880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	67.7820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7665	15.0953	6.4235	0.0964		1.2205	1.2205		1.2205	1.2205	0.0000	19,270.5882	19,270.5882	0.3694	0.3533	19,385.1037
Landscaping	4.4988	1.7239	149.6764	7.9100e-003		0.8304	0.8304		0.8304	0.8304		269.7912	269.7912	0.2586		276.2570
Total	**80.1354**	**16.8192**	**156.1000**	**0.1043**		**2.0508**	**2.0508**		**2.0508**	**2.0508**	**0.0000**	**19,540.3794**	**19,540.3794**	**0.6280**	**0.3533**	**19,661.3607**

6.2 Area by SubCategory

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
SubCategory	lb/day										lb/day					
Architectural Coating	6.0880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	67.7820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7665	15.0953	6.4235	0.0964		1.2205	1.2205		1.2205	1.2205	0.0000	19,270.5882	19,270.5882	0.3694	0.3533	19,385.1037
Landscaping	4.4988	1.7239	149.6764	7.9100e-003		0.8304	0.8304		0.8304	0.8304		269.7912	269.7912	0.2586		276.2570
Total	**80.1354**	**16.8192**	**156.1000**	**0.1043**		**2.0508**	**2.0508**		**2.0508**	**2.0508**	**0.0000**	**19,540.3794**	**19,540.3794**	**0.6280**	**0.3533**	**19,661.3607**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Northlake Creek Avoidance Alternative

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	44.00	1000sqft	1.01	44,000.00	0
Elementary School	628.00	Student	23.00	52,502.92	0
Other Asphalt Surfaces	2.00	Acre	2.00	87,120.00	0
Other Asphalt Surfaces	71.00	Acre	71.00	3,092,760.00	0
City Park	26.00	Acre	26.00	1,132,560.00	0
Single Family Housing	1,650.00	Dwelling Unit	264.00	2,970,000.00	4719
Single Family Housing	165.00	Dwelling Unit	26.40	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2028
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	392.72	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on DEIR inputs

Land Use - Based on PD for CAA

Construction Phase - Based on data request

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition phase

Off-road Equipment - Based on data request

Off-road Equipment - Based on data request

Off-road Equipment - Based on data request

Off-road Equipment -

Off-road Equipment - Based on data request

Off-road Equipment - Based on data request

Trips and VMT - Based on proportion of default to adjusted worker and vendor trips from the DEIR and applied to the CalEEMod default values for the CAA.

Grading -

Vehicle Trips - Based on VMT and DEIR

Woodstoves - No wood fireplaces

Energy Use -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	550.00	1,935.00
tblConstructionPhase	NumDays	7,750.00	1,565.00
tblConstructionPhase	NumDays	7,750.00	781.00
tblConstructionPhase	NumDays	775.00	652.00
tblConstructionPhase	NumDays	775.00	1,304.00

tblConstructionPhase	NumDays	775.00	521.00
tblConstructionPhase	NumDays	300.00	261.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	1,542.75	455.00
tblFireplaces	NumberNoFireplace	181.50	1,360.00
tblFireplaces	NumberWood	90.75	0.00
tblGrading	AcresOfGrading	18,256.00	1,937.50
tblGrading	AcresOfGrading	652.00	3,260.00
tblGrading	AcresOfGrading	260.50	1,302.50
tblGrading	MaterialExported	0.00	8,279,040.00
tblLandUse	LotAcreage	1.21	23.00
tblLandUse	LotAcreage	53.57	26.40
tblLandUse	LotAcreage	535.71	264.00
tblOffRoadEquipment	HorsePower	212.00	600.00
tblOffRoadEquipment	HorsePower	212.00	436.00
tblOffRoadEquipment	HorsePower	212.00	100.00
tblOffRoadEquipment	HorsePower	212.00	290.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	25.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	392.72
tblTripsAndVMT	VendorTripNumber	917.00	47.00
tblTripsAndVMT	VendorTripNumber	917.00	19.00
tblTripsAndVMT	WorkerTripNumber	95.00	20.00

tblTripsAndVMT	WorkerTripNumber	15.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	11.00
tblTripsAndVMT	WorkerTripNumber	2,501.00	262.00
tblTripsAndVMT	WorkerTripNumber	500.00	52.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	2,501.00	131.00
tblVehicleTrips	CC_TL	8.40	1.07
tblVehicleTrips	CNW_TL	6.90	1.07
tblVehicleTrips	CW_TL	16.60	1.07
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	8.70	13.24
tblVehicleTrips	HO_TTP	40.60	0.00
tblVehicleTrips	HS_TL	5.90	13.24
tblVehicleTrips	HS_TTP	19.20	0.00
tblVehicleTrips	HW_TL	14.70	13.24
tblVehicleTrips	HW_TTP	40.20	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	22.75	53.80
tblVehicleTrips	ST_TR	0.00	0.91
tblVehicleTrips	ST_TR	9.91	9.30
tblVehicleTrips	SU_TR	16.74	53.80
tblVehicleTrips	SU_TR	0.00	0.91
tblVehicleTrips	SU_TR	8.62	8.10
tblVehicleTrips	WD_TR	1.89	53.80
tblVehicleTrips	WD_TR	1.29	1.62
tblVehicleTrips	WD_TR	27.92	0.91

tblVehicleTrips	WD_TR	9.52	8.96
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	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
Year	lb/day										lb/day					
2018	65.5184	1,109.6360	442.7064	1.8793	161.1172	26.7856	187.9028	52.2440	24.7158	76.9598	0.0000	198,486.8200	198,486.8200	29.0413	0.0000	199,212.8535
2019	57.4739	991.2970	400.9115	1.8304	90.9513	22.3235	113.2748	29.5238	20.6044	50.1282	0.0000	192,698.8834	192,698.8834	27.9743	0.0000	193,398.2404
2020	69.4245	947.0583	412.3529	1.8924	94.9648	21.5162	116.4810	30.5911	19.8817	50.4728	0.0000	197,626.9374	197,626.9374	28.5837	0.0000	198,341.5294
2021	17.6213	49.5572	48.4392	0.1080	12.5734	2.2440	14.8175	4.6377	2.0917	6.7294	0.0000	10,615.2048	10,615.2048	1.8113	0.0000	10,660.4883
2022	16.9639	43.2567	46.6375	0.1067	12.5735	1.8640	14.4374	4.6377	1.7386	6.3763	0.0000	10,483.2783	10,483.2783	1.7934	0.0000	10,528.1141
2023	16.4597	37.7722	44.9811	0.1051	12.5735	1.5768	14.1503	4.6377	1.4712	6.1089	0.0000	10,324.0025	10,324.0025	1.7695	0.0000	10,368.2394
2024	14.4954	18.6912	28.1669	0.0716	3.8107	0.7045	4.5152	1.0175	0.6658	1.6833	0.0000	7,071.7750	7,071.7750	0.7619	0.0000	7,090.8214
2025	16.3070	35.7335	49.5119	0.1132	12.7970	1.3664	14.1634	4.6970	1.2723	5.9692	0.0000	11,108.9914	11,108.9914	2.0178	0.0000	11,159.4375
2026	15.7130	33.4641	44.9768	0.0937	11.1535	1.3527	12.5062	4.2570	1.2596	5.5166	0.0000	9,109.9833	9,109.9833	1.9458	0.0000	9,158.6278
2027	15.3269	30.4849	38.6574	0.0838	11.0641	1.2251	12.2892	4.2333	1.1422	5.3755	0.0000	8,149.7104	8,149.7104	1.6726	0.0000	8,191.5256
2028	1.8404	13.9737	19.3938	0.0425	1.5859	0.5381	2.1241	0.4234	0.5060	0.9294	0.0000	4,136.5259	4,136.5259	0.6486	0.0000	4,152.7396
Maximum	**69.4245**	**1,109.6360**	**442.7064**	**1.8924**	**161.1172**	**26.7856**	**187.9028**	**52.2440**	**24.7158**	**76.9598**	**0.0000**	**198,486.8200**	**198,486.8200**	**29.0413**	**0.0000**	**199,212.8535**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	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
Year	lb/day										lb/day					
2018	65.5184	1,109.6360	442.7064	1.8793	130.9873	26.7856	157.7729	37.5945	24.7158	62.3103	0.0000	198,486.8199	198,486.8199	29.0413	0.0000	199,212.8535
2019	57.4739	991.2970	400.9115	1.8304	71.8418	22.3235	94.1654	20.9320	20.6044	41.5364	0.0000	192,698.8834	192,698.8834	27.9743	0.0000	193,398.2403
2020	69.4245	947.0583	412.3529	1.8924	75.8553	21.5162	97.3715	21.9994	19.8817	41.8810	0.0000	197,626.9374	197,626.9374	28.5837	0.0000	198,341.5293
2021	17.6213	49.5572	48.4392	0.1080	7.2827	2.2440	9.5267	2.4438	2.0917	4.5355	0.0000	10,615.2048	10,615.2048	1.8113	0.0000	10,660.4883
2022	16.9639	43.2567	46.6375	0.1067	7.2827	1.8640	9.1467	2.4438	1.7386	4.1824	0.0000	10,483.2783	10,483.2783	1.7934	0.0000	10,528.1141
2023	16.4597	37.7722	44.9811	0.1051	7.2827	1.5768	8.8595	2.4438	1.4712	3.9150	0.0000	10,324.0025	10,324.0025	1.7695	0.0000	10,368.2394
2024	14.4954	18.6912	28.1669	0.0716	3.8107	0.7045	4.5152	1.0175	0.6658	1.6833	0.0000	7,071.7750	7,071.7750	0.7619	0.0000	7,090.8214
2025	16.3070	35.7335	49.5119	0.1132	7.5063	1.3664	8.8727	2.5031	1.2723	3.7754	0.0000	11,108.9914	11,108.9914	2.0178	0.0000	11,159.4375
2026	15.7130	33.4641	44.9768	0.0937	5.8627	1.3527	7.2155	2.0632	1.2596	3.3228	0.0000	9,109.9833	9,109.9833	1.9458	0.0000	9,158.6278
2027	15.3269	30.4849	38.6574	0.0838	5.7733	1.2251	6.9984	2.0394	1.1422	3.1816	0.0000	8,149.7104	8,149.7104	1.6726	0.0000	8,191.5256
2028	1.8404	13.9737	19.3938	0.0425	1.5859	0.5381	2.1241	0.4234	0.5060	0.9294	0.0000	4,136.5259	4,136.5259	0.6486	0.0000	4,152.7396
Maximum	**69.4245**	**1,109.6360**	**442.7064**	**1.8924**	**130.9873**	**26.7856**	**157.7729**	**37.5945**	**24.7158**	**62.3103**	**0.0000**	**198,486.8199**	**198,486.8199**	**29.0413**	**0.0000**	**199,212.8535**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**23.54**	**0.00**	**19.76**	**31.93**	**0.00**	**20.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	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	lb/day										lb/day					
Area	80.1354	16.8192	156.1000	0.1043		2.0508	2.0508		2.0508	2.0508	0.0000	19,540.3794	19,540.3794	0.6280	0.3533	19,661.3607
Energy	1.5030	12.8602	5.5842	0.0820		1.0385	1.0385		1.0385	1.0385		16,396.5999	16,396.5999	0.3143	0.3006	16,494.0367
Mobile	27.7734	135.8391	394.4732	1.7904	181.4944	1.2590	182.7534	48.5535	1.1694	49.7229		183,097.3301	183,097.3301	7.9197		183,295.3236
Total	**109.4118**	**165.5185**	**556.1574**	**1.9766**	**181.4944**	**4.3482**	**185.8427**	**48.5535**	**4.2587**	**52.8122**	**0.0000**	**219,034.3094**	**219,034.3094**	**8.8620**	**0.6539**	**219,450.7210**

Mitigated Operational

	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	lb/day										lb/day					
Area	80.1354	16.8192	156.1000	0.1043		2.0508	2.0508		2.0508	2.0508	0.0000	19,540.3794	19,540.3794	0.6280	0.3533	19,661.3607
Energy	1.5030	12.8602	5.5842	0.0820		1.0385	1.0385		1.0385	1.0385		16,396.5999	16,396.5999	0.3143	0.3006	16,494.0367
Mobile	27.7734	135.8391	394.4732	1.7904	181.4944	1.2590	182.7534	48.5535	1.1694	49.7229		183,097.3301	183,097.3301	7.9197		183,295.3236
Total	**109.4118**	**165.5185**	**556.1574**	**1.9766**	**181.4944**	**4.3482**	**185.8427**	**48.5535**	**4.2587**	**52.8122**	**0.0000**	**219,034.3094**	**219,034.3094**	**8.8620**	**0.6539**	**219,450.7210**

	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	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2018	12/31/2018	5	261	
2	Grading	Grading	7/1/2018	12/29/2020	5	652	
3	Fine Grading 1	Grading	10/1/2018	9/28/2023	5	1304	
4	Utilities 1	Trenching	2/1/2019	12/30/2020	5	499	
5	Building Construction	Building Construction	1/1/2020	12/30/2025	5	1565	
6	Architectural Coating	Architectural Coating	8/1/2020	12/31/2027	5	1935	
7	Utilities 2	Trenching	7/1/2025	2/26/2026	5	173	
8	Fine Grading 2	Grading	10/1/2025	9/29/2027	5	521	
9	Building Construction 2	Building Construction	1/1/2026	12/28/2028	5	781	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1937.5

Acres of Paving: 73

Residential Indoor: 6,615,675; Residential Outdoor: 2,205,225; Non-Residential Indoor: 144,754; Non-Residential Outdoor: 48,251; Striped Parking Area: 190,793 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40

Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Crawler Tractors	3	8.00	600	0.43
Grading	Crawler Tractors	2	8.00	436	0.43
Grading	Crawler Tractors	2	8.00	100	0.43
Grading	Crawler Tractors	2	8.00	290	0.43
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	25	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Fine Grading 1	Excavators	2	8.00	158	0.38
Fine Grading 1	Graders	1	8.00	187	0.41
Fine Grading 1	Rubber Tired Dozers	1	8.00	247	0.40
Fine Grading 1	Scrapers	0	8.00	367	0.48
Fine Grading 1	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Utilities 1	Excavators	1	6.00	158	0.38
Utilities 1	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Utilities 2	Excavators	1	6.00	158	0.38
Utilities 2	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Fine Grading 2	Excavators	2	8.00	158	0.38
Fine Grading 2	Graders	1	8.00	187	0.41

Fine Grading 2	Rubber Tired Dozers	1	8.00	247	0.40
Fine Grading 2	Scrapers	0	8.00	367	0.48
Fine Grading 2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction 2	Cranes	1	7.00	231	0.29
Building Construction 2	Forklifts	3	8.00	89	0.20
Building Construction 2	Generator Sets	1	8.00	84	0.74
Building Construction 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 2	Welders	1	8.00	46	0.45

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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	38	20.00	0.00	1,034,880.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading 1	6	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Utilities 1	3	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	262.00	47.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	52.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Utilities 2	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading 2	6	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	131.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2018

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	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708		3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**18.0663**	**2.5769**	**20.6432**	**9.9307**	**2.3708**	**12.3014**		**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

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	lb/day										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	0.1101	0.0831	0.8951	2.1400e-003	0.2012	1.7900e-003	0.2030	0.0534	1.6500e-003	0.0550		212.5037	212.5037	8.0000e-003		212.7036
Total	**0.1101**	**0.0831**	**0.8951**	**2.1400e-003**	**0.2012**	**1.7900e-003**	**0.2030**	**0.0534**	**1.6500e-003**	**0.0550**		**212.5037**	**212.5037**	**8.0000e-003**		**212.7036**

3.2 Site Preparation - 2018

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	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708	0.0000	3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**7.0458**	**2.5769**	**9.6228**	**3.8730**	**2.3708**	**6.2437**	**0.0000**	**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

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	lb/day										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	0.1101	0.0831	0.8951	2.1400e-003	0.2012	1.7900e-003	0.2030	0.0534	1.6500e-003	0.0550		212.5037	212.5037	8.0000e-003		212.7036
Total	**0.1101**	**0.0831**	**0.8951**	**2.1400e-003**	**0.2012**	**1.7900e-003**	**0.2030**	**0.0534**	**1.6500e-003**	**0.0550**		**212.5037**	**212.5037**	**8.0000e-003**		**212.7036**

3.3 Grading - 2018

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	lb/day										lb/day					
Fugitive Dust					22.6537	0.0000	22.6537	10.4884	0.0000	10.4884			0.0000			0.0000
Off-Road	41.7253	510.2829	286.9201	0.5391		20.7005	20.7005		19.0445	19.0445		54,261.8472	54,261.8472	16.8925		54,684.1585
Total	**41.7253**	**510.2829**	**286.9201**	**0.5391**	**22.6537**	**20.7005**	**43.3542**	**10.4884**	**19.0445**	**29.5329**		**54,261.8472**	**54,261.8472**	**16.8925**		**54,684.1585**

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	lb/day										lb/day					
Hauling	16.1528	519.8033	113.5067	1.2650	111.2097	1.9885	113.1982	28.0921	1.9024	29.9945		136,655.4533	136,655.4533	9.9410		136,903.9788
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	0.1223	0.0923	0.9945	2.3700e-003	0.2236	1.9900e-003	0.2256	0.0593	1.8400e-003	0.0611		236.1152	236.1152	8.8900e-003		236.3373
Total	**16.2751**	**519.8956**	**114.5012**	**1.2673**	**111.4333**	**1.9905**	**113.4238**	**28.1514**	**1.9043**	**30.0556**		**136,891.5685**	**136,891.5685**	**9.9499**		**137,140.3162**

3.3 Grading - 2018

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	lb/day										lb/day					
Fugitive Dust					8.8349	0.0000	8.8349	4.0905	0.0000	4.0905			0.0000			0.0000
Off-Road	41.7253	510.2829	286.9200	0.5391		20.7005	20.7005		19.0445	19.0445	0.0000	54,261.8471	54,261.8471	16.8925		54,684.1584
Total	**41.7253**	**510.2829**	**286.9200**	**0.5391**	**8.8349**	**20.7005**	**29.5354**	**4.0905**	**19.0445**	**23.1350**	**0.0000**	**54,261.8471**	**54,261.8471**	**16.8925**		**54,684.1584**

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	lb/day										lb/day					
Hauling	16.1528	519.8033	113.5067	1.2650	111.2097	1.9885	113.1982	28.0921	1.9024	29.9945		136,655.4533	136,655.4533	9.9410		136,903.9788
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	0.1223	0.0923	0.9945	2.3700e-003	0.2236	1.9900e-003	0.2256	0.0593	1.8400e-003	0.0611		236.1152	236.1152	8.8900e-003		236.3373
Total	**16.2751**	**519.8956**	**114.5012**	**1.2673**	**111.4333**	**1.9905**	**113.4238**	**28.1514**	**1.9043**	**30.0556**		**136,891.5685**	**136,891.5685**	**9.9499**		**137,140.3162**

3.3 Grading - 2019

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	lb/day										lb/day					
Fugitive Dust					22.6537	0.0000	22.6537	10.4884	0.0000	10.4884			0.0000			0.0000
Off-Road	38.8159	464.2972	265.3755	0.5390		18.8007	18.8007		17.2966	17.2966		53,376.9270	53,376.9270	16.8879		53,799.1243
Total	**38.8159**	**464.2972**	**265.3755**	**0.5390**	**22.6537**	**18.8007**	**41.4543**	**10.4884**	**17.2966**	**27.7850**		**53,376.9270**	**53,376.9270**	**16.8879**		**53,799.1243**

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	lb/day										lb/day					
Hauling	15.2889	492.6313	110.6551	1.2466	59.1884	1.8174	61.0058	15.3233	1.7387	17.0620		134,891.4779	134,891.4779	9.8102		135,136.7338
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	0.1108	0.0813	0.8850	2.2900e-003	0.2236	1.9300e-003	0.2255	0.0593	1.7800e-003	0.0611		228.4262	228.4262	7.8600e-003		228.6226
Total	**15.3996**	**492.7126**	**111.5400**	**1.2489**	**59.4119**	**1.8193**	**61.2312**	**15.3826**	**1.7405**	**17.1231**		**135,119.9041**	**135,119.9041**	**9.8181**		**135,365.3564**

3.3 Grading - 2019

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	lb/day										lb/day					
Fugitive Dust					8.8349	0.0000	8.8349	4.0905	0.0000	4.0905			0.0000			0.0000
Off-Road	38.8159	464.2972	265.3755	0.5390		18.8007	18.8007		17.2966	17.2966	0.0000	53,376.9270	53,376.9270	16.8879		53,799.1243
Total	**38.8159**	**464.2972**	**265.3755**	**0.5390**	**8.8349**	**18.8007**	**27.6356**	**4.0905**	**17.2966**	**21.3871**	**0.0000**	**53,376.9270**	**53,376.9270**	**16.8879**		**53,799.1243**

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	lb/day										lb/day					
Hauling	15.2889	492.6313	110.6551	1.2466	59.1884	1.8174	61.0058	15.3233	1.7387	17.0620		134,891.4779	134,891.4779	9.8102		135,136.7338
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	0.1108	0.0813	0.8850	2.2900e-003	0.2236	1.9300e-003	0.2255	0.0593	1.7800e-003	0.0611		228.4262	228.4262	7.8600e-003		228.6226
Total	**15.3996**	**492.7126**	**111.5400**	**1.2489**	**59.4119**	**1.8193**	**61.2312**	**15.3826**	**1.7405**	**17.1231**		**135,119.9041**	**135,119.9041**	**9.8181**		**135,365.3564**

3.3 Grading - 2020

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	lb/day										lb/day					
Fugitive Dust					22.6537	0.0000	22.6537	10.4884	0.0000	10.4884			0.0000			0.0000
Off-Road	36.4364	425.9466	247.6808	0.5391		17.2078	17.2078		15.8312	15.8312		52,216.9923	52,216.9923	16.8880		52,639.1931
Total	**36.4364**	**425.9466**	**247.6808**	**0.5391**	**22.6537**	**17.2078**	**39.8615**	**10.4884**	**15.8312**	**26.3196**		**52,216.9923**	**52,216.9923**	**16.8880**		**52,639.1931**

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	lb/day										lb/day					
Hauling	14.2013	462.3033	107.4804	1.2321	59.3912	1.4790	60.8702	15.3732	1.4150	16.7882		133,501.7528	133,501.7528	9.5824		133,741.3124
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	0.1022	0.0725	0.8020	2.2200e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		221.4841	221.4841	6.9800e-003		221.6586
Total	**14.3035**	**462.3758**	**108.2824**	**1.2343**	**59.6147**	**1.4809**	**61.0956**	**15.4325**	**1.4167**	**16.8492**		**133,723.2369**	**133,723.2369**	**9.5894**		**133,962.9710**

3.3 Grading - 2020

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	lb/day										lb/day					
Fugitive Dust					8.8349	0.0000	8.8349	4.0905	0.0000	4.0905			0.0000			0.0000
Off-Road	36.4364	425.9466	247.6808	0.5391		17.2078	17.2078		15.8312	15.8312	0.0000	52,216.9922	52,216.9922	16.8880		52,639.1931
Total	**36.4364**	**425.9466**	**247.6808**	**0.5391**	**8.8349**	**17.2078**	**26.0428**	**4.0905**	**15.8312**	**19.9217**	**0.0000**	**52,216.9922**	**52,216.9922**	**16.8880**		**52,639.1931**

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	lb/day										lb/day					
Hauling	14.2013	462.3033	107.4804	1.2321	59.3912	1.4790	60.8702	15.3732	1.4150	16.7882		133,501.7528	133,501.7528	9.5824		133,741.3124
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	0.1022	0.0725	0.8020	2.2200e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		221.4841	221.4841	6.9800e-003		221.6586
Total	**14.3035**	**462.3758**	**108.2824**	**1.2343**	**59.6147**	**1.4809**	**61.0956**	**15.4325**	**1.4167**	**16.8492**		**133,723.2369**	**133,723.2369**	**9.5894**		**133,962.9710**

3.4 Fine Grading 1 - 2018

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	2.7963	31.1387	17.5159	0.0317		1.5152	1.5152		1.3940	1.3940		3,194.8307	3,194.8307	0.9946		3,219.6956
Total	**2.7963**	**31.1387**	**17.5159**	**0.0317**	**8.6733**	**1.5152**	**10.1885**	**3.5965**	**1.3940**	**4.9905**		**3,194.8307**	**3,194.8307**	**0.9946**		**3,219.6956**

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	lb/day										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	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349
Total	**0.0489**	**0.0369**	**0.3978**	**9.5000e-004**	**0.0894**	**8.0000e-004**	**0.0902**	**0.0237**	**7.4000e-004**	**0.0245**		**94.4461**	**94.4461**	**3.5500e-003**		**94.5349**

3.4 Fine Grading 1 - 2018

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	2.7963	31.1387	17.5159	0.0317		1.5152	1.5152		1.3940	1.3940	0.0000	3,194.8307	3,194.8307	0.9946		3,219.6956
Total	**2.7963**	**31.1387**	**17.5159**	**0.0317**	**3.3826**	**1.5152**	**4.8978**	**1.4026**	**1.3940**	**2.7966**	**0.0000**	**3,194.8307**	**3,194.8307**	**0.9946**		**3,219.6956**

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	lb/day										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	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349
Total	**0.0489**	**0.0369**	**0.3978**	**9.5000e-004**	**0.0894**	**8.0000e-004**	**0.0902**	**0.0237**	**7.4000e-004**	**0.0245**		**94.4461**	**94.4461**	**3.5500e-003**		**94.5349**

3.4 Fine Grading 1 - 2019

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	2.6084	28.6925	17.2539	0.0317		1.3707	1.3707		1.2610	1.2610		3,140.3905	3,140.3905	0.9936		3,165.2302
Total	**2.6084**	**28.6925**	**17.2539**	**0.0317**	**8.6733**	**1.3707**	**10.0440**	**3.5965**	**1.2610**	**4.8575**		**3,140.3905**	**3,140.3905**	**0.9936**		**3,165.2302**

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	lb/day										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	0.0443	0.0325	0.3540	9.2000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		91.3705	91.3705	3.1400e-003		91.4491
Total	**0.0443**	**0.0325**	**0.3540**	**9.2000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**91.3705**	**91.3705**	**3.1400e-003**		**91.4491**

3.4 Fine Grading 1 - 2019

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	2.6084	28.6925	17.2539	0.0317		1.3707	1.3707		1.2610	1.2610	0.0000	3,140.3905	3,140.3905	0.9936		3,165.2302
Total	**2.6084**	**28.6925**	**17.2539**	**0.0317**	**3.3826**	**1.3707**	**4.7533**	**1.4026**	**1.2610**	**2.6636**	**0.0000**	**3,140.3905**	**3,140.3905**	**0.9936**		**3,165.2302**

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	lb/day										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	0.0443	0.0325	0.3540	9.2000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		91.3705	91.3705	3.1400e-003		91.4491
Total	**0.0443**	**0.0325**	**0.3540**	**9.2000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**91.3705**	**91.3705**	**3.1400e-003**		**91.4491**

3.4 Fine Grading 1 - 2020

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	2.4643	26.6934	17.0411	0.0317		1.2572	1.2572		1.1566	1.1566		3,071.8350	3,071.8350	0.9935		3,096.6724
Total	**2.4643**	**26.6934**	**17.0411**	**0.0317**	**8.6733**	**1.2572**	**9.9305**	**3.5965**	**1.1566**	**4.7531**		**3,071.8350**	**3,071.8350**	**0.9935**		**3,096.6724**

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	lb/day										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	0.0409	0.0290	0.3208	8.9000e-004	0.0894	7.5000e-004	0.0902	0.0237	6.9000e-004	0.0244		88.5936	88.5936	2.7900e-003		88.6634
Total	**0.0409**	**0.0290**	**0.3208**	**8.9000e-004**	**0.0894**	**7.5000e-004**	**0.0902**	**0.0237**	**6.9000e-004**	**0.0244**		**88.5936**	**88.5936**	**2.7900e-003**		**88.6634**

3.4 Fine Grading 1 - 2020

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	2.4643	26.6934	17.0411	0.0317		1.2572	1.2572		1.1566	1.1566	0.0000	3,071.8350	3,071.8350	0.9935		3,096.6724
Total	**2.4643**	**26.6934**	**17.0411**	**0.0317**	**3.3826**	**1.2572**	**4.6398**	**1.4026**	**1.1566**	**2.5592**	**0.0000**	**3,071.8350**	**3,071.8350**	**0.9935**		**3,096.6724**

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	lb/day										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	0.0409	0.0290	0.3208	8.9000e-004	0.0894	7.5000e-004	0.0902	0.0237	6.9000e-004	0.0244		88.5936	88.5936	2.7900e-003		88.6634
Total	**0.0409**	**0.0290**	**0.3208**	**8.9000e-004**	**0.0894**	**7.5000e-004**	**0.0902**	**0.0237**	**6.9000e-004**	**0.0244**		**88.5936**	**88.5936**	**2.7900e-003**		**88.6634**

3.4 Fine Grading 1 - 2021

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	2.3323	24.9943	16.8691	0.0317		1.1526	1.1526		1.0604	1.0604		3,071.2204	3,071.2204	0.9933		3,096.0528
Total	**2.3323**	**24.9943**	**16.8691**	**0.0317**	**8.6733**	**1.1526**	**9.8259**	**3.5965**	**1.0604**	**4.6569**		**3,071.2204**	**3,071.2204**	**0.9933**		**3,096.0528**

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	lb/day										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	0.0382	0.0261	0.2946	8.6000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.7000e-004	0.0244		85.7801	85.7801	2.5200e-003		85.8432
Total	**0.0382**	**0.0261**	**0.2946**	**8.6000e-004**	**0.0894**	**7.2000e-004**	**0.0901**	**0.0237**	**6.7000e-004**	**0.0244**		**85.7801**	**85.7801**	**2.5200e-003**		**85.8432**

3.4 Fine Grading 1 - 2021

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	2.3323	24.9943	16.8691	0.0317		1.1526	1.1526		1.0604	1.0604	0.0000	3,071.2204	3,071.2204	0.9933		3,096.0528
Total	**2.3323**	**24.9943**	**16.8691**	**0.0317**	**3.3826**	**1.1526**	**4.5352**	**1.4026**	**1.0604**	**2.4630**	**0.0000**	**3,071.2204**	**3,071.2204**	**0.9933**		**3,096.0528**

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	lb/day										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	0.0382	0.0261	0.2946	8.6000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.7000e-004	0.0244		85.7801	85.7801	2.5200e-003		85.8432
Total	**0.0382**	**0.0261**	**0.2946**	**8.6000e-004**	**0.0894**	**7.2000e-004**	**0.0901**	**0.0237**	**6.7000e-004**	**0.0244**		**85.7801**	**85.7801**	**2.5200e-003**		**85.8432**

3.4 Fine Grading 1 - 2022

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.9864	20.9565	16.2899	0.0317		0.9366	0.9366		0.8617	0.8617		3,070.8227	3,070.8227	0.9932		3,095.6519
Total	**1.9864**	**20.9565**	**16.2899**	**0.0317**	**8.6733**	**0.9366**	**9.6100**	**3.5965**	**0.8617**	**4.4582**		**3,070.8227**	**3,070.8227**	**0.9932**		**3,095.6519**

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	lb/day										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	0.0358	0.0236	0.2713	8.3000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		82.7656	82.7656	2.2800e-003		82.8225
Total	**0.0358**	**0.0236**	**0.2713**	**8.3000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**82.7656**	**82.7656**	**2.2800e-003**		**82.8225**

3.4 Fine Grading 1 - 2022

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.9864	20.9565	16.2899	0.0317		0.9366	0.9366		0.8617	0.8617	0.0000	3,070.8227	3,070.8227	0.9932		3,095.6519
Total	**1.9864**	**20.9565**	**16.2899**	**0.0317**	**3.3826**	**0.9366**	**4.3192**	**1.4026**	**0.8617**	**2.2644**	**0.0000**	**3,070.8227**	**3,070.8227**	**0.9932**		**3,095.6519**

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	lb/day										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	0.0358	0.0236	0.2713	8.3000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		82.7656	82.7656	2.2800e-003		82.8225
Total	**0.0358**	**0.0236**	**0.2713**	**8.3000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**82.7656**	**82.7656**	**2.2800e-003**		**82.8225**

3.4 Fine Grading 1 - 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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.7482	17.9488	15.7771	0.0317		0.7749	0.7749		0.7129	0.7129		3,071.2201	3,071.2201	0.9933		3,096.0525
Total	**1.7482**	**17.9488**	**15.7771**	**0.0317**	**8.6733**	**0.7749**	**9.4483**	**3.5965**	**0.7129**	**4.3094**		**3,071.2201**	**3,071.2201**	**0.9933**		**3,096.0525**

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	lb/day										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	0.0338	0.0213	0.2494	8.0000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		79.7377	79.7377	2.0500e-003		79.7890
Total	**0.0338**	**0.0213**	**0.2494**	**8.0000e-004**	**0.0894**	**6.8000e-004**	**0.0901**	**0.0237**	**6.3000e-004**	**0.0243**		**79.7377**	**79.7377**	**2.0500e-003**		**79.7890**

3.4 Fine Grading 1 - 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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.7482	17.9488	15.7771	0.0317		0.7749	0.7749		0.7129	0.7129	0.0000	3,071.2201	3,071.2201	0.9933		3,096.0525
Total	**1.7482**	**17.9488**	**15.7771**	**0.0317**	**3.3826**	**0.7749**	**4.1575**	**1.4026**	**0.7129**	**2.1156**	**0.0000**	**3,071.2201**	**3,071.2201**	**0.9933**		**3,096.0525**

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	lb/day										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	0.0338	0.0213	0.2494	8.0000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		79.7377	79.7377	2.0500e-003		79.7890
Total	**0.0338**	**0.0213**	**0.2494**	**8.0000e-004**	**0.0894**	**6.8000e-004**	**0.0901**	**0.0237**	**6.3000e-004**	**0.0243**		**79.7377**	**79.7377**	**2.0500e-003**		**79.7890**

3.5 Utilities 1 - 2019

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	lb/day										lb/day					
Off-Road	0.5448	5.5175	5.9014	8.5300e-003		0.3311	0.3311		0.3046	0.3046		844.6570	844.6570	0.2672		851.3380
Total	**0.5448**	**5.5175**	**5.9014**	**8.5300e-003**		**0.3311**	**0.3311**		**0.3046**	**0.3046**		**844.6570**	**844.6570**	**0.2672**		**851.3380**

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	lb/day										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	0.0609	0.0447	0.4867	1.2600e-003	0.1230	1.0600e-003	0.1240	0.0326	9.8000e-004	0.0336		125.6344	125.6344	4.3200e-003		125.7424
Total	**0.0609**	**0.0447**	**0.4867**	**1.2600e-003**	**0.1230**	**1.0600e-003**	**0.1240**	**0.0326**	**9.8000e-004**	**0.0336**		**125.6344**	**125.6344**	**4.3200e-003**		**125.7424**

3.5 Utilities 1 - 2019

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	lb/day										lb/day					
Off-Road	0.5448	5.5175	5.9014	8.5300e-003		0.3311	0.3311		0.3046	0.3046	0.0000	844.6570	844.6570	0.2672		851.3380
Total	**0.5448**	**5.5175**	**5.9014**	**8.5300e-003**		**0.3311**	**0.3311**		**0.3046**	**0.3046**	**0.0000**	**844.6570**	**844.6570**	**0.2672**		**851.3380**

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	lb/day										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	0.0609	0.0447	0.4867	1.2600e-003	0.1230	1.0600e-003	0.1240	0.0326	9.8000e-004	0.0336		125.6344	125.6344	4.3200e-003		125.7424
Total	**0.0609**	**0.0447**	**0.4867**	**1.2600e-003**	**0.1230**	**1.0600e-003**	**0.1240**	**0.0326**	**9.8000e-004**	**0.0336**		**125.6344**	**125.6344**	**4.3200e-003**		**125.7424**

3.5 Utilities 1 - 2020

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	lb/day										lb/day					
Off-Road	0.4980	4.9672	5.8704	8.5300e-003		0.2873	0.2873		0.2643	0.2643		826.2416	826.2416	0.2672		832.9222
Total	**0.4980**	**4.9672**	**5.8704**	**8.5300e-003**		**0.2873**	**0.2873**		**0.2643**	**0.2643**		**826.2416**	**826.2416**	**0.2672**		**832.9222**

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	lb/day										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	0.0562	0.0399	0.4411	1.2200e-003	0.1230	1.0300e-003	0.1240	0.0326	9.5000e-004	0.0336		121.8162	121.8162	3.8400e-003		121.9122
Total	**0.0562**	**0.0399**	**0.4411**	**1.2200e-003**	**0.1230**	**1.0300e-003**	**0.1240**	**0.0326**	**9.5000e-004**	**0.0336**		**121.8162**	**121.8162**	**3.8400e-003**		**121.9122**

3.5 Utilities 1 - 2020

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	lb/day										lb/day					
Off-Road	0.4980	4.9672	5.8704	8.5300e-003		0.2873	0.2873		0.2643	0.2643	0.0000	826.2416	826.2416	0.2672		832.9222
Total	**0.4980**	**4.9672**	**5.8704**	**8.5300e-003**		**0.2873**	**0.2873**		**0.2643**	**0.2643**	**0.0000**	**826.2416**	**826.2416**	**0.2672**		**832.9222**

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	lb/day										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	0.0562	0.0399	0.4411	1.2200e-003	0.1230	1.0300e-003	0.1240	0.0326	9.5000e-004	0.0336		121.8162	121.8162	3.8400e-003		121.9122
Total	**0.0562**	**0.0399**	**0.4411**	**1.2200e-003**	**0.1230**	**1.0300e-003**	**0.1240**	**0.0326**	**9.5000e-004**	**0.0336**		**121.8162**	**121.8162**	**3.8400e-003**		**121.9122**

3.6 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	lb/day										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	0.1748	4.9985	1.4447	0.0119	0.3009	0.0239	0.3248	0.0866	0.0229	0.1095		1,266.4106	1,266.4106	0.0847		1,268.5277
Worker	1.3389	0.9497	10.5065	0.0291	2.9285	0.0245	2.9530	0.7767	0.0226	0.7992		2,901.4414	2,901.4414	0.0915		2,903.7277
Total	**1.5136**	**5.9481**	**11.9512**	**0.0410**	**3.2294**	**0.0484**	**3.2778**	**0.8633**	**0.0454**	**0.9087**		**4,167.8520**	**4,167.8520**	**0.1761**		**4,172.2554**

3.6 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	lb/day										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	0.1748	4.9985	1.4447	0.0119	0.3009	0.0239	0.3248	0.0866	0.0229	0.1095		1,266.4106	1,266.4106	0.0847		1,268.5277
Worker	1.3389	0.9497	10.5065	0.0291	2.9285	0.0245	2.9530	0.7767	0.0226	0.7992		2,901.4414	2,901.4414	0.0915		2,903.7277
Total	**1.5136**	**5.9481**	**11.9512**	**0.0410**	**3.2294**	**0.0484**	**3.2778**	**0.8633**	**0.0454**	**0.9087**		**4,167.8520**	**4,167.8520**	**0.1761**		**4,172.2554**

3.6 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	lb/day										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	0.1500	4.5538	1.3196	0.0118	0.3009	9.6300e-003	0.3105	0.0866	9.2100e-003	0.0958		1,256.5240	1,256.5240	0.0811		1,258.5519
Worker	1.2493	0.8545	9.6483	0.0282	2.9285	0.0237	2.9522	0.7767	0.0218	0.7985		2,809.2979	2,809.2979	0.0827		2,811.3645
Total	**1.3993**	**5.4083**	**10.9679**	**0.0400**	**3.2294**	**0.0333**	**3.2627**	**0.8633**	**0.0310**	**0.8943**		**4,065.8218**	**4,065.8218**	**0.1638**		**4,069.9164**

3.6 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	lb/day										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	0.1500	4.5538	1.3196	0.0118	0.3009	9.6300e-003	0.3105	0.0866	9.2100e-003	0.0958		1,256.5240	1,256.5240	0.0811		1,258.5519
Worker	1.2493	0.8545	9.6483	0.0282	2.9285	0.0237	2.9522	0.7767	0.0218	0.7985		2,809.2979	2,809.2979	0.0827		2,811.3645
Total	**1.3993**	**5.4083**	**10.9679**	**0.0400**	**3.2294**	**0.0333**	**3.2627**	**0.8633**	**0.0310**	**0.8943**		**4,065.8218**	**4,065.8218**	**0.1638**		**4,069.9164**

3.6 Building Construction - 2022

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	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	lb/day										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	0.1408	4.3277	1.2491	0.0117	0.3009	8.4200e-003	0.3093	0.0866	8.0600e-003	0.0947		1,245.3603	1,245.3603	0.0783		1,247.3170
Worker	1.1733	0.7717	8.8864	0.0272	2.9285	0.0229	2.9515	0.7767	0.0211	0.7978		2,710.5720	2,710.5720	0.0746		2,712.4379
Total	**1.3141**	**5.0994**	**10.1355**	**0.0389**	**3.2295**	**0.0313**	**3.2608**	**0.8633**	**0.0292**	**0.8925**		**3,955.9323**	**3,955.9323**	**0.1529**		**3,959.7549**

3.6 Building Construction - 2022

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	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	lb/day										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	0.1408	4.3277	1.2491	0.0117	0.3009	8.4200e-003	0.3093	0.0866	8.0600e-003	0.0947		1,245.3603	1,245.3603	0.0783		1,247.3170
Worker	1.1733	0.7717	8.8864	0.0272	2.9285	0.0229	2.9515	0.7767	0.0211	0.7978		2,710.5720	2,710.5720	0.0746		2,712.4379
Total	**1.3141**	**5.0994**	**10.1355**	**0.0389**	**3.2295**	**0.0313**	**3.2608**	**0.8633**	**0.0292**	**0.8925**		**3,955.9323**	**3,955.9323**	**0.1529**		**3,959.7549**

3.6 Building Construction - 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	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	lb/day										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	0.1046	3.2777	1.1100	0.0113	0.3009	4.0000e-003	0.3049	0.0866	3.8200e-003	0.0905		1,206.6842	1,206.6842	0.0689		1,208.4067
Worker	1.1054	0.6980	8.1683	0.0262	2.9285	0.0223	2.9508	0.7767	0.0205	0.7972		2,611.4079	2,611.4079	0.0672		2,613.0880
Total	**1.2100**	**3.9757**	**9.2783**	**0.0375**	**3.2295**	**0.0263**	**3.2557**	**0.8633**	**0.0243**	**0.8876**		**3,818.0921**	**3,818.0921**	**0.1361**		**3,821.4947**

3.6 Building Construction - 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	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	lb/day										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	0.1046	3.2777	1.1100	0.0113	0.3009	4.0000e-003	0.3049	0.0866	3.8200e-003	0.0905		1,206.6842	1,206.6842	0.0689		1,208.4067
Worker	1.1054	0.6980	8.1683	0.0262	2.9285	0.0223	2.9508	0.7767	0.0205	0.7972		2,611.4079	2,611.4079	0.0672		2,613.0880
Total	**1.2100**	**3.9757**	**9.2783**	**0.0375**	**3.2295**	**0.0263**	**3.2557**	**0.8633**	**0.0243**	**0.8876**		**3,818.0921**	**3,818.0921**	**0.1361**		**3,821.4947**

3.6 Building Construction - 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	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	lb/day										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	0.1020	3.2660	1.0763	0.0112	0.3009	3.9300e-003	0.3049	0.0866	3.7600e-003	0.0904		1,202.0042	1,202.0042	0.0679		1,203.7006
Worker	1.0490	0.6363	7.6044	0.0254	2.9285	0.0220	2.9505	0.7767	0.0202	0.7969		2,530.4059	2,530.4059	0.0616		2,531.9453
Total	**1.1510**	**3.9023**	**8.6807**	**0.0366**	**3.2295**	**0.0259**	**3.2553**	**0.8633**	**0.0240**	**0.8873**		**3,732.4101**	**3,732.4101**	**0.1294**		**3,735.6459**

3.6 Building Construction - 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	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	lb/day										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	0.1020	3.2660	1.0763	0.0112	0.3009	3.9300e-003	0.3049	0.0866	3.7600e-003	0.0904		1,202.0042	1,202.0042	0.0679		1,203.7006
Worker	1.0490	0.6363	7.6044	0.0254	2.9285	0.0220	2.9505	0.7767	0.0202	0.7969		2,530.4059	2,530.4059	0.0616		2,531.9453
Total	**1.1510**	**3.9023**	**8.6807**	**0.0366**	**3.2295**	**0.0259**	**3.2553**	**0.8633**	**0.0240**	**0.8873**		**3,732.4101**	**3,732.4101**	**0.1294**		**3,735.6459**

3.6 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0994	3.2383	1.0488	0.0112	0.3009	3.8600e-003	0.3048	0.0866	3.6800e-003	0.0903		1,195.5590	1,195.5590	0.0668		1,197.2299
Worker	0.9992	0.5821	7.0559	0.0244	2.9285	0.0215	2.9500	0.7767	0.0198	0.7965		2,432.4521	2,432.4521	0.0561		2,433.8553
Total	**1.0986**	**3.8204**	**8.1047**	**0.0355**	**3.2295**	**0.0254**	**3.2548**	**0.8633**	**0.0235**	**0.8868**		**3,628.0111**	**3,628.0111**	**0.1230**		**3,631.0852**

3.6 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0994	3.2383	1.0488	0.0112	0.3009	3.8600e-003	0.3048	0.0866	3.6800e-003	0.0903		1,195.5590	1,195.5590	0.0668		1,197.2299
Worker	0.9992	0.5821	7.0559	0.0244	2.9285	0.0215	2.9500	0.7767	0.0198	0.7965		2,432.4521	2,432.4521	0.0561		2,433.8553
Total	**1.0986**	**3.8204**	**8.1047**	**0.0355**	**3.2295**	**0.0254**	**3.2548**	**0.8633**	**0.0235**	**0.8868**		**3,628.0111**	**3,628.0111**	**0.1230**		**3,631.0852**

3.7 Architectural Coating - 2020

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**11.7261**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	lb/day										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	0.2657	0.1885	2.0853	5.7800e-003	0.5812	4.8600e-003	0.5861	0.1542	4.4800e-003	0.1586		575.8586	575.8586	0.0182		576.3124
Total	**0.2657**	**0.1885**	**2.0853**	**5.7800e-003**	**0.5812**	**4.8600e-003**	**0.5861**	**0.1542**	**4.4800e-003**	**0.1586**		**575.8586**	**575.8586**	**0.0182**		**576.3124**

3.7 Architectural Coating - 2020

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**11.7261**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	lb/day										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	0.2657	0.1885	2.0853	5.7800e-003	0.5812	4.8600e-003	0.5861	0.1542	4.4800e-003	0.1586		575.8586	575.8586	0.0182		576.3124
Total	**0.2657**	**0.1885**	**2.0853**	**5.7800e-003**	**0.5812**	**4.8600e-003**	**0.5861**	**0.1542**	**4.4800e-003**	**0.1586**		**575.8586**	**575.8586**	**0.0182**		**576.3124**

3.7 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**11.7028**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										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	0.2480	0.1696	1.9149	5.6000e-003	0.5812	4.7000e-003	0.5859	0.1542	4.3300e-003	0.1585		557.5706	557.5706	0.0164		557.9808
Total	**0.2480**	**0.1696**	**1.9149**	**5.6000e-003**	**0.5812**	**4.7000e-003**	**0.5859**	**0.1542**	**4.3300e-003**	**0.1585**		**557.5706**	**557.5706**	**0.0164**		**557.9808**

3.7 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**11.7028**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										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	0.2480	0.1696	1.9149	5.6000e-003	0.5812	4.7000e-003	0.5859	0.1542	4.3300e-003	0.1585		557.5706	557.5706	0.0164		557.9808
Total	**0.2480**	**0.1696**	**1.9149**	**5.6000e-003**	**0.5812**	**4.7000e-003**	**0.5859**	**0.1542**	**4.3300e-003**	**0.1585**		**557.5706**	**557.5706**	**0.0164**		**557.9808**

3.7 Architectural Coating - 2022

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**11.6884**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	lb/day										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	0.2329	0.1532	1.7637	5.4000e-003	0.5812	4.5500e-003	0.5858	0.1542	4.1900e-003	0.1583		537.9761	537.9761	0.0148		538.3464
Total	**0.2329**	**0.1532**	**1.7637**	**5.4000e-003**	**0.5812**	**4.5500e-003**	**0.5858**	**0.1542**	**4.1900e-003**	**0.1583**		**537.9761**	**537.9761**	**0.0148**		**538.3464**

3.7 Architectural Coating - 2022

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**11.6884**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	lb/day										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	0.2329	0.1532	1.7637	5.4000e-003	0.5812	4.5500e-003	0.5858	0.1542	4.1900e-003	0.1583		537.9761	537.9761	0.0148		538.3464
Total	**0.2329**	**0.1532**	**1.7637**	**5.4000e-003**	**0.5812**	**4.5500e-003**	**0.5858**	**0.1542**	**4.1900e-003**	**0.1583**		**537.9761**	**537.9761**	**0.0148**		**538.3464**

3.7 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**11.6756**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	lb/day										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	0.2194	0.1385	1.6212	5.2000e-003	0.5812	4.4200e-003	0.5857	0.1542	4.0700e-003	0.1582		518.2947	518.2947	0.0133		518.6282
Total	**0.2194**	**0.1385**	**1.6212**	**5.2000e-003**	**0.5812**	**4.4200e-003**	**0.5857**	**0.1542**	**4.0700e-003**	**0.1582**		**518.2947**	**518.2947**	**0.0133**		**518.6282**

3.7 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**11.6756**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	lb/day										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	0.2194	0.1385	1.6212	5.2000e-003	0.5812	4.4200e-003	0.5857	0.1542	4.0700e-003	0.1582		518.2947	518.2947	0.0133		518.6282
Total	**0.2194**	**0.1385**	**1.6212**	**5.2000e-003**	**0.5812**	**4.4200e-003**	**0.5857**	**0.1542**	**4.0700e-003**	**0.1582**		**518.2947**	**518.2947**	**0.0133**		**518.6282**

3.7 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**11.6647**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	lb/day										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	0.2082	0.1263	1.5093	5.0400e-003	0.5812	4.3600e-003	0.5856	0.1542	4.0100e-003	0.1582		502.2180	502.2180	0.0122		502.5235
Total	**0.2082**	**0.1263**	**1.5093**	**5.0400e-003**	**0.5812**	**4.3600e-003**	**0.5856**	**0.1542**	**4.0100e-003**	**0.1582**		**502.2180**	**502.2180**	**0.0122**		**502.5235**

3.7 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**11.6647**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	lb/day										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	0.2082	0.1263	1.5093	5.0400e-003	0.5812	4.3600e-003	0.5856	0.1542	4.0100e-003	0.1582		502.2180	502.2180	0.0122		502.5235
Total	**0.2082**	**0.1263**	**1.5093**	**5.0400e-003**	**0.5812**	**4.3600e-003**	**0.5856**	**0.1542**	**4.0100e-003**	**0.1582**		**502.2180**	**502.2180**	**0.0122**		**502.5235**

3.7 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1983	0.1155	1.4004	4.8400e-003	0.5812	4.2700e-003	0.5855	0.1542	3.9300e-003	0.1581		482.7768	482.7768	0.0111		483.0552
Total	**0.1983**	**0.1155**	**1.4004**	**4.8400e-003**	**0.5812**	**4.2700e-003**	**0.5855**	**0.1542**	**3.9300e-003**	**0.1581**		**482.7768**	**482.7768**	**0.0111**		**483.0552**

3.7 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1983	0.1155	1.4004	4.8400e-003	0.5812	4.2700e-003	0.5855	0.1542	3.9300e-003	0.1581		482.7768	482.7768	0.0111		483.0552
Total	**0.1983**	**0.1155**	**1.4004**	**4.8400e-003**	**0.5812**	**4.2700e-003**	**0.5855**	**0.1542**	**3.9300e-003**	**0.1581**		**482.7768**	**482.7768**	**0.0111**		**483.0552**

3.7 Architectural Coating - 2026

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1899	0.1064	1.3083	4.6700e-003	0.5812	4.1200e-003	0.5854	0.1542	3.7900e-003	0.1579		466.0100	466.0100	0.0102		466.2652
Total	**0.1899**	**0.1064**	**1.3083**	**4.6700e-003**	**0.5812**	**4.1200e-003**	**0.5854**	**0.1542**	**3.7900e-003**	**0.1579**		**466.0100**	**466.0100**	**0.0102**		**466.2652**

3.7 Architectural Coating - 2026

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1899	0.1064	1.3083	4.6700e-003	0.5812	4.1200e-003	0.5854	0.1542	3.7900e-003	0.1579		466.0100	466.0100	0.0102		466.2652
Total	**0.1899**	**0.1064**	**1.3083**	**4.6700e-003**	**0.5812**	**4.1200e-003**	**0.5854**	**0.1542**	**3.7900e-003**	**0.1579**		**466.0100**	**466.0100**	**0.0102**		**466.2652**

3.7 Architectural Coating - 2027

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1815	0.0982	1.2258	4.5200e-003	0.5812	3.9000e-003	0.5851	0.1542	3.5800e-003	0.1577		451.1545	451.1545	9.3700e-003		451.3886
Total	**0.1815**	**0.0982**	**1.2258**	**4.5200e-003**	**0.5812**	**3.9000e-003**	**0.5851**	**0.1542**	**3.5800e-003**	**0.1577**		**451.1545**	**451.1545**	**9.3700e-003**		**451.3886**

3.7 Architectural Coating - 2027

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	lb/day										lb/day					
Archit. Coating	11.4839					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**11.6548**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										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	0.1815	0.0982	1.2258	4.5200e-003	0.5812	3.9000e-003	0.5851	0.1542	3.5800e-003	0.1577		451.1545	451.1545	9.3700e-003		451.3886
Total	**0.1815**	**0.0982**	**1.2258**	**4.5200e-003**	**0.5812**	**3.9000e-003**	**0.5851**	**0.1542**	**3.5800e-003**	**0.1577**		**451.1545**	**451.1545**	**9.3700e-003**		**451.3886**

3.8 Utilities 2 - 2025

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	lb/day										lb/day					
Off-Road	0.3235	2.9189	5.7890	8.5600e-003		0.1261	0.1261		0.1160	0.1160		828.3372	828.3372	0.2679		835.0347
Total	**0.3235**	**2.9189**	**5.7890**	**8.5600e-003**		**0.1261**	**0.1261**		**0.1160**	**0.1160**		**828.3372**	**828.3372**	**0.2679**		**835.0347**

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	lb/day										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	0.0305	0.0178	0.2155	7.4000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.0000e-004	0.0243		74.2734	74.2734	1.7100e-003		74.3162
Total	**0.0305**	**0.0178**	**0.2155**	**7.4000e-004**	**0.0894**	**6.6000e-004**	**0.0901**	**0.0237**	**6.0000e-004**	**0.0243**		**74.2734**	**74.2734**	**1.7100e-003**		**74.3162**

3.8 Utilities 2 - 2025

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	lb/day										lb/day					
Off-Road	0.3235	2.9189	5.7890	8.5600e-003		0.1261	0.1261		0.1160	0.1160	0.0000	828.3372	828.3372	0.2679		835.0347
Total	**0.3235**	**2.9189**	**5.7890**	**8.5600e-003**		**0.1261**	**0.1261**		**0.1160**	**0.1160**	**0.0000**	**828.3372**	**828.3372**	**0.2679**		**835.0347**

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	lb/day										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	0.0305	0.0178	0.2155	7.4000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.0000e-004	0.0243		74.2734	74.2734	1.7100e-003		74.3162
Total	**0.0305**	**0.0178**	**0.2155**	**7.4000e-004**	**0.0894**	**6.6000e-004**	**0.0901**	**0.0237**	**6.0000e-004**	**0.0243**		**74.2734**	**74.2734**	**1.7100e-003**		**74.3162**

3.8 Utilities 2 - 2026

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	lb/day										lb/day					
Off-Road	0.3235	2.9189	5.7890	8.5600e-003		0.1261	0.1261		0.1160	0.1160		828.3372	828.3372	0.2679		835.0347
Total	**0.3235**	**2.9189**	**5.7890**	**8.5600e-003**		**0.1261**	**0.1261**		**0.1160**	**0.1160**		**828.3372**	**828.3372**	**0.2679**		**835.0347**

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	lb/day										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	0.0292	0.0164	0.2013	7.2000e-004	0.0894	6.3000e-004	0.0901	0.0237	5.8000e-004	0.0243		71.6938	71.6938	1.5700e-003		71.7331
Total	**0.0292**	**0.0164**	**0.2013**	**7.2000e-004**	**0.0894**	**6.3000e-004**	**0.0901**	**0.0237**	**5.8000e-004**	**0.0243**		**71.6938**	**71.6938**	**1.5700e-003**		**71.7331**

3.8 Utilities 2 - 2026

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	lb/day										lb/day					
Off-Road	0.3235	2.9189	5.7890	8.5600e-003		0.1261	0.1261		0.1160	0.1160	0.0000	828.3372	828.3372	0.2679		835.0347
Total	**0.3235**	**2.9189**	**5.7890**	**8.5600e-003**		**0.1261**	**0.1261**		**0.1160**	**0.1160**	**0.0000**	**828.3372**	**828.3372**	**0.2679**		**835.0347**

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	lb/day										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	0.0292	0.0164	0.2013	7.2000e-004	0.0894	6.3000e-004	0.0901	0.0237	5.8000e-004	0.0243		71.6938	71.6938	1.5700e-003		71.7331
Total	**0.0292**	**0.0164**	**0.2013**	**7.2000e-004**	**0.0894**	**6.3000e-004**	**0.0901**	**0.0237**	**5.8000e-004**	**0.0243**		**71.6938**	**71.6938**	**1.5700e-003**		**71.7331**

3.9 Fine Grading 2 - 2025

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790		3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**8.6733**	**0.6294**	**9.3027**	**3.5965**	**0.5790**	**4.1755**		**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0763	0.0444	0.5386	1.8600e-003	0.2236	1.6400e-003	0.2252	0.0593	1.5100e-003	0.0608		185.6834	185.6834	4.2800e-003		185.7905
Total	**0.0763**	**0.0444**	**0.5386**	**1.8600e-003**	**0.2236**	**1.6400e-003**	**0.2252**	**0.0593**	**1.5100e-003**	**0.0608**		**185.6834**	**185.6834**	**4.2800e-003**		**185.7905**

3.9 Fine Grading 2 - 2025

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790	0.0000	3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**3.3826**	**0.6294**	**4.0120**	**1.4026**	**0.5790**	**1.9817**	**0.0000**	**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0763	0.0444	0.5386	1.8600e-003	0.2236	1.6400e-003	0.2252	0.0593	1.5100e-003	0.0608		185.6834	185.6834	4.2800e-003		185.7905
Total	**0.0763**	**0.0444**	**0.5386**	**1.8600e-003**	**0.2236**	**1.6400e-003**	**0.2252**	**0.0593**	**1.5100e-003**	**0.0608**		**185.6834**	**185.6834**	**4.2800e-003**		**185.7905**

3.9 Fine Grading 2 - 2026

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790		3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**8.6733**	**0.6294**	**9.3027**	**3.5965**	**0.5790**	**4.1755**		**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0730	0.0409	0.5032	1.8000e-003	0.2236	1.5900e-003	0.2251	0.0593	1.4600e-003	0.0608		179.2346	179.2346	3.9300e-003		179.3328
Total	**0.0730**	**0.0409**	**0.5032**	**1.8000e-003**	**0.2236**	**1.5900e-003**	**0.2251**	**0.0593**	**1.4600e-003**	**0.0608**		**179.2346**	**179.2346**	**3.9300e-003**		**179.3328**

3.9 Fine Grading 2 - 2026

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790	0.0000	3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**3.3826**	**0.6294**	**4.0120**	**1.4026**	**0.5790**	**1.9817**	**0.0000**	**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0730	0.0409	0.5032	1.8000e-003	0.2236	1.5900e-003	0.2251	0.0593	1.4600e-003	0.0608		179.2346	179.2346	3.9300e-003		179.3328
Total	**0.0730**	**0.0409**	**0.5032**	**1.8000e-003**	**0.2236**	**1.5900e-003**	**0.2251**	**0.0593**	**1.4600e-003**	**0.0608**		**179.2346**	**179.2346**	**3.9300e-003**		**179.3328**

3.9 Fine Grading 2 - 2027

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790		3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**8.6733**	**0.6294**	**9.3027**	**3.5965**	**0.5790**	**4.1755**		**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0698	0.0378	0.4714	1.7400e-003	0.2236	1.5000e-003	0.2251	0.0593	1.3800e-003	0.0607		173.5210	173.5210	3.6000e-003		173.6110
Total	**0.0698**	**0.0378**	**0.4714**	**1.7400e-003**	**0.2236**	**1.5000e-003**	**0.2251**	**0.0593**	**1.3800e-003**	**0.0607**		**173.5210**	**173.5210**	**3.6000e-003**		**173.6110**

3.9 Fine Grading 2 - 2027

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	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.5576	15.2013	15.5699	0.0317		0.6294	0.6294		0.5790	0.5790	0.0000	3,071.9872	3,071.9872	0.9935		3,096.8258
Total	**1.5576**	**15.2013**	**15.5699**	**0.0317**	**3.3826**	**0.6294**	**4.0120**	**1.4026**	**0.5790**	**1.9817**	**0.0000**	**3,071.9872**	**3,071.9872**	**0.9935**		**3,096.8258**

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	lb/day										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	0.0698	0.0378	0.4714	1.7400e-003	0.2236	1.5000e-003	0.2251	0.0593	1.3800e-003	0.0607		173.5210	173.5210	3.6000e-003		173.6110
Total	**0.0698**	**0.0378**	**0.4714**	**1.7400e-003**	**0.2236**	**1.5000e-003**	**0.2251**	**0.0593**	**1.3800e-003**	**0.0607**		**173.5210**	**173.5210**	**3.6000e-003**		**173.6110**

3.10 Building Construction 2 - 2026

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0393	1.2969	0.4154	4.4800e-003	0.1217	1.5200e-003	0.1232	0.0350	1.4600e-003	0.0365		480.8114	480.8114	0.0266		481.4767
Worker	0.4783	0.2681	3.2959	0.0118	1.4643	0.0104	1.4747	0.3883	9.5600e-003	0.3979		1,173.9867	1,173.9867	0.0257		1,174.6296
Total	**0.5176**	**1.5650**	**3.7113**	**0.0163**	**1.5859**	**0.0119**	**1.5978**	**0.4234**	**0.0110**	**0.4344**		**1,654.7981**	**1,654.7981**	**0.0523**		**1,656.1063**

3.10 Building Construction 2 - 2026

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0393	1.2969	0.4154	4.4800e-003	0.1217	1.5200e-003	0.1232	0.0350	1.4600e-003	0.0365		480.8114	480.8114	0.0266		481.4767
Worker	0.4783	0.2681	3.2959	0.0118	1.4643	0.0104	1.4747	0.3883	9.5600e-003	0.3979		1,173.9867	1,173.9867	0.0257		1,174.6296
Total	**0.5176**	**1.5650**	**3.7113**	**0.0163**	**1.5859**	**0.0119**	**1.5978**	**0.4234**	**0.0110**	**0.4344**		**1,654.7981**	**1,654.7981**	**0.0523**		**1,656.1063**

3.10 Building Construction 2 - 2027

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0385	1.2852	0.4085	4.4600e-003	0.1217	1.4900e-003	0.1232	0.0350	1.4200e-003	0.0365		478.5632	478.5632	0.0262		479.2183
Worker	0.4573	0.2473	3.0880	0.0114	1.4643	9.8100e-003	1.4741	0.3883	9.0300e-003	0.3974		1,136.5622	1,136.5622	0.0236		1,137.1521
Total	**0.4958**	**1.5325**	**3.4965**	**0.0159**	**1.5859**	**0.0113**	**1.5972**	**0.4234**	**0.0105**	**0.4338**		**1,615.1254**	**1,615.1254**	**0.0498**		**1,616.3703**

3.10 Building Construction 2 - 2027

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0385	1.2852	0.4085	4.4600e-003	0.1217	1.4900e-003	0.1232	0.0350	1.4200e-003	0.0365		478.5632	478.5632	0.0262		479.2183
Worker	0.4573	0.2473	3.0880	0.0114	1.4643	9.8100e-003	1.4741	0.3883	9.0300e-003	0.3974		1,136.5622	1,136.5622	0.0236		1,137.1521
Total	**0.4958**	**1.5325**	**3.4965**	**0.0159**	**1.5859**	**0.0113**	**1.5972**	**0.4234**	**0.0105**	**0.4338**		**1,615.1254**	**1,615.1254**	**0.0498**		**1,616.3703**

3.10 Building Construction 2 - 2028

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0378	1.2754	0.4030	4.4400e-003	0.1217	1.4600e-003	0.1231	0.0350	1.4000e-003	0.0364		476.6449	476.6449	0.0258		477.2906
Worker	0.4352	0.2286	2.9062	0.0111	1.4643	9.1000e-003	1.4734	0.3883	8.3700e-003	0.3967		1,103.4066	1,103.4066	0.0218		1,103.9510
Total	**0.4730**	**1.5040**	**3.3091**	**0.0155**	**1.5859**	**0.0106**	**1.5965**	**0.4234**	**9.7700e-003**	**0.4331**		**1,580.0516**	**1,580.0516**	**0.0476**		**1,581.2416**

3.10 Building Construction 2 - 2028

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										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	0.0378	1.2754	0.4030	4.4400e-003	0.1217	1.4600e-003	0.1231	0.0350	1.4000e-003	0.0364		476.6449	476.6449	0.0258		477.2906
Worker	0.4352	0.2286	2.9062	0.0111	1.4643	9.1000e-003	1.4734	0.3883	8.3700e-003	0.3967		1,103.4066	1,103.4066	0.0218		1,103.9510
Total	**0.4730**	**1.5040**	**3.3091**	**0.0155**	**1.5859**	**0.0106**	**1.5965**	**0.4234**	**9.7700e-003**	**0.4331**		**1,580.0516**	**1,580.0516**	**0.0476**		**1,581.2416**

4.0 Operational Detail - Mobile

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	lb/day										lb/day					
Mitigated	27.7734	135.8391	394.4732	1.7904	181.4944	1.2590	182.7534	48.5535	1.1694	49.7229		183,097.3301	183,097.3301	7.9197		183,295.3236
Unmitigated	27.7734	135.8391	394.4732	1.7904	181.4944	1.2590	182.7534	48.5535	1.1694	49.7229		183,097.3301	183,097.3301	7.9197		183,295.3236

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1,398.80	1,398.80	1398.80	400,762	400,762
Elementary School	1,017.36	0.00	0.00	2,504,438	2,504,438
Government (Civic Center)	40.04	40.04	40.04	123,649	123,649
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	14,784.00	15,345.00	13365.00	70,658,702	70,658,702
Single Family Housing	1,478.40	1,534.50	1336.50	7,065,870	7,065,870
Total	18,718.60	18,318.34	16,140.34	80,753,422	80,753,422

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
City Park	1.07	1.07	1.07	33.00	48.00	19.00	66	28	6
Elementary School	16.60	8.40	6.90	65.00	30.00	5.00	63	25	12
Government (Civic Center)	16.60	8.40	6.90	75.00	20.00	5.00	50	34	16
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	13.24	13.24	13.24	100.00	0.00	0.00	100	0	0
Single Family Housing	13.24	13.24	13.24	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Elementary School	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Government (Civic Center)	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Other Asphalt Surfaces	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Single Family Housing	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Northlake Creek Avoidance Alternative - Los Angeles-South Coast County, Winter

	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	lb/day										lb/day					
NaturalGas Mitigated	1.5030	12.8602	5.5842	0.0820		1.0385	1.0385		1.0385	1.0385		16,396.5999	16,396.5999	0.3143	0.3006	16,494.0367
NaturalGas Unmitigated	1.5030	12.8602	5.5842	0.0820		1.0385	1.0385		1.0385	1.0385		16,396.5999	16,396.5999	0.3143	0.3006	16,494.0367

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	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	1495.97	0.0161	0.1467	0.1232	8.8000e-004		0.0112	0.0112		0.0112	0.0112		175.9969	175.9969	3.3700e-003	3.2300e-003	177.0428
Government (Civic Center)	1254.9	0.0135	0.1230	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003		147.6358	147.6358	2.8300e-003	2.7100e-003	148.5131
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12420	0.1339	1.1446	0.4871	7.3100e-003		0.0925	0.0925		0.0925	0.0925		1,461.1788	1,461.1788	0.0280	0.0268	1,469.8619
Single Family Housing	124200	1.3394	11.4459	4.8706	0.0731		0.9254	0.9254		0.9254	0.9254		14,611.7884	14,611.7884	0.2801	0.2679	14,698.6190
Total		**1.5030**	**12.8602**	**5.5842**	**0.0820**		**1.0385**	**1.0385**		**1.0385**	**1.0385**		**16,396.5999**	**16,396.5999**	**0.3143**	**0.3006**	**16,494.0367**

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	1.49597	0.0161	0.1467	0.1232	8.8000e-004		0.0112	0.0112		0.0112	0.0112		175.9969	175.9969	3.3700e-003	3.2300e-003	177.0428
Government (Civic Center)	1.2549	0.0135	0.1230	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003		147.6358	147.6358	2.8300e-003	2.7100e-003	148.5131
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12.42	0.1339	1.1446	0.4871	7.3100e-003		0.0925	0.0925		0.0925	0.0925		1,461.1788	1,461.1788	0.0280	0.0268	1,469.8619
Single Family Housing	124.2	1.3394	11.4459	4.8706	0.0731		0.9254	0.9254		0.9254	0.9254		14,611.7884	14,611.7884	0.2801	0.2679	14,698.6190
Total		**1.5030**	**12.8602**	**5.5842**	**0.0820**		**1.0385**	**1.0385**		**1.0385**	**1.0385**		**16,396.5999**	**16,396.5999**	**0.3143**	**0.3006**	**16,494.0367**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	80.1354	16.8192	156.1000	0.1043		2.0508	2.0508		2.0508	2.0508	0.0000	19,540.3794	19,540.3794	0.6280	0.3533	19,661.3607
Unmitigated	80.1354	16.8192	156.1000	0.1043		2.0508	2.0508		2.0508	2.0508	0.0000	19,540.3794	19,540.3794	0.6280	0.3533	19,661.3607

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	lb/day										lb/day					
Architectural Coating	6.0880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	67.7820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7665	15.0953	6.4235	0.0964		1.2205	1.2205		1.2205	1.2205	0.0000	19,270.5882	19,270.5882	0.3694	0.3533	19,385.1037
Landscaping	4.4988	1.7239	149.6764	7.9100e-003		0.8304	0.8304		0.8304	0.8304		269.7912	269.7912	0.2586		276.2570
Total	**80.1354**	**16.8192**	**156.1000**	**0.1043**		**2.0508**	**2.0508**		**2.0508**	**2.0508**	**0.0000**	**19,540.3794**	**19,540.3794**	**0.6280**	**0.3533**	**19,661.3607**

6.2 Area by SubCategory

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
SubCategory	lb/day										lb/day					
Architectural Coating	6.0880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	67.7820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7665	15.0953	6.4235	0.0964		1.2205	1.2205		1.2205	1.2205	0.0000	19,270.5882	19,270.5882	0.3694	0.3533	19,385.1037
Landscaping	4.4988	1.7239	149.6764	7.9100e-003		0.8304	0.8304		0.8304	0.8304		269.7912	269.7912	0.2586		276.2570
Total	**80.1354**	**16.8192**	**156.1000**	**0.1043**		**2.0508**	**2.0508**		**2.0508**	**2.0508**	**0.0000**	**19,540.3794**	**19,540.3794**	**0.6280**	**0.3533**	**19,661.3607**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Northlake Creek Avoidance Alternative

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	44.00	1000sqft	1.01	44,000.00	0
Elementary School	628.00	Student	23.00	52,502.92	0
Other Asphalt Surfaces	2.00	Acre	2.00	87,120.00	0
Other Asphalt Surfaces	71.00	Acre	71.00	3,092,760.00	0
City Park	26.00	Acre	26.00	1,132,560.00	0
Single Family Housing	1,650.00	Dwelling Unit	264.00	2,970,000.00	4719
Single Family Housing	165.00	Dwelling Unit	26.40	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2028
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	392.72	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Northlake Creek Avoidance Alternative - Los Angeles-South Coast County, Annual

Project Characteristics - Based on DEIR inputs

Land Use - Based on PD for CAA

Construction Phase - Based on data request

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition phase

Off-road Equipment - Based on data request

Off-road Equipment - Based on data request

Off-road Equipment - Based on data request

Off-road Equipment -

Off-road Equipment - Based on data request

Off-road Equipment - Based on data request

Trips and VMT - Based on proportion of default to adjusted worker and vendor trips from the DEIR and applied to the CalEEMod default values for the CAA.

Grading -

Vehicle Trips - Based on VMT and DEIR

Woodstoves - No wood fireplaces

Energy Use -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	550.00	1,935.00
tblConstructionPhase	NumDays	7,750.00	1,565.00
tblConstructionPhase	NumDays	7,750.00	781.00
tblConstructionPhase	NumDays	775.00	652.00
tblConstructionPhase	NumDays	775.00	1,304.00

tblConstructionPhase	NumDays	775.00	521.00
tblConstructionPhase	NumDays	300.00	261.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	1,542.75	455.00
tblFireplaces	NumberNoFireplace	181.50	1,360.00
tblFireplaces	NumberWood	90.75	0.00
tblGrading	AcresOfGrading	18,256.00	1,937.50
tblGrading	AcresOfGrading	652.00	3,260.00
tblGrading	AcresOfGrading	260.50	1,302.50
tblGrading	MaterialExported	0.00	8,279,040.00
tblLandUse	LotAcreage	1.21	23.00
tblLandUse	LotAcreage	53.57	26.40
tblLandUse	LotAcreage	535.71	264.00
tblOffRoadEquipment	HorsePower	212.00	600.00
tblOffRoadEquipment	HorsePower	212.00	436.00
tblOffRoadEquipment	HorsePower	212.00	100.00
tblOffRoadEquipment	HorsePower	212.00	290.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	25.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	392.72
tblTripsAndVMT	VendorTripNumber	917.00	47.00
tblTripsAndVMT	VendorTripNumber	917.00	19.00
tblTripsAndVMT	WorkerTripNumber	95.00	20.00

tblTripsAndVMT	WorkerTripNumber	15.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	11.00
tblTripsAndVMT	WorkerTripNumber	2,501.00	262.00
tblTripsAndVMT	WorkerTripNumber	500.00	52.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	2,501.00	131.00
tblVehicleTrips	CC_TL	8.40	1.07
tblVehicleTrips	CNW_TL	6.90	1.07
tblVehicleTrips	CW_TL	16.60	1.07
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	8.70	13.24
tblVehicleTrips	HO_TTP	40.60	0.00
tblVehicleTrips	HS_TL	5.90	13.24
tblVehicleTrips	HS_TTP	19.20	0.00
tblVehicleTrips	HW_TL	14.70	13.24
tblVehicleTrips	HW_TTP	40.20	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	22.75	53.80
tblVehicleTrips	ST_TR	0.00	0.91
tblVehicleTrips	ST_TR	9.91	9.30
tblVehicleTrips	SU_TR	16.74	53.80
tblVehicleTrips	SU_TR	0.00	0.91
tblVehicleTrips	SU_TR	8.62	8.10
tblVehicleTrips	WD_TR	1.89	53.80
tblVehicleTrips	WD_TR	1.29	1.62
tblVehicleTrips	WD_TR	27.92	0.91

tblVehicleTrips	WD_TR	9.52	8.96
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2018	4.4855	75.4811	29.6661	0.1255	14.1364	1.8714	16.0078	4.2376	1.7264	5.9640	0.0000	12,016.5417	12,016.5417	1.7547	0.0000	12,060.4084
2019	7.4628	130.5681	51.7351	0.2404	13.9915	2.9069	16.8984	4.0726	2.6829	6.7555	0.0000	22,963.6909	22,963.6909	3.2851	0.0000	23,045.8175
2020	8.0797	124.2246	52.9296	0.2472	14.4295	2.7892	17.2187	4.1878	2.5767	6.7644	0.0000	23,427.1361	23,427.1361	3.3476	0.0000	23,510.8248
2021	2.2795	6.4820	6.3548	0.0142	3.0136	0.2928	3.3064	0.7521	0.2730	1.0250	0.0000	1,265.9426	1,265.9426	0.2143	0.0000	1,271.3003
2022	2.1862	5.6370	6.0939	0.0140	3.0087	0.2423	3.2510	0.7499	0.2260	0.9759	0.0000	1,245.2853	1,245.2853	0.2114	0.0000	1,250.5697
2023	2.0629	4.3271	5.3491	0.0127	2.8071	0.1794	2.9864	0.6399	0.1677	0.8076	0.0000	1,131.7762	1,131.7762	0.1788	0.0000	1,136.2463
2024	1.8817	2.4580	3.7179	9.4600e-003	0.4895	0.0923	0.5818	0.1309	0.0872	0.2181	0.0000	848.7108	848.7108	0.0905	0.0000	850.9720
2025	1.9277	2.9883	4.5180	0.0110	1.3885	0.1083	1.4968	0.3173	0.1016	0.4189	0.0000	979.5446	979.5446	0.1344	0.0000	982.9055
2026	2.0013	4.0483	5.2275	0.0113	1.7842	0.1626	1.9468	0.5887	0.1516	0.7402	0.0000	993.2018	993.2018	0.2035	0.0000	998.2882
2027	1.9358	3.4717	4.5228	9.8600e-003	1.5734	0.1387	1.7121	0.4753	0.1296	0.6049	0.0000	870.4676	870.4676	0.1677	0.0000	874.6601
2028	0.2321	1.8129	2.5204	5.5300e-003	0.2014	0.0697	0.2711	0.0539	0.0655	0.1194	0.0000	488.9999	488.9999	0.0762	0.0000	490.9037
Maximum	**8.0797**	**130.5681**	**52.9296**	**0.2472**	**14.4295**	**2.9069**	**17.2187**	**4.2376**	**2.6829**	**6.7644**	**0.0000**	**23,427.1361**	**23,427.1361**	**3.3476**	**0.0000**	**23,510.8248**

2.1 Overall Construction

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2018	4.4855	75.4810	29.6661	0.1255	9.8885	1.8714	11.7599	2.7589	1.7264	4.4853	0.0000	12,016.5372	12,016.5372	1.7547	0.0000	12,060.4039
2019	7.4628	130.5680	51.7350	0.2404	10.1072	2.9069	13.0141	2.7938	2.6829	5.4767	0.0000	22,963.6828	22,963.6828	3.2851	0.0000	23,045.8093
2020	8.0796	124.2245	52.9295	0.2472	10.5489	2.7892	13.3381	2.9110	2.5766	5.4876	0.0000	23,427.1279	23,427.1279	3.3476	0.0000	23,510.8165
2021	2.2795	6.4820	6.3548	0.0142	1.4798	0.2928	1.7726	0.3747	0.2730	0.6477	0.0000	1,265.9417	1,265.9417	0.2143	0.0000	1,271.2995
2022	2.1862	5.6370	6.0939	0.0140	1.4767	0.2423	1.7190	0.3736	0.2260	0.5996	0.0000	1,245.2845	1,245.2845	0.2114	0.0000	1,250.5689
2023	2.0629	4.3271	5.3491	0.0127	1.3963	0.1794	1.5757	0.3302	0.1677	0.4979	0.0000	1,131.7755	1,131.7755	0.1788	0.0000	1,136.2455
2024	1.8817	2.4580	3.7179	9.4600e-003	0.4895	0.0923	0.5818	0.1309	0.0872	0.2181	0.0000	848.7104	848.7104	0.0905	0.0000	850.9716
2025	1.9277	2.9883	4.5180	0.0110	0.8460	0.1083	0.9543	0.2051	0.1016	0.3068	0.0000	979.5441	979.5441	0.1344	0.0000	982.9049
2026	2.0013	4.0483	5.2275	0.0113	0.8836	0.1626	1.0462	0.2797	0.1516	0.4312	0.0000	993.2009	993.2009	0.2035	0.0000	998.2874
2027	1.9358	3.4717	4.5228	9.8600e-003	0.7957	0.1387	0.9345	0.2340	0.1296	0.3636	0.0000	870.4669	870.4669	0.1677	0.0000	874.6593
2028	0.2321	1.8129	2.5203	5.5300e-003	0.2014	0.0697	0.2711	0.0539	0.0655	0.1194	0.0000	488.9995	488.9995	0.0762	0.0000	490.9033
Maximum	**8.0796**	**130.5680**	**52.9295**	**0.2472**	**10.5489**	**2.9069**	**13.3381**	**2.9110**	**2.6829**	**5.4876**	**0.0000**	**23,427.1279**	**23,427.1279**	**3.3476**	**0.0000**	**23,510.8165**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**32.93**	**0.00**	**28.49**	**35.54**	**0.00**	**23.61**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Northlake Creek Avoidance Alternative - Los Angeles-South Coast County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2021	3-31-2021	2.1593	2.1593
2	4-1-2021	6-30-2021	2.1750	2.1750
3	7-1-2021	9-30-2021	2.1989	2.1989
4	10-1-2021	12-31-2021	2.2073	2.2073
5	1-1-2022	3-31-2022	1.9357	1.9357
6	4-1-2022	6-30-2022	1.9495	1.9495
7	7-1-2022	9-30-2022	1.9709	1.9709
8	10-1-2022	12-31-2022	1.9787	1.9787
9	1-1-2023	3-31-2023	1.7432	1.7432
10	4-1-2023	6-30-2023	1.7555	1.7555
11	7-1-2023	9-30-2023	1.7607	1.7607
12	10-1-2023	12-31-2023	1.1329	1.1329
13	1-1-2024	3-31-2024	1.0786	1.0786
14	4-1-2024	6-30-2024	1.0720	1.0720
15	7-1-2024	9-30-2024	1.0838	1.0838
16	10-1-2024	12-31-2024	1.0904	1.0904
17	1-1-2025	3-31-2025	1.0244	1.0244
18	4-1-2025	6-30-2025	1.0296	1.0296
19	7-1-2025	9-30-2025	1.1488	1.1488
20	10-1-2025	12-31-2025	1.7032	1.7032
21	1-1-2026	3-31-2026	1.5419	1.5419
22	4-1-2026	6-30-2026	1.4875	1.4875
23	7-1-2026	9-30-2026	1.5038	1.5038
24	10-1-2026	12-31-2026	1.5078	1.5078
25	1-1-2027	3-31-2027	1.4725	1.4725
26	4-1-2027	6-30-2027	1.4851	1.4851

27	**7-1-2027**	**9-30-2027**	1.4954	1.4954
28	**10-1-2027**	**12-31-2027**	0.9511	0.9511
29	**1-1-2028**	**3-31-2028**	0.5140	0.5140
30	**4-1-2028**	**6-30-2028**	0.5117	0.5117
31	**7-1-2028**	**9-30-2028**	0.5173	0.5173
		Highest	2.2073	2.2073

2.2 Overall Operational

Unmitigated Operational

	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					
Area	14.0657	0.4042	18.7899	2.1900e-003		0.1191	0.1191		0.1191	0.1191	0.0000	249.1186	249.1186	0.0335	4.0100e-003	251.1504
Energy	0.2743	2.3470	1.0191	0.0150		0.1895	0.1895		0.1895	0.1895	0.0000	5,525.6835	5,525.6835	0.2596	0.0927	5,559.8031
Mobile	4.6896	23.7864	69.0499	0.3123	30.6391	0.2162	30.8553	8.2099	0.2008	8.4107	0.0000	28,968.6222	28,968.6222	1.2328	0.0000	28,999.4428
Waste						0.0000	0.0000		0.0000	0.0000	506.6573	0.0000	506.6573	29.9426	0.0000	1,255.2221
Water						0.0000	0.0000		0.0000	0.0000	40.7728	525.2997	566.0725	4.2266	0.1069	703.5948
Total	**19.0297**	**26.5375**	**88.8588**	**0.3294**	**30.6391**	**0.5247**	**31.1638**	**8.2099**	**0.5093**	**8.7193**	**547.4302**	**35,268.7240**	**35,816.1542**	**35.6951**	**0.2036**	**36,769.2132**

2.2 Overall Operational

Mitigated Operational

	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					
Area	14.0657	0.4042	18.7899	2.1900e-003		0.1191	0.1191		0.1191	0.1191	0.0000	249.1186	249.1186	0.0335	4.0100e-003	251.1504
Energy	0.2743	2.3470	1.0191	0.0150		0.1895	0.1895		0.1895	0.1895	0.0000	5,525.6835	5,525.6835	0.2596	0.0927	5,559.8031
Mobile	4.6896	23.7864	69.0499	0.3123	30.6391	0.2162	30.8553	8.2099	0.2008	8.4107	0.0000	28,968.6222	28,968.6222	1.2328	0.0000	28,999.4428
Waste						0.0000	0.0000		0.0000	0.0000	506.6573	0.0000	506.6573	29.9426	0.0000	1,255.2221
Water						0.0000	0.0000		0.0000	0.0000	40.7728	525.2997	566.0725	4.2266	0.1069	703.5948
Total	**19.0297**	**26.5375**	**88.8588**	**0.3294**	**30.6391**	**0.5247**	**31.1638**	**8.2099**	**0.5093**	**8.7193**	**547.4302**	**35,268.7240**	**35,816.1542**	**35.6951**	**0.2036**	**36,769.2132**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2018	12/31/2018	5	261	
2	Grading	Grading	7/1/2018	12/29/2020	5	652	
3	Fine Grading 1	Grading	10/1/2018	9/28/2023	5	1304	
4	Utilities 1	Trenching	2/1/2019	12/30/2020	5	499	
5	Building Construction	Building Construction	1/1/2020	12/30/2025	5	1565	
6	Architectural Coating	Architectural Coating	8/1/2020	12/31/2027	5	1935	
7	Utilities 2	Trenching	7/1/2025	2/26/2026	5	173	
8	Fine Grading 2	Grading	10/1/2025	9/29/2027	5	521	
9	Building Construction 2	Building Construction	1/1/2026	12/28/2028	5	781	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1937.5

Acres of Paving: 73

Residential Indoor: 6,615,675; Residential Outdoor: 2,205,225; Non-Residential Indoor: 144,754; Non-Residential Outdoor: 48,251; Striped Parking Area: 190,793 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Crawler Tractors	3	8.00	600	0.43
Grading	Crawler Tractors	2	8.00	436	0.43
Grading	Crawler Tractors	2	8.00	100	0.43
Grading	Crawler Tractors	2	8.00	290	0.43
Grading	Excavators	0	8.00	158	0.38

Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	25	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Fine Grading 1	Excavators	2	8.00	158	0.38
Fine Grading 1	Graders	1	8.00	187	0.41
Fine Grading 1	Rubber Tired Dozers	1	8.00	247	0.40
Fine Grading 1	Scrapers	0	8.00	367	0.48
Fine Grading 1	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Utilities 1	Excavators	1	6.00	158	0.38
Utilities 1	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Utilities 2	Excavators	1	6.00	158	0.38
Utilities 2	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Fine Grading 2	Excavators	2	8.00	158	0.38
Fine Grading 2	Graders	1	8.00	187	0.41
Fine Grading 2	Rubber Tired Dozers	1	8.00	247	0.40
Fine Grading 2	Scrapers	0	8.00	367	0.48
Fine Grading 2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction 2	Cranes	1	7.00	231	0.29
Building Construction 2	Forklifts	3	8.00	89	0.20
Building Construction 2	Generator Sets	1	8.00	84	0.74

Building Construction 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 2	Welders	1	8.00	46	0.45

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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	38	20.00	0.00	1,034,880.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading 1	6	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Utilities 1	3	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	262.00	47.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	52.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Utilities 2	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading 2	6	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	131.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2018

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					2.3577	0.0000	2.3577	1.2960	0.0000	1.2960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5954	6.2899	2.9332	4.9600e-003		0.3363	0.3363		0.3094	0.3094	0.0000	453.6168	453.6168	0.1412	0.0000	457.1472
Total	**0.5954**	**6.2899**	**2.9332**	**4.9600e-003**	**2.3577**	**0.3363**	**2.6939**	**1.2960**	**0.3094**	**1.6053**	**0.0000**	**453.6168**	**453.6168**	**0.1412**	**0.0000**	**457.1472**

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	0.0130	0.0111	0.1198	2.8000e-004	0.0257	2.3000e-004	0.0260	6.8400e-003	2.2000e-004	7.0500e-003	0.0000	25.5758	25.5758	9.6000e-004	0.0000	25.5998
Total	**0.0130**	**0.0111**	**0.1198**	**2.8000e-004**	**0.0257**	**2.3000e-004**	**0.0260**	**6.8400e-003**	**2.2000e-004**	**7.0500e-003**	**0.0000**	**25.5758**	**25.5758**	**9.6000e-004**	**0.0000**	**25.5998**

3.2 Site Preparation - 2018

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					0.9195	0.0000	0.9195	0.5054	0.0000	0.5054	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5954	6.2899	2.9332	4.9600e-003		0.3363	0.3363		0.3094	0.3094	0.0000	453.6163	453.6163	0.1412	0.0000	457.1467
Total	**0.5954**	**6.2899**	**2.9332**	**4.9600e-003**	**0.9195**	**0.3363**	**1.2558**	**0.5054**	**0.3094**	**0.8148**	**0.0000**	**453.6163**	**453.6163**	**0.1412**	**0.0000**	**457.1467**

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	0.0130	0.0111	0.1198	2.8000e-004	0.0257	2.3000e-004	0.0260	6.8400e-003	2.2000e-004	7.0500e-003	0.0000	25.5758	25.5758	9.6000e-004	0.0000	25.5998
Total	**0.0130**	**0.0111**	**0.1198**	**2.8000e-004**	**0.0257**	**2.3000e-004**	**0.0260**	**6.8400e-003**	**2.2000e-004**	**7.0500e-003**	**0.0000**	**25.5758**	**25.5758**	**9.6000e-004**	**0.0000**	**25.5998**

3.3 Grading - 2018

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					2.6788	0.0000	2.6788	0.8323	0.0000	0.8323	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7330	33.4235	18.7933	0.0353		1.3559	1.3559		1.2474	1.2474	0.0000	3,224.2715	3,224.2715	1.0038	0.0000	3,249.3655
Total	**2.7330**	**33.4235**	**18.7933**	**0.0353**	**2.6788**	**1.3559**	**4.0347**	**0.8323**	**1.2474**	**2.0797**	**0.0000**	**3,224.2715**	**3,224.2715**	**1.0038**	**0.0000**	**3,249.3655**

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	1.0431	34.7215	7.1616	0.0837	7.1296	0.1288	7.2584	1.8021	0.1232	1.9253	0.0000	8,200.2960	8,200.2960	0.5783	0.0000	8,214.7538
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	7.2600e-003	6.2100e-003	0.0668	1.6000e-004	0.0144	1.3000e-004	0.0145	3.8100e-003	1.2000e-004	3.9300e-003	0.0000	14.2632	14.2632	5.4000e-004	0.0000	14.2766
Total	**1.0503**	**34.7277**	**7.2284**	**0.0838**	**7.1440**	**0.1289**	**7.2729**	**1.8059**	**0.1234**	**1.9292**	**0.0000**	**8,214.5592**	**8,214.5592**	**0.5789**	**0.0000**	**8,229.0304**

3.3 Grading - 2018

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					1.0448	0.0000	1.0448	0.3246	0.0000	0.3246	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7330	33.4235	18.7932	0.0353		1.3559	1.3559		1.2474	1.2474	0.0000	3,224.2677	3,224.2677	1.0038	0.0000	3,249.3617
Total	**2.7330**	**33.4235**	**18.7932**	**0.0353**	**1.0448**	**1.3559**	**2.4006**	**0.3246**	**1.2474**	**1.5720**	**0.0000**	**3,224.2677**	**3,224.2677**	**1.0038**	**0.0000**	**3,249.3617**

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	1.0431	34.7215	7.1616	0.0837	7.1296	0.1288	7.2584	1.8021	0.1232	1.9253	0.0000	8,200.2960	8,200.2960	0.5783	0.0000	8,214.7538
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	7.2600e-003	6.2100e-003	0.0668	1.6000e-004	0.0144	1.3000e-004	0.0145	3.8100e-003	1.2000e-004	3.9300e-003	0.0000	14.2632	14.2632	5.4000e-004	0.0000	14.2766
Total	**1.0503**	**34.7277**	**7.2284**	**0.0838**	**7.1440**	**0.1289**	**7.2729**	**1.8059**	**0.1234**	**1.9292**	**0.0000**	**8,214.5592**	**8,214.5592**	**0.5789**	**0.0000**	**8,229.0304**

3.3 Grading - 2019

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					3.8531	0.0000	3.8531	1.4778	0.0000	1.4778	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0655	60.5908	34.6315	0.0704		2.4535	2.4535		2.2572	2.2572	0.0000	6,319.1667	6,319.1667	1.9993	0.0000	6,369.1497
Total	**5.0655**	**60.5908**	**34.6315**	**0.0704**	**3.8531**	**2.4535**	**6.3066**	**1.4778**	**2.2572**	**3.7350**	**0.0000**	**6,319.1667**	**6,319.1667**	**1.9993**	**0.0000**	**6,369.1497**

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	1.9672	65.5557	13.9244	0.1643	7.5695	0.2346	7.8041	1.9617	0.2245	2.1862	0.0000	16,129.2778	16,129.2778	1.1375	0.0000	16,157.7145
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	0.0131	0.0109	0.1185	3.0000e-004	0.0286	2.5000e-004	0.0289	7.6000e-003	2.3000e-004	7.8300e-003	0.0000	27.4926	27.4926	9.5000e-004	0.0000	27.5163
Total	**1.9803**	**65.5666**	**14.0429**	**0.1646**	**7.5981**	**0.2349**	**7.8329**	**1.9693**	**0.2247**	**2.1940**	**0.0000**	**16,156.7704**	**16,156.7704**	**1.1384**	**0.0000**	**16,185.2308**

3.3 Grading - 2019

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					1.5027	0.0000	1.5027	0.5763	0.0000	0.5763	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0655	60.5907	34.6315	0.0704		2.4535	2.4535		2.2572	2.2572	0.0000	6,319.1592	6,319.1592	1.9993	0.0000	6,369.1421
Total	**5.0655**	**60.5907**	**34.6315**	**0.0704**	**1.5027**	**2.4535**	**3.9562**	**0.5763**	**2.2572**	**2.8335**	**0.0000**	**6,319.1592**	**6,319.1592**	**1.9993**	**0.0000**	**6,369.1421**

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	1.9672	65.5557	13.9244	0.1643	7.5695	0.2346	7.8041	1.9617	0.2245	2.1862	0.0000	16,129.2778	16,129.2778	1.1375	0.0000	16,157.7145
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	0.0131	0.0109	0.1185	3.0000e-004	0.0286	2.5000e-004	0.0289	7.6000e-003	2.3000e-004	7.8300e-003	0.0000	27.4926	27.4926	9.5000e-004	0.0000	27.5163
Total	**1.9803**	**65.5666**	**14.0429**	**0.1646**	**7.5981**	**0.2349**	**7.8329**	**1.9693**	**0.2247**	**2.1940**	**0.0000**	**16,156.7704**	**16,156.7704**	**1.1384**	**0.0000**	**16,185.2308**

3.3 Grading - 2020

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					3.8441	0.0000	3.8441	1.4728	0.0000	1.4728	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7367	55.3731	32.1985	0.0701		2.2370	2.2370		2.0581	2.0581	0.0000	6,158.1596	6,158.1596	1.9917	0.0000	6,207.9515
Total	**4.7367**	**55.3731**	**32.1985**	**0.0701**	**3.8441**	**2.2370**	**6.0811**	**1.4728**	**2.0581**	**3.5309**	**0.0000**	**6,158.1596**	**6,158.1596**	**1.9917**	**0.0000**	**6,207.9515**

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	1.8210	61.2769	13.5063	0.1618	7.5662	0.1906	7.7568	1.9606	0.1823	2.1429	0.0000	15,904.4055	15,904.4055	1.1078	0.0000	15,932.0994
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	0.0120	9.6800e-003	0.1070	2.9000e-004	0.0285	2.4000e-004	0.0287	7.5700e-003	2.2000e-004	7.7900e-003	0.0000	26.5551	26.5551	8.4000e-004	0.0000	26.5760
Total	**1.8330**	**61.2866**	**13.6133**	**0.1621**	**7.5947**	**0.1908**	**7.7855**	**1.9681**	**0.1826**	**2.1507**	**0.0000**	**15,930.9606**	**15,930.9606**	**1.1086**	**0.0000**	**15,958.6755**

3.3 Grading - 2020

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					1.4992	0.0000	1.4992	0.5744	0.0000	0.5744	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7367	55.3730	32.1985	0.0701		2.2370	2.2370		2.0581	2.0581	0.0000	6,158.1523	6,158.1523	1.9917	0.0000	6,207.9441
Total	**4.7367**	**55.3730**	**32.1985**	**0.0701**	**1.4992**	**2.2370**	**3.7362**	**0.5744**	**2.0581**	**2.6325**	**0.0000**	**6,158.1523**	**6,158.1523**	**1.9917**	**0.0000**	**6,207.9441**

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	1.8210	61.2769	13.5063	0.1618	7.5662	0.1906	7.7568	1.9606	0.1823	2.1429	0.0000	15,904.4055	15,904.4055	1.1078	0.0000	15,932.0994
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	0.0120	9.6800e-003	0.1070	2.9000e-004	0.0285	2.4000e-004	0.0287	7.5700e-003	2.2000e-004	7.7900e-003	0.0000	26.5551	26.5551	8.4000e-004	0.0000	26.5760
Total	**1.8330**	**61.2866**	**13.6133**	**0.1621**	**7.5947**	**0.1908**	**7.7855**	**1.9681**	**0.1826**	**2.1507**	**0.0000**	**15,930.9606**	**15,930.9606**	**1.1086**	**0.0000**	**15,958.6755**

3.4 Fine Grading 1 - 2018

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					1.9273	0.0000	1.9273	0.2959	0.0000	0.2959	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0923	1.0276	0.5780	1.0500e-003		0.0500	0.0500		0.0460	0.0460	0.0000	95.6440	95.6440	0.0298	0.0000	96.3883
Total	**0.0923**	**1.0276**	**0.5780**	**1.0500e-003**	**1.9273**	**0.0500**	**1.9773**	**0.2959**	**0.0460**	**0.3419**	**0.0000**	**95.6440**	**95.6440**	**0.0298**	**0.0000**	**96.3883**

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	1.4600e-003	1.2500e-003	0.0135	3.0000e-005	2.8900e-003	3.0000e-005	2.9200e-003	7.7000e-004	2.0000e-005	7.9000e-004	0.0000	2.8744	2.8744	1.1000e-004	0.0000	2.8771
Total	**1.4600e-003**	**1.2500e-003**	**0.0135**	**3.0000e-005**	**2.8900e-003**	**3.0000e-005**	**2.9200e-003**	**7.7000e-004**	**2.0000e-005**	**7.9000e-004**	**0.0000**	**2.8744**	**2.8744**	**1.1000e-004**	**0.0000**	**2.8771**

3.4 Fine Grading 1 - 2018

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					0.7517	0.0000	0.7517	0.1154	0.0000	0.1154	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0923	1.0276	0.5780	1.0500e-003		0.0500	0.0500		0.0460	0.0460	0.0000	95.6438	95.6438	0.0298	0.0000	96.3882
Total	**0.0923**	**1.0276**	**0.5780**	**1.0500e-003**	**0.7517**	**0.0500**	**0.8017**	**0.1154**	**0.0460**	**0.1614**	**0.0000**	**95.6438**	**95.6438**	**0.0298**	**0.0000**	**96.3882**

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	1.4600e-003	1.2500e-003	0.0135	3.0000e-005	2.8900e-003	3.0000e-005	2.9200e-003	7.7000e-004	2.0000e-005	7.9000e-004	0.0000	2.8744	2.8744	1.1000e-004	0.0000	2.8771
Total	**1.4600e-003**	**1.2500e-003**	**0.0135**	**3.0000e-005**	**2.8900e-003**	**3.0000e-005**	**2.9200e-003**	**7.7000e-004**	**2.0000e-005**	**7.9000e-004**	**0.0000**	**2.8744**	**2.8744**	**1.1000e-004**	**0.0000**	**2.8771**

3.4 Fine Grading 1 - 2019

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					2.5145	0.0000	2.5145	0.6186	0.0000	0.6186	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3404	3.7444	2.2516	4.1400e-003		0.1789	0.1789		0.1646	0.1646	0.0000	371.7833	371.7833	0.1176	0.0000	374.7240
Total	**0.3404**	**3.7444**	**2.2516**	**4.1400e-003**	**2.5145**	**0.1789**	**2.6934**	**0.6186**	**0.1646**	**0.7832**	**0.0000**	**371.7833**	**371.7833**	**0.1176**	**0.0000**	**374.7240**

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	5.2300e-003	4.3600e-003	0.0474	1.2000e-004	0.0114	1.0000e-004	0.0115	3.0400e-003	9.0000e-005	3.1300e-003	0.0000	10.9971	10.9971	3.8000e-004	0.0000	11.0065
Total	**5.2300e-003**	**4.3600e-003**	**0.0474**	**1.2000e-004**	**0.0114**	**1.0000e-004**	**0.0115**	**3.0400e-003**	**9.0000e-005**	**3.1300e-003**	**0.0000**	**10.9971**	**10.9971**	**3.8000e-004**	**0.0000**	**11.0065**

3.4 Fine Grading 1 - 2019

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					0.9807	0.0000	0.9807	0.2413	0.0000	0.2413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3404	3.7444	2.2516	4.1400e-003		0.1789	0.1789		0.1646	0.1646	0.0000	371.7829	371.7829	0.1176	0.0000	374.7236
Total	**0.3404**	**3.7444**	**2.2516**	**4.1400e-003**	**0.9807**	**0.1789**	**1.1595**	**0.2413**	**0.1646**	**0.4058**	**0.0000**	**371.7829**	**371.7829**	**0.1176**	**0.0000**	**374.7236**

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	5.2300e-003	4.3600e-003	0.0474	1.2000e-004	0.0114	1.0000e-004	0.0115	3.0400e-003	9.0000e-005	3.1300e-003	0.0000	10.9971	10.9971	3.8000e-004	0.0000	11.0065
Total	**5.2300e-003**	**4.3600e-003**	**0.0474**	**1.2000e-004**	**0.0114**	**1.0000e-004**	**0.0115**	**3.0400e-003**	**9.0000e-005**	**3.1300e-003**	**0.0000**	**10.9971**	**10.9971**	**3.8000e-004**	**0.0000**	**11.0065**

3.4 Fine Grading 1 - 2020

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					2.5175	0.0000	2.5175	0.6203	0.0000	0.6203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3228	3.4968	2.2324	4.1500e-003		0.1647	0.1647		0.1515	0.1515	0.0000	365.0606	365.0606	0.1181	0.0000	368.0123
Total	**0.3228**	**3.4968**	**2.2324**	**4.1500e-003**	**2.5175**	**0.1647**	**2.6822**	**0.6203**	**0.1515**	**0.7718**	**0.0000**	**365.0606**	**365.0606**	**0.1181**	**0.0000**	**368.0123**

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	4.8400e-003	3.9000e-003	0.0431	1.2000e-004	0.0115	1.0000e-004	0.0116	3.0500e-003	9.0000e-005	3.1400e-003	0.0000	10.7038	10.7038	3.4000e-004	0.0000	10.7122
Total	**4.8400e-003**	**3.9000e-003**	**0.0431**	**1.2000e-004**	**0.0115**	**1.0000e-004**	**0.0116**	**3.0500e-003**	**9.0000e-005**	**3.1400e-003**	**0.0000**	**10.7038**	**10.7038**	**3.4000e-004**	**0.0000**	**10.7122**

3.4 Fine Grading 1 - 2020

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					0.9818	0.0000	0.9818	0.2419	0.0000	0.2419	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3228	3.4968	2.2324	4.1500e-003		0.1647	0.1647		0.1515	0.1515	0.0000	365.0601	365.0601	0.1181	0.0000	368.0118
Total	**0.3228**	**3.4968**	**2.2324**	**4.1500e-003**	**0.9818**	**0.1647**	**1.1465**	**0.2419**	**0.1515**	**0.3934**	**0.0000**	**365.0601**	**365.0601**	**0.1181**	**0.0000**	**368.0118**

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	4.8400e-003	3.9000e-003	0.0431	1.2000e-004	0.0115	1.0000e-004	0.0116	3.0500e-003	9.0000e-005	3.1400e-003	0.0000	10.7038	10.7038	3.4000e-004	0.0000	10.7122
Total	**4.8400e-003**	**3.9000e-003**	**0.0431**	**1.2000e-004**	**0.0115**	**1.0000e-004**	**0.0116**	**3.0500e-003**	**9.0000e-005**	**3.1400e-003**	**0.0000**	**10.7038**	**10.7038**	**3.4000e-004**	**0.0000**	**10.7122**

3.4 Fine Grading 1 - 2021

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					2.5145	0.0000	2.5145	0.6186	0.0000	0.6186	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3044	3.2618	2.2014	4.1400e-003		0.1504	0.1504		0.1384	0.1384	0.0000	363.5944	363.5944	0.1176	0.0000	366.5343
Total	**0.3044**	**3.2618**	**2.2014**	**4.1400e-003**	**2.5145**	**0.1504**	**2.6649**	**0.6186**	**0.1384**	**0.7570**	**0.0000**	**363.5944**	**363.5944**	**0.1176**	**0.0000**	**366.5343**

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	4.4900e-003	3.5000e-003	0.0395	1.1000e-004	0.0114	9.0000e-005	0.0115	3.0400e-003	9.0000e-005	3.1300e-003	0.0000	10.3243	10.3243	3.0000e-004	0.0000	10.3319
Total	**4.4900e-003**	**3.5000e-003**	**0.0395**	**1.1000e-004**	**0.0114**	**9.0000e-005**	**0.0115**	**3.0400e-003**	**9.0000e-005**	**3.1300e-003**	**0.0000**	**10.3243**	**10.3243**	**3.0000e-004**	**0.0000**	**10.3319**

3.4 Fine Grading 1 - 2021

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					0.9807	0.0000	0.9807	0.2413	0.0000	0.2413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3044	3.2618	2.2014	4.1400e-003		0.1504	0.1504		0.1384	0.1384	0.0000	363.5940	363.5940	0.1176	0.0000	366.5339
Total	**0.3044**	**3.2618**	**2.2014**	**4.1400e-003**	**0.9807**	**0.1504**	**1.1311**	**0.2413**	**0.1384**	**0.3797**	**0.0000**	**363.5940**	**363.5940**	**0.1176**	**0.0000**	**366.5339**

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	4.4900e-003	3.5000e-003	0.0395	1.1000e-004	0.0114	9.0000e-005	0.0115	3.0400e-003	9.0000e-005	3.1300e-003	0.0000	10.3243	10.3243	3.0000e-004	0.0000	10.3319
Total	**4.4900e-003**	**3.5000e-003**	**0.0395**	**1.1000e-004**	**0.0114**	**9.0000e-005**	**0.0115**	**3.0400e-003**	**9.0000e-005**	**3.1300e-003**	**0.0000**	**10.3243**	**10.3243**	**3.0000e-004**	**0.0000**	**10.3319**

3.4 Fine Grading 1 - 2022

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					2.5115	0.0000	2.5115	0.6170	0.0000	0.6170	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2582	2.7243	2.1177	4.1200e-003		0.1218	0.1218		0.1120	0.1120	0.0000	362.1545	362.1545	0.1171	0.0000	365.0827
Total	**0.2582**	**2.7243**	**2.1177**	**4.1200e-003**	**2.5115**	**0.1218**	**2.6333**	**0.6170**	**0.1120**	**0.7290**	**0.0000**	**362.1545**	**362.1545**	**0.1171**	**0.0000**	**365.0827**

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	4.2000e-003	3.1500e-003	0.0362	1.1000e-004	0.0114	9.0000e-005	0.0115	3.0300e-003	8.0000e-005	3.1100e-003	0.0000	9.9232	9.9232	2.7000e-004	0.0000	9.9300
Total	**4.2000e-003**	**3.1500e-003**	**0.0362**	**1.1000e-004**	**0.0114**	**9.0000e-005**	**0.0115**	**3.0300e-003**	**8.0000e-005**	**3.1100e-003**	**0.0000**	**9.9232**	**9.9232**	**2.7000e-004**	**0.0000**	**9.9300**

3.4 Fine Grading 1 - 2022

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					0.9795	0.0000	0.9795	0.2406	0.0000	0.2406	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2582	2.7243	2.1177	4.1200e-003		0.1218	0.1218		0.1120	0.1120	0.0000	362.1540	362.1540	0.1171	0.0000	365.0822
Total	**0.2582**	**2.7243**	**2.1177**	**4.1200e-003**	**0.9795**	**0.1218**	**1.1012**	**0.2406**	**0.1120**	**0.3526**	**0.0000**	**362.1540**	**362.1540**	**0.1171**	**0.0000**	**365.0822**

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	4.2000e-003	3.1500e-003	0.0362	1.1000e-004	0.0114	9.0000e-005	0.0115	3.0300e-003	8.0000e-005	3.1100e-003	0.0000	9.9232	9.9232	2.7000e-004	0.0000	9.9300
Total	**4.2000e-003**	**3.1500e-003**	**0.0362**	**1.1000e-004**	**0.0114**	**9.0000e-005**	**0.0115**	**3.0300e-003**	**8.0000e-005**	**3.1100e-003**	**0.0000**	**9.9232**	**9.9232**	**2.7000e-004**	**0.0000**	**9.9300**

3.4 Fine Grading 1 - 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					2.3128	0.0000	2.3128	0.5077	0.0000	0.5077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1696	1.7410	1.5304	3.0800e-003		0.0752	0.0752		0.0692	0.0692	0.0000	270.2579	270.2579	0.0874	0.0000	272.4431
Total	**0.1696**	**1.7410**	**1.5304**	**3.0800e-003**	**2.3128**	**0.0752**	**2.3879**	**0.5077**	**0.0692**	**0.5769**	**0.0000**	**270.2579**	**270.2579**	**0.0874**	**0.0000**	**272.4431**

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	2.9400e-003	2.1200e-003	0.0249	8.0000e-005	8.5000e-003	7.0000e-005	8.5700e-003	2.2600e-003	6.0000e-005	2.3200e-003	0.0000	7.1333	7.1333	1.8000e-004	0.0000	7.1379
Total	**2.9400e-003**	**2.1200e-003**	**0.0249**	**8.0000e-005**	**8.5000e-003**	**7.0000e-005**	**8.5700e-003**	**2.2600e-003**	**6.0000e-005**	**2.3200e-003**	**0.0000**	**7.1333**	**7.1333**	**1.8000e-004**	**0.0000**	**7.1379**

3.4 Fine Grading 1 - 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					0.9020	0.0000	0.9020	0.1980	0.0000	0.1980	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1696	1.7410	1.5304	3.0800e-003		0.0752	0.0752		0.0692	0.0692	0.0000	270.2576	270.2576	0.0874	0.0000	272.4428
Total	**0.1696**	**1.7410**	**1.5304**	**3.0800e-003**	**0.9020**	**0.0752**	**0.9772**	**0.1980**	**0.0692**	**0.2672**	**0.0000**	**270.2576**	**270.2576**	**0.0874**	**0.0000**	**272.4428**

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	2.9400e-003	2.1200e-003	0.0249	8.0000e-005	8.5000e-003	7.0000e-005	8.5700e-003	2.2600e-003	6.0000e-005	2.3200e-003	0.0000	7.1333	7.1333	1.8000e-004	0.0000	7.1379
Total	**2.9400e-003**	**2.1200e-003**	**0.0249**	**8.0000e-005**	**8.5000e-003**	**7.0000e-005**	**8.5700e-003**	**2.2600e-003**	**6.0000e-005**	**2.3200e-003**	**0.0000**	**7.1333**	**7.1333**	**1.8000e-004**	**0.0000**	**7.1379**

3.5 Utilities 1 - 2019

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	0.0648	0.6566	0.7023	1.0200e-003		0.0394	0.0394		0.0362	0.0362	0.0000	91.1849	91.1849	0.0289	0.0000	91.9062
Total	**0.0648**	**0.6566**	**0.7023**	**1.0200e-003**		**0.0394**	**0.0394**		**0.0362**	**0.0362**	**0.0000**	**91.1849**	**91.1849**	**0.0289**	**0.0000**	**91.9062**

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	6.5600e-003	5.4600e-003	0.0594	1.5000e-004	0.0143	1.3000e-004	0.0145	3.8100e-003	1.2000e-004	3.9300e-003	0.0000	13.7885	13.7885	4.7000e-004	0.0000	13.8003
Total	**6.5600e-003**	**5.4600e-003**	**0.0594**	**1.5000e-004**	**0.0143**	**1.3000e-004**	**0.0145**	**3.8100e-003**	**1.2000e-004**	**3.9300e-003**	**0.0000**	**13.7885**	**13.7885**	**4.7000e-004**	**0.0000**	**13.8003**

3.5 Utilities 1 - 2019

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	0.0648	0.6566	0.7023	1.0200e-003		0.0394	0.0394		0.0362	0.0362	0.0000	91.1848	91.1848	0.0289	0.0000	91.9061
Total	**0.0648**	**0.6566**	**0.7023**	**1.0200e-003**		**0.0394**	**0.0394**		**0.0362**	**0.0362**	**0.0000**	**91.1848**	**91.1848**	**0.0289**	**0.0000**	**91.9061**

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	6.5600e-003	5.4600e-003	0.0594	1.5000e-004	0.0143	1.3000e-004	0.0145	3.8100e-003	1.2000e-004	3.9300e-003	0.0000	13.7885	13.7885	4.7000e-004	0.0000	13.8003
Total	**6.5600e-003**	**5.4600e-003**	**0.0594**	**1.5000e-004**	**0.0143**	**1.3000e-004**	**0.0145**	**3.8100e-003**	**1.2000e-004**	**3.9300e-003**	**0.0000**	**13.7885**	**13.7885**	**4.7000e-004**	**0.0000**	**13.8003**

3.5 Utilities 1 - 2020

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	0.0650	0.6482	0.7661	1.1100e-003		0.0375	0.0375		0.0345	0.0345	0.0000	97.8168	97.8168	0.0316	0.0000	98.6077
Total	**0.0650**	**0.6482**	**0.7661**	**1.1100e-003**		**0.0375**	**0.0375**		**0.0345**	**0.0345**	**0.0000**	**97.8168**	**97.8168**	**0.0316**	**0.0000**	**98.6077**

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	6.6300e-003	5.3400e-003	0.0591	1.6000e-004	0.0157	1.3000e-004	0.0159	4.1800e-003	1.2000e-004	4.3000e-003	0.0000	14.6615	14.6615	4.6000e-004	0.0000	14.6730
Total	**6.6300e-003**	**5.3400e-003**	**0.0591**	**1.6000e-004**	**0.0157**	**1.3000e-004**	**0.0159**	**4.1800e-003**	**1.2000e-004**	**4.3000e-003**	**0.0000**	**14.6615**	**14.6615**	**4.6000e-004**	**0.0000**	**14.6730**

3.5 Utilities 1 - 2020

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	0.0650	0.6482	0.7661	1.1100e-003		0.0375	0.0375		0.0345	0.0345	0.0000	97.8167	97.8167	0.0316	0.0000	98.6076
Total	**0.0650**	**0.6482**	**0.7661**	**1.1100e-003**		**0.0375**	**0.0375**		**0.0345**	**0.0345**	**0.0000**	**97.8167**	**97.8167**	**0.0316**	**0.0000**	**98.6076**

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	6.6300e-003	5.3400e-003	0.0591	1.6000e-004	0.0157	1.3000e-004	0.0159	4.1800e-003	1.2000e-004	4.3000e-003	0.0000	14.6615	14.6615	4.6000e-004	0.0000	14.6730
Total	**6.6300e-003**	**5.3400e-003**	**0.0591**	**1.6000e-004**	**0.0157**	**1.3000e-004**	**0.0159**	**4.1800e-003**	**1.2000e-004**	**4.3000e-003**	**0.0000**	**14.6615**	**14.6615**	**4.6000e-004**	**0.0000**	**14.6730**

3.6 Building Construction - 2020

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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

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	0.0223	0.6672	0.1806	1.5800e-003	0.0388	3.1000e-003	0.0419	0.0112	2.9700e-003	0.0142	0.0000	152.9560	152.9560	9.7200e-003	0.0000	153.1990
Worker	0.1584	0.1278	1.4128	3.8800e-003	0.3761	3.2100e-003	0.3793	0.0999	2.9500e-003	0.1029	0.0000	350.5479	350.5479	0.0111	0.0000	350.8241
Total	**0.1808**	**0.7950**	**1.5934**	**5.4600e-003**	**0.4149**	**6.3100e-003**	**0.4212**	**0.1111**	**5.9200e-003**	**0.1170**	**0.0000**	**503.5039**	**503.5039**	**0.0208**	**0.0000**	**504.0231**

3.6 Building Construction - 2020

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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

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	0.0223	0.6672	0.1806	1.5800e-003	0.0388	3.1000e-003	0.0419	0.0112	2.9700e-003	0.0142	0.0000	152.9560	152.9560	9.7200e-003	0.0000	153.1990
Worker	0.1584	0.1278	1.4128	3.8800e-003	0.3761	3.2100e-003	0.3793	0.0999	2.9500e-003	0.1029	0.0000	350.5479	350.5479	0.0111	0.0000	350.8241
Total	**0.1808**	**0.7950**	**1.5934**	**5.4600e-003**	**0.4149**	**6.3100e-003**	**0.4212**	**0.1111**	**5.9200e-003**	**0.1170**	**0.0000**	**503.5039**	**503.5039**	**0.0208**	**0.0000**	**504.0231**

3.6 Building Construction - 2021

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	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

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	0.0191	0.6053	0.1641	1.5600e-003	0.0386	1.2300e-003	0.0399	0.0112	1.1800e-003	0.0123	0.0000	151.1887	151.1887	9.2700e-003	0.0000	151.4205
Worker	0.1471	0.1145	1.2930	3.7400e-003	0.3747	3.0900e-003	0.3778	0.0995	2.8400e-003	0.1024	0.0000	338.1206	338.1206	9.9500e-003	0.0000	338.3694
Total	**0.1662**	**0.7198**	**1.4571**	**5.3000e-003**	**0.4133**	**4.3200e-003**	**0.4176**	**0.1107**	**4.0200e-003**	**0.1147**	**0.0000**	**489.3093**	**489.3093**	**0.0192**	**0.0000**	**489.7899**

3.6 Building Construction - 2021

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	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

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	0.0191	0.6053	0.1641	1.5600e-003	0.0386	1.2300e-003	0.0399	0.0112	1.1800e-003	0.0123	0.0000	151.1887	151.1887	9.2700e-003	0.0000	151.4205
Worker	0.1471	0.1145	1.2930	3.7400e-003	0.3747	3.0900e-003	0.3778	0.0995	2.8400e-003	0.1024	0.0000	338.1206	338.1206	9.9500e-003	0.0000	338.3694
Total	**0.1662**	**0.7198**	**1.4571**	**5.3000e-003**	**0.4133**	**4.3200e-003**	**0.4176**	**0.1107**	**4.0200e-003**	**0.1147**	**0.0000**	**489.3093**	**489.3093**	**0.0192**	**0.0000**	**489.7899**

3.6 Building Construction - 2022

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	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

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	0.0178	0.5729	0.1547	1.5400e-003	0.0385	1.0800e-003	0.0396	0.0111	1.0300e-003	0.0121	0.0000	149.2866	149.2866	8.9200e-003	0.0000	149.5095
Worker	0.1374	0.1031	1.1868	3.5900e-003	0.3732	2.9800e-003	0.3762	0.0991	2.7400e-003	0.1019	0.0000	324.9851	324.9851	8.9500e-003	0.0000	325.2089
Total	**0.1552**	**0.6759**	**1.3414**	**5.1300e-003**	**0.4117**	**4.0600e-003**	**0.4158**	**0.1102**	**3.7700e-003**	**0.1140**	**0.0000**	**474.2717**	**474.2717**	**0.0179**	**0.0000**	**474.7184**

3.6 Building Construction - 2022

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	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

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	0.0178	0.5729	0.1547	1.5400e-003	0.0385	1.0800e-003	0.0396	0.0111	1.0300e-003	0.0121	0.0000	149.2866	149.2866	8.9200e-003	0.0000	149.5095
Worker	0.1374	0.1031	1.1868	3.5900e-003	0.3732	2.9800e-003	0.3762	0.0991	2.7400e-003	0.1019	0.0000	324.9851	324.9851	8.9500e-003	0.0000	325.2089
Total	**0.1552**	**0.6759**	**1.3414**	**5.1300e-003**	**0.4117**	**4.0600e-003**	**0.4158**	**0.1102**	**3.7700e-003**	**0.1140**	**0.0000**	**474.2717**	**474.2717**	**0.0179**	**0.0000**	**474.7184**

3.6 Building Construction - 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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

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	0.0132	0.4328	0.1388	1.4900e-003	0.0385	5.1000e-004	0.0390	0.0111	4.8000e-004	0.0116	0.0000	144.6130	144.6130	7.8800e-003	0.0000	144.8100
Worker	0.1292	0.0932	1.0913	3.4600e-003	0.3732	2.9000e-003	0.3761	0.0991	2.6700e-003	0.1018	0.0000	313.0930	313.0930	8.0600e-003	0.0000	313.2945
Total	**0.1424**	**0.5261**	**1.2301**	**4.9500e-003**	**0.4117**	**3.4100e-003**	**0.4151**	**0.1102**	**3.1500e-003**	**0.1134**	**0.0000**	**457.7059**	**457.7059**	**0.0159**	**0.0000**	**458.1044**

3.6 Building Construction - 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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

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	0.0132	0.4328	0.1388	1.4900e-003	0.0385	5.1000e-004	0.0390	0.0111	4.8000e-004	0.0116	0.0000	144.6130	144.6130	7.8800e-003	0.0000	144.8100
Worker	0.1292	0.0932	1.0913	3.4600e-003	0.3732	2.9000e-003	0.3761	0.0991	2.6700e-003	0.1018	0.0000	313.0930	313.0930	8.0600e-003	0.0000	313.2945
Total	**0.1424**	**0.5261**	**1.2301**	**4.9500e-003**	**0.4117**	**3.4100e-003**	**0.4151**	**0.1102**	**3.1500e-003**	**0.1134**	**0.0000**	**457.7059**	**457.7059**	**0.0159**	**0.0000**	**458.1044**

3.6 Building Construction - 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	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

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	0.0130	0.4345	0.1356	1.4900e-003	0.0388	5.0000e-004	0.0393	0.0112	4.8000e-004	0.0117	0.0000	145.1448	145.1448	7.8200e-003	0.0000	145.3404
Worker	0.1233	0.0857	1.0241	3.3800e-003	0.3761	2.8800e-003	0.3790	0.0999	2.6500e-003	0.1025	0.0000	305.7189	305.7189	7.4400e-003	0.0000	305.9050
Total	**0.1363**	**0.5202**	**1.1596**	**4.8700e-003**	**0.4149**	**3.3800e-003**	**0.4183**	**0.1111**	**3.1300e-003**	**0.1142**	**0.0000**	**450.8638**	**450.8638**	**0.0153**	**0.0000**	**451.2455**

3.6 Building Construction - 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	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

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	0.0130	0.4345	0.1356	1.4900e-003	0.0388	5.0000e-004	0.0393	0.0112	4.8000e-004	0.0117	0.0000	145.1448	145.1448	7.8200e-003	0.0000	145.3404
Worker	0.1233	0.0857	1.0241	3.3800e-003	0.3761	2.8800e-003	0.3790	0.0999	2.6500e-003	0.1025	0.0000	305.7189	305.7189	7.4400e-003	0.0000	305.9050
Total	**0.1363**	**0.5202**	**1.1596**	**4.8700e-003**	**0.4149**	**3.3800e-003**	**0.4183**	**0.1111**	**3.1300e-003**	**0.1142**	**0.0000**	**450.8638**	**450.8638**	**0.0153**	**0.0000**	**451.2455**

3.6 Building Construction - 2025

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	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4953	301.4953	0.0709	0.0000	303.2671
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4953**	**301.4953**	**0.0709**	**0.0000**	**303.2671**

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	0.0126	0.4275	0.1311	1.4700e-003	0.0385	4.9000e-004	0.0390	0.0111	4.7000e-004	0.0116	0.0000	143.2520	143.2520	7.6500e-003	0.0000	143.4433
Worker	0.1164	0.0778	0.9432	3.2200e-003	0.3732	2.7900e-003	0.3760	0.0991	2.5700e-003	0.1017	0.0000	291.6378	291.6378	6.7300e-003	0.0000	291.8062
Total	**0.1289**	**0.5053**	**1.0742**	**4.6900e-003**	**0.4117**	**3.2800e-003**	**0.4150**	**0.1102**	**3.0400e-003**	**0.1133**	**0.0000**	**434.8898**	**434.8898**	**0.0144**	**0.0000**	**435.2494**

3.6 Building Construction - 2025

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	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4949	301.4949	0.0709	0.0000	303.2667
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4949**	**301.4949**	**0.0709**	**0.0000**	**303.2667**

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	0.0126	0.4275	0.1311	1.4700e-003	0.0385	4.9000e-004	0.0390	0.0111	4.7000e-004	0.0116	0.0000	143.2520	143.2520	7.6500e-003	0.0000	143.4433
Worker	0.1164	0.0778	0.9432	3.2200e-003	0.3732	2.7900e-003	0.3760	0.0991	2.5700e-003	0.1017	0.0000	291.6378	291.6378	6.7300e-003	0.0000	291.8062
Total	**0.1289**	**0.5053**	**1.0742**	**4.6900e-003**	**0.4117**	**3.2800e-003**	**0.4150**	**0.1102**	**3.0400e-003**	**0.1133**	**0.0000**	**434.8898**	**434.8898**	**0.0144**	**0.0000**	**435.2494**

3.7 Architectural Coating - 2020

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					
Archit. Coating	0.6259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.0918	0.0998	1.6000e-004		6.0500e-003	6.0500e-003		6.0500e-003	6.0500e-003	0.0000	13.9152	13.9152	1.0800e-003	0.0000	13.9422
Total	**0.6391**	**0.0918**	**0.0998**	**1.6000e-004**		**6.0500e-003**	**6.0500e-003**		**6.0500e-003**	**6.0500e-003**	**0.0000**	**13.9152**	**13.9152**	**1.0800e-003**	**0.0000**	**13.9422**

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	0.0131	0.0106	0.1167	3.2000e-004	0.0311	2.6000e-004	0.0313	8.2500e-003	2.4000e-004	8.4900e-003	0.0000	28.9451	28.9451	9.1000e-004	0.0000	28.9679
Total	**0.0131**	**0.0106**	**0.1167**	**3.2000e-004**	**0.0311**	**2.6000e-004**	**0.0313**	**8.2500e-003**	**2.4000e-004**	**8.4900e-003**	**0.0000**	**28.9451**	**28.9451**	**9.1000e-004**	**0.0000**	**28.9679**

3.7 Architectural Coating - 2020

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					
Archit. Coating	0.6259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.0918	0.0998	1.6000e-004		6.0500e-003	6.0500e-003		6.0500e-003	6.0500e-003	0.0000	13.9152	13.9152	1.0800e-003	0.0000	13.9422
Total	**0.6391**	**0.0918**	**0.0998**	**1.6000e-004**		**6.0500e-003**	**6.0500e-003**		**6.0500e-003**	**6.0500e-003**	**0.0000**	**13.9152**	**13.9152**	**1.0800e-003**	**0.0000**	**13.9422**

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	0.0131	0.0106	0.1167	3.2000e-004	0.0311	2.6000e-004	0.0313	8.2500e-003	2.4000e-004	8.4900e-003	0.0000	28.9451	28.9451	9.1000e-004	0.0000	28.9679
Total	**0.0131**	**0.0106**	**0.1167**	**3.2000e-004**	**0.0311**	**2.6000e-004**	**0.0313**	**8.2500e-003**	**2.4000e-004**	**8.4900e-003**	**0.0000**	**28.9451**	**28.9451**	**9.1000e-004**	**0.0000**	**28.9679**

3.7 Architectural Coating - 2021

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					
Archit. Coating	1.4987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**1.5272**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

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	0.0292	0.0227	0.2566	7.4000e-004	0.0744	6.1000e-004	0.0750	0.0198	5.6000e-004	0.0203	0.0000	67.1079	67.1079	1.9700e-003	0.0000	67.1573
Total	**0.0292**	**0.0227**	**0.2566**	**7.4000e-004**	**0.0744**	**6.1000e-004**	**0.0750**	**0.0198**	**5.6000e-004**	**0.0203**	**0.0000**	**67.1079**	**67.1079**	**1.9700e-003**	**0.0000**	**67.1573**

3.7 Architectural Coating - 2021

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					
Archit. Coating	1.4987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**1.5272**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

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	0.0292	0.0227	0.2566	7.4000e-004	0.0744	6.1000e-004	0.0750	0.0198	5.6000e-004	0.0203	0.0000	67.1079	67.1079	1.9700e-003	0.0000	67.1573
Total	**0.0292**	**0.0227**	**0.2566**	**7.4000e-004**	**0.0744**	**6.1000e-004**	**0.0750**	**0.0198**	**5.6000e-004**	**0.0203**	**0.0000**	**67.1079**	**67.1079**	**1.9700e-003**	**0.0000**	**67.1573**

3.7 Architectural Coating - 2022

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					
Archit. Coating	1.4929					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**1.5195**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

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	0.0273	0.0205	0.2355	7.1000e-004	0.0741	5.9000e-004	0.0747	0.0197	5.4000e-004	0.0202	0.0000	64.5009	64.5009	1.7800e-003	0.0000	64.5453
Total	**0.0273**	**0.0205**	**0.2355**	**7.1000e-004**	**0.0741**	**5.9000e-004**	**0.0747**	**0.0197**	**5.4000e-004**	**0.0202**	**0.0000**	**64.5009**	**64.5009**	**1.7800e-003**	**0.0000**	**64.5453**

3.7 Architectural Coating - 2022

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					
Archit. Coating	1.4929					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**1.5195**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

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	0.0273	0.0205	0.2355	7.1000e-004	0.0741	5.9000e-004	0.0747	0.0197	5.4000e-004	0.0202	0.0000	64.5009	64.5009	1.7800e-003	0.0000	64.5453
Total	**0.0273**	**0.0205**	**0.2355**	**7.1000e-004**	**0.0741**	**5.9000e-004**	**0.0747**	**0.0197**	**5.4000e-004**	**0.0202**	**0.0000**	**64.5009**	**64.5009**	**1.7800e-003**	**0.0000**	**64.5453**

3.7 Architectural Coating - 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					
Archit. Coating	1.4929					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**1.5178**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

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	0.0257	0.0185	0.2166	6.9000e-004	0.0741	5.7000e-004	0.0747	0.0197	5.3000e-004	0.0202	0.0000	62.1406	62.1406	1.6000e-003	0.0000	62.1806
Total	**0.0257**	**0.0185**	**0.2166**	**6.9000e-004**	**0.0741**	**5.7000e-004**	**0.0747**	**0.0197**	**5.3000e-004**	**0.0202**	**0.0000**	**62.1406**	**62.1406**	**1.6000e-003**	**0.0000**	**62.1806**

3.7 Architectural Coating - 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					
Archit. Coating	1.4929					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**1.5178**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

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	0.0257	0.0185	0.2166	6.9000e-004	0.0741	5.7000e-004	0.0747	0.0197	5.3000e-004	0.0202	0.0000	62.1406	62.1406	1.6000e-003	0.0000	62.1806
Total	**0.0257**	**0.0185**	**0.2166**	**6.9000e-004**	**0.0741**	**5.7000e-004**	**0.0747**	**0.0197**	**5.3000e-004**	**0.0202**	**0.0000**	**62.1406**	**62.1406**	**1.6000e-003**	**0.0000**	**62.1806**

3.7 Architectural Coating - 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					
Archit. Coating	1.5044					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**1.5281**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

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	0.0245	0.0170	0.2033	6.7000e-004	0.0747	5.7000e-004	0.0752	0.0198	5.3000e-004	0.0204	0.0000	60.6770	60.6770	1.4800e-003	0.0000	60.7140
Total	**0.0245**	**0.0170**	**0.2033**	**6.7000e-004**	**0.0747**	**5.7000e-004**	**0.0752**	**0.0198**	**5.3000e-004**	**0.0204**	**0.0000**	**60.6770**	**60.6770**	**1.4800e-003**	**0.0000**	**60.7140**

3.7 Architectural Coating - 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					
Archit. Coating	1.5044					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**1.5281**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

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	0.0245	0.0170	0.2033	6.7000e-004	0.0747	5.7000e-004	0.0752	0.0198	5.3000e-004	0.0204	0.0000	60.6770	60.6770	1.4800e-003	0.0000	60.7140
Total	**0.0245**	**0.0170**	**0.2033**	**6.7000e-004**	**0.0747**	**5.7000e-004**	**0.0752**	**0.0198**	**5.3000e-004**	**0.0204**	**0.0000**	**60.6770**	**60.6770**	**1.4800e-003**	**0.0000**	**60.7140**

3.7 Architectural Coating - 2025

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					
Archit. Coating	1.4987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**1.5210**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

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	0.0232	0.0155	0.1879	6.4000e-004	0.0744	5.6000e-004	0.0749	0.0198	5.1000e-004	0.0203	0.0000	58.1049	58.1049	1.3400e-003	0.0000	58.1385
Total	**0.0232**	**0.0155**	**0.1879**	**6.4000e-004**	**0.0744**	**5.6000e-004**	**0.0749**	**0.0198**	**5.1000e-004**	**0.0203**	**0.0000**	**58.1049**	**58.1049**	**1.3400e-003**	**0.0000**	**58.1385**

3.7 Architectural Coating - 2025

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					
Archit. Coating	1.4987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**1.5210**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

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	0.0232	0.0155	0.1879	6.4000e-004	0.0744	5.6000e-004	0.0749	0.0198	5.1000e-004	0.0203	0.0000	58.1049	58.1049	1.3400e-003	0.0000	58.1385
Total	**0.0232**	**0.0155**	**0.1879**	**6.4000e-004**	**0.0744**	**5.6000e-004**	**0.0749**	**0.0198**	**5.1000e-004**	**0.0203**	**0.0000**	**58.1049**	**58.1049**	**1.3400e-003**	**0.0000**	**58.1385**

3.7 Architectural Coating - 2026

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					
Archit. Coating	1.4987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**1.5210**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

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	0.0222	0.0143	0.1756	6.2000e-004	0.0744	5.4000e-004	0.0749	0.0198	5.0000e-004	0.0203	0.0000	56.0867	56.0867	1.2300e-003	0.0000	56.1175
Total	**0.0222**	**0.0143**	**0.1756**	**6.2000e-004**	**0.0744**	**5.4000e-004**	**0.0749**	**0.0198**	**5.0000e-004**	**0.0203**	**0.0000**	**56.0867**	**56.0867**	**1.2300e-003**	**0.0000**	**56.1175**

3.7 Architectural Coating - 2026

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					
Archit. Coating	1.4987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**1.5210**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

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	0.0222	0.0143	0.1756	6.2000e-004	0.0744	5.4000e-004	0.0749	0.0198	5.0000e-004	0.0203	0.0000	56.0867	56.0867	1.2300e-003	0.0000	56.1175
Total	**0.0222**	**0.0143**	**0.1756**	**6.2000e-004**	**0.0744**	**5.4000e-004**	**0.0749**	**0.0198**	**5.0000e-004**	**0.0203**	**0.0000**	**56.0867**	**56.0867**	**1.2300e-003**	**0.0000**	**56.1175**

3.7 Architectural Coating - 2027

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					
Archit. Coating	1.4987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**1.5210**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

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	0.0212	0.0132	0.1646	6.0000e-004	0.0744	5.1000e-004	0.0749	0.0198	4.7000e-004	0.0202	0.0000	54.2991	54.2991	1.1300e-003	0.0000	54.3273
Total	**0.0212**	**0.0132**	**0.1646**	**6.0000e-004**	**0.0744**	**5.1000e-004**	**0.0749**	**0.0198**	**4.7000e-004**	**0.0202**	**0.0000**	**54.2991**	**54.2991**	**1.1300e-003**	**0.0000**	**54.3273**

3.7 Architectural Coating - 2027

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					
Archit. Coating	1.4987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**1.5210**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

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	0.0212	0.0132	0.1646	6.0000e-004	0.0744	5.1000e-004	0.0749	0.0198	4.7000e-004	0.0202	0.0000	54.2991	54.2991	1.1300e-003	0.0000	54.3273
Total	**0.0212**	**0.0132**	**0.1646**	**6.0000e-004**	**0.0744**	**5.1000e-004**	**0.0749**	**0.0198**	**4.7000e-004**	**0.0202**	**0.0000**	**54.2991**	**54.2991**	**1.1300e-003**	**0.0000**	**54.3273**

3.8 Utilities 2 - 2025

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	0.0214	0.1927	0.3821	5.6000e-004		8.3200e-003	8.3200e-003		7.6500e-003	7.6500e-003	0.0000	49.5960	49.5960	0.0160	0.0000	49.9970
Total	**0.0214**	**0.1927**	**0.3821**	**5.6000e-004**		**8.3200e-003**	**8.3200e-003**		**7.6500e-003**	**7.6500e-003**	**0.0000**	**49.5960**	**49.5960**	**0.0160**	**0.0000**	**49.9970**

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	1.8000e-003	1.2100e-003	0.0146	5.0000e-005	5.7900e-003	4.0000e-005	5.8300e-003	1.5400e-003	4.0000e-005	1.5800e-003	0.0000	4.5210	4.5210	1.0000e-004	0.0000	4.5236
Total	**1.8000e-003**	**1.2100e-003**	**0.0146**	**5.0000e-005**	**5.7900e-003**	**4.0000e-005**	**5.8300e-003**	**1.5400e-003**	**4.0000e-005**	**1.5800e-003**	**0.0000**	**4.5210**	**4.5210**	**1.0000e-004**	**0.0000**	**4.5236**

3.8 Utilities 2 - 2025

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	0.0214	0.1927	0.3821	5.6000e-004		8.3200e-003	8.3200e-003		7.6500e-003	7.6500e-003	0.0000	49.5960	49.5960	0.0160	0.0000	49.9970
Total	**0.0214**	**0.1927**	**0.3821**	**5.6000e-004**		**8.3200e-003**	**8.3200e-003**		**7.6500e-003**	**7.6500e-003**	**0.0000**	**49.5960**	**49.5960**	**0.0160**	**0.0000**	**49.9970**

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	1.8000e-003	1.2100e-003	0.0146	5.0000e-005	5.7900e-003	4.0000e-005	5.8300e-003	1.5400e-003	4.0000e-005	1.5800e-003	0.0000	4.5210	4.5210	1.0000e-004	0.0000	4.5236
Total	**1.8000e-003**	**1.2100e-003**	**0.0146**	**5.0000e-005**	**5.7900e-003**	**4.0000e-005**	**5.8300e-003**	**1.5400e-003**	**4.0000e-005**	**1.5800e-003**	**0.0000**	**4.5210**	**4.5210**	**1.0000e-004**	**0.0000**	**4.5236**

3.8 Utilities 2 - 2026

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	6.6300e-003	0.0598	0.1187	1.8000e-004		2.5800e-003	2.5800e-003		2.3800e-003	2.3800e-003	0.0000	15.4048	15.4048	4.9800e-003	0.0000	15.5294
Total	**6.6300e-003**	**0.0598**	**0.1187**	**1.8000e-004**		**2.5800e-003**	**2.5800e-003**		**2.3800e-003**	**2.3800e-003**	**0.0000**	**15.4048**	**15.4048**	**4.9800e-003**	**0.0000**	**15.5294**

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	5.4000e-004	3.4000e-004	4.2400e-003	1.0000e-005	1.8000e-003	1.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.3555	1.3555	3.0000e-005	0.0000	1.3562
Total	**5.4000e-004**	**3.4000e-004**	**4.2400e-003**	**1.0000e-005**	**1.8000e-003**	**1.0000e-005**	**1.8100e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.3555**	**1.3555**	**3.0000e-005**	**0.0000**	**1.3562**

3.8 Utilities 2 - 2026

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	6.6300e-003	0.0598	0.1187	1.8000e-004		2.5800e-003	2.5800e-003		2.3800e-003	2.3800e-003	0.0000	15.4048	15.4048	4.9800e-003	0.0000	15.5294
Total	**6.6300e-003**	**0.0598**	**0.1187**	**1.8000e-004**		**2.5800e-003**	**2.5800e-003**		**2.3800e-003**	**2.3800e-003**	**0.0000**	**15.4048**	**15.4048**	**4.9800e-003**	**0.0000**	**15.5294**

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	5.4000e-004	3.4000e-004	4.2400e-003	1.0000e-005	1.8000e-003	1.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.3555	1.3555	3.0000e-005	0.0000	1.3562
Total	**5.4000e-004**	**3.4000e-004**	**4.2400e-003**	**1.0000e-005**	**1.8000e-003**	**1.0000e-005**	**1.8100e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.3555**	**1.3555**	**3.0000e-005**	**0.0000**	**1.3562**

3.9 Fine Grading 2 - 2025

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					0.8894	0.0000	0.8894	0.1838	0.0000	0.1838	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0514	0.5016	0.5138	1.0500e-003		0.0208	0.0208		0.0191	0.0191	0.0000	91.9664	91.9664	0.0297	0.0000	92.7100
Total	**0.0514**	**0.5016**	**0.5138**	**1.0500e-003**	**0.8894**	**0.0208**	**0.9102**	**0.1838**	**0.0191**	**0.2029**	**0.0000**	**91.9664**	**91.9664**	**0.0297**	**0.0000**	**92.7100**

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	2.2600e-003	1.5100e-003	0.0183	6.0000e-005	7.2300e-003	5.0000e-005	7.2900e-003	1.9200e-003	5.0000e-005	1.9700e-003	0.0000	5.6512	5.6512	1.3000e-004	0.0000	5.6545
Total	**2.2600e-003**	**1.5100e-003**	**0.0183**	**6.0000e-005**	**7.2300e-003**	**5.0000e-005**	**7.2900e-003**	**1.9200e-003**	**5.0000e-005**	**1.9700e-003**	**0.0000**	**5.6512**	**5.6512**	**1.3000e-004**	**0.0000**	**5.6545**

3.9 Fine Grading 2 - 2025

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					0.3469	0.0000	0.3469	0.0717	0.0000	0.0717	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0514	0.5016	0.5138	1.0500e-003		0.0208	0.0208		0.0191	0.0191	0.0000	91.9663	91.9663	0.0297	0.0000	92.7099
Total	**0.0514**	**0.5016**	**0.5138**	**1.0500e-003**	**0.3469**	**0.0208**	**0.3676**	**0.0717**	**0.0191**	**0.0908**	**0.0000**	**91.9663**	**91.9663**	**0.0297**	**0.0000**	**92.7099**

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	2.2600e-003	1.5100e-003	0.0183	6.0000e-005	7.2300e-003	5.0000e-005	7.2900e-003	1.9200e-003	5.0000e-005	1.9700e-003	0.0000	5.6512	5.6512	1.3000e-004	0.0000	5.6545
Total	**2.2600e-003**	**1.5100e-003**	**0.0183**	**6.0000e-005**	**7.2300e-003**	**5.0000e-005**	**7.2900e-003**	**1.9200e-003**	**5.0000e-005**	**1.9700e-003**	**0.0000**	**5.6512**	**5.6512**	**1.3000e-004**	**0.0000**	**5.6545**

3.9 Fine Grading 2 - 2026

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					1.4765	0.0000	1.4765	0.5066	0.0000	0.5066	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2033	1.9838	2.0319	4.1400e-003		0.0821	0.0821		0.0756	0.0756	0.0000	363.6852	363.6852	0.1176	0.0000	366.6258
Total	**0.2033**	**1.9838**	**2.0319**	**4.1400e-003**	**1.4765**	**0.0821**	**1.5587**	**0.5066**	**0.0756**	**0.5821**	**0.0000**	**363.6852**	**363.6852**	**0.1176**	**0.0000**	**366.6258**

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	8.5200e-003	5.4900e-003	0.0675	2.4000e-004	0.0286	2.1000e-004	0.0288	7.6000e-003	1.9000e-004	7.7900e-003	0.0000	21.5718	21.5718	4.7000e-004	0.0000	21.5837
Total	**8.5200e-003**	**5.4900e-003**	**0.0675**	**2.4000e-004**	**0.0286**	**2.1000e-004**	**0.0288**	**7.6000e-003**	**1.9000e-004**	**7.7900e-003**	**0.0000**	**21.5718**	**21.5718**	**4.7000e-004**	**0.0000**	**21.5837**

3.9 Fine Grading 2 - 2026

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					0.5759	0.0000	0.5759	0.1976	0.0000	0.1976	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2033	1.9838	2.0319	4.1400e-003		0.0821	0.0821		0.0756	0.0756	0.0000	363.6848	363.6848	0.1176	0.0000	366.6254
Total	**0.2033**	**1.9838**	**2.0319**	**4.1400e-003**	**0.5759**	**0.0821**	**0.6580**	**0.1976**	**0.0756**	**0.2731**	**0.0000**	**363.6848**	**363.6848**	**0.1176**	**0.0000**	**366.6254**

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	8.5200e-003	5.4900e-003	0.0675	2.4000e-004	0.0286	2.1000e-004	0.0288	7.6000e-003	1.9000e-004	7.7900e-003	0.0000	21.5718	21.5718	4.7000e-004	0.0000	21.5837
Total	**8.5200e-003**	**5.4900e-003**	**0.0675**	**2.4000e-004**	**0.0286**	**2.1000e-004**	**0.0288**	**7.6000e-003**	**1.9000e-004**	**7.7900e-003**	**0.0000**	**21.5718**	**21.5718**	**4.7000e-004**	**0.0000**	**21.5837**

3.9 Fine Grading 2 - 2027

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					1.2748	0.0000	1.2748	0.3957	0.0000	0.3957	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1511	1.4745	1.5103	3.0800e-003		0.0611	0.0611		0.0562	0.0562	0.0000	270.3254	270.3254	0.0874	0.0000	272.5111
Total	**0.1511**	**1.4745**	**1.5103**	**3.0800e-003**	**1.2748**	**0.0611**	**1.3358**	**0.3957**	**0.0562**	**0.4518**	**0.0000**	**270.3254**	**270.3254**	**0.0874**	**0.0000**	**272.5111**

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	6.0500e-003	3.7600e-003	0.0470	1.7000e-004	0.0213	1.5000e-004	0.0214	5.6500e-003	1.3000e-004	5.7800e-003	0.0000	15.5232	15.5232	3.2000e-004	0.0000	15.5312
Total	**6.0500e-003**	**3.7600e-003**	**0.0470**	**1.7000e-004**	**0.0213**	**1.5000e-004**	**0.0214**	**5.6500e-003**	**1.3000e-004**	**5.7800e-003**	**0.0000**	**15.5232**	**15.5232**	**3.2000e-004**	**0.0000**	**15.5312**

3.9 Fine Grading 2 - 2027

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					0.4972	0.0000	0.4972	0.1543	0.0000	0.1543	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1511	1.4745	1.5103	3.0800e-003		0.0611	0.0611		0.0562	0.0562	0.0000	270.3251	270.3251	0.0874	0.0000	272.5108
Total	**0.1511**	**1.4745**	**1.5103**	**3.0800e-003**	**0.4972**	**0.0611**	**0.5582**	**0.1543**	**0.0562**	**0.2105**	**0.0000**	**270.3251**	**270.3251**	**0.0874**	**0.0000**	**272.5108**

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	6.0500e-003	3.7600e-003	0.0470	1.7000e-004	0.0213	1.5000e-004	0.0214	5.6500e-003	1.3000e-004	5.7800e-003	0.0000	15.5232	15.5232	3.2000e-004	0.0000	15.5312
Total	**6.0500e-003**	**3.7600e-003**	**0.0470**	**1.7000e-004**	**0.0213**	**1.5000e-004**	**0.0214**	**5.6500e-003**	**1.3000e-004**	**5.7800e-003**	**0.0000**	**15.5232**	**15.5232**	**3.2000e-004**	**0.0000**	**15.5312**

3.10 Building Construction 2 - 2026

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	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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	4.9900e-003	0.1718	0.0521	5.9000e-004	0.0156	1.9000e-004	0.0158	4.5100e-003	1.9000e-004	4.6900e-003	0.0000	57.8274	57.8274	3.0600e-003	0.0000	57.9039
Worker	0.0558	0.0360	0.4424	1.5600e-003	0.1873	1.3600e-003	0.1887	0.0498	1.2500e-003	0.0510	0.0000	141.2955	141.2955	3.1000e-003	0.0000	141.3729
Total	**0.0608**	**0.2078**	**0.4945**	**2.1500e-003**	**0.2030**	**1.5500e-003**	**0.2045**	**0.0543**	**1.4400e-003**	**0.0557**	**0.0000**	**199.1228**	**199.1228**	**6.1600e-003**	**0.0000**	**199.2768**

3.10 Building Construction 2 - 2026

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	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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	4.9900e-003	0.1718	0.0521	5.9000e-004	0.0156	1.9000e-004	0.0158	4.5100e-003	1.9000e-004	4.6900e-003	0.0000	57.8274	57.8274	3.0600e-003	0.0000	57.9039
Worker	0.0558	0.0360	0.4424	1.5600e-003	0.1873	1.3600e-003	0.1887	0.0498	1.2500e-003	0.0510	0.0000	141.2955	141.2955	3.1000e-003	0.0000	141.3729
Total	**0.0608**	**0.2078**	**0.4945**	**2.1500e-003**	**0.2030**	**1.5500e-003**	**0.2045**	**0.0543**	**1.4400e-003**	**0.0557**	**0.0000**	**199.1228**	**199.1228**	**6.1600e-003**	**0.0000**	**199.2768**

3.10 Building Construction 2 - 2027

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	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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	4.8900e-003	0.1703	0.0512	5.9000e-004	0.0156	1.9000e-004	0.0158	4.5100e-003	1.8000e-004	4.6900e-003	0.0000	57.5533	57.5533	3.0100e-003	0.0000	57.6286
Worker	0.0533	0.0332	0.4146	1.5100e-003	0.1873	1.2800e-003	0.1886	0.0498	1.1800e-003	0.0509	0.0000	136.7919	136.7919	2.8400e-003	0.0000	136.8629
Total	**0.0582**	**0.2034**	**0.4658**	**2.1000e-003**	**0.2030**	**1.4700e-003**	**0.2044**	**0.0543**	**1.3600e-003**	**0.0556**	**0.0000**	**194.3451**	**194.3451**	**5.8500e-003**	**0.0000**	**194.4915**

3.10 Building Construction 2 - 2027

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	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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	4.8900e-003	0.1703	0.0512	5.9000e-004	0.0156	1.9000e-004	0.0158	4.5100e-003	1.8000e-004	4.6900e-003	0.0000	57.5533	57.5533	3.0100e-003	0.0000	57.6286
Worker	0.0533	0.0332	0.4146	1.5100e-003	0.1873	1.2800e-003	0.1886	0.0498	1.1800e-003	0.0509	0.0000	136.7919	136.7919	2.8400e-003	0.0000	136.8629
Total	**0.0582**	**0.2034**	**0.4658**	**2.1000e-003**	**0.2030**	**1.4700e-003**	**0.2044**	**0.0543**	**1.3600e-003**	**0.0556**	**0.0000**	**194.3451**	**194.3451**	**5.8500e-003**	**0.0000**	**194.4915**

3.10 Building Construction 2 - 2028

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	0.1771	1.6148	2.0830	3.4900e-003		0.0683	0.0683		0.0643	0.0643	0.0000	300.3357	300.3357	0.0706	0.0000	302.1007
Total	**0.1771**	**1.6148**	**2.0830**	**3.4900e-003**		**0.0683**	**0.0683**		**0.0643**	**0.0643**	**0.0000**	**300.3357**	**300.3357**	**0.0706**	**0.0000**	**302.1007**

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	4.7700e-003	0.1677	0.0501	5.8000e-004	0.0155	1.9000e-004	0.0157	4.4700e-003	1.8000e-004	4.6500e-003	0.0000	56.8793	56.8793	2.9500e-003	0.0000	56.9530
Worker	0.0503	0.0304	0.3872	1.4600e-003	0.1859	1.1800e-003	0.1871	0.0494	1.0800e-003	0.0505	0.0000	131.7849	131.7849	2.6000e-003	0.0000	131.8500
Total	**0.0550**	**0.1981**	**0.4374**	**2.0400e-003**	**0.2014**	**1.3700e-003**	**0.2028**	**0.0538**	**1.2600e-003**	**0.0551**	**0.0000**	**188.6642**	**188.6642**	**5.5500e-003**	**0.0000**	**188.8030**

3.10 Building Construction 2 - 2028

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	0.1771	1.6148	2.0830	3.4900e-003		0.0683	0.0683		0.0643	0.0643	0.0000	300.3353	300.3353	0.0706	0.0000	302.1003
Total	**0.1771**	**1.6148**	**2.0830**	**3.4900e-003**		**0.0683**	**0.0683**		**0.0643**	**0.0643**	**0.0000**	**300.3353**	**300.3353**	**0.0706**	**0.0000**	**302.1003**

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	4.7700e-003	0.1677	0.0501	5.8000e-004	0.0155	1.9000e-004	0.0157	4.4700e-003	1.8000e-004	4.6500e-003	0.0000	56.8793	56.8793	2.9500e-003	0.0000	56.9530
Worker	0.0503	0.0304	0.3872	1.4600e-003	0.1859	1.1800e-003	0.1871	0.0494	1.0800e-003	0.0505	0.0000	131.7849	131.7849	2.6000e-003	0.0000	131.8500
Total	**0.0550**	**0.1981**	**0.4374**	**2.0400e-003**	**0.2014**	**1.3700e-003**	**0.2028**	**0.0538**	**1.2600e-003**	**0.0551**	**0.0000**	**188.6642**	**188.6642**	**5.5500e-003**	**0.0000**	**188.8030**

4.0 Operational Detail - Mobile

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	4.6896	23.7864	69.0499	0.3123	30.6391	0.2162	30.8553	8.2099	0.2008	8.4107	0.0000	28,968.6222	28,968.6222	1.2328	0.0000	28,999.4428
Unmitigated	4.6896	23.7864	69.0499	0.3123	30.6391	0.2162	30.8553	8.2099	0.2008	8.4107	0.0000	28,968.6222	28,968.6222	1.2328	0.0000	28,999.4428

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1,398.80	1,398.80	1398.80	400,762	400,762
Elementary School	1,017.36	0.00	0.00	2,504,438	2,504,438
Government (Civic Center)	40.04	40.04	40.04	123,649	123,649
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	14,784.00	15,345.00	13365.00	70,658,702	70,658,702
Single Family Housing	1,478.40	1,534.50	1336.50	7,065,870	7,065,870
Total	18,718.60	18,318.34	16,140.34	80,753,422	80,753,422

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
City Park	1.07	1.07	1.07	33.00	48.00	19.00	66	28	6
Elementary School	16.60	8.40	6.90	65.00	30.00	5.00	63	25	12
Government (Civic Center)	16.60	8.40	6.90	75.00	20.00	5.00	50	34	16
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	13.24	13.24	13.24	100.00	0.00	0.00	100	0	0
Single Family Housing	13.24	13.24	13.24	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Elementary School	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Government (Civic Center)	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Other Asphalt Surfaces	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Single Family Housing	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Northlake Creek Avoidance Alternative - Los Angeles-South Coast County, Annual

	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	2,811.0425	2,811.0425	0.2076	0.0430	2,829.0303
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,811.0425	2,811.0425	0.2076	0.0430	2,829.0303
NaturalGas Mitigated	0.2743	2.3470	1.0191	0.0150		0.1895	0.1895		0.1895	0.1895	0.0000	2,714.6410	2,714.6410	0.0520	0.0498	2,730.7728
NaturalGas Unmitigated	0.2743	2.3470	1.0191	0.0150		0.1895	0.1895		0.1895	0.1895	0.0000	2,714.6410	2,714.6410	0.0520	0.0498	2,730.7728

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	546030	2.9400e-003	0.0268	0.0225	1.6000e-004		2.0300e-003	2.0300e-003		2.0300e-003	2.0300e-003	0.0000	29.1383	29.1383	5.6000e-004	5.3000e-004	29.3114
Government (Civic Center)	458040	2.4700e-003	0.0225	0.0189	1.3000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.4428	24.4428	4.7000e-004	4.5000e-004	24.5880
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4.53331e+006	0.0244	0.2089	0.0889	1.3300e-003		0.0169	0.0169		0.0169	0.0169	0.0000	241.9145	241.9145	4.6400e-003	4.4400e-003	243.3521
Single Family Housing	4.53331e+007	0.2444	2.0889	0.8889	0.0133		0.1689	0.1689		0.1689	0.1689	0.0000	2,419.1454	2,419.1454	0.0464	0.0444	2,433.5212
Total		**0.2743**	**2.3470**	**1.0191**	**0.0150**		**0.1895**	**0.1895**		**0.1895**	**0.1895**	**0.0000**	**2,714.6410**	**2,714.6410**	**0.0520**	**0.0498**	**2,730.7728**

5.2 Energy by Land Use - NaturalGas

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	546030	2.9400e-003	0.0268	0.0225	1.6000e-004		2.0300e-003	2.0300e-003		2.0300e-003	2.0300e-003	0.0000	29.1383	29.1383	5.6000e-004	5.3000e-004	29.3114
Government (Civic Center)	458040	2.4700e-003	0.0225	0.0189	1.3000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.4428	24.4428	4.7000e-004	4.5000e-004	24.5880
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4.53331e+006	0.0244	0.2089	0.0889	1.3300e-003		0.0169	0.0169		0.0169	0.0169	0.0000	241.9145	241.9145	4.6400e-003	4.4400e-003	243.3521
Single Family Housing	4.53331e+007	0.2444	2.0889	0.8889	0.0133		0.1689	0.1689		0.1689	0.1689	0.0000	2,419.1454	2,419.1454	0.0464	0.0444	2,433.5212
Total		**0.2743**	**2.3470**	**1.0191**	**0.0150**		**0.1895**	**0.1895**		**0.1895**	**0.1895**	**0.0000**	**2,714.6410**	**2,714.6410**	**0.0520**	**0.0498**	**2,730.7728**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	310817	55.3674	4.0900e-003	8.5000e-004	55.7217
Government (Civic Center)	571560	101.8147	7.5200e-003	1.5600e-003	102.4662
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.35437e+006	241.2600	0.0178	3.6900e-003	242.8039
Single Family Housing	1.35437e+007	2,412.6004	0.1782	0.0369	2,428.0385
Total		**2,811.0425**	**0.2076**	**0.0430**	**2,829.0303**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	310817	55.3674	4.0900e-003	8.5000e-004	55.7217
Government (Civic Center)	571560	101.8147	7.5200e-003	1.5600e-003	102.4662
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.35437e+006	241.2600	0.0178	3.6900e-003	242.8039
Single Family Housing	1.35437e+007	2,412.6004	0.1782	0.0369	2,428.0385
Total		**2,811.0425**	**0.2076**	**0.0430**	**2,829.0303**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	14.0657	0.4042	18.7899	2.1900e-003		0.1191	0.1191		0.1191	0.1191	0.0000	249.1186	249.1186	0.0335	4.0100e-003	251.1504
Unmitigated	14.0657	0.4042	18.7899	2.1900e-003		0.1191	0.1191		0.1191	0.1191	0.0000	249.1186	249.1186	0.0335	4.0100e-003	251.1504

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	1.1111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	12.3702					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0221	0.1887	0.0803	1.2000e-003		0.0153	0.0153		0.0153	0.0153	0.0000	218.5248	218.5248	4.1900e-003	4.0100e-003	219.8234
Landscaping	0.5624	0.2155	18.7096	9.9000e-004		0.1038	0.1038		0.1038	0.1038	0.0000	30.5938	30.5938	0.0293	0.0000	31.3270
Total	**14.0657**	**0.4042**	**18.7898**	**2.1900e-003**		**0.1191**	**0.1191**		**0.1191**	**0.1191**	**0.0000**	**249.1186**	**249.1186**	**0.0335**	**4.0100e-003**	**251.1504**

6.2 Area by SubCategory

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
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	12.3702					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0221	0.1887	0.0803	1.2000e-003		0.0153	0.0153		0.0153	0.0153	0.0000	218.5248	218.5248	4.1900e-003	4.0100e-003	219.8234
Landscaping	0.5624	0.2155	18.7096	9.9000e-004		0.1038	0.1038		0.1038	0.1038	0.0000	30.5938	30.5938	0.0293	0.0000	31.3270
Total	**14.0657**	**0.4042**	**18.7898**	**2.1900e-003**		**0.1191**	**0.1191**		**0.1191**	**0.1191**	**0.0000**	**249.1186**	**249.1186**	**0.0335**	**4.0100e-003**	**251.1504**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	566.0725	4.2266	0.1069	703.5948
Unmitigated	566.0725	4.2266	0.1069	703.5948

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 30.9785	61.3089	4.5300e-003	9.4000e-004	61.7012
Elementary School	1.52242 / 3.9148	11.7619	0.0504	1.3400e-003	13.4234
Government (Civic Center)	8.74103 / 5.3574	33.6506	0.2871	7.2000e-003	42.9730
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	118.255 / 74.5518	459.3511	3.8845	0.0974	585.4972
Total		**566.0725**	**4.2266**	**0.1069**	**703.5948**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 30.9785	61.3089	4.5300e-003	9.4000e-004	61.7012
Elementary School	1.52242 / 3.9148	11.7619	0.0504	1.3400e-003	13.4234
Government (Civic Center)	8.74103 / 5.3574	33.6506	0.2871	7.2000e-003	42.9730
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	118.255 / 74.5518	459.3511	3.8845	0.0974	585.4972
Total		**566.0725**	**4.2266**	**0.1069**	**703.5948**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	506.6573	29.9426	0.0000	1,255.2221
Unmitigated	506.6573	29.9426	0.0000	1,255.2221

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	2.24	0.4547	0.0269	0.0000	1.1265
Elementary School	114.61	23.2648	1.3749	0.0000	57.6375
Government (Civic Center)	250.8	50.9101	3.0087	0.0000	126.1277
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2128.31	432.0277	25.5321	0.0000	1,070.3303
Total		**506.6573**	**29.9426**	**0.0000**	**1,255.2221**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	2.24	0.4547	0.0269	0.0000	1.1265
Elementary School	114.61	23.2648	1.3749	0.0000	57.6375
Government (Civic Center)	250.8	50.9101	3.0087	0.0000	126.1277
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2128.31	432.0277	25.5321	0.0000	1,070.3303
Total		**506.6573**	**29.9426**	**0.0000**	**1,255.2221**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX F-1

CREEK AVOIDANCE ALTERNATIVE ASSESSMENT

NORTHLAKE
CASTAIC, LOS ANGELES COUNTY, CALIFORNIA

CREEK AVOIDANCE ALTERNATIVE

ASSESSMENT

July 2021
Revised: June 2022

Prepared for:

Northlake Associates, LLC
10250 Constellation Boulevard, STE 2750
Los Angeles, CA 90067
Thomas DiPrima
Telephone: (310) 824-7093

Prepared by:

Sikand Engineering Associates
15230 Burbank Blvd, Ste. 100
Van Nuys, California 91411
Contact: Raman Gaur
Telephone: (818) 787-8550

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EXHIBITS

1. Creek Avoidance Alternative Exhibit “A”

I. INTRODUCTION/BACKGROUND

The project involves the phased development of up to 3,150 residential units, 9.2 acres of commercial uses, 13.9 acres of industrial uses, 799.5 acres of parks and open space, a 22.9-acre school site and a 1.4-acre pad for a future fire station (Project) within the area of the previously approved Northlake Specific Plan (Project Site). Subsequent to the publication of the Final SEIR, the Regional Planning Commission requested that the Applicant include an affordable housing component in the Project. The Applicant made minor revisions to the Project to include an affordable component. Specifically, the Applicant eliminated 108,283 square feet (SF) of industrial use (all of the industrial uses) and 13,197 SF of commercial uses (leaving 38,700 SF of commercial uses) and reallocated 323 units from the Phase 2 area of the Project to the Phase 1 area. The County of Los Angeles Regional Planning Commission approved the Northlake Project on April 18, 2018 and the Los Angeles County Board of Supervisors approved the Project on April 2, 2019 (previously Approved Project).

On January 11, 2021 the Los Angeles Superior Court ruled (Court Ruling) on the Center For Biological Diversity and Endangered Habitats League v. County Of Los Angeles, et al, and Real Parties in Interest, Northlake Associates, et al, Case No. 19STCPO1610, finding that the analysis of project alternatives in the Supplemental Environmental Impact Report (SEIR) was deficient in failing to adequately study a creek avoidance alternative and explain the reasons for rejection at a screening level. The ruling on the creek avoidance alternative is as follows.

ISSUE TWO: THE REASONABLE RANGE OF ALTERNATIVES PRESENTED IN THE SEIR IS DEFICIENT FOR FAILING TO CONSIDER AN ALTERNATIVE THAT WOULD PRESERVE THE GRASSHOPPER CREEK HABITAT:

CEQA requires the lead agency to consider a reasonable range of alternatives to evaluate whether an alternative to the Project exists that will reduce or better mitigate the significant environmental impacts of a project. PRC 21002; Guidelines section l 5126.6. An EIR is to "ensure that all reasonable alternatives to proposed projects are thoroughly assessed" by the decision- makers. Laurel Heights Improvement Association v. Regents of the University of California (1988) 47 Cal.3d 376, 400.

The SEIR's alternate analysis for the Project does not include an alternative that would protect Grasshopper Creek (AR 2403-2426), and for that reason is fatally flawed.

Without necessarily finding a violation of section 1 51 51, the Court finds that the County's exclusion of the "creek avoidance" alternative from the range of alternatives is not supported by substantial evidence. That failure is a violation of Guidelines section 1 5126.6 and, therefore, of PRC 21002. The failure invalidates the approvals given for the Project and requires the submittal of an amended EIR that includes an appropriate analysis section for consideration by the County's decisionmakers.

The planning and design effort of this Creek Avoidance Alternative Assessment is to address the Court Ruling that includes an updated alternative study and a comprehensive analysis of the impacts and feasibility off a Creek Avoidance Alternative.

II. CREEK AVOIDANCE ALTERNATIVE DESCRIPTION

This Creek Avoidance Alternative assumes the same design basis as the previously assessed screening alternative in the SEIR: avoid disturbing the creek bottom that runs through the Project Site while developing a viable land plan effectuating the approved Northlake Specific Plan. The existing landform is created by landslides that traverse the Project Site from the westerly side of Grasshopper Creek to the easterly side of the Project boundary. Typically, per standard engineering and design practices and Los Angeles County requirements, all underlying landslides would be required to be removed and recompacted in order to provide a suitable soil condition for project development. Grasshopper Creek has several existing landslides directly underneath the creek bottom that extend from approximately 10-feet to 200-feet easterly and westerly of the creek bottom. A 300-foot setback was determined to be an appropriate buffer from the creek bottom for the Creek Avoidance Alternative. This setback was based on three considerations: 1) Topography ascending to the east from the creek can be rather steep (locally 1.5:1 to 1:1 +/-). The 300-foot setback generally removes the toe of development into areas with 3:1 to 4:1 slope gradients. 2) The irregular / meandering path of the creek bed required a suitable setback to accommodate a design that would allow a toe for a fill slope configuration, as development is proposed for the easterly slopes and developable pads will need to be graded. 3) The 300-foot setback allowed the proposed fill slope to begin further east / upslope of the upper portions of most of the small to moderate size landslides which are located along the east side of the creek bed. This design and the suitability of the landslide stability mid slope would still need to be fully analyzed by G3SoilsWorks (the Project Site geotechnical engineer for the Project). Thus, the developable area for the Creek Avoidance Alternative will commence at the creek setback line and ascend easterly to the easterly boundary of the Creek Avoidance Alternative. The Creek Avoidance Alternative requires the realignment and new construction of Ridge Route Road. The planning areas around the realigned Ridge Route Road will be developed to provide affordable housing and commercial uses. The Creek Avoidance Alternative is shown on the Creek Avoidance Study Exhibit "A" (attached hereto).

III. ALTERNATIVE ANALYSIS

A. Limits of Grading & Earthwork

Under this alternative, from the easterly creek setback a 2:1 ascending slope would create tiers of developable pad areas across the Project Site to the easterly Project boundary. The total residential developable area will be limited to 264 acres when various factors discussed below are taken into account (the total Project Site acreage is 1330 acres). The elevation for the developable pads for this alternative is based on the approved Northlake Specific Plan elevations. The Creek Avoidance Alternative site grading will require cut in order to develop the site as indicated, however, due to the lack of fill placement area this new design will produce a net export of dirt, which will need to be exported offsite from the Project Site: Phase 1 will produce an estimated 5.4 million cubic yards of export, and Phase 2 will produce an estimated 2.8 million

cubic yards of export, totaling approximately 8.2 million cubic yards of export from the Project Site. The exported yardage would need to be taken offsite to a landfill or other designated area by haul trucks. In comparison, the Approved Project resulted in a balanced site; no export was required.

B. **Project Access - Bridges**

As part of the design for the Creek Avoidance Alternative, two clear span bridges to access the project from Ridge Route Road are required in Phase 1, and an additional third bridge is required in Phase 2. The bridges will be approximately 600-feet long to span across Grasshopper Creek, west to east, and will be approximately 90- to 120-feet above the creek bottom. Columns and piles will be required to be imbedded into underlying, intact bedrock at either end of the bridge. The utilities (i.e., sewer, water, gas, electric, telephone and cable) serving the easterly portion of the project will be supported and span under these bridges all crossing the creek from above similar to access, utilities run west to east given existing conditions.

Hydrology & LID

Los Angeles County Public Works approved the hydrology study for Tentative Tract 73336 based on the previously Approved Project configuration. The previously Approved Project was designed assuming existing Grasshopper Creek would be graded and filled with the tributary drainage areas being captured and routed through the Project Site in a covered storm drain system. At the downstream end of the Project was a series of regional basins (retention and detention) that were designed to mitigate increases to storm drain runoff volume due to site development and to satisfy hydromodification requirements (Projects must fully mitigate off-site drainage impacts caused by hydromodification and changes in water quality, flow velocity, flow volume, and depth/width of flow. Hydromodification control criteria must be implemented by project applicants to control potential adverse impacts of changes in hydrology that may result from projects located within natural drainage systems; County of Los Angeles Department of Public Works, Low Impact Development, Standard Manual, February 2014). Since these basins are located within the footprint of the existing creek, they would not be able to be utilized for the Creek Avoidance Alternative. Per the geotechnical consultant, G3SoilsWorks, the only place where infiltration would be feasible on the Project Site was within the creek bottom area. Therefore, for hydromodification and Low Impact Development (LID) purposes, the use of infiltration for the Creek Avoidance Alternative would be considered infeasible. Similarly, there would not be enough irrigation demand to implement a harvest and re-use program. Biofiltration would therefore be required to meet the LID volume criteria.

The Creek Avoidance Alternative would reduce the hydromodification impacts as compared to the previously Approved Project. This is due to the fact that there would be debris in the creek which would reduce the effects of "hungry water" as the Creek Avoidance Alternative outlets the developed "Q" into the existing drainage course. However, there would still be some degree of impact and in order to mitigate for this hydromodification concern, the Creek Avoidance Alternative would require that drainage acceptance letters for any hydraulic impacts be obtained from all downstream owners.

The previously Approved Project had a 1,001 acre disturbed area project footprint with a requirement of 41.3 acre-ft of retention storage for LID and 113.6 acre-ft of detention storage for hydromodification. The Creek Avoidance Alternative has a 647 acre disturbed area project footprint. For the Creek Avoidance Alternative, we have prorated these volumes based on the project footprint (647 acre for Creek Avoidance/1,001 acre for the previously Approved Project = 0.646). Therefore, the required storage for the Creek Avoidance Alternative is 43.1 x 0.646 = 27.9 acre-ft of retention and 113.6 x 0.646 = 73.4 acre-ft for detention storage. The 27.9 acre-ft could no longer be retained and infiltrated and would therefore need to be accepted by the downstream owner. Since the site drains to the Castaic Lagoon an increase in volume may be considered by the owner (State and County) to be beneficial.

C. **Unit Count**

With a significantly reduced project footprint, revised street design to accommodate traffic circulation, LID requirements, and relocated basins/best management practices (BMPs), the developable acreage for the Creek Avoidance Alternative decreases the total developable area from 364 acres to 286 acres, thereby reducing the amount of area available for development. After incorporating other conditioned site elements such as a 23 acres school site and 1 acre fire station (as per the Specific Plan) along with 167 acres of recreation and park areas, under the Creek Avoidance Alternative design the residential unit count will be reduced to 1,815 units (of which 165 units are affordable). As compared to the 3,150 dwelling units (of which 315 units were affordable with an additional 6 live/work units) under the previously Approved Project, the Creek Avoidance Alternative would result in a reduction of 1,335 dwelling units. The Creek Avoidance Alternative will have similar commercial acreages as the previously Approved Project. Proportionately, the affordable unit count would be reduced from 315 to 165 units.

IV. CONCLUSION

The previously Approved Project was a balanced site as it relates to grading and earthwork. The Creek Avoidance Alternative requires extensive cut in order to create the developable pad areas. Due to the lack of onsite fill areas to accept this cut the Creek Avoidance Alternative is an unbalanced site which produces 8.2 million cubic yards of export, which will need to be hauled offsite.

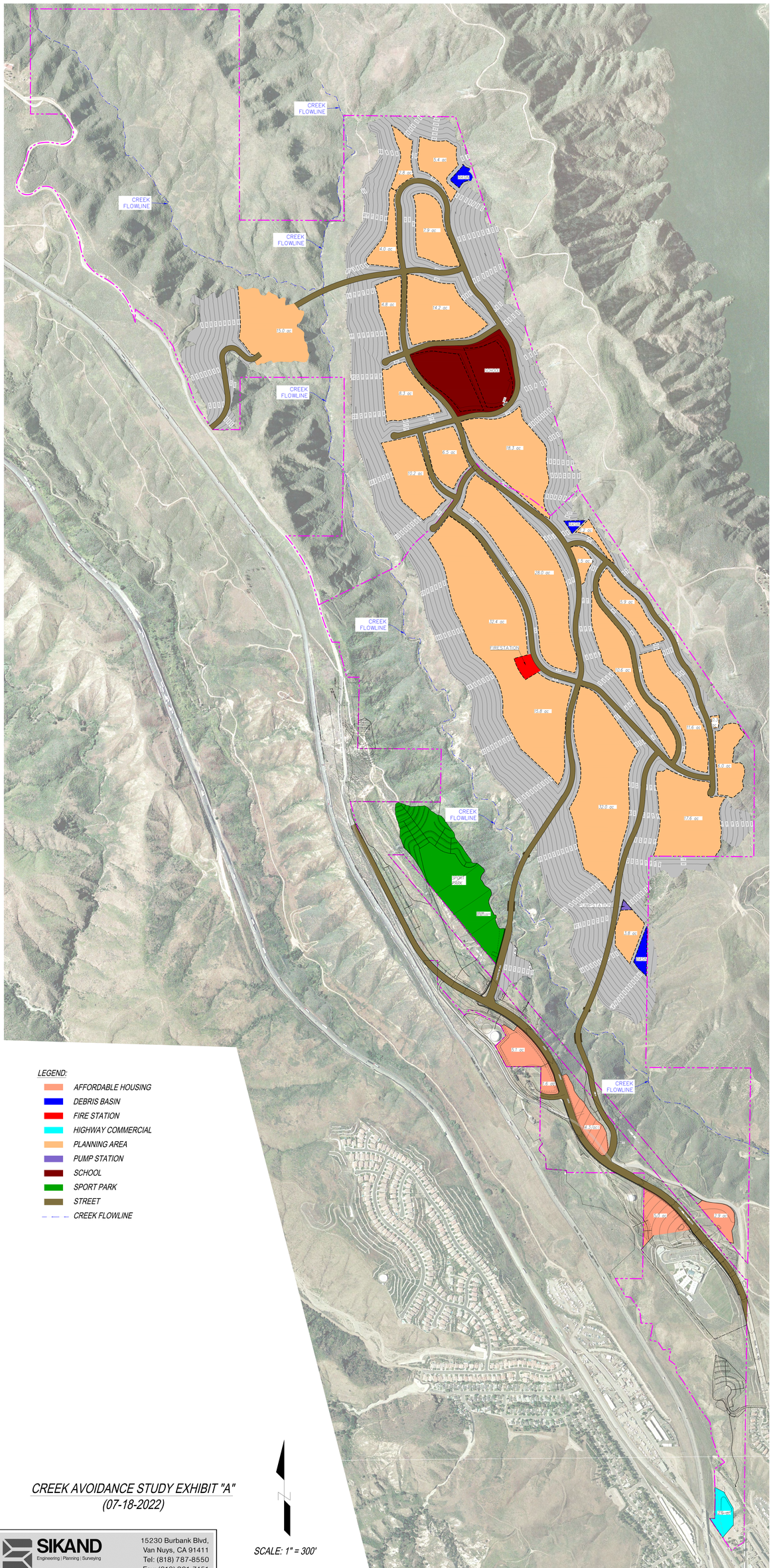
The required infrastructure improvements, remediation of potential geotechnical and flood hazards and project grading that requires relocations of some existing on-site easements, pipelines, and utilities to accommodate site development are similar to the original design, and in some cases more (due to the crossing and support within or below the three proposed bridges crossings) than were in the previously Approved Project.

The previously Approved Project took advantage of the permeable areas in the creek at the downstream end of the project to meet LID and hydromodification requirements for development

of retention and detention basins. For the Creek Avoidance Alternative these requirements will need to be addressed by implementing bio-filtration and obtaining downstream acceptance letters.

Compared to the previously Approved Project, a Creek Avoidance Alternative reduces the project's developable area by 30%. This reduced developable area results in a project wide unit count reduction of 42%, or loss of 1,335 units.

This assessment assumes that from civil engineering standpoint what development could be designed to avoid Grasshopper Creek with reasonable engineering assumptions. Geotechnical and Biological evaluations are beyond the scope of this analysis and will be separately contained in the project's soils engineer, G3SoilsWorks, technical report and Glenn Lukos Associates, technical memorandum.



LEGEND:

- *AFFORDABLE HOUSING*
- *DEBRIS BASIN*
- *FIRE STATION*
- *HIGHWAY COMMERCIAL*
- *PLANNING AREA*
- *PUMP STATION*
- *SCHOOL*
- *SPORT PARK*
- *STREET*
- *CREEK FLOWLINE*

CREEK AVOIDANCE STUDY EXHIBIT "A"
(07-18-2022)

SCALE: 1" = 300'

SIKAND
Engineering | Planning | Surveying

15230 Burbank Blvd,
Van Nuys, CA 91411
Tel: (818) 787-8550
Fax: (818) 901-7451
info@sikand.com

APPENDIX F-2

GEOTECHNICAL/HYDROGEOLOGIC REVIEW OF CREEK AVOIDANCE ALTERNATIVE

G3SoilWorks

GEOLOGY · GEOTECH · GROUNDWATER

BONTERRA PSOMAS
225 South Lake Avenue, Suite 1000
Pasadena, CA, 91101

July 14, 2021
Project No. 1-1048-C

Attention: Joan P. Kelly, AICP, Principal-in-Charge
Jennifer Marks, Senior Project Manager

CC: Mr. Thomas DiPrima
Northlake Associates, LLC

Subject: Geotechnical / Hydrogeologic Review of
Creek Avoidance Alternative Design
Northlake, Vesting Tentative Tract Map No. 73336
Castaic, Los Angeles County, California

Dear Mr. DiPrima,

Pursuant to your request and authorization, G3SoilWorks, Inc. (G3) has reviewed the referenced project alternative to the Approved Northlake Specific Plan which would avoid Grasshopper Canyon (a.k.a. “Grasshopper Creek”) – herein termed the Creek Avoidance Alternative (CAA). The original approved plan designated Grasshopper Creek – an ephemeral drainage / canyon bottom that runs southeasterly through the site – as a fill zone and a structurally important component that both controlled the ultimate elevations of the original project and provided key support / buttressing to mitigate existing slope instability. Sikand Engineering Associates (Sikand) has designed the CAA (Reference 1, Exhibit A) to avoid grading impacts to Grasshopper Creek. G3 has prepared this review of Sikand’s CAA design report and has presented opinion of project feasibility herein based on that review from a geotechnical / hydrogeologic perspective. Other available information for this geotechnical / hydrogeologic review and evaluation included the referenced geotechnical studies, aerial photo review, ongoing desktop research of published and proprietary information, and substantial knowledge of this project site and underlying geologic conditions. Our review found that the CAA configuration results in significant increased geotechnical, engineering hydrogeologic, and safety / critical access risks to the development. The CAA was also found to seriously impact Grasshopper Creek as well. It is our opinion that the CAA approach, in an attempt to “save” the creek, would likely result in the ultimate degradation and destruction of the creek and canyon habitat. We also conclude that the engineering geologic / geotechnical adversities that would develop as a result of implementing the CAA approach would result in unacceptable increases in risk and, as a result, would not be feasible.

CREEK AVOIDANCE ALTERNATIVE PROJECT DESCRIPTION

The proposed Northlake project is a large-scale residential development in the Castaic area of unincorporated Los Angeles County, California, located easterly of Interstate 5 (Golden State Freeway) and westerly of the Castaic Lake State Recreation Area. Implementation of the original Approved Project is separated into two phases, with the first phase incorporating the southern 720± acres and the second phase incorporating the northern 610± acres. The extent of the original project layout encompassed the lower portion of Grasshopper Creek and the adjoining ridges to the east and west. In order to avoid grading impacts to Grasshopper Creek, the layout of the subject CAA moves the development easterly of Grasshopper Creek with a setback of approximately 300 feet, reduces the development acreage to 368 acres, and leaves in place basal landslides at the creek bottom (see Exhibit B). To accommodate travel into and out of this development, at least two bridges on the order of 90 to 120 feet high will need to be installed in Phase 1 with an additional bridge installed in Phase 2 for a total of three bridges (see Exhibit A).

SETTING

The project site is in a westerly facing flank complex that trends from Castaic Lake to the Golden State Freeway. In ancestral time, when rainfall was more plentiful, associated undercutting / downcutting caused the formation of Grasshopper Canyon. This erosional activity also undermined / exposed the underlying geologic structure and resulted in numerous landslide complexes (see Glossary, Figure 1). The current canyon is generally steep-sided on the west and gentler on the east - a geometry that is reflective of the existing geologic conditions. In the present day, the climate has become much drier, and the creek has only developed limited alluvial structure within its bottom (See Glossary, Figure 2). Surface flows have become ephemeral with extended dry periods and only occasional flows ranging from a trickle following typical rain events to a torrent following extreme rain events. Sources of water to the creek include surface water directed by tributaries and transient groundwater / moisture stored largely within landslide debris and, to a lesser extent, along bedding planes and other structure that is hydraulically favorable (see Glossary). Groundwater storage as free water within the alluvial structure of the canyon is very limited due to the limited alluvial development, and is, rather, present in the form of near-surface moisture. Surface water is generally only present during and immediately following rainfall of sufficient intensity / duration to create flow, which occurs infrequently. The majority of water comes from the easterly tributaries and northerly headwaters, as illustrated in Exhibit C. The only semi-permanent surface water is limited to the man-made pond which is located on a terrace above the creek on the easterly flank tributary system (see Exhibit C). This pond is understood to have been created in the early- to mid-20th century for support of livestock activities. Based on our review, this pond is to be removed under both the CAA and the original Approved Project.

Habitat quality along Grasshopper Creek from a hydrogeologic / geomorphic perspective is predominantly poor to mediocre, as described in Table 1 below, Glossary Figure 2, the project environmental studies (Reference 7), and from aerial photo studies. In “better alluviated” portions of the creek that can store water / moisture, the flow corridor has scrubby semi-riparian vegetation development as exemplified in Glossary Figure 2b. These “better alluviated” portions of the creek

are not considered to be sufficiently developed / contiguous to be considered "good" or "well-developed" habitat, as exemplified in Glossary Figure 2a. In other areas, alluvial development is marginal to absent, with some areas exposing relatively barren bedrock. The areas of limited to absent alluvial development generally have only poorly developed vegetation and are considered mediocre to poor quality habitat as exemplified in Glossary Figure 2c-2d. Locations of poor, mediocre, and fair habitat along Grasshopper Creek from a geomorphic perspective are shown in Exhibit C. For habitat conditions from a biologic perspective, refer to Glenn Lukos Associates technical memorandum dated June 25, 2021.

Table 1: Description of habitat quality based on hydrogeologic / geomorphic conditions present.

Habitat Quality	Alluviation	Vegetation
Poor	Marginal to absent	Sparse to absent phreatophyte development / low and scrubby growth
Mediocre	Limited	Low density of low growing vegetation
Fair	Moderate	Medium dense cover with moderately defined corridor

CONSIDERATIONS

Hydrogeologic Considerations

The new CAA configuration sets the development back approximately 300 feet from Grasshopper Creek and removes / replaces the upper landslides with engineered compacted fills and associated underground back drains while leaving the lower landslides in place within the 300± feet set back zone. As Exhibit C shows, a majority of the tributaries to the east which contribute both water and sediment to Grasshopper Creek will be eliminated and/or redirected toward storm drain systems where the earthwork assemblies are constructed. Even though development, grading, and placement of fill within Grasshopper Creek proper has been eliminated under the CAA, Grasshopper Creek's habitat will still be significantly impacted by the neighboring development. The modification of the easterly tributaries with geotechnically-required buttressing systems required to stabilize the slopes will result in the loss of up to 2/3 of Grasshopper Creek's current tributary water. Not only will the surface flows be affected, but any subsurface water (a major contributor during drought conditions) that once fed the creek through landslide deposits and, to a lesser extent, through bedding planes on the easterly flank will be reduced or cutoff entirely. As the bedding planes dip away from the creek on the westerly flank, subsurface water from the westerly flank is not expected to contribute nearly to the same degree as from the easterly flank, which dips toward the creek. This significant reduction in subsurface and surface water will negatively impact / reduce habitat productivity. Even with Grasshopper Creek preserved in place, the surface and subsurface water / moisture sources that once fed it will no longer be available to sustain it under the proposed CAA development plan.

When considering the influence of the altered hydrology on the canyon system – with most of the alluvial and habitat-sustaining, low-flow water and moisture crimped or eliminated under the proposed plan – the canyon would still be exposed to high-flow water rain events (10- to 50-year storms) in wet years. As ordinary transport mechanisms that move eroded soils downstream continue to occur, the lost sediments would not be replaced from the sediment-loading easterly tributaries (which will be lost as a result of development) as they once were, and the creek will begin to suffer from sediment starvation and deflation. This change in flow regime will reduce the vegetation density which act as an erosion control, making the canyon more susceptible to greater erosion. Continued downcutting of the canyon will eventually lead to exposure of the underlying bedrock and unfavorable bedding planes (Glossary Figure 1). This downcut condition presents several negative consequences as they pertain to both the creek habitat and to the proposed development alternative which include: 1) degradation of habitat / loss of phreatophytes due to removal of alluvial sediment platform, nutrients, and moisture / groundwater storage carried with it; 2) increased risk for uncontrolled deflation / downcutting during periods of heavy rain; 3) scour of sediments and bedrock compromising the integrity of the proposed bridge additions (as in Glossary Figure 3); and 4) daylighting and undermining of bedding planes and related geologic structure leading to slope instabilities and endangerment to the development above (as in Glossary Figure 1).

Geotechnical / Engineering Geologic Considerations

From a structural geology perspective, the geologic formations underlying the project area which includes Grasshopper Creek generally dip to the west, as in Glossary Figure 1. These rocks are relatively low strength materials that became highly unstable due to the downcutting action of the ancestral Grasshopper Canyon during high-flow climate conditions, which daylighted out-of-slope bedding and resulted in the original failures (i.e., landslides, see Exhibit B).

The success and safety of any project design at this location is predicated on the stabilization of these slopes to protect the development above. In order to preserve Grasshopper Creek in place, the CAA shifts development to the east of Grasshopper Creek and leaves lower portions of landslides in place within the setback area. This leaves no option but to place earthen keys and retaining wall systems upslope of these landslides (see Exhibit D). However, along some portions of the lower canyon, complete landslide removal will very likely still be required within the setback zone to even achieve an acceptable factor of safety for the proposed development. With the creek now being starved of sediment load, the creek bottom will begin to erode and deflate further, and the canyon will start scouring its banks and bottom (see Glossary). This will result in a reoccurrence of the conditions which produced the original landslides – the escalation of downcutting and mass wasting – likely developing new instabilities that can / will undermine the proposed buttress and/or retaining wall systems.

An option to increase the setback distance from the Grasshopper Creek flow line may possibly be considered. However, potential drawbacks must be considered, including: 1) a larger setback increases the amount of landslide material immediately below the proposed fill – this will greatly increase existing slope instability and will require even wider and deeper remedial keyways; 2)

the larger setback will considerably reduce the developable area and further decreases the lot count; and 3) remedial grading associated with the larger keyway excavation will likely require back cut slopes to approach or go beyond the current eastern ridgeline. The development of undercutting / erosion / deflation will still be expected to occur and cause problems unacceptably increasing risk of instability.

In addition, the integrity of the proposed bridges is expressly dependent upon the strength of the soil / rock into which its foundations are embedded. Foundation elements will likely need to bear into the canyon sidewalls and creek bottom to support the bridges. However, the canyon sidewalls – particularly the easterly side – have unfavorable geology, including landslide debris and shallow / unsupported bedding structure. If foundation elements are founded in the creek, they will become increasingly exposed to extreme scour (Glossary, Figure 3) because of the unbalanced sediment-starvation condition, resulting in deflation and undermining of the supports. The unfavorable geologic conditions will be at significantly increased risk of becoming unstable and damaged, undermining the foundation elements. Neither the sidewalls nor the creek bottom present suitable conditions for bridge foundation embedment and expose the bridges to high risks of instability. Moreover, since most of the utilities required to support the development will need to be suspended under these bridges, instability to the bridge abutments from scour would introduce risk of both utility separation and/or spillage into the creek, as well as the loss of functionality of the utilities. Not only is the bridge itself exposed to significant increased risk of instability, but the introduced undermining / mass wasting condition further destabilizes the banks and side slopes, presenting great risk to the development above.

CONCLUSIONS

Our review considered the detailed studies and information database developed by the Northlake design team for the subject area from engineering geologic, geotechnical, and hydrogeologic perspectives. Based on our technical and expert opinion, feasibility of the CAA is heavily influenced by the following key considerations:

1. The site area is underlain by bedrock that dips westerly over the majority of the area to be developed. In ancestral time when climate was wetter, the downcutting action of Grasshopper Canyon daylighted bedding in the canyon by action of erosion. These unsupported / daylighted beds became unstable and formed the complexes of landslides present on the site, as shown on Exhibit B.
2. Hydrogeologically, the predominant tributaries for Grasshopper Creek are located to the east of the creek, and to a lesser extent, the headwater areas to the north. Note that the easterly tributaries will be eliminated and filled in under both the CAA and the Approved Project. The new storm drain controls and mandated BMPs will introduce a new hydrologic regime, re-directing water away from the creek and removing not only surface flows provided by the tributaries, but their sediment loads as well. This new regime increases susceptibility to creek deflation, accelerated erosion of the canyon, and associated slope destabilization.

3. Although low-flow, low-threshold contributions to the Grasshopper Creek drainage will likely be strongly reduced by removal of the easterly tributaries, high-flow events will still occur in response to upper bound storms, creating susceptibility to an increased rate of erosion and resulting in derogatory effects on embankment and foundational stability.

4. The keyway / buttress assemblies along the western revised earthwork limits will be less effective than the original plan that used essentially the entire canyon as a buttress fill and removed all landslide remnants, replacing them with engineered, compacted fill. Since the keyway / buttress assemblies for the CAA have been moved up-dip / upslope to the east to accommodate preservation of the creek, their effective depth relative to the rock exposed along the canyon bottom is reduced, providing a lesser degree of protection against future instabilities when compared to the original plan remedial concepts.

5. The existing habitat quality along the creek is predominantly poor to mediocre from a geomorphic perspective, and generally has only limited alluvial development that may be locally absent. Surface water flows are highly ephemeral (uncommon / infrequent), and storage of water / moisture in the alluvial materials is limited, even within the better-developed portions. This alluvium has been shown in site specific studies to be sensitive to erosion and mobilization (References 6-7).

6. Site specific studies and our expert experience with similar canyon and creek bottom terrain indicate that during the majority of time, when surface water contributions are lacking to absent, an important contributor of essential moisture is local groundwater. The landslide bodies, unlike the surrounding bedrock, are failed masses of rock that are broken up and disarticulated. These landslide complexes have the ability to store considerable groundwater / moisture (relative to intact bedrock) that is proximal to the drainage and can contribute water through seepage mechanisms into the creek – particularly its alluvial complexes – to be available to habitat during recurring dry and drought periods. With remedial grading of the vast majority of landslides on the east slope, this potential subsurface water for the creek will be removed, eliminating a significant portion of – if not all – groundwater sources for Grasshopper Creek.

7. The subject CAA plan will result in the need to install multiple high bridges to cross the canyon to provide access to the east side development from the west side. These bridges and their supports will likely include foundation elements that will bear into either the canyon sidewall or creek bottom. The canyon sidewall areas, particularly the easterly side, have been identified as being comprised of materials that are poor stability candidates – namely landslide debris and geologically unfavorable bedding structure. The canyon bottom is subject to erosion and scour. These geologic / hydrogeologic conditions present risks of instability to the proposed bridges and risk of spillage / interruption to associated utilities.

Integrating the above, we conclude the following:

A. The Creek Avoidance Alternative still significantly impacts the hydrogeology of Grasshopper Creek, namely by elimination of 1) surface water / sediment load recharge from the easterly tributaries; and 2) elimination of subsurface water from remedial removal of landslide debris that are both considered primary. This loss will starve the creek of a large proportion of low-flow water along with sediment that are critical components to habitat productivity. Habitat of the canyon bottom will be strongly degraded as the alluvial materials deflate and erode away, ultimately leaving an actively downcutting rock-bottomed gully.

B. The loss of the easterly tributary will produce a substantial reduction in sediment recharge, which will have profound engineering repercussions. When the creek is starved of sediment recharge, it will begin to scour its bottom and banks to make up for the lost sediment recharge loads. This will result in deflation of the already scant alluvial materials present. As already described, detailed project studies have shown the alluvial materials to be easily mobilized and eroded. With a strongly reduced sediment recharge, this deflation will likely continue such that the canyon resumes downcutting. This will have a destabilizing effect to the development by 1) undermining the keyways / buttresses by exposing / removing support from underlying adverse bedding planes and/or introducing new failures; and 2) accelerated ongoing scour and downcutting of bridge supports.

C. To provide suitable slope stability for the development, complete remedial removal of landslides, significantly enhanced and deepened cut-off keyway / buttress systems, and/or other heavy engineering mitigation within the setback and creek flow line area will likely be required. Even still, the creek-ward portions will be subject to undercutting and mass wasting failures that can damage / destroy creek habitat and create dangerous undermining / destabilizations.

We have found, based on our direct study and experience, that any attempt at saving Grasshopper Creek and isolating it from the development results in either a degradation of the habitat character of the creek and/or presents an increased risk of instability to the Project elements. Climate change studies we have reviewed show that current climate trends of drought interrupted by heavy atmospheric river type events are likely to remain in place for the foreseeable future. The influence of these climate effects on the subject canyon and creek is important to consider from both engineering and habitat perspectives. Storms that produce periodic heavy flows in times of drought interruption will tend to be favored as has been in recent past events – favoring alluvial deflation and canyon downcutting. Stress to the habitat from prolonged drought will increase and available water sources and quantities will be reduced strongly, effectively destroying the creek.

We conclude from our review that the subject CAA approach would likely result in the ultimate degradation and destruction of the creek and canyon habitat. We also conclude that the engineering geologic / geotechnical adversities that would develop as a result of implementing the CAA approach would result in unacceptable increases in risk. As such, it is our expert opinion that the CAA proposed development is infeasible from engineering geologic, geotechnical, and hydrogeologic perspectives.

This memorandum is subject to the review and approval by the controlling jurisdiction. If you have any questions, or require additional information, please contact the undersigned.

Respectfully submitted,
G3SoilWorks, Inc.

By: _____
Richard H. Spindler, P.G., C.E.G.
Senior Engineering Geologist

By: _____
Larry E. Fanning, P.G., C.E.G., R.E.P.A., Q.S.D.
President

By: _____
Dana L. Mariscal
Staff Engineer

Attachments: List of Selected References
Glossary
Exhibit A – Developmental Study
Exhibit B – Landslide and Inferred Landslide Map
Exhibit C – Tributary and Habitat Map
Exhibit D – Cross-Section A-A'

Distribution: Addressee

LIST OF SELECTED REFERENCES

1. Sikand Engineering Associates, Creek Avoidance Alternative Assessment, Northlake, Castaic, Los Angeles County, California, dated April 2021.
2. LACDPW, Geotechnical and Materials Engineering Review sheet, Tentative Tract 73336, Castaic, Tentative Map Feasibility Approval, dated May 25, 2016, PCA: GMPH / A867.
3. G3SoilWorks, Inc., Response to Geologic and Soils Engineering Review Sheet, Tentative Tract 73336, Northlake, Castaic, Los Angeles County, California, dated May 19, 2016, Project No. 1-1048.
4. G3SoilWorks, Inc., Response to Geologic and Soils Engineering Review Sheet, Tentative Tract 73336, Northlake, Castaic, Los Angeles County, California, dated April 18, 2016, Project No. 1-1048.
5. G3SoilWorks, Inc., Updated Geologic / Geotechnical Report and Response to County Review Comments, Northlake Vesting Tentative Tract Map No. 73336, Los Angeles County, California, dated February 10, 2016, Project No. 1-1048.
6. Geosyntec Consultants, Low Impact Development Plan, Vesting TTM No. 073336, Northlake Phase 1, dated April 2017, Project Number: WW1993.
7. BonTerra Psomas, Biological Resources Downstream Impacts Assessment, NorthLake Specific Plan Project, Revision dated March 2017.

Glossary

1. Ephemeral creek – A dry creek bed with flowing water only during / after precipitation for a short period.
2. Key – Excavation of predetermined depth and width starting at the toe of a proposed slope. When compacted engineered fill is placed at designed grade, the created fill prism counters the downslope driving force of uphill daylighted bedding. (also, Buttress).
3. Keyways – An excavated trench into competent earth material beneath the toe of a proposed fill slope for increased slope stability (see Key).
4. Undercutting – erosion of materials at base of slope (in this case, by action of stream flow)
5. Downcutting – downward erosion that cuts, erodes, and deepens the channel by removing material.
6. Alluviation – Deposition / accumulation of sediment created by running water (also, Alluvial; Alluvium).
7. Bedding Planes – The surface that separates each successive layer of a stratified rock from its preceding layer. Depending on its engineering geologic character, bedding planes represent a discontinuity / plane of weakness.
8. Tributaries – A smaller body of water that feeds into a larger body of water.
9. Headwaters – The upstream source / where a stream begins.
10. Sediment Starvation – When sediment export exceeds sediment import of an alluvial / fluvial system.
11. Deflation – Geomorphic process of removal of soil resulting in bedrock exposure.
12. Mass Wasting – Downward slope movement, failure, and ground loss triggered by a variety of derogatory processes often acting in combination to create an unzippering / run-away instability that may occur rapidly over a large area.
13. Daylighted bedding – when rock layers dip at angles less than the angle of the slope.
14. Scour – removal of sediment by fast flowing water causing scour holes around objects in the path of flowing water, particularly bridge abutments (see Figure 3 below).

Glossary Figures

Figure 1: Illustration of interaction mechanism between stream flow and weak zones in a rock mass with resulting slope instability and slope deformation. The slope can be stressed by downcutting and weak zones / daylighted bedding planes.

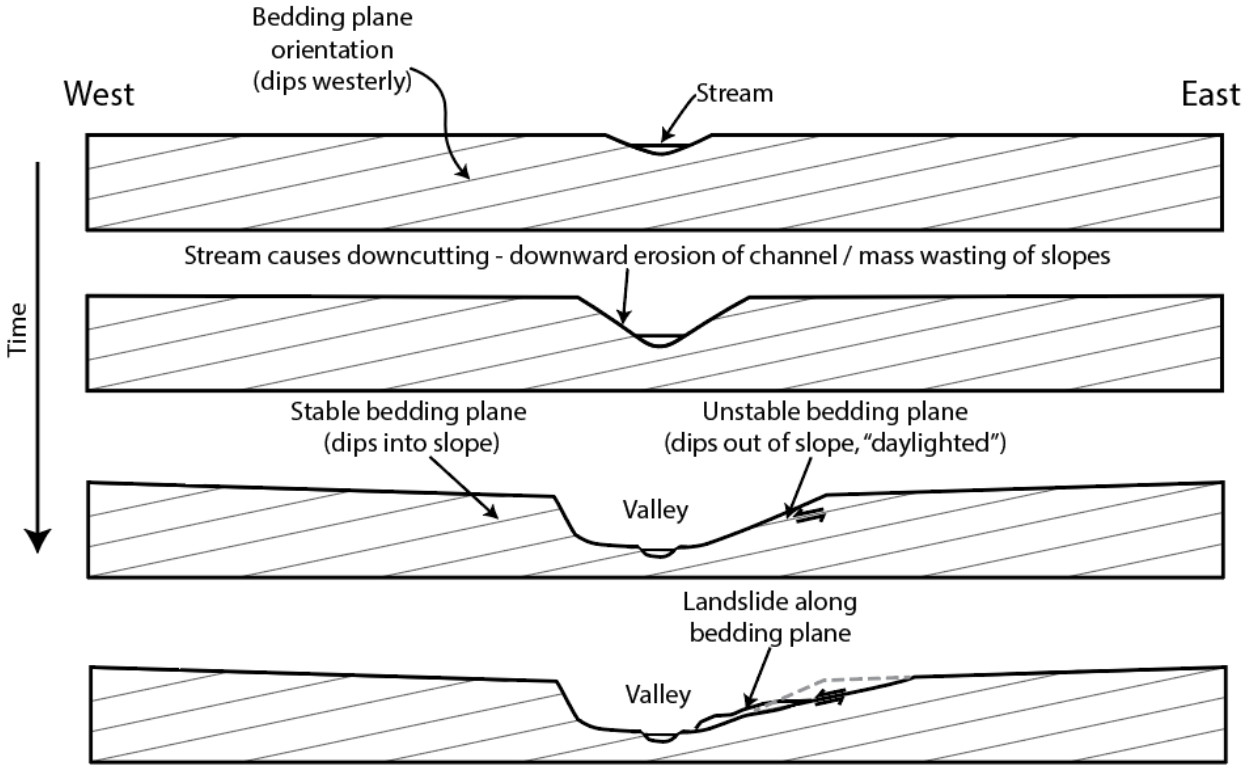
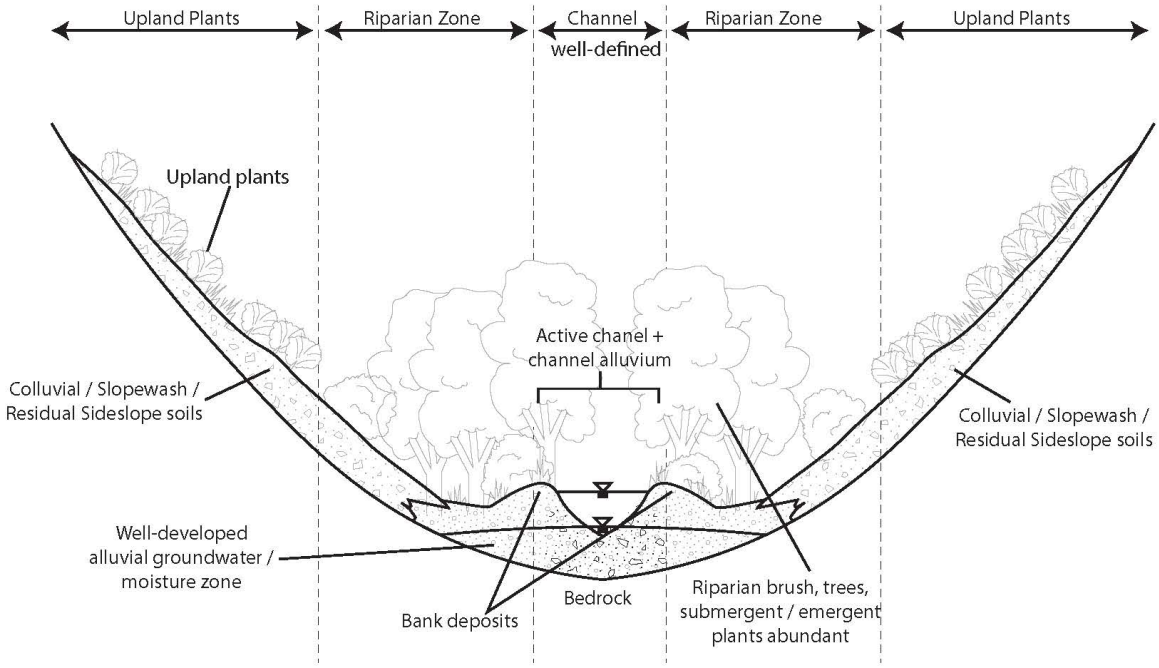


Figure 2a-d: Examples of habitat quality from a geomorphic perspective.

2a) Well-Developed Habitat



2b) Fair Habitat

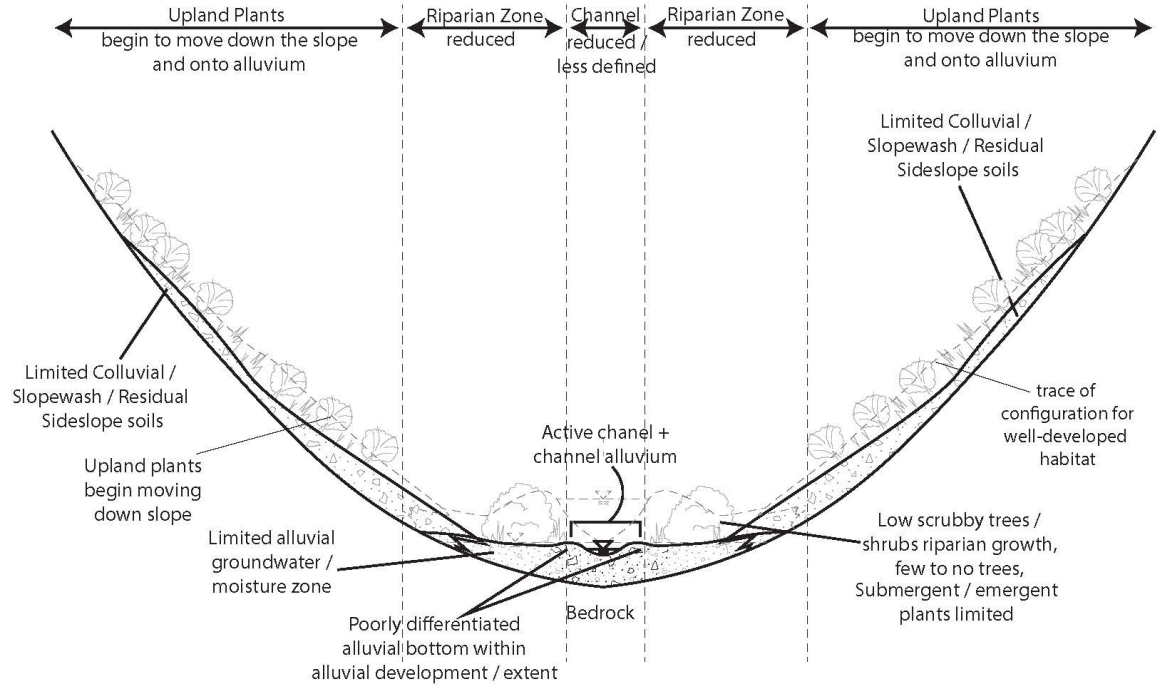


Figure 2a-d: Examples of habitat quality from a geomorphic perspective.

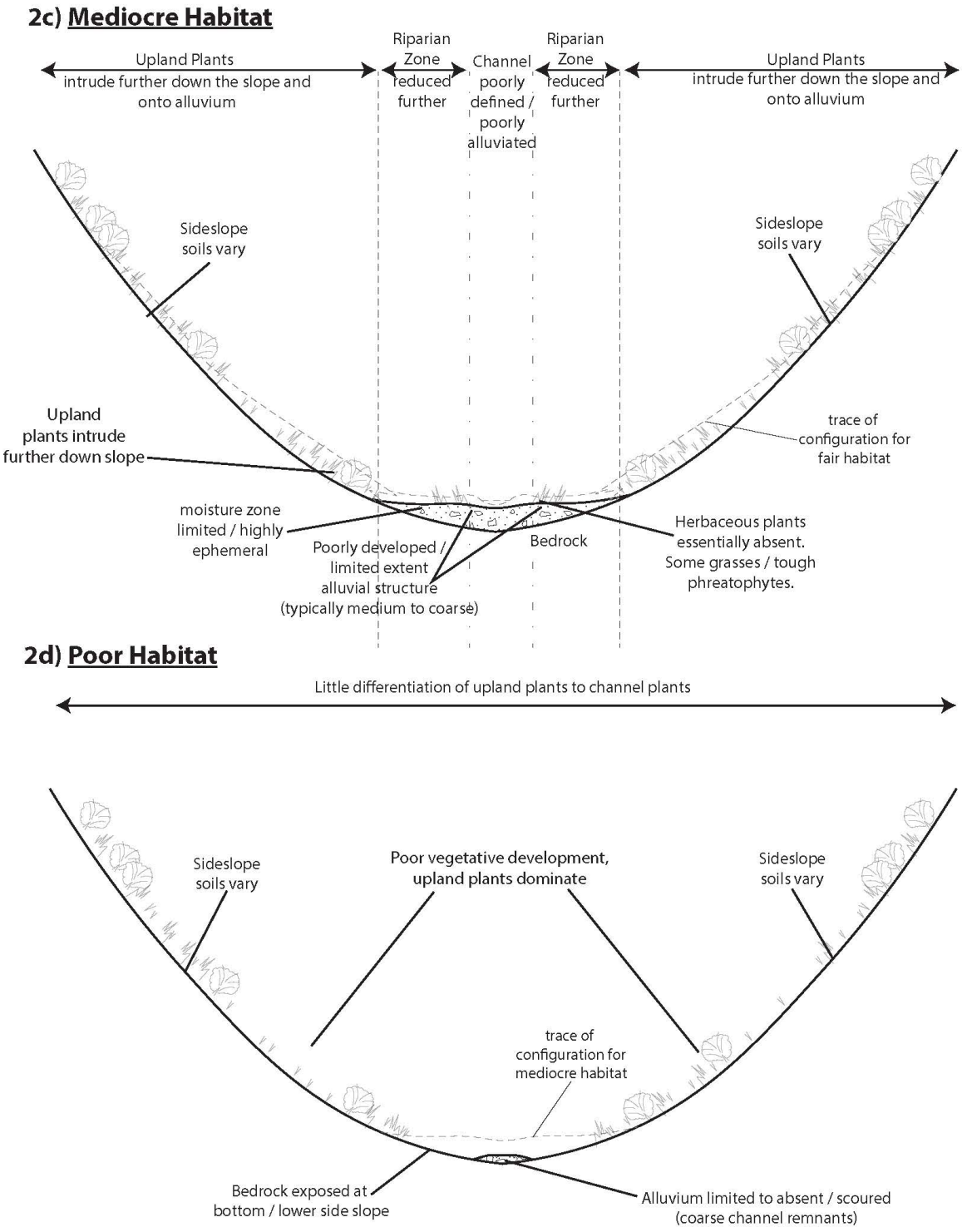
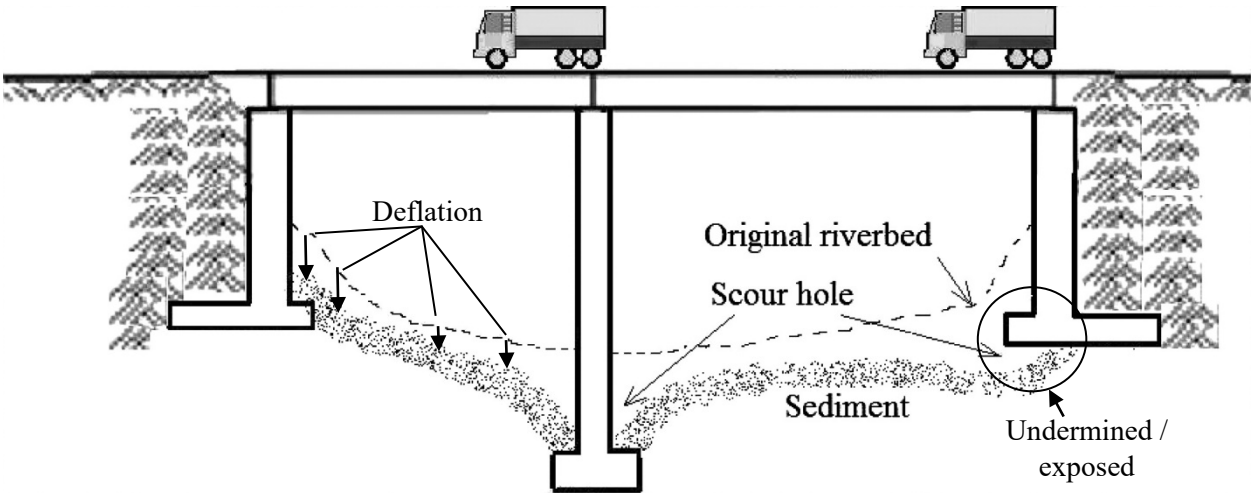
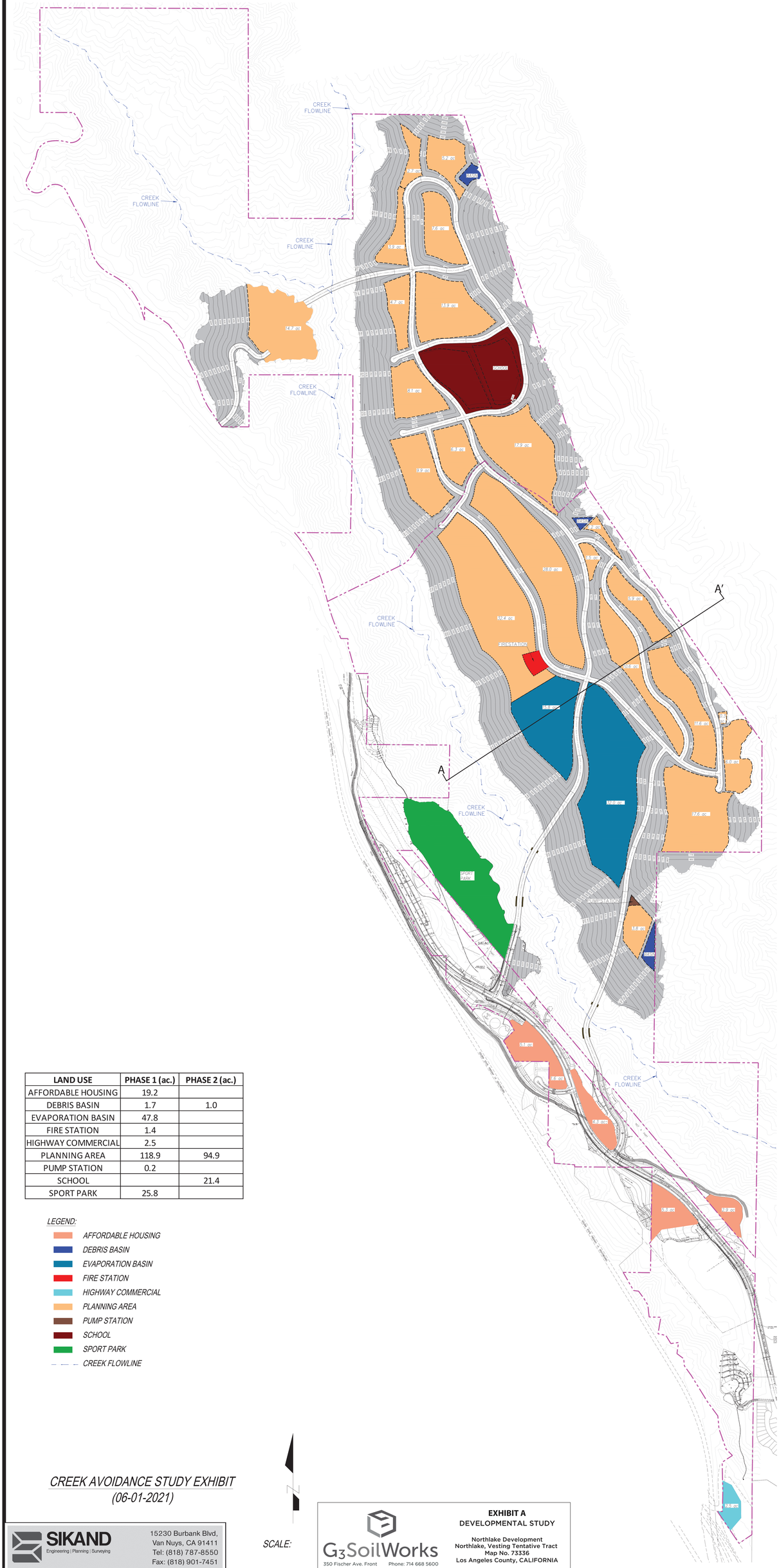


Figure 3: Example depiction of bridge scour





LAND USE	PHASE 1 (ac.)	PHASE 2 (ac.)
AFFORDABLE HOUSING	19.2	
DEBRIS BASIN	1.7	1.0
EVAPORATION BASIN	47.8	
FIRE STATION	1.4	
HIGHWAY COMMERCIAL	2.5	
PLANNING AREA	118.9	94.9
PUMP STATION	0.2	
SCHOOL		21.4
SPORT PARK	25.8	

LEGEND:

- *AFFORDABLE HOUSING*
- *DEBRIS BASIN*
- *EVAPORATION BASIN*
- *FIRE STATION*
- *HIGHWAY COMMERCIAL*
- *PLANNING AREA*
- *PUMP STATION*
- *SCHOOL*
- *SPORT PARK*
- *CREEK FLOWLINE*

CREEK AVOIDANCE STUDY EXHIBIT
(06-01-2021)

SCALE:

SIKAND
Engineering | Planning | Surveying
15230 Burbank Blvd,
Van Nuys, CA 91411
Tel: (818) 787-8550
Fax: (818) 901-7451
info@sikand.com

G3SoilWorks
350 Fischer Ave. Front
Costa Mesa, CA 92626
Phone: 714 668 5600
G3SoilWorks.com

EXHIBIT A
DEVELOPMENTAL STUDY

Northlake Development
Northlake, Vesting Tentative Tract
Map No. 73336
Los Angeles County, CALIFORNIA

JULY 2021 PN 1-1048-C

G3SoilWorks
350 Fischer Ave. Front
Costa Mesa, CA 92626
Phone: 714 668 5600
G3SoilWorks.com

Exhibit B
Landslide and Inferred Landslide Map

NORTHLAKE, VESTING TENTATIVE TRACT MAP NO. 73336
LOS ANGELES COUNTY, CALIFORNIA

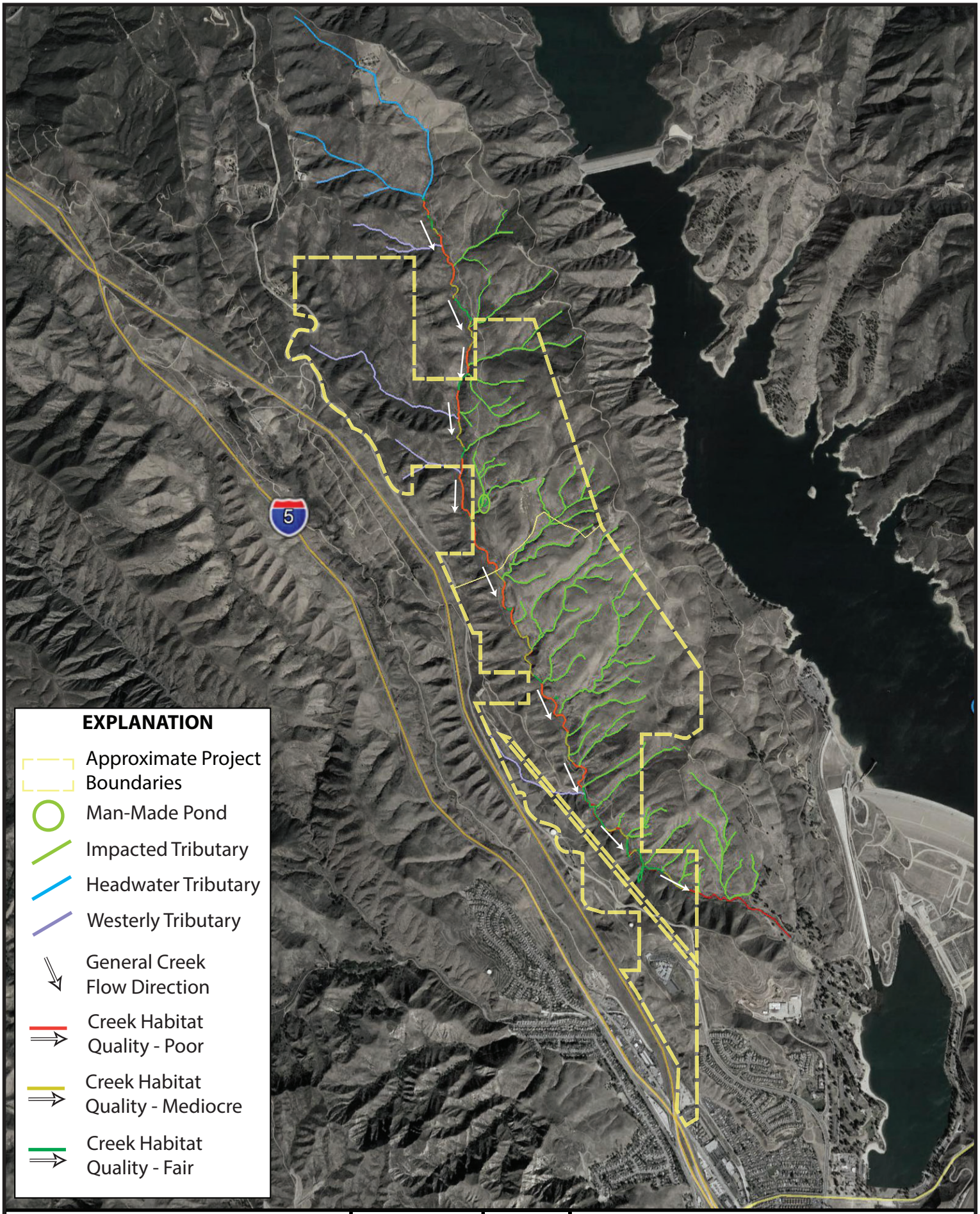
July 2021

PN: 1-1048-C

EXPLANATION

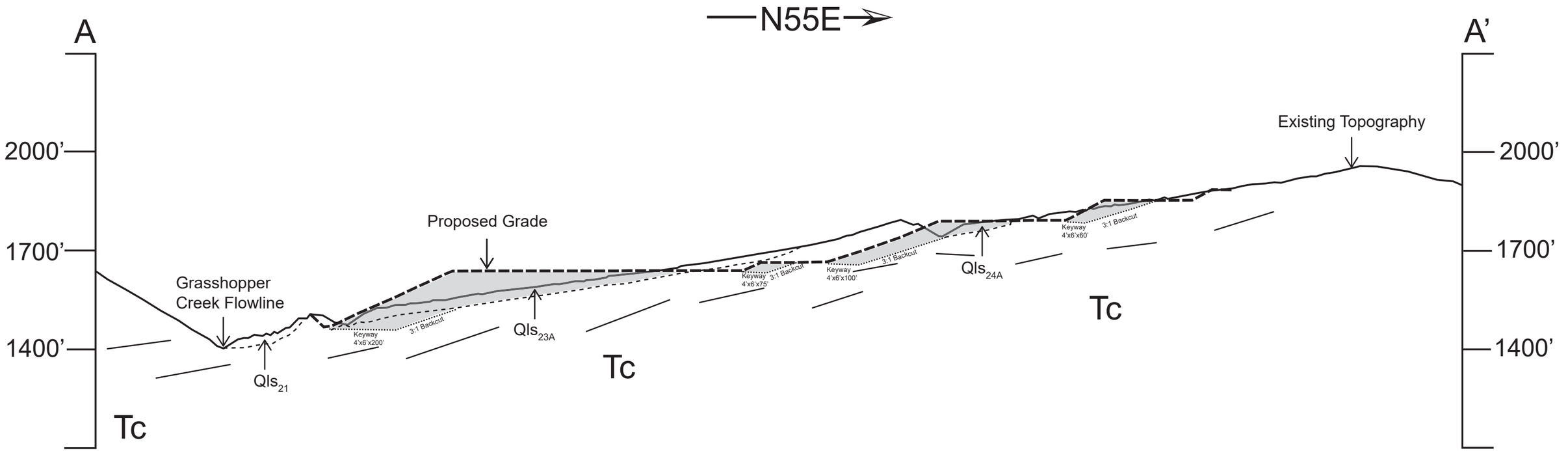
- Approximate Geologic Contact
- caf — Compacted Artificial Fill
- af — Artificial Fill
- Qal — Alluvium
- Qoal — Older Alluvium
- Qcol — Colluvium
- Rock Creep
- Qls (Phase 1) — Landslide (Phase 1)
- Qls — Inferred Landslide (Phase 2)
- Tc — Castaic Formation





Tributary and Habitat Map	Proj. No. 1-1048-C	July 2021	G3SoilWorks
Northlake Development	Los Angeles County, CA	Exhibit C	

350 Fischer Ave. Front
Costa Mesa, CA 92626
Phone: (714) 668 5600
www.G3SoilWorks.com



EXPLANATION

Tc	Castaic Formatation
Qls	Landslide with Number Designation
/	Schematic Bedding

Schematic Geologic Cross-Section A-A’
Based on Creek Avoidance Study Exhibit (Exhibit A)
Dated 06-01-2021

Scale: 1” = 300’ H&V

Geotechnical Cross-Section A-A’		Project No. 1-1048-C	July 2021
Northlake Development	Los Angeles County, CA		Exhibit D

G3SoilWorks
350 Fischer Ave. Front
Costa Mesa, CA 92626
Phone: (714) 668 5600
www.G3SoilWorks.com

APPENDIX F-3

CREEK AVOIDANCE ALTERNATIVE BIOLOGICAL CONDITIONS

TECHNICAL MEMORANDUM

GLENN LUKOS ASSOCIATES
Regulatory Services

PROJECT NUMBER: 11150006WOOD

TO: Joan P. Kelly, AICP, Principal-in-Charge
Jennifer Marks, Senior Project Manager
BONTERRA PSOMAS
225 South Lake Avenue, Suite 1000
Pasadena, California 91101

FROM: Tony Bomkamp

DATE: July 01, 2021

SUBJECT: Biological Conditions Associated with Grasshopper Creek Avoidance Alternative, NorthLake Project, Castaic, Los Angeles County

---

I have reviewed various documents[1] that address the Grasshopper Creek Avoidance Alternative for the NorthLake Project, comparing existing conditions and the expected hydrological conditions within Grasshopper Creek in the post-project condition. The Grasshopper Creek Avoidance Alternative includes establishment of a development on the east side setback approximately 300 feet from Grasshopper Creek and requires remediation of the upper landslides with engineered compacted fills and associated underground back drains while leaving the lower landslides in place within the 300± feet set back zone. Most of the tributaries to the east which contribute both water and sediment to Grasshopper Creek will be eliminated and/or redirected toward storm drain systems where the earthwork assemblies are constructed. Even though development, grading, and placement of fill within Grasshopper Creek has been eliminated under this Alternative, the hydrologic and associated biological conditions associated with Grasshopper Creek habitat will be substantially modified by the proposed development. The modification of the easterly tributaries with geotechnically-required buttressing systems required to stabilize the slopes will result in the loss of up to two-thirds of Grasshopper Creek's current tributary water. Not only will the surface flows be affected, but subsurface water (a major contributor during normal and drought conditions) that contributes to the creek through landslide deposits and, to a lesser extent, through bedding planes on the easterly flank will be reduced and likely eliminated. This significant reduction in subsurface and surface water will negatively impact / reduce habitat productivity. Even with Grasshopper Creek preserved in place, the surface and subsurface water sources that contribute to it will no longer be available to maintain the existing conditions.

[1] Those documents include the Sikland Memo *Creek Avoidance Alternative Assessment* dated June __, 2021 and the G3Soils Geotechnical / Hydrogeologic Review of Creek Avoidance Alternative Design, dated June__, 2021(G3Soils Memo), as well as the Trial Court's January 11, 2021 Ruling in the matter *Center for Biological Diversity v. County of Los Angeles, et al.,* Case No. 19STCPO1610 and the 2019 NorthLake Supplemental Environmental Impact Report.

EXISTING CONDITIONS

Grasshopper Creek flows from north to south and is an ephemeral drainage, with localized areas of seasonal groundwater discharge due to the water-holding capacity of landslides and bedding planes that provide for the discharge of subsurface water. In other areas, which do not exhibit discharge of subsurface water, shallow groundwater lenses support phreatophytes (plants with roots that are capable of reaching shallow groundwater typically at depths between three to 20 feet).[2] Where subsurface water occurs, Grasshopper Creek supports a mix of phreatophytes such as willows (*Salix* spp.), mulefat (*Baccharis salicifolia*), saltgrass (*Distichlis spicata*), and spiny rush (*Juncus acutus leopoldii*), a California Native Plant Society List 4 species[3]. Thus, while Grasshopper Creek appears dry for most of the year and surface water is not usually present except during storm events, portions of the creek support phreatophytic vegetation, due to shallow groundwater, including areas densely vegetated with species such as spiny rush, which are supported by the subsurface water that is directly dependent on the geological conditions.

AVOIDANCE ALTERNATIVE POST-PROJECT CONDITIONS

Under the post project conditions for the Grasshopper Creek Avoidance Alternative in addition to elimination of a significant portion of the surface tributary discharge, subsurface water will also be eliminated. This will occur as a result of the remedial grading needed to remove the landslide areas that will eliminate the landslide debris and bedding planes that store and transmit the groundwater[4], such that the groundwater that currently supports the phreatophytes will be, "by design" eliminated. The stress on "by design" is important because the very conditions that create the potential unstable geotechnical conditions are the very conditions that provide for the presence of the subsurface water. Elimination of this subsurface water will result in the elimination of the phreatophytic vegetation, which contributes to the conditions within Grasshopper Creek that are associated with the biological values. In short, the very conditions that contribute to the important biological functions in Grasshopper Creek will be eliminated and the creek would fail to function as it currently does.

CONCLUSIONS

The Grasshopper Creek Avoidance Alternative, while avoiding direct grading impacts to the drainage would, nevertheless, result in elimination of the hydrological conditions (*i.e.*, near surface or shallow ground water) that supports a special-status plant (spiny rush) and the suite of other riparian phreatophytes. Even with establishment of a 300-foot setback, it would not be possible to construct a geotechnically sound development and maintain Grasshopper Creek in its current biological condition.

---

[2] T.W. Robinson. *Phreatophytes: Geological Survey Water-Supply Paper 1423*. Washington D.C. 1958.
[3] See GLA Rare Plant Memo dated July 2021.
[4] See G3Soils Memo.

APPENDIX F-4

PARTIAL CREEK AVOIDANCE ALTERNATIVE ASSESSMENT

SIKAND
Engineering | Planning | Surveying
15230 Burbank Blvd., #100 Van Nuys, CA 91411
Phone 818.787.8550 Fax 818.901.7451
www.sikand.com Email: info@sikand.com

MEMORANDUM

TO: Northlake Associates, LLC

CC:

FROM: Raman Gaur

Vice President/ Project Director

DATE: July 12, 2022 – Revised: October 14, 2024

RE: Partial Creek Avoidance Alternative (PCAA)

PARTIAL CREEK AVOIDANCE ALTERNATIVE

Background: The Applicant originally proposed the phased development of up to 3,150 residential units, 9.2 acres of commercial uses, 13.9 acres of industrial uses, 799.5 acres of parks and open space, a 22.9-acre school site and a 1.4-acre pad for a future fire station (Project) within the area of the previously approved Northlake Specific Plan (Project Site). Subsequent to the publication of the Final Supplemental Environmental Impact Report (SEIR), the County of Los Angeles Regional Planning Commission requested that the Applicant include an affordable housing component in the Project. The Applicant made minor revisions to the Project to include an affordable component. Specifically, the Applicant eliminated 108,283 square feet (SF) of industrial use (all of the industrial uses) and 13,197 SF of commercial uses (leaving 38,700 SF of commercial uses) and reallocated 315 units from the Phase 2 area of the Project to the Phase 1 area. All 315 reallocated units are affordable units. The Regional Planning Commission approved the Northlake Project on April 18, 2018, and the Los Angeles County Board of Supervisors approved the Project on April 2, 2019 (the Project).

On January 11, 2021, the Los Angeles Superior Court ruled (Court Ruling) on the Center for Biological Diversity and Endangered Habitats League v. County of Los Angeles, et al, and Real Parties in Interest, Northlake Associates, et al, Case No.

19STCPO1610, finding that the analysis of project alternatives in the SEIR was deficient in failing to adequately study a creek avoidance alternative.

Creek Avoidance Alternative: A Creek Avoidance Alternative (CAA) Assessment was prepared and presented by the Applicant and technical consultants for the Northlake project to the Regional Planning Director, Amy Bodek, and her staff on July 29, 2021. The assessment concluded that due primarily to geotechnical reasonings, completely avoiding the creek was not a feasible alternative. Regional Planning took that conclusion under advisement and stated that the assessment would be forwarded to the Department of Public Works for further review. During this meeting the Planning Director requested that the Applicant team assess an additional alternative that, while not fully avoiding the creek, could reduce the development's impacts to the creek.

Partial Creek Avoidance Alternative: Based on the above request, the Applicant team analyzed and prepared an alternative that reduces some of the impacts to Grasshopper Creek (Creek) – a partial creek avoidance alternative – but still maintains the majority of the Project's design and features. This alternative reflects the fact that the existing landslides within the Project Site, especially the numerous landslides that toe out under the creek within Phase 1 of the Project, will most likely result in the loss of the Creek, once disturbed. As such, due to engineering geologic / geotechnical adversities that would develop as a result of implementing the CAA approach, development of the CAA would result in unacceptable increases in risk of future slope failures/landslides and, as a result, would not be feasible.

This alternative leaves Phase 1 as previously approved but reduces the scope of the Phase 2 development of the Project (see attached Exhibit).

The reduced Phase 2 area design (Partial Creek Avoidance Alternative, PCAA) avoids a cluster of smaller and larger landslides in the northern portion of the Phase 2 area. This is proposed to avoid disturbing the landslides and risk additional loss of Creek area (similar to the issues with the CAA). This alternative design would preserve both the Creek and sensitive habitat within the upper portion of the Phase 2 area of the Project Site.

This alternative provides a balanced site within the proposed Phase 2 grading footprint and does not require any additional import or export of soil, while reducing the total disturbed area in Phase 2 by 60%, thereby creating additional undisturbed open space. It also reduces the impacts to that portion of the Creek on the Project Site by approximately 20%.

Furthermore, this alternative greatly reduces the raw earthwork of Phase 2 by approximately 10 million cubic yards.

The alternate design maintains the Project unit count of 3,150. The alternative design preserves the agreed affordable component of 315 units, mixed use and live work units, and preserves the school and fire station sites, commercial sites, and the sports park, all of which were provided in the Project and remain unchanged in this alternate design.

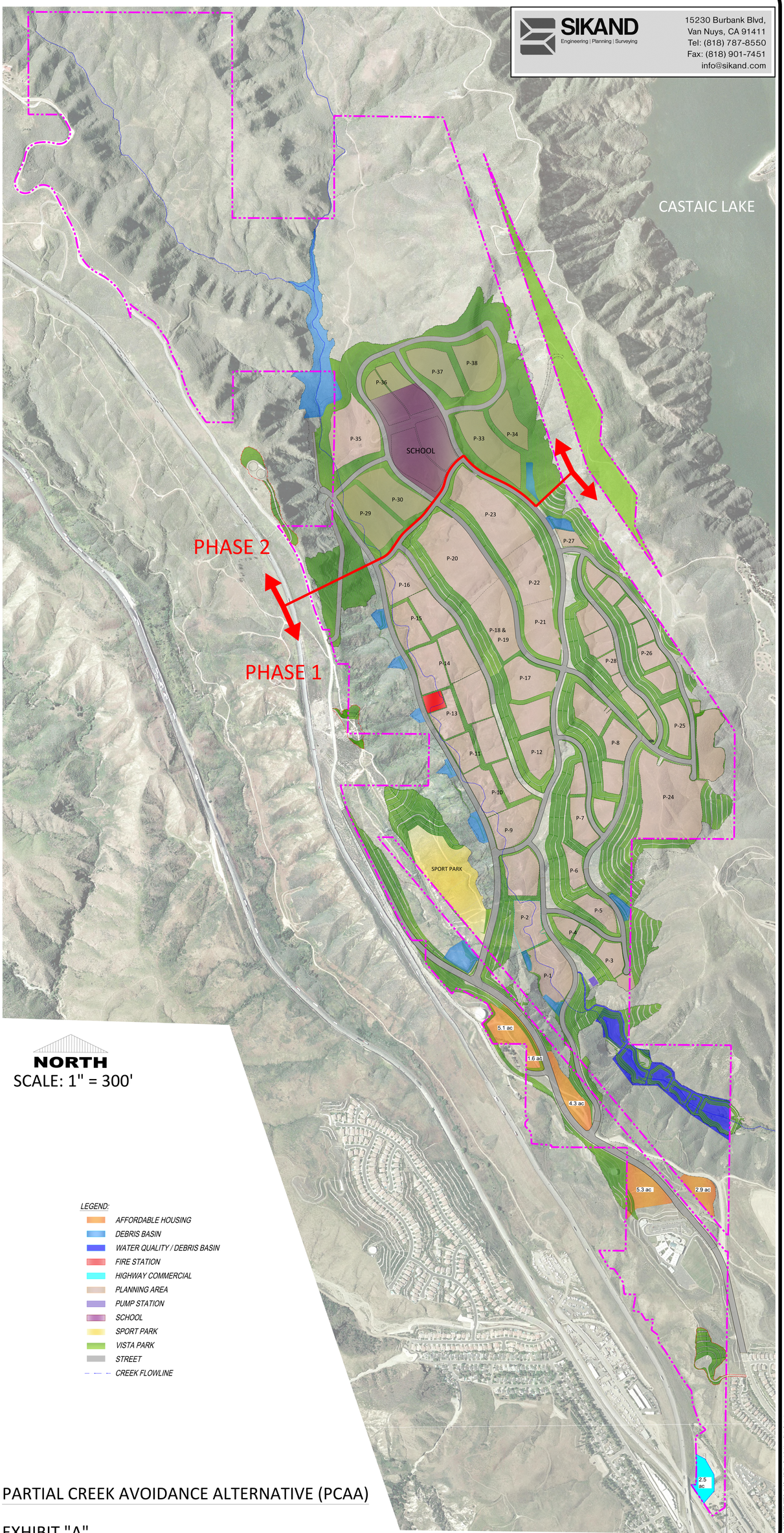
Benefits of the Partial Creek Avoidance Alternative

• The portion of the Creek that will be saved in Phase 2 is contiguous of the upstream offsite tributary, and therefore this alternative preserves more undisturbed stream.
• The Project Site can be graded for better balance, since Phase 2 is mostly cut, while Phase 1 is fill.
• Reducing Phase 2 would promote saving of more sensitive habitat in those areas that will be undisturbed where sensitive habitat is present.
• Reducing Phase 2 will better assist wildlife movement with the upper wildlife crossing, and does not affect the secondary access and Project circulation.
• Reducing the scale of Phase 2 would promote a better fire break from the northern denser vegetation.

Rejection of the Partial Creek Avoidance Alternative

• Although the Partial Creek Avoidance Alternative would have similar impacts for each environmental topic when compared to the previously approved Project, it would not provide active recreational area to the same extent as the previously approved Project as the alternative provides 22 percent less active recreation area. (Specific Plan Policy IV. Open Space/Recreation Area, Goal i: To improve opportunities for a variety of outdoor recreational experiences.)

SIKAND
Engineering | Planning | Surveying
15230 Burbank Blvd,
Van Nuys, CA 91411
Tel: (818) 787-8550
Fax: (818) 901-7451
info@sikand.com



NORTH
SCALE: 1" = 300'

LEGEND:
- AFFORDABLE HOUSING
- DEBRIS BASIN
- WATER QUALITY / DEBRIS BASIN
- FIRE STATION
- HIGHWAY COMMERCIAL
- PLANNING AREA
- PUMP STATION
- SCHOOL
- SPORT PARK
- VISTA PARK
- STREET
- CREEK FLOWLINE

PARTIAL CREEK AVOIDANCE ALTERNATIVE (PCAA)

EXHIBIT "A"

APPENDIX F-5

NORTHLAKE SPECIFIC PLAN ALTERNATIVES VMT ANALYSIS

Stantec

Memo

To:	Damon Mamalakis Armbruster Goldsmith & Delvac LLP	From:	Maria Morris and Daryl Zerfass Stantec
Project/File:	2042648800	Date:	February 27, 2025

Reference: Northlake Specific Plan Alternatives VMT Analysis

This memorandum summarizes a vehicle mile travelled (VMT) analysis prepared for the Northlake Specific Plan (NLSP) Development located east of the Interstate 5 (I-5) Freeway and north of Lake Hughes Road in the unincorporated Los Angeles County. The NLSP was adopted by the Board of Supervisors on June 1, 1992. In 2019, changes to the land use plan were approved by the Los Angeles County Board of Supervisors (referred to herein as the previously approved Project). The Project applicant is currently proposing to recirculate portions of the Northlake Specific Plan Supplemental EIR including the alternatives section. As part of the recirculated alternatives section, two new alternatives, referred to here as the Creek Avoidance Alternative (CAA) and the Partial Creek Avoidance Alternative (PCAA) are proposed. Presented here is a VMT assessment of the CAA and PCAA alternatives with a comparison to the previously approved Project. **Figure 1** shows the previously approved Project site plan.

Methodology

At the time the previously approved Project traffic analysis was prepared, level of service (LOS) was the metric used to evaluate transportation impacts. VMT is now the metric used to evaluate a transportation impact per Senate Bill 743. Los Angeles County has updated their Transportation Impact Analysis Guidelines[1] to utilize the VMT metric. The County has also developed a VMT tool (Version 1.0 available upon request from the County) that is specifically designed to develop project-specific daily residential VMT per capita and daily employment VMT per employee metrics for residential, office, and industrial development projects in the County. The County's VMT tool is used to calculate VMT estimates for the CAA and PCAA alternatives for comparison to the VMT estimates of the previously approved Project[2].

VMT Analysis

The Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA[3] (OPR's Technical Advisory) defines VMT as "the amount and distance of automobile travel attributable to a project"[4]. Project VMT is calculated by multiplying the Project-generated vehicle trips with the vehicle trip lengths. **Table 1** summarizes the land use for the previously approved Project, the CAA, and the PCAA.

[1] TIA Guidelines Version 1.1, Los Angeles County Department of Public Works, July 2020 updated September 2020.
[2] The previously approved Project would generate less VMT and a lower VMT per service population rate than the NLSP. Due to the VMT reduction, the previously approved Project's impacts would be less, and the previously approved Project would not result in any new or increased significant transportation impacts. (The Northlake Specific Plan Transportation Analysis Memorandum, Stantec, November 19, 2024).
[3] Technical Advisory on Evaluating Transportation Impacts in CEQA, State of California Governor's Office of Planning and Research, December 2018.
[4] Page 4 ibid.

Reference: Northlake Specific Plan Alternatives VMT Analysis

Table 1 Northlake Specific Plan Project Land Use Summary

Category	Previously Approved Project		CAA		PCAA	
	Acres	Units	Acres	Units	Acres	Units
Residential						
Single Family	186	1,143	264	1,650	94	1,143
Multi Family	107	1,341	0	0	107	1,341
Single Family (Age Qualified)	49	345	0	0	49	345
Affordable Housing/Live Work	20	321	20	165	20	321
Total Residential	**362**	**3,150**	**284**	**1,815**	**270**	**3,150**
Difference (Compared to Approved Project)	***n/a***	***n/a***	***-78***	***-1,335***	***-92***	***0***
Non-Residential						
Commercial Highway	2	n/a	2	n/a	2	n/a
School	44		23		44	
Recreation Park	167		26		103	
Public Services (Fire Station)	1		1		1	
Total Non-Residential	**214**		**52**		**150**	
Difference (Compared to Approved Project)	***n/a***		***-162***		***-64***	
Other – Roads and Open Space						
Road	120	n/a	71	n/a	98	n/a
OS - Manufactured Slope	305		284		239	
OS - Undisturbed	328		638		572	
Total Road and Open Space	**753**		**993**		**909**	
Difference (Compared to Approved Project)	**n/a**		**+240**		**+156**	
Total Project	**1,329**	**3,150**	**1,329**	**1,815**	**1,329**	**3,150**

As shown in **Table 1**, the previously approved Project includes 3,150 residential dwelling units on 362 acres. The CAA proposes to construct 1,815 residential units on 284 acres (1,335 fewer residential units on 78 less residential acres). The PCAA proposes to construct 3,150 residential units (the same as the previously approved Project) on 270 acres (92 less residential acres). The CAA would construct fewer residential units than the previously approved Project and would generate fewer vehicle trips when compared to the approved Project. The PCAA would generate the same vehicle trips as the previously approved Project. Average trip lengths are not anticipated to change. Therefore, the residential component of each of the two alternatives would generate less than or the same VMT compared to the previously approved Project.

In regard to the non-residential uses, the previously approved Project includes development of non-residential uses on 214 acres. In comparison, the CAA proposes non-residential development on 52 acres and the PCAA 150 acres. Both alternatives would generate fewer non-residential vehicle trips when compared to the previously approved Project. Average trip lengths are not anticipated to change. Therefore, the non-residential component of each of the two alternatives would generate less VMT compared to the approved Project. Lastly, **Table 1** shows a decrease is road development and increases in open space. These land uses do not generate vehicle trips on their own and would not affect VMT.

Reference: Northlake Specific Plan Alternatives VMT Analysis

Conclusion

The Project was approved in 2019, for which the approval was rescinded May 2021. The Project applicant is currently proposing to recirculate portions of the Northlake Specific Plan Supplemental EIR including the alternatives section. As part of the recirculated alternatives section, the Project applicant is proposing two additional development alternatives referred to here as the CAA and the PCAA.

The land use summary provided in **Table 1** compares the proposed land uses for the two alternatives and shows that residential development for the CAA is reduced compared to the previously approved Project by 1,335 dwelling units (-42%), while the number of residential units for the PCAA is the same as the previously approved Project but on a reduced development area (92 less residential acres). Non-residential development for the CAA and the PCAA is reduced compared to the previously approved Project by 162 acres and 64 acres, respectively.

With the CAA the residential and non-residential development is reduced, therefore this alternative would generate fewer vehicle trips and less VMT compared to the previously approved Project. Residential trips would be reduced by approximately 28% and residential VMT would be reduced by approximately 37% in comparison to the previously approved Project. **Table 2** summarizes the reductions.

With the PCAA, the number of residential units is the same as the previously approved Project and non-residential development is reduced compared to the previously approved Project. As shown in **Table 2**, this alternative would have the same amount of residential vehicle trips and residential VMT as generated by the previously approved Project.

For the non-residential uses, the school acreage decreases with the CAA and remains the same with the PCAA, and school attendance is presumed to reduce proportionally to the reduction in population. The changes to school and park use are not expected to have a significant effect on VMT.

The previously approved Project does not result in any new or increased significant transportation impacts when compared to the NLSP[5]. Therefore, since the CAA would generate less VMT than the previously approved Project, and the PCAA would generate the same amount of VMT as the previously approved Project, the CAA and the PCAA would not result in any new or increased significant transportation impacts.

[5] The Northlake Specific Plan Transportation Analysis Memorandum, Stantec, November 19, 2024.

Reference: Northlake Specific Plan Alternatives VMT Analysis

Table 2 Estimated Residential Trip and VMT Reductions

Description	Previously Approved Project	CAA	PCAA
Residential Units	3,150	1,815	3,150
Estimated Population[1]	10,049	5,790	10,049
Residential VMT per Capita[2]	25.9	28.4	25.9
Total Residential Daily Trips[2]	22,677	16,262	22,677
Total Residential VMT[3]	260,256	164,432	260,256
Change in Total Residential Units (Compared to Approved Project)	--	-42%	0%
Change in Total Residential Daily Trips (Compared to Approved Project)	--	-28%	0%
Change in Total Residential VMT (Compared to Approved Project)	--	-37%	0%

[1] Assumes 3.19 persons per household (source: US Census QuickFacts for Castaic Census Designated Place, California)

[2] Los Angeles County VMT Tool Version 1.0

[3] Total VMT = Population x VMT per capita

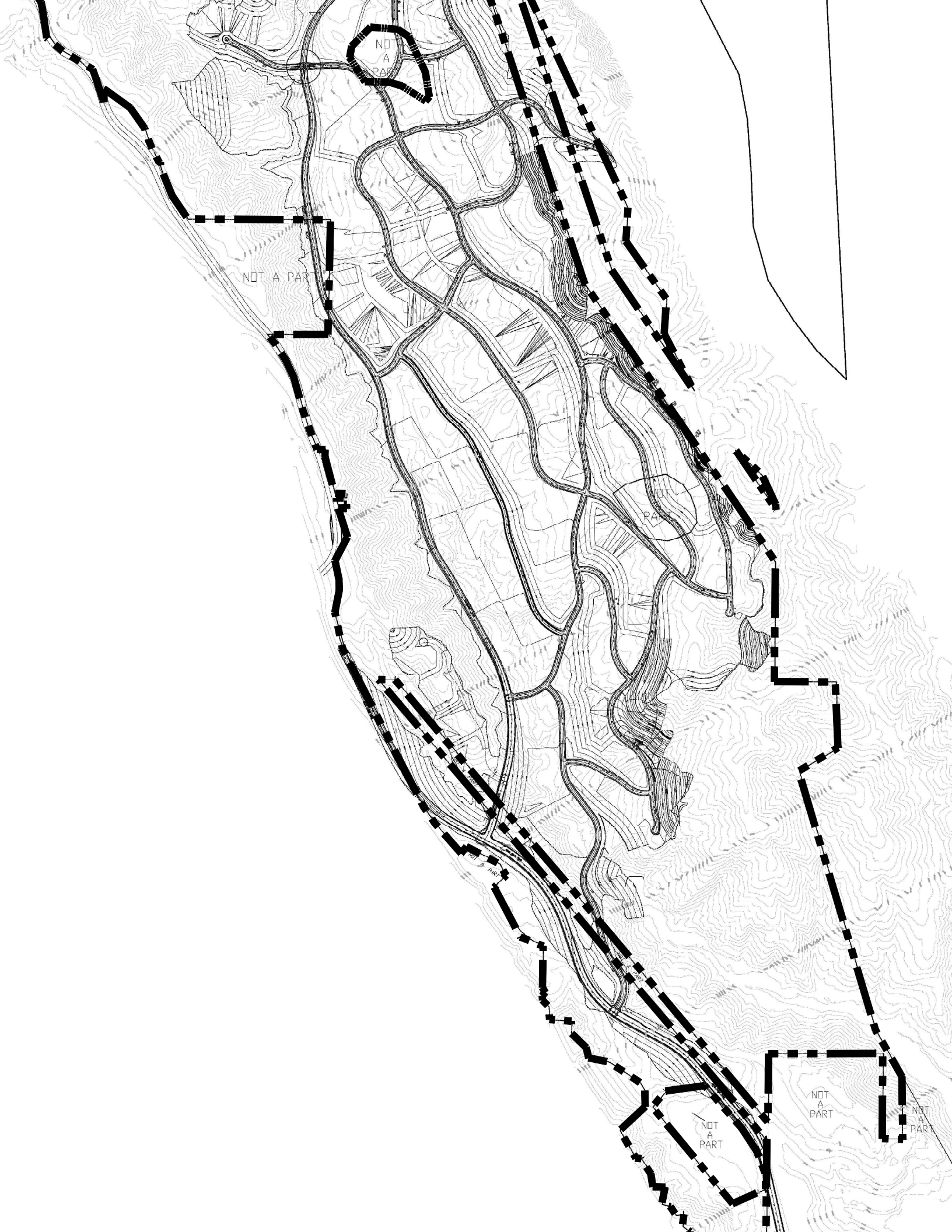
Sincerely,

STANTEC CONSULTING SERVICES INC.

Daryl Zerfass PE, PTP
Principal, Transportation Planning & Traffic Engineering
Phone: (949) 923-6058
Daryl.Zerfass@stantec.com

Maria Morris AICP, PTP
Senior Transportation Planner
Phone: (949) 923-6072
Maria.Morris@stantec.com

Attachment: Figure 1 Previously Approved Project Site Plan


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APPENDIX G

NORTHLAKE PARTIAL CREEK AVOIDANCE ALTERNATIVE AND ASSOCIATED WILDLIFE MOVEMENT ENHANCEMENTS

TECHNICAL MEMORANDUM

GLENN LUKOS ASSOCIATES
Regulatory Services

PROJECT NUMBER: 11150006WOOD

TO: Thomas DiPrima

FROM: Tony Bomkamp

DATE: April 17, 2023

SUBJECT: NorthLake Partial Creek Avoidance Alternative and Associated Wildlife Movement Enhancements

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Biologists from Glenn Lukos Associates (GLA) conducted an analysis of a Partial Creek Avoidance Alternative ("PCAA") prepared by the NorthLake development team that avoids the northerly segments of Grasshopper Creek on the NorthLake project site. The purpose of the biological analysis was to determine the effects on Wildlife Movement of the PCAA compared with the project as previously approved by the County of Los Angeles ("Previously Approved Project") and in the final decision of the Superior Court in the CENTER FOR BIOLOGICAL DIVERSITY and ENDANGERED HABITATS LEAGUE v. COUNTY OF LOS ANGELES, et al, and Real Parties in Interest, NORTHLAKE ASSOCIATES, et al, Case No. 19STCPO1610. This analysis considers specific factors including the previous approved project design and the proposed PCAA, with a focus on the northern portion of the site. This analysis considers the following issues.

- Expanded potential for wildlife movement due to elimination of development in the northernmost portion of the project site.
- Reduced encroachment by the development into the identified wildlife corridor to the north of the project site, and
- Enhanced movement opportunities associated with the freeway culverts that allow limited east-to-west and west-to-east movement.

Expanded Potential for Wildlife Movement due to Elimination of Development in the Northernmost Portion of the Project Site

It was determined that the Previously Approved Project would not have impacts to wildlife movement under the California Environmental Quality Act ("CEQA"), a determination that the Superior Court upheld. Even though it was determined that impacts to wildlife movement were determined to be less than significant, the project Applicant voluntarily accepted a condition of approval (Condition of Approval No. 51) to provide for wildlife movement post project development. Exhibit 1 depicts the preliminary Wildlife Connectivity Plan adopted as a condition of approval for the Previously Approved Project. It is anticipated that if the Previously Approved Project were reapproved, the same or a functionally equivalent Wildlife Connectivity Plan would be adopted as depicted on Exhibit 2. In addition, it is anticipated that the Wildlife Connectivity Plan would also apply to each of the alternatives

considered in the Recirculated Draft Supplemental Environmental Impact Report. Of the three alternatives considered, only the PCAA's reduced northerly footprint would have implications regarding the Wildlife Connectivity Plan as the two other alternatives propose similar northerly development.

Under the Previously Approved Project, wildlife would have an unobstructed path from the nearby culvert under Interstate 5 to the Castaic Lake environs. Exhibit 2 depicts the PCAA wherein the northernmost approximately 2,200 feet of development has been eliminated leaving a broad corridor across the northern end of the site, including a variety of pathways along drainages and other suitable topographic features.

Reduction of Encroachment by the Approved Development into the Identified Wildlife Corridor to the North of the Project Site

Exhibit 3 depicts the project site in the context of Figure 8 prepared by South Coast Wildlands that shows "permeability" for a suite of wildlife species described in the *South Coast Missing Linkages Project: A Linkage Design for the Sierra Madre-Castaic Connection*[1] ("Linkages Project"). Figure 8 consolidates the permeability for all the species considered in the Linkages Project. The Previously Approved Project fully avoided areas of permeability for the Mountain Lion; however, the project encroached into the Least Cost Corridor areas of mule deer permeability. When areas of highest permeability (i.e., most ideal for animal passage) are considered, those areas are to the north of the project development areas, and thus not impacted by the project. As such, the Previously Approved Project would have a less than significant impact on mule deer movement. Exhibit 4 shows that with the PCAA, the encroachment into the area of Least Cost Corridor areas for mule deer permeability is reduced substantially and outside the areas of highest permeability. Like the Previously Approved Project, the PCAA would have less than significant impacts on mule deer movement in the identified wildlife corridor.

Enhanced Movement Opportunities Associated with the Freeway Culverts that Allow Limited East-to-West and West-to-East Movement Under Interstate 5

Exhibit 2 depicts the location of the two northerly under-crossings beneath Interstate 5 in relation to the PCAA that eliminates the above-mentioned approximately 2,200 feet of development leaving multiple paths for wildlife movement between the northern Interstate 5 under-crossing and Castaic Lake. Exhibit 2 also shows the relationship between the southerly of these two crossings which now can more easily connect wildlife to Castaic Lake by the northerly route as well as to the south and west. In addition, Exhibit 2 shows pathways through the southerly part of the develop consistent with the preliminary Wildlife Connectivity Plan adopted as a condition of approval for the Previously Approved Project.

[1] Penrod, K., C. Cabanero, P. Beier, C. Luke, W. Spencer, and E. Rubin. 2005. *South Coast Missing Linkages Project: A Linkage Design for the Sierra Madre-Castaic Connection*. South Coast Wildlands, Idyllwild, CA. www.scwildlands.org

Conclusions

By eliminating development at the northern end of the project site, the PCAA provides for enhanced wildlife movement when compared with the Previously Approved Project, which was determined through project approval and review by the court to have less than significant impacts to wildlife movement.

North Valley Paseo

North Valley Park

School

Vista Park

CASTAIC LAKE

Enhanced Parkway

Grasshopper Creek Park

Fire Station

5

Community Sports Park

Commercial

Castaic Lagoon Park

Lower Ridge Route

Industrial

Northlake Hills Elementary School

LEGEND

- PROPOSED WILDLIFE CONNECTIVITY
- EXISTING FREEWAY CROSSING

1″=600′

0′ 600′ 1200′

Exhibit 1

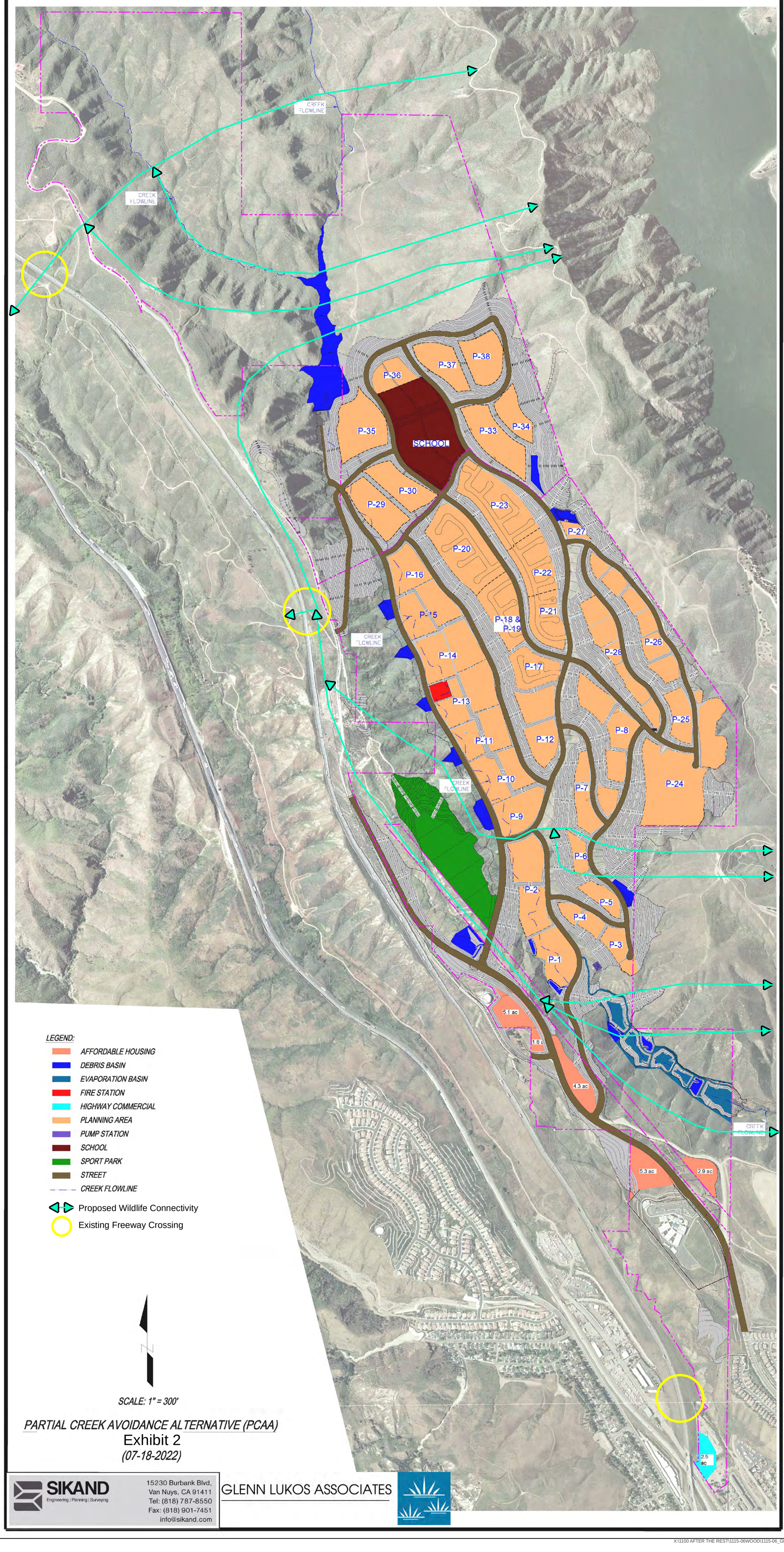
Previously Approved Project

NORTHLAKE WILDLIFE CONNECTIVITY PLAN PRELIMINARY

NORTHLAKE

DATE: 03.19.2018

PLACEWORKS



PARTIAL CREEK AVOIDANCE ALTERNATIVE (PCAA)

Exhibit 2

(07-18-2022)

SIKAND
Engineering | Planning | Surveying
15230 Burbank Blvd,
Van Nuys, CA 91411
Tel: (818) 787-8550
Fax: (818) 901-7451
info@sikand.com

GLENN LUKOS ASSOCIATES

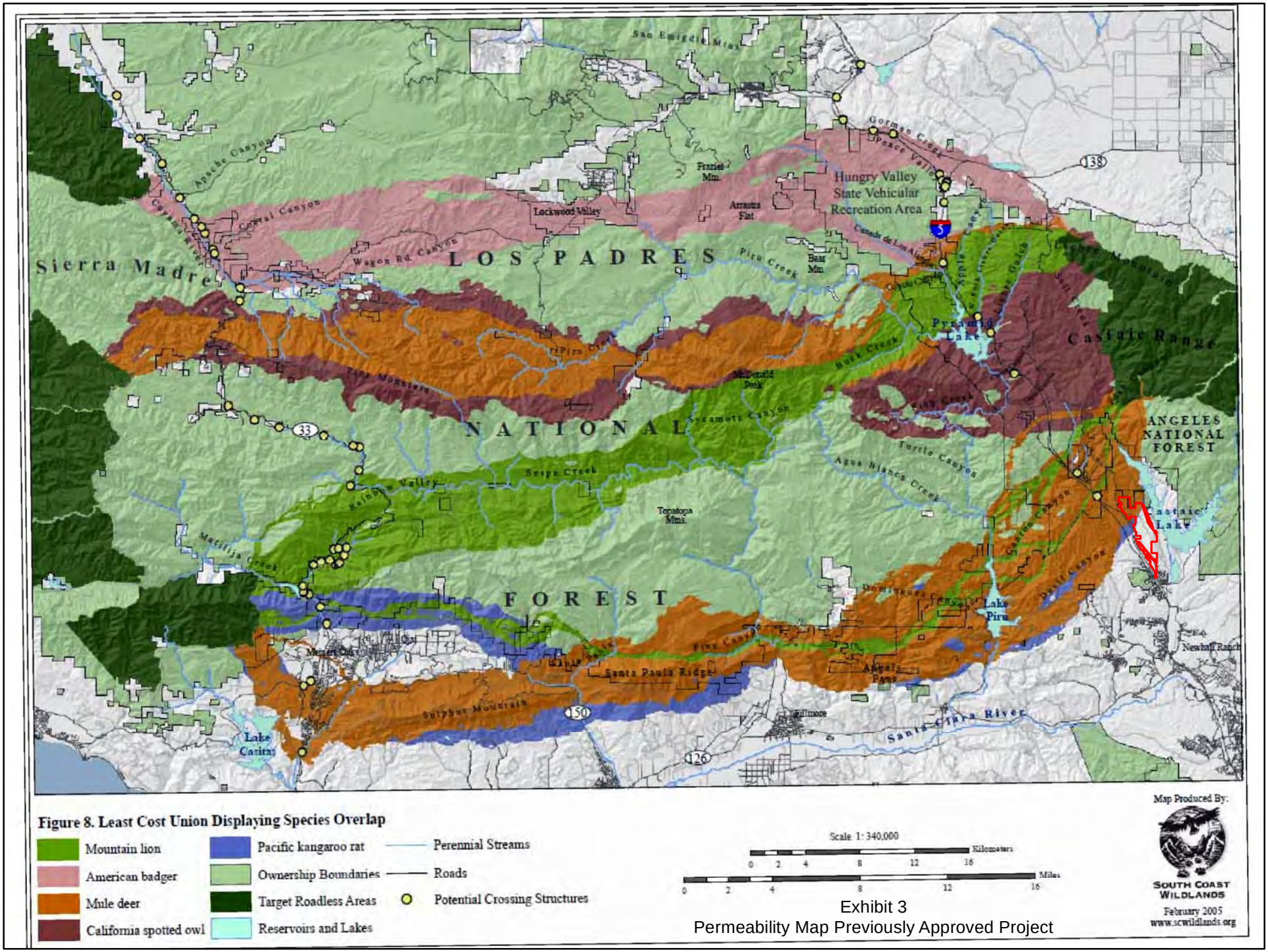


Figure 8. Least Cost Union Displaying Species Overlap

- Mountain lion
- American badger
- Mule deer
- California spotted owl
- Pacific kangaroo rat
- Ownership Boundaries
- Target Roadless Areas
- Reservoirs and Lakes
- Perennial Streams
- Roads
- Potential Crossing Structures

Scale 1: 340,000

Kilometers 0 2 4 8 12 16

Miles 0 2 4 8 12 16

Map Produced By:

SOUTH COAST WILDLANDS

February 2005

www.scwildlands.org

Exhibit 3

Permeability Map Previously Approved Project

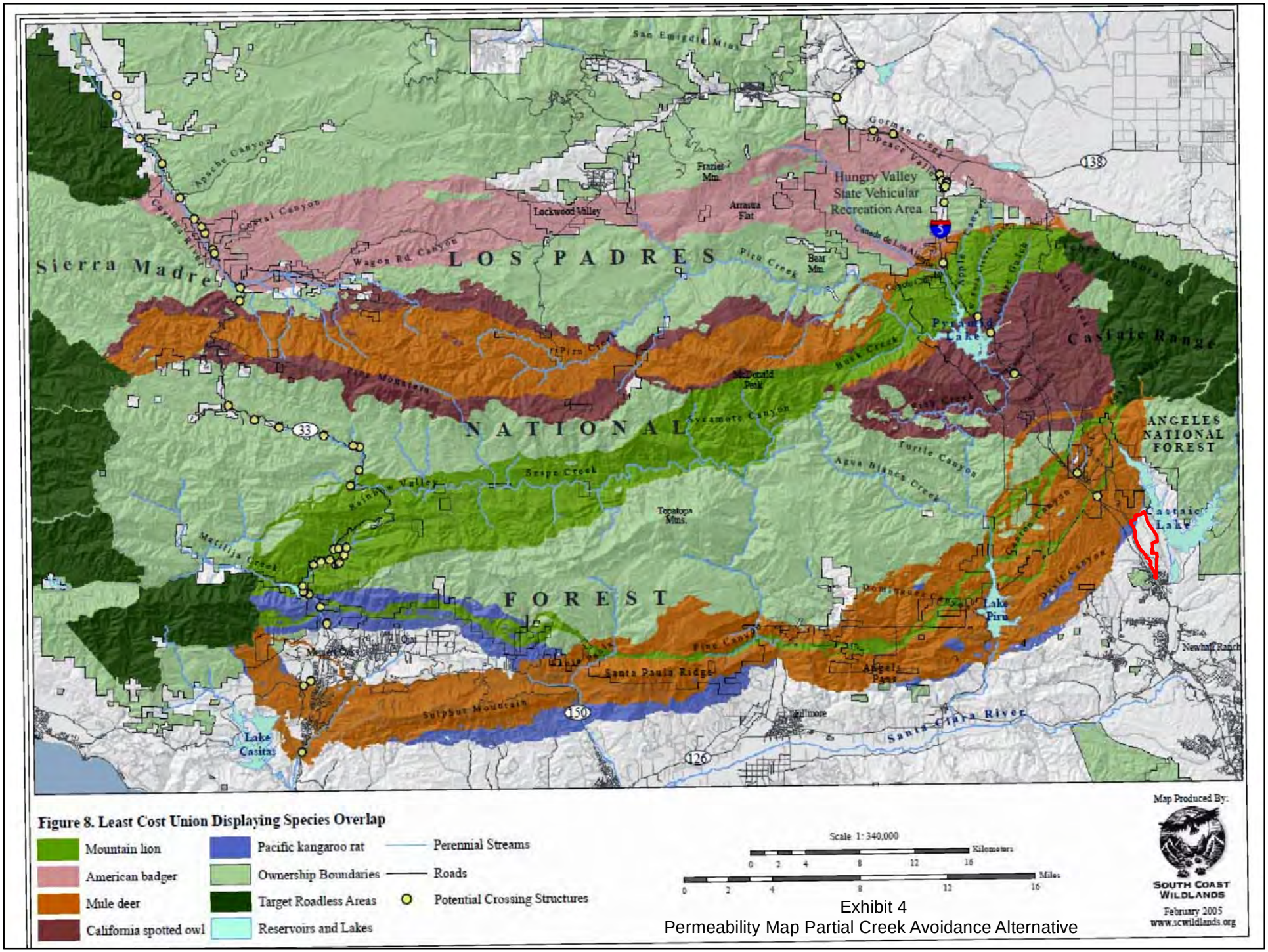


Exhibit 4
Permeability Map Partial Creek Avoidance Alternative

APPENDIX H

EFFECTS OF POTENTIAL LISTING OF WESTERN SPADEFOOT TOAD ON NORTHLAKE PROJECT IN CASTAIC, LOS ANGELES COUNTY, CALIFORNIA

TECHNICAL MEMORANDUM

GLENN LUKOS ASSOCIATES
Regulatory Services

PROJECT NUMBER: 1115-6WOOD

TO: Damon Mamalakis

FROM: Tony Bomkamp

DATE: November 12, 2023

SUBJECT: Effects of Potential Listing of Western Spadefoot Toad on NorthLake Project in Castaic, Los Angeles County, California

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On December 5, 2023, U.S. Fish and Wildlife Service (USFWS) issued a "Proposed Rule" to List the Western Spadefoot Toad (WST). Specifically, to list the WST which was summarized follows:

> *We, the U.S. Fish and Wildlife Service (Service), propose to list the northern distinct population segment (DPS) of the western spadefoot (Spea hammondii), an amphibian occurring in central and northern California, and the southern DPS of the western spadefoot, occurring in southern California and northwestern Mexico, as threatened DPSs under the Endangered Species Act of 1973 (Act), as amended. This determination serves as our 12-month finding on a petition to list the western spadefoot range-wide. After a review of the best scientific and commercial information available, we find that listing the northern and southern DPSs of the western spadefoot as threatened is warranted. Accordingly, we propose to list the northern and southern DPSs of the western spadefoot as threatened DPSs with a rule issued under section 4(d) of the Act (''4(d) rule''). If we finalize this rule as proposed, it would add the northern DPS and southern DPS of the western spadefoot to the List of Endangered and Threatened Wildlife and extend the Act's protections to the two DPSs. Due to the current lack of data sufficient to perform required analyses, we conclude that the designation of critical habitat for the northern DPS and southern DPS of the western spadefoot is not determinable at this time.*[1]

The WST was evaluated as part of the NorthLake Supplemental Draft Environmental Impact Report (SDEIR) to determine whether removal of occupied habitat would result in significant impacts in accordance with Appendix G of the CEQA Guidelines. At the time the SDEIR was prepared, the WST was designated as a Species of Concern by California Department of Fish and Wildlife (CDFW). Based on this status as a Species of Concern,

[1] **Federal Register** / Vol. 88, No. 232 / Tuesday, December 5, 2023 / Proposed Rules, p.82452.

the SDEIR found that the proposed impacts were significant and with mitigation, the proposed impacts would be reduced to less-than-significant. Subsequent to these determinations, the Los Angeles Superior Court ruled (Court Ruling) on the Center For Biological Diversity and Endangered Habitats League v. County Of Los Angeles, et al, and Real Parties in Interest, NorthLake Associates, et al, Case No. 19STCPO1610, finding that relative to the WST that the SEIR was deficient in failing to adequately delineate the WST baseline and failing to provide adequate mitigation measures for the relocation of the WST.

To address the Court's decision, the applicant prepared a detailed Western Spadefoot Toad (*Spea hammondii*) Impact Assessment and Habitat Mitigation and Monitoring Plan (HMMP) dated June 2023 that updated the impact analysis and provided for onsite mitigation that addresses the proposed impacts and reduces the impacts to less-than-significant, again based on the WST status as a California Species of Concern. The HMMP was reviewed by the County of Los Angeles and by the California Department of Fish and Wildlife (CDFW) and approved by each agency prior to the proposed listing by USFWS which would result in the listing of the WST as "Threatened" pursuant to the Federal Endangered Species Act (FESA).

Thus, currently, the WST remains a California Species of Concern and the finding of significance would not change. The new federal status of "Proposed Threatened" would not change the finding that the impacts on the WST from the proposed Project would be significant. Under the CEQA Appendix G Guidelines, the proposed mitigation would remain adequate, and no additional mitigation would be necessary due to the new federal Proposed Rule.

Should the Proposed Rule to list the WST as "Threatened" pursuant to the FESA, be finalized and the WST listed as Threatened, it would be necessary to obtain a "Take" permit pursuant to Section 7 or Section 10 of the FESA to permit relocation of the WST as called for in the HMMP. During processing of the Take permit from USFWS, additional mitigation could be required by USFWS; nevertheless, this would not change the mitigation requirements under CEQA.

APPENDIX I

SUMMARY OF WESTERN SPADEFOOT TOAD SURVEYS IN 2023 AND 2024 AT NORTHLAKE PROJECT SITE, LOS ANGELES COUNTY, CALIFORNIA

TECHNICAL MEMORANDUM

GLENN LUKOS ASSOCIATES
Regulatory Services

PROJECT NUMBER: 11150006WOOD

TO: Thomas DiPrima

FROM: Tony Bomkamp and Stephanie Cashin

DATE: August 6, 2024

SUBJECT: Summary of Western Spadefoot Toad Surveys in 2023 and 2024 at NorthLake Project Site, Los Angeles County, California

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Biologists from Glenn Lukos Associates (GLA) conducted surveys for the western spadefoot toad (*Spea hammondii*) (WST) during the 2022/2023 and 2023/2024 rainfall seasons to document status within areas of potential habitat at the NorthLake Project Site (Project Site). As described below, for each of the survey seasons, WST was detected in three existing features within the Project Site where WST had been detected previously. The occupied features are depicted on Exhibit 1 [Pond Map]. The three features are designated as Cattle Pond, Pond 1, and Pond 2. Exhibit 2 [Site Photographs] depicts representative photographs from both the 2023 and 2024 surveys. Table 1 below summarizes the survey dates, weather, and presence/absence of WST for each of the survey seasons.

Table 1. Summary of Western Spadefoot Surveys

Survey Date	Biologist[1]	Start/End Time	Start/End Temperature (degree F)	Start/End Wind Speed (mph)	Cloud Cover (%)	Western Spadefoot Detected
04/27/2023	JA, SC, JF	0700-1500	65-83	3-5/0-1	Clear	Yes
04/03/2024	SC, CW	0930-1230	64-75	1-2/2-5	Clear	Yes
05/15/2024	SC, CW	1300-1400	70-70	0-5/0-5	Clear	Yes

[1] Jeff Ahrens (JA), Stephanie Cashin (SC), Jason Fitzgibbon (JF), Chris Waterston (CW).

2023 Western Spadefoot Survey Results

On April 27, 2023, GLA biologists, Jeff Ahrens, Stephanie Cashin, and Jason Fitzgibbon, conducted a focused survey for the WST at three previously documented ponded features known to support WST. GLA biologists also inspected potentially suitable habitat for WST when encountered. The 2022-2023 rainfall year was above average measuring 24.06 inches[1]. Above average rainfall damaged access roads within the Project Site and delayed earlier survey efforts to the previously documented

[1] https://dpw.lacounty.gov/wrd/rainfall/

ponded features. However, WST were detected at all three ponded features on April 27, 2023. Details regarding the WST the previously documented ponded features are below.

Cattle Pond

The Cattle Pond is a large shallow basin, which inundates during the rainy season. During the survey, the feature contained mostly open water with bare soil edges and sporadic mulefat (*Baccharis salicifolia*) along the edges [Exhibit 2, Photograph 1 and 2]. On April 27, 2023, the Cattle Pond had dried significantly with remaining surface water measuring 20 meters by 13 meters, eight centimeters deep, on average, and 15 centimeters at the deepest point. Clay was saturated below the surface and measured at least 30 cm in depth. The water was turbid, which made the estimation of WST individuals difficult. WST tadpoles were observed coming up for air at surface and diving into deeper water.

Biologists Stephanie Cashin and Jason Fitzgibbon walked the pond edge to search for WST. While walking the pond edge, WST metamorphs were observed hopping from the edge into vegetation and additional metamorphs were observed emerging from deep soil cracks along the edges [Exhibit 2, Photograph 4]. Gosner stage (Gosner, 1960)[2] was visually estimated and recorded as a range for each cohort. The metamorphs retained a small tail that wrapped close to the body (Gosner stage 44-45). Biologist Jeff Ahrens conducted dip netting near the center to confirm WST presence. Dip netting was conducted for 15 minutes with 25 WST tadpoles (Gosner stage 26-35) observed that appeared to be from the same cohort with all individuals with an estimated length of nine cm. No other amphibian species was detected.

Pond 1

Pond 1 is a shallow round depression measuring approximately ten meters by eight meters with transparent open water, an average of ten centimeters deep with portions up to 30 centimeters. The edges of the pond were vegetated predominately with common spike rush (*Eleocharis marchrostachya*) [Exhibit 2, Photograph 5]. The pond is surrounded primarily by grassland habitat, including annual bromes (*Bromus* spp.) and slender wild oat (*Avena barbata*). The WST population was estimated visually using an average of three counts which were then rounded to the nearest one hundred. An estimated 1,000 WST tadpoles, appearing to be from three cohorts, were detected in Pond 1. Approximately half of this total appeared to be from the oldest and largest cohort measuring approximately 9 cm with some having well developed hind legs (Gosner 31-41). The tadpoles were observed in several dense congregations and others were evenly distributed throughout the pool. Some WST tadpoles were also observed surfacing for air from deeper areas [Exhibit 2, Photograph

[2] Gosner, K. L. (1960) A Simplified Table for Staging Anuarn Embryos and Larvae with Notes on Identification. Herpetologica, 16, 183-190.

6]. Additionally, an estimated 400 non-aquatic metamorphs were detected roaming within the vegetation and emerging from soil cracks of the previously wetted pond edge.

Pond 2

Pond 2 was dry on April 27, 2023. Pond 2 is also a shallow round depression surrounded by grassland and supports patches of common spike rush [Exhibit 2, Photograph 7]. Near the center and presumably the deepest location of the pond, an estimated 400 desiccated WST tadpoles were observed [Exhibit 2, Photograph 8]. Additionally, an estimated 100 WST toadlets, less than 2.5 cm, were observed within and emerging from soil cracks within the depression.

2024 Western Spadefoot Survey Results

On April 3 and May 15, 2024, GLA biologists, Stephanie Cashin and Chris Waterston, conducted a focused survey for the WST at three previously documented ponded features known to support WST (the same features as 2023). The 2023-2024 rainfall year was above average measuring 19.24 inches (*Castaic Fire Station, Los Angeles Public Works*). For a second consecutive year, above average rainfall damaged access roads to the ponded features and delayed earlier survey efforts. As with the 2023 surveys, WST were detected at all three ponded features. No additional features with WST were detected in 2024. Details regarding each of the previously documented occupied features are below.

Cattle Pond

On May 15, 2024, the Cattle Pond was dry, but evidence of ponding during the 2024 rain season was observed with mud visible in the deep soil cracks and cow hoofprints. The pond was walked in meandering transects to detect presence of WST, hydrology, and vegetation cover. No surface water was observed. Approximately 40 WST metamorphs were detected roaming in vegetation and emerging from soil cracks in the depression, suggesting there were likely 100s [Exhibit 2, Photograph 9].

Pond 1

On April 3, 2024, Pond 1 was observed to be inundated to approximately half of the maximum ponding observed in 2023. An approximate six- by five-meter area of shallow, clear, open water that supported patches of common spike rush was observed [Exhibit 2, Photograph 10]. An estimated 600 WST tadpoles from three cohorts were detected in Pond 1 [Exhibit 2, Photograph 11]. The smallest WST tadpoles were similar in size to the co-occurring Baja California treefrog (*Pseudacris hypochondriaca*) tadpoles.

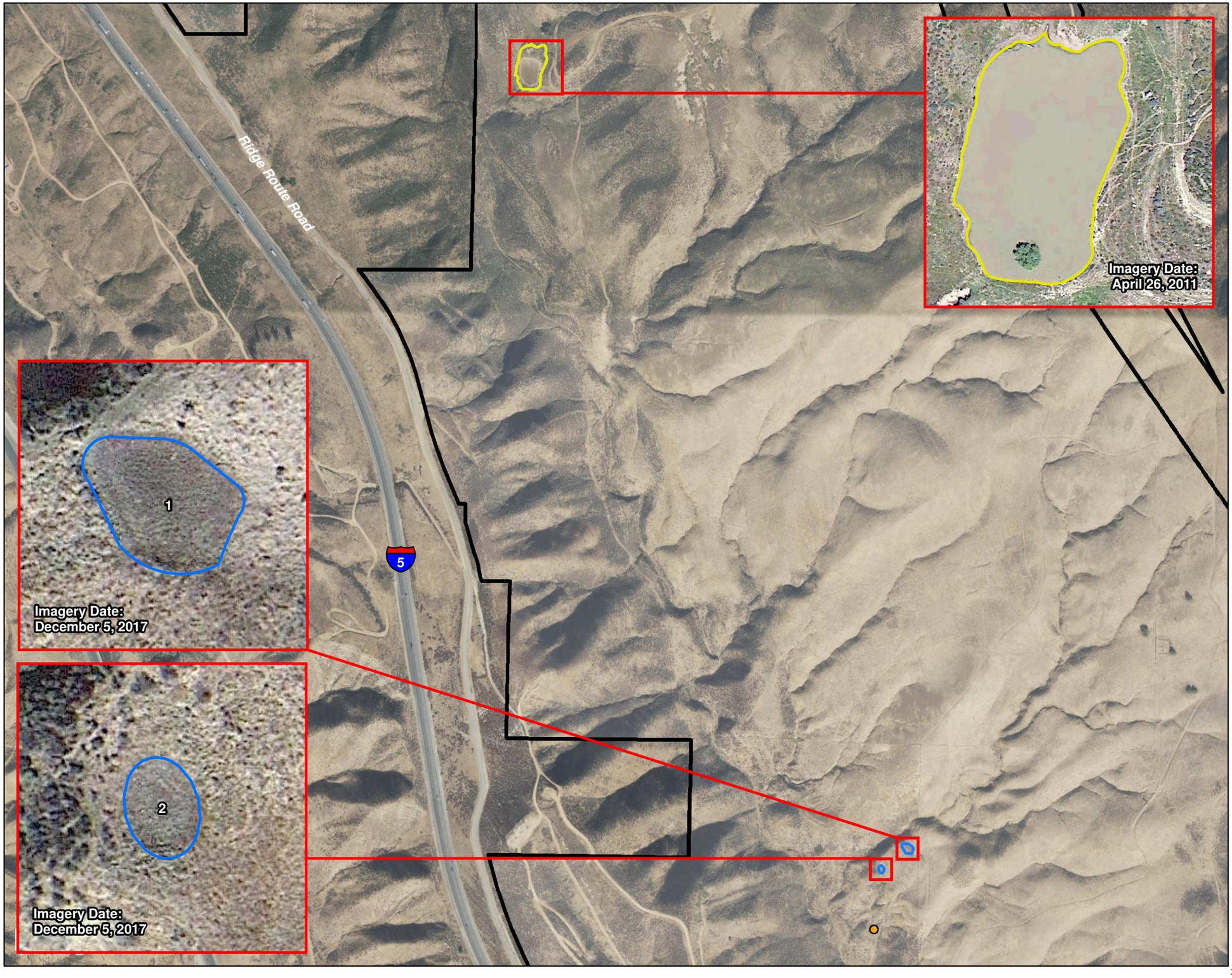
Pond 2

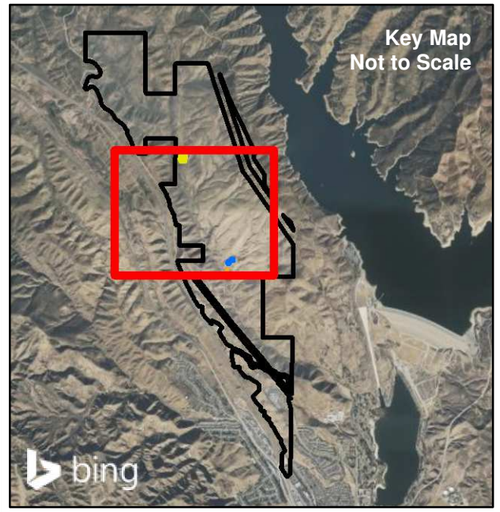
On April 3, 2024, inundation was observed within Pond 2. An approximate six- by five-meter shallow, turbid pond was observed, which supported patches of common spike rush [Exhibit 2, Photograph 12]. An estimated 350 WST tadpoles appearing to be from two cohorts were detected in Pond 2 [Exhibit 2, Photographs 13 and 14]. Approximately 300 of the individuals appeared to be from the oldest and largest cohort, which measured approximately 9 cm. A few individuals were observed to have well developed hind legs (Gosner 31-41). The second, smaller cohort was approximately half the size of the larger cohort at five cm. No other amphibian species were detected in Pond 2.

Discussion and Conclusion

GLA biologists detected WST at three locations during two above average rainfall seasons (2022-2023, 2023-2024). Surveys were delayed due to access issues both years; however, WST were detected at all known locations as documented in *Western Spadefoot Toad (Spea hammondii) Impact Assessment and Habitat Mitigation and Monitoring Plan (GLA April 2024)* during both years. Given the survey delays within the earlier portion of the survey season, population estimates varied between each ponded feature, but consistent detection suggests the populations appear stable at each feature.

The WST population estimates for the Cattle Pond were difficult to quantify as this pond dried faster and earlier in the year than the two smaller ponds and the water was turbid. The detection of WST at the Cattle Pond was low; however, metamorphs were quickly detected during both years. Given the Cattle Pond dries faster than Ponds 1 and 2, WST development may be accelerated in the Cattle Pond. The Cattle Pond is larger than the other two ponds with more soil cracks available for WST refuge; therefore, the number of metamorphs hiding in the cracks is likely much higher than were detected. The detection of WST at Pond 1 yielded the highest consistent detection from 500s to low 1,000s and multiple cohorts were observed co-occurring. Pond 1 appears to remain inundated longer than Pond 2; therefore, it may support a larger population of WST larvae, allowing multiple cohorts to metamorphose. Pond 1 was observed to support multiple cohorts and Baja California treefrog during both years. During the 2024 Pond 2 survey, the WST tadpoles were primarily from one cohort and of similar size to Pond 1's oldest cohort. As mentioned above, Pond 2 appears to dry faster than Pond 1, as it exhibited half the surface area compared to Pond 1 in 2024 and completely dry during the 2023 visit. However, Pond 2 remained inundated long enough, in both years, to produce at least one cohort, given the numerous metamorphs detected in 2023 and the late-stage tadpoles observed in 2024. Although Pond 1 appears to have the ability to support more WST larvae, both ponds are sufficiently proximate to each other to function as a single population that is likely supporting hundreds to low 1,000s of WST metamorphs during above average rainfall years.





Project Location

Cattle Pond: 0.80 acre

Pond
#1: 0.06 acre
#2: 0.02 acre

N

0 275 550 1,100
Feet

1 inch = 550 feet

Coordinate System: State Plane 5 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: May 10, 2022

NORTHLAKE SPECIFIC PLAN

Pond Map

GLENN LUKOS ASSOCIATES

Exhibit 1

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Photograph 1: Depicts the Cattle Pond, facing approximately west, on April 27, 2023.



Photograph 2: Depicts a closer view of wet potion of Cattle Pond, facing approximately north, on April 27, 2023.



Photograph 3: Depicts western spadefoot (*Spea hammondii*) metamorph with tail (Gosner 44), approximately 2.5 cm long, detected in Cattle Pond and placed temporarily into white basin for photograph then released on April 27, 2023.



Photograph 4: Depicts western spadefoot metamorphs emerging from soil crack of Cattle Pond on April 27, 2023.



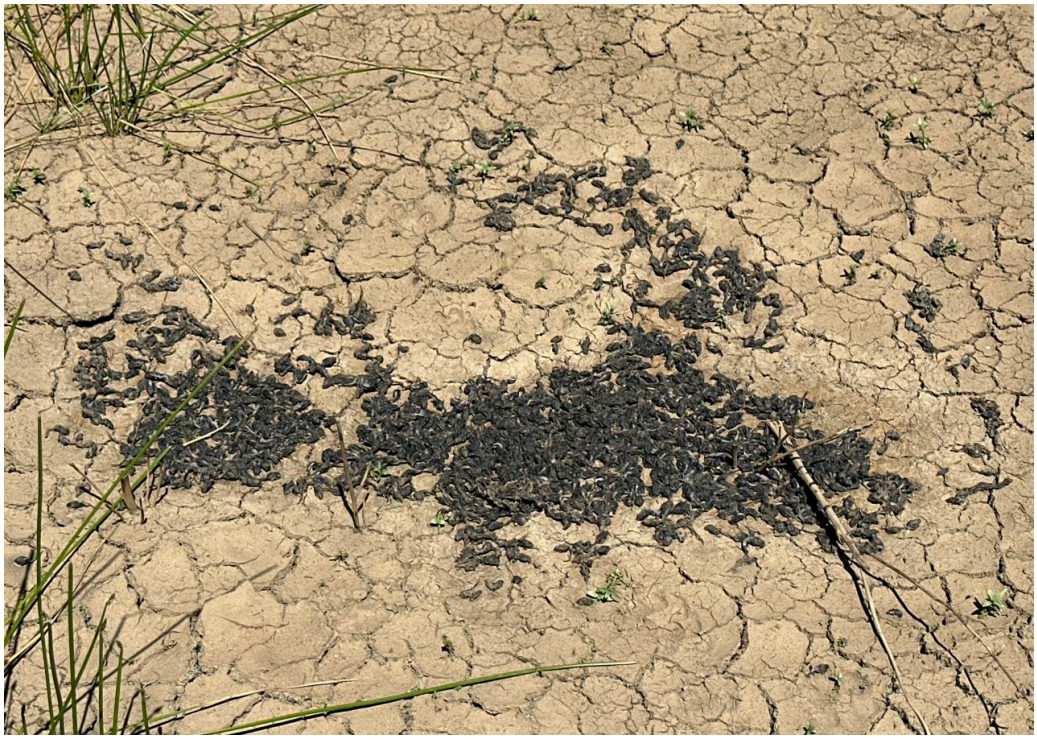
Photograph 5: Depicts Pond 1 with transparent open water and emergent common spike rush (*Eleocharis machrostachya*) on April 27, 2023.



Photograph 6: Depicts western spadefoot in Pond 1 with an estimated 100, 9 cm long tadepoles (Gosner 36-39) and 12 metamorph (Gosner 42-44). Additionally, 300-500 non-aquatic metamorphs (Gosner 44-46) were free moving in vegetation or emerging from soil cracks around pond on April 27, 2023.



Photograph 7: Depicts Pond 2 dry on April 27, 2023.



Photograph 8: Depicts dead western spadefoot tadpoles near center of Pond 2 on April 27, 2023. Additionally, approximately 100 non-aquatic metamorphs (Gosner 44-46) were free moving in vegetation or emerging from soil cracks around pond.



Photograph 9: Depicts Western spadefoot metamorph hiding in a soil crack within the Cattle Pond on May 25, 2024



Photograph 10: Depicts Pond 1 on April 3, 2024.



Photograph 11: Depicts dozens of western spadefoot tadpoles (Gosnar 31-41) in Pool 1 on April 3, 2024. Three cohorts of spadefoot tadpoles were observed and Baja California treefrog (*Pseudacris hypochondriaca*) tadpoles were observed.



Photograph 12: Depicts dozens of western spadefoot tadpoles in Pond 2 on April 3, 2024.



Photograph 13: Depicts western spadefoot tadpoles congregating at pond edge in warn shallow water on April 3, 2024



Photograph 14: Depicts an additional view of western spadefoot tadpoles in Pond 1 on April 3, 2024

APPENDIX J

CROTCH'S BUMBLEBEE SURVEY RESULTS, IMPACTS AND MITIGATION FOR NORTHLAKE PROJECT, LOS ANGELES COUNTY BY GLENN LUKOS ASSOCIATES, INC, DATED JULY 2024

TECHNICAL MEMORANDUM

GLENN LUKOS ASSOCIATES
Regulatory Services

PROJECT NUMBER: 1115-6WOOD

TO: Tom DiPrima

FROM: Tony Bomkamp

DATE: July 26, 2024

SUBJECT: Crotch's Bumblebee Survey Results, Impacts and Mitigation for NorthLake Project, Los Angeles County

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Biologists from Glenn Lukos Associates (GLA) conducted focused surveys for the Crotch's Bumblebee (*Bombus crotchii*) (CBB) on the NorthLake project site [Project site; Exhibits 1 and 2], including areas proposed for development and areas within the NorthLake open space that also included adjacent parcels owned by NorthLake that have been identified for mitigation through establishment of a long-term conservation mechanism. Exhibit 3 depicts the proposed development area and areas of onsite and offsite open space, wherein the offsite open space is under the ownership of NorthLake.

Background

The CBB was petitioned to the State of California in 2018 for listing of the CBB as endangered under the California Endangered Species Act (CESA). The Fish and Game Commission advanced the species to "Candidate" status (for listing as endangered) under the CESA in June 2019. The CBB has a historic range that covers the portions of southern and central California including the NorthLake project site. Subsequently, the candidacy of the CBB was challenged in court, and in November 2020 the Sacramento County Superior Court ruled that insects are not eligible for listing under CESA. The Superior Court's ruling was subject to a subsequent legal challenge regarding CESA's definition of a fish as "a wild fish, mollusk, crustacean, invertebrate, amphibian, or part, spawn, or ovum of any of those animals" and was eventually overruled by the California Court of Appeal on May 31, 2022, making the CBB subject to protection under CESA.[1]

[1] *Almond Alliance of California v. Fish and Game Commission* (2022) 79 Cal.App.5th 337.

Invertebrates

The CBB is a State Candidate Endangered species[2] that inhabits open grassland and scrub habitats. This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California. This species was historically common in the Central Valley of California, but according to the listing package now appears to be absent from most of it, especially in the center of its historic range.

Bumblebees, including CBB, are generalist foragers and have been reported visiting a wide variety of flowering plants. CBB has a very short tongue, and thus is best suited to forage at open flowers with short corollas. The plant families commonly associated with CBB observations or collections from California include Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae. Plants in the genera *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia* are common food plants. These floral associations do not necessarily represent CBB's only preferred plants over other flowering plants, but rather may represent the prevalence of these flowers in the landscape where this species occurs.

Bumblebees are social insects that live in colonies composed of a queen, workers, and reproductive individuals (males and new queens). Colonies are annual and only the new, mated queens overwinter. These queens emerge from hibernation in the early spring and immediately start foraging for pollen and nectar and begin to search for a nest site. Nests are often located underground in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees. Initially, the queen does the foraging and care for the colony until the first workers emerge and assist with these duties. Bumblebees collect both nectar and pollen of the plants that they pollinate. In general, bumblebees forage from a diversity of plants, although individual species can vary greatly in their plant preferences, largely due to differences in tongue length. Bumblebees are well-known to engage in "buzz pollination," a very effective foraging technique in which they sonicate the flowers to vibrate the pollen loose from the anthers.

As addressed in more detail below, GLA biologists conducted surveys for CBB within areas of suitable habitat within the NorthLake Project site. The CBB was detected during the surveys at a variety of locations across the site, including within areas proposed for development and within areas proposed for avoidance that will be maintained as open space subject to permanent preservation. Exhibit 1 shows the Project site boundaries, Project development area and areas where CBB were detected.

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[2] The California Fish and Game Commission voted to designate CBB as Candidate Endangered species on June 12, 2019. That designation was placed on hold during the litigation. Following the Court of Appeal ruling, the candidacy was reinstated on September 30, 2022. The final determination is pending.

Methodology

Surveys were conducted by GLA biologists experienced in conducting focused surveys for the CBB in areas of suitable habitat within the proposed development area as well as areas of onsite and offsite open space as depicted on Exhibit 1.

GLA biologists performed focused surveys for the CBB within suitable habitat areas within the NorthLake Project site. Surveys followed a protocol developed by GLA which largely encompasses the CBB flight season (March to September) when the queen, daughters, males and new queens are generally active. Surveys are preferably spaced out throughout the flight season to take advantage of different blooming periods and floral resources. The survey protocol recommends that individual biologists conduct three focused surveys during the flight season, beginning within the three acres of that contain the highest quality floral resources per every 50 acres of potential suitable habitat. Based on previous mapping by BonTerra[3], the Project site supports up to 1001.8 acres of potential suitable habitat, and due to the overall size of the Project site and distance between suitable habitat areas, four different biologists conducted three focused surveys each, with two or three biologists during each survey visit. In addition to the focused surveys listed in Table 1 below, CBB were observed on April 3, 2024 during other biological surveys conducted by GLA.

During each focused survey, two sampling approaches were implemented. During the first phase, the surveyor conducted one hour of visual survey effort within the three-acre flowering area identified as supporting the highest quality habitat as determined by the surveyor. If CBB were not detected during the first hour of searching, a second hour of survey effort was conducted. During the second hour, the surveyor could either choose to resurvey the same flowering area (if any *Bombus* species were detected prior) or the surveyor could choose to conduct a second hour of searching within another high quality three-acre flowering area on site. If CBB were not detected during the second hour of the survey effort, the second survey phase was be implemented, in which the surveyor surveyed the best additional flowering areas throughout the site, as deemed appropriate. The surveyor scanned suitable flowering areas for bumblebee activity and focused on those areas. Minimal time was spent in lesser quality habitat. Depending on the size of the habitat area, the opportunistic survey effort generally did not exceed one hour. In addition, GLA biologists documented bumblebee activity incidentally during all other biological surveys.

Focused surveys were conducted by GLA biologists Jason Fitzgibbon, Chris Waterston, Stephanie Cashin, and Ian Rhodes on May 15, May 16, May 23 and June 27, 2024. Pursuant to the survey guidelines, the surveys were conducted during daytime hours when floral resources

[3] BonTerra. December 2015. Biological Technical Assessment Report, NorthLake Specific Plan Development Project, Prepare for Woodridge Capital Partners, LLC 1999 Avenue of the Stars Suite 2850 Los Angeles, California 90067.

were in bloom and when it was sufficiently warm for bumblebee activity. Weather conditions during the surveys were conducive to a high level of bee activity. Table 1 summarizes the CBB survey visits. The results of the CBB surveys are documented below. Resumes for each of the Biologists are attached as Appendix A with specific qualifications for CBB included with the resumes and a GLA qualifications memo included at the end of Appendix A.

Table 1. Summary of Crotch's Bumblebee Surveys

Survey Date	Biologist[1]	Start/End Time	Start/End Temperature (degree F)	Start/End Wind Speed (mph)	Cloud Cover (%)
05/15/24	SC/CW	1400/1700	64/68	2-5/5-10	Clear
05/16/24	SC/CW	0900/1200	65/70	2-4/2-5	Clear
05/23/24	SC/IR	1050/1415	64/73	1-2/2-12	Cloudy
06/27/24	JF/IR	0620/0915	69/84	0-2/2-5	Clear
[1] Jason Fitzgibbon (JF), Chris Waterston (CW), Stephanie Cashin (SC), Ian Rhodes (IR).					

Results

Crotch bumblebees were detected within the proposed development areas and within proposed open space areas as depicted on Exhibit 1. Based on previous vegetation mapping for the NorthLake Project site conducted for the Biological Technical Assessment Report (BTAR) prepared by BonTerra (2015), the site contains areas of sage scrub communities, native grassland communities and wildflower fields that provide suitable nectar sources and therefore considered suitable habitat for the CBB. As recorded in the BTAR and depicted on Exhibit 2 the following vegetation associations were confirmed by GLA to exhibit suitable conditions based on a combination of Crotch bumblebee survey observations and the presence of suitable nectar plants.

Impacts

Project grading will impact the following vegetation alliances that support or could potentially support CBB based on the presence of suitable floral resources.

Sage Scrub Communities

A total of 634.70 acres of sage scrub would be impacted by Project implementation, which includes Purple sage scrub, California sagebrush–California buckwheat scrub, Black sage scrub, California sagebrush–California buckwheat scrub/Foothill needlegrass grassland, California sagebrush–California buckwheat scrub/California annual grassland, and the burned sage scrub areas: burned Purple sage scrub, burned California sagebrush–California buckwheat scrub, burned Black sage scrub, and burned California sagebrush–California buckwheat scrub/California annual grassland. Impacts on these vegetation types

would be considered significant due to the loss of this vegetation type in southern California and the potential for this habitat to support special status species.

Native Grassland Communities
A total of 24.23 acres of Foothill needlegrass grassland and burned Foothill needle grass grassland would be impacted by Project implementation. Impacts on this vegetation type would be considered significant due to the limited distribution of this vegetation type in California.

California Annual Grassland/Wildflower Fields
A total of 342.85 acres of California annual grassland/Wildflower fields would be impacted by Project implementation. Impacts on California annual grassland/Wildflower fields would be considered adverse and potentially significant because of the density and diversity of native plants found in this vegetation type and because of the general lack of similar areas in the Project vicinity.

Mitigation

Based on the detection of CBB within the NorthLake development area, it is expected that an Incidental Take Permit will be needed to authorize incidental take of CBB during grading. Mitigation for direct impacts to CBB and associated habitat will be fulfilled through compensatory mitigation at a minimum 2:1 suitable habitat that provides replacement of equal functions and values to those impacted by the NorthLake project, or as otherwise determined through the Incidental Take Permit process. Mitigation will be accomplished either through a combination of onsite conservation, offsite conservation on adjacent NorthLake owned lands, and/or through a CDFW-approved mitigation bank. If mitigation is not purchased through a mitigation bank, and lands are conserved separately, a cost estimate will be prepared to estimate the initial start-up costs and ongoing annual costs of management activities for the management of the conservation easement area(s) in perpetuity. The funding source will be in the form of an endowment to help the qualified natural lands management entity that is ultimately selected to hold the conservation easement(s). The endowment amount will be established following the completion of a project-specific Property Analysis Record to calculate the costs of in-perpetuity land management. The Property Analysis Record will consider all management activities required in the Incidental Take Permit to fulfill the requirements of the conservation easement(s), which are currently in review and development.

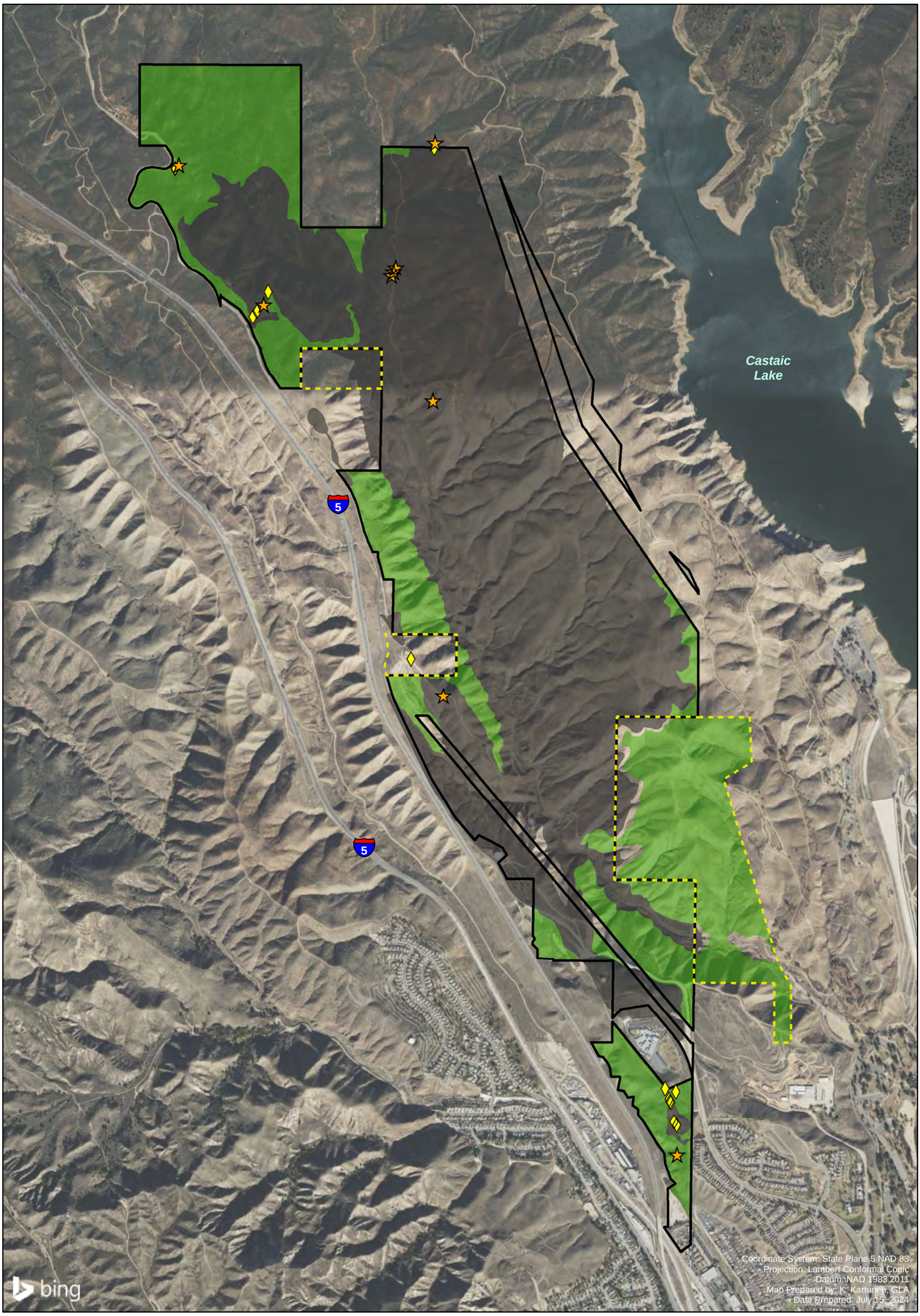
Based on areas of suitable habitat, the project would provide 337.55 acres of mitigation within the onsite conservation areas and 156.66 acres of conservation on adjacent NorthLake ownership for a total of 492.2 acres of preservation as depicted on Exhibit 3. Thus, based on impacts to up to 1,001.8 acres of suitable habitat which supports or potentially supports CBB, the mitigation ratio of 2:1 would be 2,003.6 acres. To achieve 2:1 mitigation, NorthLake will provide approximately 337.5 acres onsite, 156.7 acres on

NorthLake-owned offsite property, and obtain 1,509.4 acres from a CDFW-approved mitigation bank for the CBB or through purchase and long-term conservation of suitable habitat, or a combination of the two options to account for the remainder. Appendix B is a Mitigation Feasibility Assessment that includes candidate properties with suitable habitat such as coastal sage scrub, chaparral, and native grasslands that contain suitable habitat for CBB.

As noted, the proposed mitigation will correspond to the requirements of the NorthLake Specific Plan Final Supplemental EIR (FSEIR) that were set forth in the previous approvals. With the implementation of the previously approved proposed mitigation, significant impacts on Crotch's bumblebee would be reduced to less-than-significant consistent with the FSEIR measures excerpted below.

> **Coastal Sage Scrub**
> The loss of sage scrub habitat within the impact area is considered a significant impact. Sage scrub habitat shall be preserved, restored, or enhanced on site and/or off site at a ratio to be determined by the County of Los Angeles Department of Regional Planning (LACDRP). The ratio shall be no less than 2:1 for habitat restoration or preservation. Habitat enhancement is the improvement of existing, disturbed native habitat areas through the removal of exotic plant species, the addition of native plants and/or seeds, or other measures. The mitigation ratio for habitat enhancement shall depend on the initial quality of the habitat area to be enhanced and would be determined by the Project Applicant and the LACDRP. Sage scrub habitat restoration/enhancement implementation shall begin not more than one year following project impacts to this habitat type.
>
> **Needlegrass Grassland**
> The loss of foothill needle grass grassland within the impact area is considered to be a significant impact. Foothill needle grass grassland shall be preserved, restored, or enhanced on site and/or off site at a ratio to be determined by the County of Los Angeles Department of Regional Planning (LACDRP). Habitat enhancement is the improvement of existing, disturbed native habitat areas through the removal of exotic plant species, the addition of native plants and/or seeds, or other measures. The ratio shall be no less than 2:1 for habitat restoration or preservation. The mitigation ratio for habitat enhancement shall depend on the initial quality of the habitat area to be enhanced, and would be determined by the project applicant and the LACDRP.
>
> **Wildflower Fields**
> The loss of California annual grassland/wildflower fields within the impact area is considered to be a significant impact. California annual grassland/wildflower fields shall be preserved, restored, or enhanced on site and/or off site at a

ratio to be determined by the County of Los Angeles Department of Regional Planning (LACDRP). Habitat enhancement is the improvement of existing, disturbed native habitat areas through the removal of exotic plant species, the addition of native plants and/or seeds, or other measures.



Project - Onsite

Project - Offsite

Development Footprint

Proposed CBB Conservation Area

Crotch's Bumblebee (9)

Other Bee Species (13)

N

0 750 1,500 3,000

Feet

1 inch = 1,500 feet

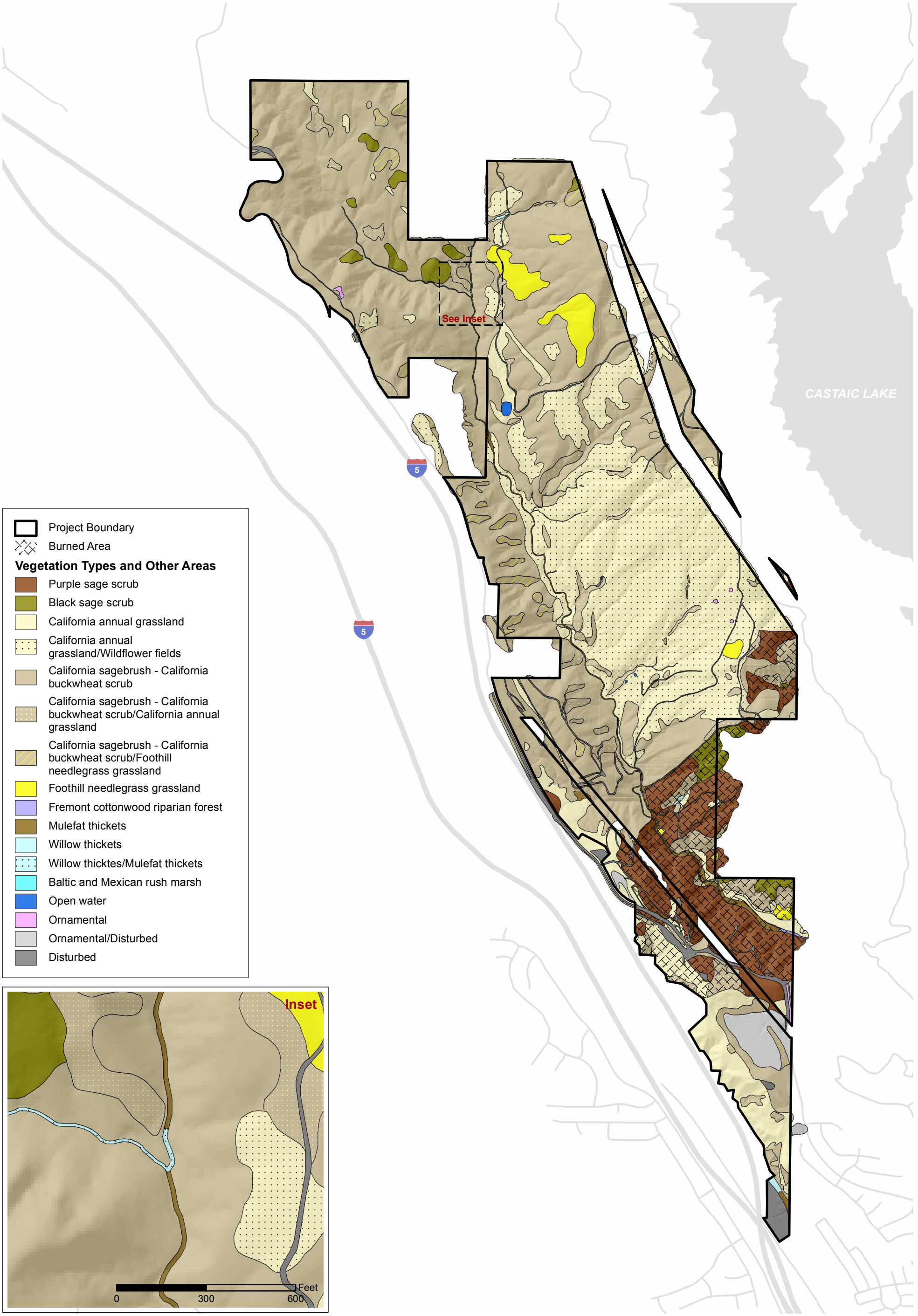
NORTHLAKE SPECIFIC PLAN

Crotch's Bumblebee Map

GLENN LUKOS ASSOCIATES

Exhibit 1

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Vegetation Types and Other Areas

Exhibit 2

NorthLake Specific Plan

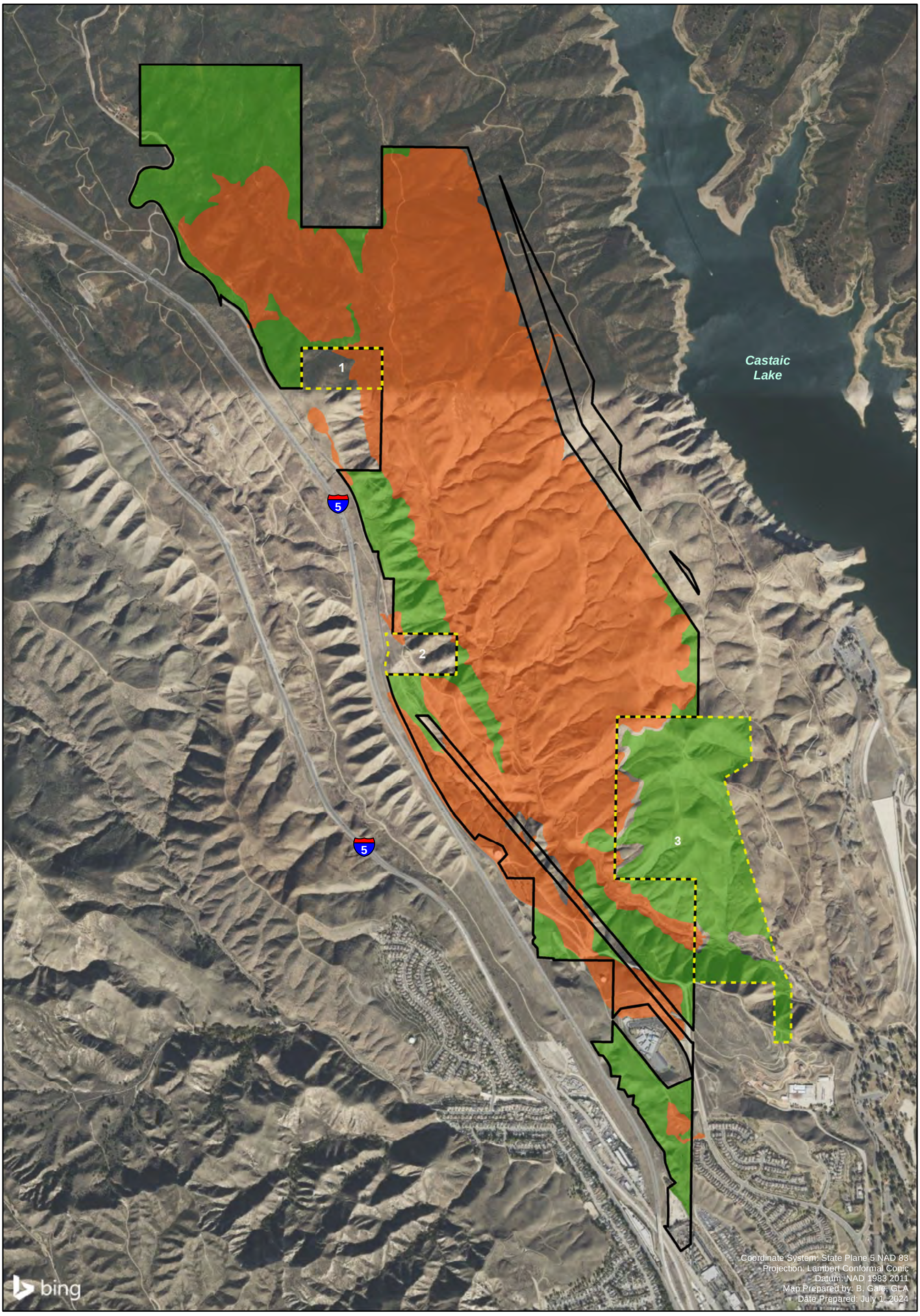
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1,500 750 0 1,500 Feet

BonTerra PSOMAS

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Project - Onsite

Project - Offsite

Development Footprint

Proposed CBB
Conservation Area (492.21 ac.)

N

0 750 1,500 3,000

Feet

1 inch = 1,500 feet

NORTHLAKE SPECIFIC PLAN

CBB Conservation Area

GLENN LUKOS ASSOCIATES

Exhibit 3

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APPENDIX A
BIOLOGIST QUALIFICATIONS

STEPHANIE CASHIN

Associate Biologist

YEARS OF EXPERIENCE

Professional start date: 2000

Years at GLA: 10

EDUCATION

MS, Environmental Studies, California State University, Fullerton, 2012

BS, Biology with Minor in Zoology, California Polytechnic State University, Pomona, 1999

PERMITS AND CERTIFICATIONS

USFWS 10(a)(1)(A) Recovery Permit #TE20280D-0 for vernal pool branchiopods (including Conservancy fairy shrimp, longhorn fairy shrimp, Riverside fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp)

TRAININGS ATTENDED

California Rare Bumblebee
The Wildlife Society-Western Section
Via Zoom, 2021

Advanced Bat Acoustics Workshop
The Wildlife Society-Western Section
Via Zoom, 2021

Intro Desert Tortoise Field Techniques
The Desert Tortoise Council
Via Zoom, 2020

Bat Acoustics Workshop
The Wildlife Society-Western Section
James Reserve, Idyllwild, 2018

CONTINUED (PAGE 4)

PROFESSIONAL SUMMARY

Stephanie Cashin is an Associate Biologist with expertise in field biology, herpetology, biological monitoring, and habitat restoration. Stephanie has served as a Project Biologist throughout Southern California and specializes in conducting focused wildlife surveys, including conducting habitat assessments and focused bat surveys, focused protocol surveys for arroyo toad, western spadefoot toad, southern western pond turtle, desert tortoise, legless lizard, least Bell's vireo, burrowing owl, and general biological surveys for California amphibian and reptile species of special concern in Orange, Los Angeles, San Bernardino, Ventura, and Riverside Counties. She has assisted in several vernal pool inventory surveys for species including listed fairy shrimp and western spadefoot toad. She has led and assisted in numerous focused rare plant surveys including many-stemmed dudleya, Blochman's dudleya, Verity's dudleya, intermediate mariposa lily, Catalina mariposa lily, slender mariposa lily, southern tarplant, Palmer's grapplinghook, and short-joint beavertail cactus. She has performed construction monitoring with a competent understanding of ensuring compliance with resource agency permit conditions while maintaining the benefit of natural resources within or adjacent to existing development areas.

Stephanie's strengths in working with complex projects include her extensive scientific background and analytical capacity. She is extremely skilled in collecting and organizing data and finding resolution to issues requiring direct action. Stephanie's biological experience spans 16 years.

SELECTED PROJECT EXPERIENCE

DEVELOPMENT

THE SAN JACINTO RIVER MASTER DRAINAGE PLAN, STAGE 3 — RIVERSIDE COUNTY, CALIFORNIA

Assisting Project Biologist to conduct focused wet season fairy shrimp surveys in support of project permitting.

MEAD VALLEY MINE PROJECT — RIVERSIDE COUNTY, CALIFORNIA

Assisting Project Biologist to conduct dry season fairy shrimp soil sample collection; conduct focused burrowing owl, rare plant, and acoustic bat surveys in support of project permitting.

ADOBE SPRINGS PROJECT — MURRIETA, CALIFORNIA

Assisting Project Biologist. Conduct focused visual presence/absence survey for southern western pond turtle (Emys marmorata pallida) for two seasons in support of project permitting. Assist with implementation of pond turtle avoidance minimization plan including installation of turtle protection fencing, turtle exclusion, preconstruction surveys and monitoring.

LOS VALLES PROJECT — LOS ANAGELES COUNTY, CALIFORNIA

Serving as Project Biologist. Prepare and implement the western spadefoot habitat mitigation creation plan including pool creation monitoring, project site surveys, western spadefoot translocation. Coordinate with CDFW in support of plan approval.

OCTA PRESERVES — ORANGE COUNTY TRANSPOTATION AUTHORITY PROPERTIES, CALIFORNIA

Assisting Project Biologist with stewardship monitoring, California gnatcatcher and cactus wren surveys, focused reptile surveys, southern cactus scrub mapping, invasive species mapping and habitat restoration monitoring.

MONTEBELLO HILLS DEVELOPMENT PROJECT — MONTEBELLO, CALIFORNIA

Assisting Project Biologist. Provide biological support and conducting focused acoustic bat surveys, construction monitoring, and preconstruction surveys for California legless lizard, Crotch bumblebee, and cactus wren.

SPECIAL AREA MANAGEMENT PLAN, VARIOUS PLANNING AREAS, AND INFRASTRUCTURE — RANCHO MISSION VIEJO; SAN JUAN CAPISTRANO, CALIFORNIA

Serving as Project Biologist. Provide biological support relevant to California Environmental Quality Act (CEQA) and National Environmental Policy Act in addition to regulatory and mitigation support. Conduct pre-construction and biological monitoring. Assist in designing and implementing protocols for a rare plant translocation program including for many-stemmed dudleya, intermediate mariposa lily, thread-leaved brodiaea, and southern tarplant. Implement management action plan rare plant monitoring for southern tarplant, thread-leaved brodiaea, Coulter's saltbush, and many-stemmed dudleya. Implement mitigation monitoring plan, identify new site receptor locations and manage translocation for many-stemmed dudleya. Collect rare plant seed and harvest rare plants for use in restoration. Coordinate with the landscape contractor. Conduct qualitative and quantitative monitoring surveys, prepare annual monitoring reports, and photo exhibits documenting findings.

TAPIA CANYON DEVELOPMENT PROJECT — SANTA CLARITA, CALIFORNIA

Serving as Project Biologist. Provide biological and regulatory support specifically for preparation of biological technical and a jurisdictional delineation reports to satisfy CEQA requirements. Conduct general biological surveys, vegetation mapping, focused plant surveys including for slender mariposa lily and Pierson's morning glory, focused surveys for western spadefoot toad, least Bell's vireo, and burrowing owl, and jurisdictional delineation. Prepare a biological technical report and jurisdictional delineation report.

SKYLINE RANCH DEVELOPMENT PROJECT — PARDEE HOMES; UNINCORPORATED LOS ANGELES COUNTY, CALIFORNIA

Serving as Project Biologist. Conduct focused burrowing owl surveys and coordinate with the project team regarding preparation of burrowing owl relocation and protection plans. Conduct coastal sage scrub vegetation mapping; overseeing coastal sage scrub maintenance activities; and conducting nesting bird surveys, coordinate, conduct annual monitoring and reporting for Plum Canyon Habitat Mitigation Plan.

SPRING CANYON DEVELOPMENT PROJECT — RAINTREE INVESTMENT CORPORATION; SANTA CLARITA, CALIFORNIA

Serving as Project Biologist and Assistant Habitat Restoration Specialist. Support preparation the HMMP and conduct mariposa lily surveys to document population locations, assess phenology, and flag populations for translocation and harvest. Conduct mitigation monitoring and preparation of annual reports for slender mariposa lily. Conduct holly leaf cherry woodland habitat assessment mapping. Conduct focused arroyo toad surveys in support of project permitting. Conduct burrowing owl and reptile preconstruction surveys.

NBC UNIVERSAL PROJECTS — NBC UNIVERSAL; UNIVERSAL CITY, CALIFORNIA

Serving as Project Biologist. Provide biological support services for multiple NBC Universal projects. Attend pre-construction meetings and perform pre-construction surveys. Conduct nesting bird and bat surveys and nest monitoring. Prepare reports documenting findings. Perform habitat assessments for nesting birds, reptiles, and various special-status plant and wildlife species. Prepare biological assessments and various mitigation compliance letters. Coordinate with various project teams.

LAX/EL SEGUNDO DUNES SENSITIVE HABITAT SUPPORT PROJECTS FOR LOS ANGELES WORLD AIRPORTS — CDM SMITH; LOS ANGELES, CALIFORNIA

Serving as Project Biologist. Provide support services for multiple projects. Conduct sensitive habitat pre-construction meeting, biological construction monitoring, conduct pre-construction nesting bird surveys, rare plant mitigation monitoring and reporting. Review construction permits and perform construction monitoring. Prepare compliance and completion memoranda, photo exhibits, and a Regional Water Quality Control Board annual monitoring report. Outside of the abovementioned scope, GLA additionally provided task management, initial technical support, and regulatory support; conducted burrowing owl, south cost branching phacelia, and Lewis' evening primrose surveys; and developed and implemented contractor training, oversee south coast branching phacelia restoration monitoring, conduct contractor training and biological monitoring within the El Segundo Dunes Blue Butterfly Reserve.

NEWPORT BANNING RANCH PROJECT — NEWPORT BANNING RANCH, LLC; NEWPORT BEACH, CALIFORNIA

Serving as Project Biologist and Assistant Habitat Restoration Specialist. Conduct biological work required for CEQA authorization including vegetation mapping; general biological surveys; rare plant surveys; and focused least Bell's vireo, cactus wren, raptor, burrowing owl surveys. Conduct qualitative and quantitative monitoring to assess germination of hand-seeded species, establishment of native container plantings, natural recruitment, and presence of non-native species. Prepare memoranda, reports, and exhibits. Conduct data analyses and report documented findings to the client and regulatory agencies including the CCC. The mitigation areas are exceeding 5-year success criteria.

THE CANYON AT PEACE PARK PROJECT — THE CANYON AT PEACE PARK; MALIBU, CALIFORNIA

Serving as Project Biologist. Monitor demolition of on-site structures in preparation for native habitat restoration. Conduct biological monitoring including for nesting birds and biological surveys pertaining to potential environmentally sensitive habitat areas. Perform focused raptor surveys. Prepare a vegetation map, biological technical report, biological memoranda, and photo exhibits for review by project attorney and California Coastal Commission (CCC). Conduct qualitative and quantitative monitoring surveys of restoration areas.

JOHN WAYNE GULCH AND SUNSET RIDGE PARK PROJECTS — CITY OF NEWPORT BEACH; NEWPORT BEACH, CALIFORNIA

Serving as Assistant Habitat Restoration Specialist. Provide habitat restoration support for the 0.48-acre John Wayne Gulch and 1.5-acre Sunset Ridge Park mitigation sites. Conduct qualitative and quantitative monitoring to assess establishment of native plantings, natural recruitment, and presence of non-natives. Prepare memoranda, reports, and exhibits. Conduct data analyses and report documented findings to the client and regulatory agencies including the CCC. Both mitigation sites are exceeding 5-year success criteria.

GOLDEN VALLEY RANCH PROJECT — TRIPOINTE GROUP; SANTA CLARITA, CALIFORNIA

Serving as Project Biologist and Assistant Habitat Restoration Specialist. Provide regulatory, biological, and habitat restoration support. Attend site meeting to review riparian mitigation site progress as well as a worker education meeting. Coordinate with the landscape contractor regarding weed abatement progress. Prepare a riparian mitigation plant palette, seed mix for riparian and alluvial mitigation areas, and mitigation area exhibit. Maintain a record of site photos.

TRANSPORTATION

PARKS, TRAILS, AND OPEN SPACE

ENERGY

WATER

EMPLOYMENT HISTORY

Glenn Lukos Associates. Associate Biologist. Lake Forest, California. 2013 – Present.

Fullerton College. Laboratory Manager-Biological Sciences. Fullerton, California. 2000 – 2013.

San Bernardino County Museum, Countywide Biodiversity Census, Herpetology Team Wildlife Biologist, San Bernardino County, California. March to August-2000.

VOLUNTEERING

Assist USGS biologists over many years and at multiple locations with western pond turtle trapping and seining, arroyo toad and western spadefoot surveys.

ADDITONAL WORKSHOPS

California Fairy and Tadpole Shrimp Identification Class and Test, Mary Schug Belk, San Diego, 2017

Flat-tailed horned lizard, Biological Monitor Training, BLM El Centro Field Office, 2017

Rare Pond Species Workshop, Laguna de Santa Rosa Foundation, 2016

As part of her Master's project, Ms. Cashin studied wildlife movement in an urban environment using camera trapping and track stations. Prior to working at GLA, Ms. Cashin managed a community college biological laboratory and teaching museum. Additionally, Ms. Cashin was a staff herpetology field biologist for the San Bernardino County Museum.

ADDITIONAL TRAININGS ATTENED (NOT ON PAGE 1)

Vernal Pool Branchiopods: Field Workshop, The Wildlife Society-Western Section, Sacramento, 2018

Wetland Delineation Course, Wetland Training Institute, 2022

CBB Qualifications

Stephanie Cashin is a Glenn Lukos Associates (GLA) Senior Wildlife Biologist with 11 years of experience conducting biological surveys for special-status floral and faunal species and habitat resources. Stephanie Cashin has a broad zoological and ecological background and continued to expand bumble bee experience through independent study and formal technical workshops. Stephanie Cashin has conducted visual focused surveys for Crotch's bumble bee (CBB), including the identification of other Bombus.species, beginning 2020 to present. GLA developed and conducts a visual methodology approved by the California Department of Fish and Wildlife in 2020, which was derived from the USFWS rusty-patched bumble bee protocol (USFWS, 2019) and the Xerces Society Bumble Bee method. Beginning in 2024, the CDFW Survey Considerations for CESA Candidate Bumble Bee Species (CDFW, 2023) guidelines are incorporated into the GLA visual survey protocol. Stephanie Cashin has detected CBB in a variety of habitats throughout southern California, including coast dune, coastal sage scrub, chaparral, grassland, meadow, and oak woodland. A summary of focused survey and incidental detection locations are listed below:

Focused Survey Locations:
Tujunga, Los Angeles County, 2024 - Crotch's bumble bee detected
Jurupa Valley, Riverside County, 2024 - Crotch's bumble bee detected
Lake Elsinore, Riverside County, 2024 - Crotch's bumble bee detected
Brea, Orange County, 2024 - Crotch's bumble bee detected
Castaic, Los Angeles County, 2024 - Crotch's bumble bee detected
La Habra, Orange County, 2023
Corona, Riverside County, June 2020 - Crotch's bumble bee detected
Calimesa, Riverside County, May 2020 and May 2021 - Crotch's bumble bee detected
Lake Hughes, Los Angeles County, July 2020 – Crotch's bumble bee detected
Carbon Canyon, Orange County, July 2020 – Crotch's bumble bee detected
Camarillo, Ventura County, 2020
Montebello, Los Angeles County, 2020 and 2021

Incidental Crotch's Bumble Bee Detection Locations:
Carbon Canyon, Orange County, June 2023
San Juan Capistrano, Orange County, May 2023.
Castaic, Los Angeles County, May 2023
Newhall, Los Angeles, April 2022
Trabuco Canyon, Orange County 2021
Castaic, Los Angeles County, June 2020
El Segundo, Los Angeles County, May 2020
Irvine, Orange County, April 2020

Technical Training:
California Bumble Bee Atlas 2024, Completed Volunteer Quiz and Named on Atlas SCP for Volunteer Field Surveys
California Bumble Bee Atlas Training 2024, Virtual Attendance, Xerces Society, March 18, 2024
Identifying Male Bumble Bees in Western North America, Virtual Attendance, Xerces Society, December 6, 2023
Field Training Workshop for California Bumble Bee Atlas Volunteers– Los Angeles Arboretum, Xerces Society, May 20, 2023
Bumble Bee Identification (Females) for Bumble Bee Atlas Volunteers, Virtual Attendance, Xerces Society, Fall 2021
California Rare Bumblebee Workshop, The Wildlife Society-Western Section, Virtual Attendance, May 2021
Los Angeles Natural History Museum, Bumble Bee Collection-Independent Study, February 2020
Entomology (CalPolyPomona, 1998)

Invertebrate Zoology (CalPolyPomona, 1998)
General Zoology (FullertonCollege, 1996)

CBB_quals_scashin2024

JASON FITZGIBBON

Associate Biologist

YEARS OF EXPERIENCE

Professional start date: 2011

Years at GLA: 7

EDUCATION

MS, Environmental Studies,
California State University, Fullerton, 2013

BS, Biology,
California State University, Long Beach, 2008

TRAININGS ATTENDED

Wetland Delineation Course,
Wetland Training Institute, 2022

California Rare Bumblebee
The Wildlife Society-Western Section, 2021

Rare Pond Species Workshop,
Laguna de Santa Rosa Foundation, 2016

Wetland Delineation Course,
Wetland Training Institute, 2013

GIS Analysis and Map Design,
California State University, Fullerton, 2013

Desert Tortoise Handling, Monitoring, and Surveying Training,
Desert Tortoise Council, 2012

Yellow-billed Cuckoo Workshop,
Kern County Preserve, 2012

PROFESSIONAL SUMMARY

Jason Fitzgibbon is a Biologist and Environmental Scientist with experience in field biology, biological monitoring, and regulatory permitting. He has participated in numerous biological studies throughout Southern California including projects requiring preparation of California Environmental Quality Act (CEQA) documents and occurring under the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), San Diego County Multiple Species Conservation Program (MSCP), and Orange County Natural Community Conservation Plan (NCCP). Jason holds a Bachelor's of Science degree in Biology and a Master of Science degree in Environmental Science with an emphasis in conservation biology. Jason's Master's thesis involved the study of the effects of adjacent construction-related disturbance on the spatial arrangement and demographic distribution of least Bell's vireo within San Diego Creek in Orange County, California.

SELECTED PROJECT EXPERIENCE

DEVELOPMENT

ALISO CREEK RESTORATION PROJECT —
LAGUNA CANYON FOUNDATION; ALISO VIEJO, CALIFORNIA

Served as Project Biologist. Conducted sensitive species surveys for least Bell's vireo, yellow-breasted chat, and rare/sensitive plants to establish a baseline measure for comparison of future monitoring results to pre-restoration condition of the 55-acre Aliso Creek restoration site. A component of restoration included sensitive species monitoring throughout implementation of the restoration program to document any increases in occurrences and/or nesting as a means of tracking restoration success.

CROWN VALLEY COMMUNITY PARK IMPROVEMENT PROJECT —HUNSAKER & ASSOCIATES IRVINE, INC.; LAGUNA NIGUEL, CALIFORNIA

Served as Project Biologist. Performed vegetation mapping, general wildlife and botanical surveys, and a jurisdictional delineation of the 16-acre study area. Conducted habitat assessments to determine presence/absence of sensitive species and communities. Prepared a biological technical report addressing potential impacts to biological resources and permitting requirements in accordance with CEQA. GLA processed Section 401, 404, and 1602 authorizations. The project involved preparation of a redesign concept for the community park including a new park entry-bridge over a soft-bottom flood channel to replace an existing Arizona crossing, two new parking lots, and connecting roadways. The redesign integrated opportunities for use of impervious pavements, managing flood debris and trash, providing water quality benefits, and minimizing impacts to native vegetation and the stream channel.

PICERNE PROPRETY PROJECT — THE PICERNE GROUP; LAGUNA NIGUEL, CALIFORNIA

Served as Project Biologist. Performed vegetation mapping, general wildlife and botanical surveys, and a jurisdictional determination of the 7-acre study area. Conducted habitat assessments to determine presence/absence of sensitive species and communities. Assisted in preparing the biological technical report addressing potential impacts to biological resources and permitting requirements in accordance with CEQA. The project is a new residential development consisting of 426 multi-family residential units, resident and guest parking, residential common use amenities and an approximately 0.66-acre open space park.

SAN JUAN MEADOWS AND DISTRITO DE LA NOVIA PROJECT —
ADVANCED REAL ESTATE SERVICES; SAN JUAN CAPISTRANO, CALIFORNIA

Served as Project Biologist. Delineated Corps and CDFW jurisdiction within the 160-acre property study area and prepared a report of findings. GLA prepared a letter of permission request for the Corps and notifications for the Regional Board and CDFW as well as coordinated processing of Section 404, 401, and 1602 authorizations. The project additionally involved preparation of a conceptual habitat mitigation and monitoring plan to address habitat restoration.

RANCH AT LAGUNA BEACH PROJECT — LAGUNA BEACH GOLF & BUNGALOW VILLAGE; LAGUNA BEACH, CALIFORNIA

Serving as Project Biologist. The project has involved coordination with the U.S. Fish and Wildlife Service and California Coastal Commission to resolve an appeal regarding property renovations. Conduct vegetation mapping, delineate coastal wetland boundaries and tree trimming/clearing locations, and survey turf removal areas for native vegetation. Conduct nesting bird surveys and prepare a nesting bird memorandum. Prepare a biological technical report addressing baseline conditions and impact analyses associated with the project and study area. Perform noise monitoring and prepare an analysis of sound monitoring data. Support review of archeological records and preparation of an archaeological and paleontological resources memorandum, habitat restoration plan, and noise/lighting management plan.

LAGUNA BEACH FUEL MODIFICATION ZONE PROJECTS — CITY OF LAGUNA BEACH; LAGUNA BEACH, CALIFORNIA

Serving as Project Manager/Biologist. Jason has served as Project Biologist for City of Laguna Beach Fire Department since 2011, providing coastal expertise for numerous fuel modification projects. The span of work has ranged from conducting general and focused surveys for sensitive wildlife and plant species including coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), Pacific pocket mouse, tidewater goby, Laguna Beach dudleya, and big-leaved crownbeard to performing habitat assessments and vegetation mapping. Additionally, Jason has prepared numerous biological technical reports for the City's ongoing fuel modification zone projects, addressing wildlife movement corridors, impacts to biological resources including special-status species, and mitigation measures. Tasks include rare plant surveys within all fuel modification zones throughout City, providing Biological Support in accordance with the California Environmental Quality Act (CEQA) for new fuel modification zones, and preparing/processing Coastal Development Permits for areas subject to Chapter 3 Policies of the Coastal Act.

LAKE FOREST DRIVE/BAKE PARKWAY EXTENSION PROJECT — THE IRVINE COMPANY; IRVINE, CALIFORNIA

Served as Project Biologist. GLA provided biological, regulatory, and mitigation support for Lake Forest Drive/Bake Parkway bridges, infrastructure, and undergrounding improvements. Reviewed rope alignment prior to construction. Performed focused surveys for least Bell's vireo. Conducted site monitoring and biological/botanical resource monitoring during construction in accordance with CEQA approvals; resource agency permits; and approved/permitted plans, reports, and technical specifications. Provided fieldwork memoranda and compliance reports. Additionally, GLA prepared a contractor education manual, processed a Section 404 permit for maintenance of undercrossings, obtained a permit amendment for noise barrier installation and buffer distance from least Bell's vireo nests, and conducted mitigation implementation and monitoring.

NEWPORT BANNING RANCH — NEWPORT BANNING RANCH, LLC; NEWPORT BEACH, CALIFORNIA

Serving as Project Biologist. Conduct biological work required for CEQA authorization including vegetation mapping; general biological surveys; rare plant surveys; and focused least Bell's vireo, cactus wren, raptor, and burrowing owl surveys. The project additionally has involved performing focused fairy shrimp, coastal California gnatcatcher, and southwestern willow flycatcher surveys; preparing a biological technical report for use in preparation of draft and final EIRs pursuant to CEQA as well as responses to comments on the final EIR; preparing a jurisdictional delineation report; and directing and participating in public outreach at public workshops. The City of Newport Beach has approved the project and certified the EIR.

RANCHO SUMMIT ESTATES PROJECT — SHEA HOMES; ENCINITAS, CALIFORNIA

Serving as Lead Biological Construction Monitor. Conduct coastal California gnatcatcher surveys in compliance with issued habitat loss permits. Monitor stream crossing work and conduct jurisdictional delineation fieldwork.

QUALITATIVE BIOLOGICAL MONITORING — SAN JUAN BASIN AUTHORITY, SAN JUAN CAPISTRANO, CALIFORNIA

Served as Project Biologist. Conducted qualitative biological monitoring of San Juan Creek for the San Juan Basin Authority's (SJBA) Phase I San Juan Basin Groundwater Management and Facility Plan. Tasks included performance of qualitative and quantitative monitoring; preparation of memoranda, reports, and exhibits; analysis of data; and submission of findings to the client and regulatory agencies.

CORONA 720 PROJECT — GREEN RIVER CANYONS, LLC; CORONA, CALIFORNIA Serving as Project Biologist. The project includes vegetation mapping within the 720-acre property as well as presence/absence surveys for coastal California gnatcatcher and focused plant surveys for various species including intermediate mariposa lily and many-stemmed dudleya.

JURISDICTIONAL DELINEATION OF THE FIRE STATION LOCATED AT THE INTERSECTION OF STATE COLLEGE AND YORBA LINDA BOULEVARDS — CITY OF FULLERTON, ORANGE COUNTY, CALIFORNIA

Served as Project Manager. Oversaw preparation of a jurisdictional delineation report and provided senior review/quality control.

LOW WATER CROSSING AT ADIT ROAD PROJECT — LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP), CALIFORNIA

Serving as Delineator/Regulatory Specialist. The Project consists of installing a low water crossing using Articulate Concrete Blocks (ACB) on Adit Road where it crosses San Francisquito Creek. The dimensions will be approximately the width of the road (12') and 200' long. GLA is conducting a jurisdictional delineation and preparing a jurisdictional delineation report.

VICTORVILLE TRANSMISSION LINE EROSION CONTROL PROJECT — LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP), SAN BERNARDINO COUNTY, CALIFORNIA

Serving as Delineator/Regulatory Specialist. The Project consists of a delineation around three transmission towers for the purpose of installing erosion control. GLA is conducting a jurisdictional delineation and preparing a jurisdictional delineation report.

OCTA M2 PRESERVES INTERIM BIOLOGICAL MONITORING SUPPORT SERVICES PROJECT—ORANGE COUNTY TRANSPORTATION AUTHORITY; ORANGE COUNTY, CALIFORNIA

Serving as Biologist. Work includes biological resources monitoring for seven Preserves totaling over 1,300 acres to determine threats and stressors that may impact Covered Species and natural communities, conducting overall assessments (e.g., invasive species, erosion, unauthorized trail cutting, and trail condition) to help determine areas of highest management priority, conducting focused species surveys, updating vegetation mapping, and documenting unauthorized activities and related effects to biological resources. GLA conducts ongoing site visits, photo monitoring, and reporting to address results of research and monitoring activities, recommend appropriate adaptive management actions, and discuss anticipated activities for the upcoming year. Specific to Laguna Beach, GLA provides biological monitoring at the Pacific Horizon Preserve, including monitoring the burn area associated with the May 2022 Coastal Fire and leading public hikes. Mr. Fitzgibbon has supported the project by conducting general biological monitoring, conducting focused surveys for special-status plants, and leading public hikes.

TRANSPORTATION

PARKS, TRAILS, AND OPEN SPACE

ENERGY

WATER

EMPLOYMENT HISTORY

Glenn Lukos Associates. Associate Biologist. Lake Forest, California. 2011 – Present.

QuantumSphere, Inc. Biologist/Chemist. Santa Ana, California. 2008 – 2011.

CBB Qualifications

Jason Fitzgibbon is a Glenn Lukos Associates (GLA) Senior Wildlife Biologist with 11 years of experience conducting biological surveys for special-status floral and faunal species and habitat resources throughout California and the southwest. In addition to the completion of Xerces Society Crotch's bumble bee (CBB) technical training workshops and associated independent study, Jason Fitzgibbon has over four years of experience conducting visual focused surveys for CBB, including the identification of other Bombus.species. Jason Fitzgibbon has detected CBB in a variety of habitats throughout southern California, including desert scrub, alkali playa, coastal sage scrub, chaparral, grassland, meadow, oak woodland and coniferous forest. A summary of focused survey and incidental detection locations are listed below:

Focused Survey Locations:
Tujunga, Los Angeles County, 2024 - Crotch's bumble bee detected
Lake Elsinore, Riverside County, 2024 - Crotch's bumble bee detected
Brea, Orange County, 2024 - Crotch's bumble bee detected
Castaic, Los Angeles County, 2024 - Crotch's bumble bee detected
La Habra, Los Angeles County, 2024 – Crotch's bumble bee detected
Riverside, Riverside County, 2023 – Crotch's bumble bee detected
Banning, San Bernadino County, 2023
Jurupa, Riverside County, 2023
Santa Clarita, Los Angeles County, 2021- Crotch's bumble bee detected
Corona, Riverside County, June 2020 - Crotch's bumble bee detected
Camarillo, Ventura County, 2020
Laguna Beach, Orange County, 2020

Incidental Crotch's Bumble Bee Detection Locations:
San Juan Capistrano, Orange County, April 2024
Pasadena, Los Angeles County, April 2024
Santa Rosa Mountains, Imperial County, March 2024
Laguna Beach, Orange County, March 2024
Carrizo Plain, San Luis Obispo County, June 2023
Castaic, Los Angeles County, May 2023
Kennedy Meadows, Kern County, May 2023
Crystal Cove State Park, Orange County, April 2023
San Mateo Wilderness, San Diego County, June 2022
Aliso Viejo, Orange County, June 2022
Nest observation - Laguna Beach, Orange County, July 2021
Lake Isabella, Kern County, April 2021
Adelanto, San Bernardino County, April 2020
Corona, Riverside County, April 2020

Technical Training:
California Bumble Bee Atlas Training 2024, Virtual Attendance, Xerces Society, April 22, 2024
Identifying Male Bumble Bees in Western North America, Virtual Attendance, Xerces Society, March 21, 2024
California Rare Bumblebee Workshop, The Wildlife Society-Western Section, Virtual Attendance, May 2021
Entomology (California State University Long Beach, 2007)
Invertebrate Zoology (California State University Long Beach, 2006)

Christopher Waterston

Regulatory Project Manager/Biologist

YEARS OF EXPERIENCE

Professional start date: 2012

Years at GLA: 3

EDUCATION

BS, Biological Science,
California State University, Fullerton, 2011

PERMITS AND CERTIFICATIONS

California Rapid Assessment Methodology (CRAM) Practitioner – Riverine and Depressional Wetlands Modules, 2015

American Academy of Underwater Sciences (AAUS) Diver Certification, 2012

TRAININGS ATTENDED

Wetland Delineation Course,
Wetland Training Institute, 2022

Introduction to
Wildlife Crossings Caltrans, 2017

Bats and Transportation, Caltrans, 2017

ESA Section 7,
Federal Highway Administration, 2016

Ordinary High-Water Mark (OHWM),
U.S. Army Corps of Engineers, 2016

CONTINUED (PAGE 4)

PROFESSIONAL SUMMARY

Christopher Waterston has eleven years of extensive environmental planning, biological and regulatory experience in both the public and private sectors. He has played a key role in coordinating and performing biological surveys, preparing technical documents, and obtaining permits for projects requiring federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and federal Clean Water Act (CWA) compliance. Christopher additionally has broad experience with regulatory agency coordination ranging from conducting Section 7 consultations to acquiring aquatic permits.

Christopher has performed the role of Lead Biologist on numerous California Department of Transportation (Caltrans) projects throughout Orange County, involving biological and regulatory aspects from initial project scoping through construction, and post-construction mitigation. He has extensive experience in preparing biological technical documents, including Natural Environment Study (NES) reports, Biological Assessments (BA), CEQA and NEPA Environmental Documents, California Rapid Assessment Method (CRAM) reports, Senate Bill (SB) 857 Fish Passage Legislative Reports, and Habitat Mitigation Monitoring Plan (HMMP) reports. He has extensive experience in writing avoidance, minimization, and mitigation measures, general and focused survey reports. He routinely coordinates and conducts general biological and aquatic resource constraints surveys and focused protocol surveys for special-status species such as arroyo toad, arroyo chub, various bat species, burrowing owl, least Bell's vireo, coastal California gnatcatcher, Essential Fish Habitat (EFH), and rare endemic plants. Christopher regularly coordinates with state, federal, and local agencies, including the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (Corps), California Department of Fish and Wildlife (CDFW), SB-857 coordination with state, federal, and local agencies, various Regional Water Quality Control Boards (RWQCBs)/State Water Resources Control Board (SWRCB), U.S. Forest Service (USFS), National Marine Fisheries Service (NMFS), and the Orange County Transportation Authority (OCTA) to obtain CWA permits, 401 water quality certifications, streambed alteration agreements, FESA and CESA incidental take permits, authorizations, approvals, and coordination. He is knowledgeable in the Orange County Central/Coastal Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP) and Western Riverside Multiple Species Habitat Conservation Plan (MSHCP). He served as the Caltrans District liaison for quarterly meetings with CDFW, USFWS, and was the District Fish Passage Biologist. His eight years of professional experience has given him familiarity in a diverse array of biological elements throughout southern California.

SELECTED PROJECT EXPERIENCE

DEVELOPMENT

RANCHO MISSION VIEJO — SAN JUAN CAPISTRANO, CALIFORNIA

Serving as Project Manager. Managing multiple large residential development, infrastructure, and mitigation compliance projects throughout the Rancho Mission Viejo (RMV) property. Regularly coordinates with RMV environmental and construction managers, contractors, and field staff. Oversees a team of biologists and regulatory specialists performing various special-status flora and fauna surveys, construction monitoring, vegetation mapping, jurisdictional delineations, and mitigation monitoring. Prepares monthly memos and annual reports to various resource agencies. Manages various contracts, project task orders, permits, and certifications.

SUMMERWIND RANCH RESIDENTIAL DEVELOPMENT — CALIMESA, CALIFORNIA

Serving as Project Manager. The project consists of a residential development. Managed a team of biologists and regulatory specialists. Conducted special-status flora and fauna surveys required by the Western Riverside MSHCP, federal, and state regulations. Conducted a jurisdictional delineation and California Rapid Assessment Method (CRAM) on the 280-acre site. Prepared and processed a jurisdictional delineation and CRAM report. Processed a Waste Discharge Requirement (WDR) with the Regional Water Quality Control Board, a preliminary jurisdictional determination with the U.S. Army Corps, and a Streambed Alteration Agreement (1600 permit) with the CA Department of Fish and Wildlife. Conducted oak tree surveys and prepared an oak tree mitigation plan to comply with city tree protection ordinances. Coordinated with project proponents, resource agencies, city staff, and various consultants to facilitate the receival of permits, approvals, and certifications for the project.

TRANSPORTATION

INTERSTATE 5 WIDENING PROJECT — CALTRANS/OCTA MEASURE 2, ORANGE COUNTY, CALIFORNIA

Served as Lead Biologist. The project involved widening the I-5 in both directions to increase capacity for the highly traveled I-5 corridor in Orange County. Facilitated in approving the biological technical document (NES), Biological Assessment, Environmental Impact Report and Environmental Impact Statement (EIR/EIS) and performed Section 7 Consultation with USFWS. Developed project standard-special specifications (SSPs), avoidance, minimization, and mitigation measures. Reviewed consultant prepared permit applications (401, 404, 1602), and coordinated with regulatory managers at CDFW and USFWS to incorporate the approved OCTA M2 NCCP/HCP measures. Performed biological surveys within the project area for nesting birds and roosting bats, fish passage analysis, and arroyo chub protocol surveys with CDFW fisheries biologists. As the project's lead biologist, coordinated meetings with the Project Development Team, contractors, consultants, and resource agency personnel. Coordinated directly with Caltrans and OCTA project managers to convey biological and permitted resource requirements. Wrote monthly monitoring reports to the SWRCB and CDFW for project compliance/noncompliance issues.

STATE ROUTE-73/MACARTHUR BOULEVARD OFF-RAMP WIDENING PROJECT — CALTRANS, ORANGE COUNTY, CALIFORNIA

Served as Lead Biologist. The safety project involved widening the SR-73 southbound MacArthur Blvd. off-ramp over Bonita Creek in the City of Newport Beach. Facilitated in the approval of the NES, BA, and CEQA/NEPA documents. Performed Section 7 Consultation with the USFWS. Prepared water quality permit applications (401, 404, and 1602). Communicated with CDFW and USFWS regarding project impacts to the Orange County Central/Coastal NCCP/HCP. Developed project contract SSPs, avoidance, minimization, and mitigation measures. Analyzed project impacts and determined ratios of mitigation needed for loss of coastal sage-scrub, wetland waters of the U.S., CDFW riparian, and NCCP/HCP habitats. Coordinated with Orange County Parks and TCA environmental program managers for mitigation credit releases. Performed protocol-level surveys for coastal California gnatcatcher, bat habitat assessments, visual and acoustic emergence surveys. Coordinated directly with Caltrans project managers and engineers to convey project environmental needs and resource agency requirements.

INTERSTATE 405 WIDEINING PROJECT — CALTRANS/OCTA MEASURE 2, ORANGE COUNTY, CALIFORNIA

As the District Biologist, served an oversight role in the Environmental Planning processes. The "design-build" project involved the addition of one high-occupancy vehicle (HOV) lane and one general-purpose lane in both directions between I-605 and SR-55. Facilitated the approval of the NES and the project's EIR/EIS. Reviewed consultant prepared permit applications and coordinated with regulatory managers at CDFW, SWRCB, and USACE to incorporate the approved OCTA M2 Program's 404 Letter of Permission

(LOP), 401 Water Quality Certification, and 1602 Streambed Alteration Agreement measures into the project's contract specifications and mitigation measures. Approved monthly biological monitoring reports and coordinated in weekly meetings with the Project's contractors, consultants, and managers for both Caltrans and OCTA.

STATE ROUTE-73 DETENTION BASIN/EROSION CONTROL PROJECT — CALTRANS/TRANSPORTAION CORRIDOR AGENCY (TCA), ORANGE COUNTY, CALIFORNIA

Served as Lead Biologist. The SR-73 was completed in the late 90s. Caltrans and TCA designed multiple detention basins adjacent to the new freeway in order to capture and filter stormwater. Due to some deficiencies, a construction project was implemented in 2014 to address excess erosion, stormwater runoff, and detention basin maintenance. As the lead biologist, conducted nesting bird surveys prior to grading operations and protocol-level coastal California gnatcatcher surveys. Facilitated and approved the landscape and plant pallet plans from district landscape architects. Monitored habitat restoration activities, performed plant transect surveys, coordinated with landscape contractors, and prepared annual Habitat Mitigation Monitoring Plan (HMMP) reports.

STATE ROUTE 74 SAFETY SHOULDER WIDENING PROJECT — CALTRANS, ORANGE COUNTY, CALIFORNIA

Served as Lead Biologist. The project involved widening the existing shoulders associated with SR-74 safety and maintenance improvements. Performed jurisdictional delineations, CRAM analysis, and biological surveys including protocol-level surveys for the federally endangered arroyo toad. Coordinated with USFWS biologists for implementation of Biological Opinion measures during construction and with U.S. Forest Service biologists for aquatic resource mitigation within Cleveland National Forest. Approved annual monitoring reports and reviewed consultant task order budgets and invoices. Coordinated with Casper's Regional Park rangers, landscape architects, and contractors for the off-site arroyo toad habitat restoration. Performed plant transect surveys, organized field procedures under USFWS mitigation measures for impacts to designated critical habitat for the arroyo toad. Performed protocol-level surveys and eradicated invasive predators within San Juan Creek for five years.

STATE ROUTE-91 EASTBOUND WIDENING PROJECT — CALTRANS, ORANGE COUNTY, CALIFORNIA

Served as the District Biologist. The project involved widening the eastbound SR-91 by adding one-general purpose lane from SR-57 to Tustin Avenue. Project impacts to the Santa Ana River required water quality permits, nesting bird surveys, and pre-construction bat roost surveys. Late in the project design phase, a maternity colony of Yuma myotis bats were discovered in the SR-91/Santa Ana River Bridge. As the district biologist, coordinated with CDFW's Caltrans liaison for facilitating project design changes; and to incorporate for the first time in the district, alternative bat habitat (panels) that were installed on the westbound side of the SR-91 Bridge. Monitored construction activities, communicated directly with project managers, engineers, construction personnel, and consultant biologists. Performed multiple day and nighttime bat surveys, collected data for CDFW, and prepared quarterly monitoring reports detailing the success of the bat mitigation.

ENERGY

TRANSMISSION PROJECT — SOUTHERN CALIFORNIA EDISON, SAN BERNARDINO COUNTY, CALIFORNIA

Served as Team Biologist. The transmission project occurred north of I-10 in the City of Cabazon from SR-111 to the Morongo Resort. Performed special-status species surveys for endemic plants, desert tortoise, desert kit fox, burrowing owl, and loggerhead shrike. Prepared daily field reports, coordinated with lead biologists, and adjacent property owners.

TRANSMISSION PROJECT — SOUTHERN CALIFORNIA EDISON, RIVERSIDE COUNTY, CALIFORNIA

Served as Team Biologist. The project occurred along the Santa Ana River Valley in Riverside County. It involved tree trimming and removal activities adjacent to Southern California Edison right-of-way. Performed nesting bird surveys ahead of vegetation maintenance activities. Coordinated with contractors, team biologists, and managers. Prepared daily field reports, collected data using a handled GPS, and submitted monthly monitoring reports to the client.

LOCAL GOVERNMENT

WEST VALLEY DETENTION CENTER — SAN BERNARDINO COUNTY, CALIFORNIA

Served as Lead Biologist. The project occurred within Day Creek, adjacent to the West Valley Detention Center in Fontana, CA. The project replaced a water and sewage line that went through Day Creek. Monitored construction activities, performed nesting bird

surveys, communicated 401, 404, and 1602 permit conditions to project contractors. Prepared daily field reports, collected data using a handled GPS, and submitted monthly monitoring reports to the client.

LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP) — BEACON PHASE II ENERGY STORAGE PROJECT SITE, KERN COUNTY, CALIFORNIA

Served as Regulatory Specialist. The Project consisted of an energy storage facility owned and operated by the LADWP within the Mojave Desert in unincorporated Kern County, CA. The project included conducting a jurisdictional delineation, preparation of a jurisdictional delineation report, and coordination with project proponents to facilitate the preparation of CEQA documents and regulatory agency permits.

MARINA DEL REY HARBOR PIER INSTALLATION — LOS ANGELES COUNTY, CALIFORNIA

Served as a team Marine Biologist and an American Academy of Underwater Sciences (AAUS) certified diver. The project involved installation and removal of piers for residential docks within Marina del Rey Harbor. Operated under a California Coastal Commission Development permit. Operated small watercraft, surface/diver communication systems, and SCUBA diving equipment. Performed sensitive habitat SCUBA surveys for invasive algae (Caulerpa) and native seagrass (Zostera) habitat surveys. Recorded species of fish, marine invertebrates, and general marine conditions. Provided surface support by recording sensitive areas surveyed with GPS units and entered data into ArcGIS.

NEWPORT BAY EELGRASS RESTORATION — ORANGE COUNTY, CALIFORNIA

Served as a team Marine Biologist and AAUS certifies diver. The City of Newport Beach's mitigation project involved installation of seagrass (Zostera) habitat within Newport Bay. Operated small watercraft, surface/diver communication systems, and SCUBA diving equipment. Gathered and separated eelgrass from "donor" beds and re-planted individual grasses below intertidal areas. Performed underwater transects and monitored the growth, density, and condition of planted seagrasses.

WHITE ABALONE SURVEYS — NATIONAL MARINE FISHERIES SERVICE AND CALIFORNIA COASTKEEPER, POINT LOMA, SAN DIEGO CALIFORNIA

Served as a team Marine Biologist and AAUS certified diver. Supported biological and genetic research dives with NMFS Marine Biologists for the federally listed white abalone (Haliotis sorenseni) off Point Loma, California. Performed underwater transects, surveyed the surrounding benthic environment and noted locations of special-status species. Collected data using diving slates, photography, and facilitated data entry for NMFS' White Abalone Recovery Plan.

PROFESSIONAL AFFILIATIONS

American Academy of Underwater Sciences

Callflora

California Coastkeeper

Divers Alert Network

Society for Conservation Biology

EMPLOYMENT HISTORY

Glenn Lukos Associates. Regulatory Project Manager/Biologist. Santa Ana, California. 2020 – Present.

California Department of Transportation – District 12 Orange County. Associate Environmental Planner (Natural Sciences)/Biologist. Santa Ana, California. 2013 - 2020.

Kidd Biological, Inc. Biologist. Perris, California. 2012.

Coastal Resources Management. Marine Biologist. Corona del Mar, California. 2012.

ADDITIONAL TRAININGS ATTENED (NOT ON PAGE 1)

Plant Identification, California Native Plant Society, 2016

Bat Workshop, Bat Conservation Management, Modoc County, 2015

Advanced Wetland Delineation, Wetland Training Institute, 2014

Construction, Design, and Maintenance, Caltrans, 2014

CEQA/NEPA Basics, Caltrans, 2013

CBB Qualifications

Chris Waterston is a Glenn Lukos Associates (GLA) Senior Biologist and Regulatory Specialist with 12 years of experience conducting biological surveys for special-status floral and faunal species and habitat resources. Chris Waterston is proficient in the visual identification of *Bombus* species within southern California. He has attended multiple *Bombus* identification and survey method trainings including, the Xerces Society's: Western Bumble Bee Identification Webinar, Male Bumble Bee Identification along the Pacific Coast of North America, and the California Bumble Bee Atlas Training Webinar. GLA developed and conducts a visual methodology approved by the California Department of Fish and Wildlife in 2020, which was derived from the USFWS rusty-patched bumble bee protocol (USFWS, 2019) and the Xerces Society Bumble Bee method. Beginning in 2024, the CDFW Survey Considerations for CESA Candidate Bumble Bee Species (CDFW, 2023) guidelines are incorporated into the GLA visual survey protocol. Chris Waterston has detected CBB in a variety of habitats throughout southern California, including coast dune, coastal sage scrub, chaparral, grassland, meadow, and oak woodland. A summary of focused survey and incidental detection locations are listed below:

Survey Location/Number of Detections:

San Juan Capistrano, CA – June 2024 - Crotch's bumble bee detected
Brea, CA – April 2024 - Crotch's bumble bee detected
La Habra, CA – April 2024 - Crotch's bumble bee detected
San Juan Capistrano, CA – March 2024 - Crotch's bumble bee detected
Castaic, CA – May 2023 and May 2024 - Crotch's bumble bee detected
Calimesa, CA – July 2022 - Crotch's bumble bee detected

Ian Rhodes

Wildlife Biologist

YEARS OF EXPERIENCE

Professional start date: 2024

Years at GLA: 0.5

EDUCATION

BA, Environmental Studies and Economics, University of California, Santa Cruz, 2021

PROFESSIONAL SUMMARY

Ian Rhodes is a Wildlife Biologist with extensive technical and field experience working within Central and Southern California plant communities, with particular interest in coastal sage scrub and grassland ecosystems. At University of California, Santa Cruz, he assisted with ecological restoration at the Fort Ord Natural Reserve in Marina, California. Specifically, his work focused on boosting populations of sand gilia (*Gilia tenuiflora* ssp. *arenaria*) and seaside bird's beak (*Cordylanthus rigidus* ssp. *littoralis*). He has also assisted with ecological restoration of native grassland and coastal sage scrub communities at the Palos Verdes Peninsula Land Conservancy as a native plant restoration nursery technician. During his time at GLA, he has assisted with the coordination and execution of a wide array of biological surveys across the Southern California area.

His field experience includes vegetation alliance mapping, California native flora identification, vegetation monitoring, focused rare plant surveys and mapping, wildlife surveys, nesting bird surveys, coastal California gnatcatcher nesting and census surveys, Crotch's bumble bee surveys, burrowing owl surveys, and seed and plant collection. Other specialized work includes public education on Southern California native flora, California native plant propagation, and landscape design.

SELECTED PROJECT EXPERIENCE

DEVELOPMENT

MONTEBELLO HILLS—TOLL BROTHERS, INC.; MONTEBELLO, CALIFORNIA

Served as a biological monitor for the annual coastal California gnatcatcher population census in 484 acres of open space in the city of Montebello, California. Work included assisting with the monitoring of breeding and nesting activities of coastal California gnatcatcher (*Polioptila californica*); planning avoidance measures with construction crews; performing qualitative monitoring of viable habitat; and analyzing and interpreting survey results.

TAPIA RANCH—DACA-CASTAIC LLC; CASTAIC, CALIFORNIA

Served as an assistant wildlife biologist for general biological surveys, vegetation alliance mapping, focused rare plant surveys, and focused Crotch's bumble bee surveys on 1,167 acres in unincorporated Los Angeles County, California. Work included assisting with the pre-survey research of rare and endangered species using data from the California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) Inventory; conducting vegetation alliance mapping; conducting rare plant surveys; conducting Crotch's bumble bee (*Bombus crotchii*) surveys; interpreting survey results; conducting surveys of viable habitat for Crotch's bumble bee; rare flora identification; and assisting in the preparation of a biological technical report.

CHURCH & DWIGHT TRAILER LOT EXPANSION PROJECT—LINK LOGISTICS; VICTORVILLE, CALIFORNIA

Served as project manager and lead biologist for a western Joshua tree survey and nesting bird survey on 10 acres in the city of Victorville, California. Work included preparing survey materials; conducting a western Joshua tree (*Yucca brevifolia*) survey; analyzing and interpreting Joshua tree survey results; conducting a pre-construction nesting bird survey; and analyzing and interpreting nesting bird survey results.

AERA MASTER PLANNED COMMUNITY—AERA ENERGY LLC; BREA, CALIFORNIA

Served as an assistant wildlife biologist for multiple biological surveys on 3,000 acres in the city of Brea, California. Work included researching rare and endangered flora and fauna using data from the CNDDB and the CNPS Inventory; conducting focused rare plant surveys; mapping observations of coastal California gnatcatcher; conducting vegetation alliance mapping in accordance with the Manual of California Vegetation; conducting Crotch's bumble bee (*Bombus crotchii*) surveys; and assisting in the preparation of a biological technical report.

CORONA QUARRY EXPANSION PROJECT—HARRISON TEMBLADOR HUNGERFORD & GUERNSEY; CORONA, CALIFORNIA

Served as an assistant wildlife biologist for multiple biological surveys on 243 acres in the city of Corona, California. Work included researching rare and endangered flora and fauna using data from the CNDDB and the CNPS Inventory; researching survey protocols and target species in accordance with the Western Riverside County Multiple-Species Habitat Conservation Plan (MSHCP); conducting vegetation alliance mapping in accordance with the Manual of California Vegetation; conducting focused rare plant surveys; mapping observations of coastal California gnatcatcher and least Bell's vireo (*Vireo bellii pusillus*); and assisting with the preparation of a biological technical report.

PARKS, TRAILS, AND OPEN SPACE

OCTA PRESERVES INTERIM BIOLOGICAL MONITORING SUPPORT SERVICES CONTRACT—ORANGE COUNTY TRANSPORTATION AUTHORITY, ORANGE COUNTY, CALIFORNIA

Served on a team of biologists conducting preserve-wide vegetation mapping. GLA has provided support to OCTA with biological resources monitoring for all seven preserves, totaling over 1,300 acres, to determine threats and stressors that may impact covered species and natural communities; conducting overall assessments (e.g., invasive species, erosion, unauthorized trail cutting, and trail condition) to help determine areas of highest management priority; and documenting unauthorized activities and related effects to biological resources (e.g., encroachments and unauthorized trail cutting). GLA provides ongoing site visits, photographic monitoring, and reporting, which includes annual reports to address results of research and monitoring activities, recommendations of appropriate adaptive management actions, and discussion of anticipated activities for the upcoming year. Ian assisted with the vegetation mapping efforts being conducted at the preserves.

PETERSEN RANCH/ELIZABETH LAKE MITIGATION BANK—EIP IV CREDIT CO., LLC; LAKE HUGHES, CALIFORNIA

Served as an assistant biologist for focused Crotch's bumble bee surveys on 3,500 acres in the town of Elizabeth Lake, California. Work included pre-survey research and preparation of materials for surveys, conducting surveys of suitable

habitat and nectar sources for Crotch's bumble bee, conducting focused Crotch's bumble bee surveys, and analyzing and interpreting survey results.

PALOS VERDES NATURE PRESERVE HABITAT RESTORATION—PALOS VERDES PENINSULA LAND CONSERVANCY (PVPLC), RANCHO PALOS VERDES, CALIFORNIA

Served as the native plant restoration nursery technician. Work included seed and cutting propagation of native plant species; implementing Best Management Practices (BMP's) within the nursery to minimize the spread of blight (*Phytopthora* sp.) and other waterborne pathogens amongst nursery stock; coordinating wholesale and retail native plant sales; coordinating public native plant sales; attending public outreach events; educating members of the public about California native flora; assisting with minor construction projects at the native plant restoration nursery; and collecting seed and cuttings from PVPLC's 1,400 acres of preserves for propagation and conservation purposes.

WATER

MDP LINE E PROJECT—ALBERT A. WEBB ASSOCIATES; SAN JACINTO, CALIFORNIA

Served as an assistant wildlife biologist for focused rare plant surveys on a 14,000 linear foot drainage in the city of San Jacinto, California. Work included performing pre-survey research of rare and endangered flora using data from the CNDDB and the CNPS Inventory; researching survey protocols and target species in accordance with the Western Riverside County MSHCP; conducting focused rare plant surveys for multiple target species including smooth tarplant (*Centromadia pungens* ssp. *laevis*) and Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*); identifying and mapping observations of least Bell's vireo; interpreting survey results; and assisting in the preparation of a biological technical report.

IVANPAH WATERLINE PROJECT—EQUINOX GOLD CORPORATION; SAN BERNARDINO COUNTY, CALIFORNIA

Served as an assistant wildlife biologist for focused rare plant surveys and burrowing owl surveys on a 30-mile linear study area in San Bernardino County, California and Clark County, Nevada. Work included performing pre-survey research of rare and endangered flora of California and Nevada using data from the CNDDB, the CNPS Inventory, and the state of Nevada's BLM plant species watchlist; assembling rare floral and faunal species tables for use in focused surveys; conducting focused rare plant surveys; interpreting survey results; assisting with burrowing owl (*Athene cunicularia*) surveys; rare flora identification; and assisting in the production of a biological technical report.

PROFESSIONAL AFFILIATIONS

California Native Plant Society, South Coast Chapter

EMPLOYMENT HISTORY

Glenn Lukos Associates. Wildlife Biologist. Santa Ana, California. February 2024 – Present.

Palos Verdes Peninsula Land Conservancy. Native Plant Restoration Nursery Technician. Rancho Palos Verdes, California. 2023.

University of California, Santa Cruz Arboretum and Botanic Garden. Horticulturist. Santa Cruz, California. 2020-2021.

UC Fort Ord Natural Preserve. Restoration Intern. Marina, California. 2019-2020.

MEMORANDUM

GLENN LUKOS ASSOCIATES
Regulatory Services

DATE: June 13, 2024

SUBJECT: Staff Qualifications to Conduct Protocol Surveys for Crotch's Bumble Bee

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Glenn Lukos Associates, Inc. (GLA) currently has four biologists on staff that are qualified to perform protocol surveys for Crotch's bumble bee (*Bombus crotchii*) [CBB].

- Jeff Ahrens
- Stephanie Cashin
- Jason Fitzgibbon
- Chris Waterston

The qualifications are based on the following:

- Ability to identify CBB in the field and distinguish CBB from other *Bombus* species that also occur in similar habitats.
- Familiarity with survey protocols.
- Training specific to CBB and other bumble bee species.
- Surveys and CBB identification in a variety of vegetation communities at multiple sites across the range of the species.

Background of CBB Experience

GLA staff have undergone training and conducted visual focused surveys for Crotch's bumble bee (CBB), beginning in 2020 and continuing to the present. Starting in 2020, GLA developed a visual survey methodology that was approved by the California Department of Fish and Wildlife (CDFW) for use on a specific project where CDFW required CBB surveys. GLA's initial survey protocol was derived from the USFWS rusty-patched bumble bee protocol (USFWS, 2019) and the Xerces Society Bumble Bee method. Beginning in 2024, GLA incorporated the CDFW Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW, 2023). The survey protocol includes photo documentation to support the field identification of CBB. GLA has surveyed and detected CBB in a variety of habitats throughout southern California, including coast dune, coastal sage scrub, chaparral, grassland, meadow, and woodland habitats.

CBB Training

There are multiple training opportunities that a number of GLA's staff have completed, including the four biologists referenced above. All the referenced staff have completed the following:

- California Rare Bumblebee Workshop, 2021, The Wildlife Society-Western Section, Virtual Attendance
- Identifying Male Bumble Bees in Western North America, 2024, Virtual Attendance, Xerces Society
- California Bumble Bee Atlas Training, 2024, Virtual Attendance, Xerces Society

In addition, two of GLA's biologist (Jeff Ahrens and Stephanie Cashin) performed independent study by reviewing the bumble bee collection at the Los Angeles Natural History Museum.

Survey Experience

GLA's staff have completed CBB protocol surveys for a variety of habitats at numerous sites throughout southern California, including in Los Angeles, Orange, Riverside, San Bernardino, Ventura and Kern counties. Collectively, GLA has detected CBB at a minimum of 13 different sites while conducting protocol surveys and has incidentally detected CBB at a minimum of another 25 sites.

p:RESUMES\GLA_CBB Qualifications

APPENDIX B
MITIGATION FEASIBILITY ASSESSMENT

MEMORANDUM

August 28, 2018

To:
John Arvin
NorthLake

From:
Marc Blain

Subject: Feasibility Analysis of NorthLake Biological Mitigation Requirements

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An analysis was conducted to confirm the feasibility of implementing NorthLake biological mitigation measures for the NorthLake Project. Specifically, requirements for preservation of existing vegetation or preservation with restoration of potentially suitable habitat for select wildlife species were reviewed and required amounts of mitigation by habitat type were calculated. Using a two-pronged approach, potential mitigation properties were identified and then evaluated using a GIS tool to rank potential mitigation parcels based on biological values relative to NorthLake mitigation needs. The results of this analysis, as discussed below, indicate that properties with the appropriate biological resources and of sufficient acreage are currently available or are in process towards becoming available within the region. Properties were considered to be "available" if they are currently listed for sale, if there are no recorded development plans for the sites, where information provided by sellers or brokers indicated that offers would be considered or potentially considered, where properties have other constraints to development such as USFWS designated Critical Habitat, and where the properties have not been used as mitigation for prior projects. As such, biological resources mitigation for the NorthLake Project is feasible.

The attached tables and maps include properties identified based on communication with sellers, brokers, mitigation bank managers, and/or other publicly available information, and the results of a preliminary analysis of on-site vegetation and soils. The purpose of the analysis was to identify available properties with native habitat that exhibit sufficient acreage to offset the potential loss of native habitats associated with Project development. Properties were identified by Psomas staff based on (1) staff's previous knowledge of properties; (2) inquiries with approved mitigation banks; (3) inquiries with entities such as the Trust for Public Lands, Mountains Recreation and Conservation Authority, and California Department of Fish and Wildlife; and (4) review of properties listed for sale (and thus assumed to be available). Potential properties were given priority based on size, proximity to the Project site, proximity to other preserved open space areas, and overall level of disturbance and quality of habitat. Aerial photos were reviewed for each site to determine the general type of habitat (e.g. scrub, riparian, grassland, etc.) as were soil maps to determine each site's suitability for establishment/translocation of special status plant species and seasonal pools for western spadefoot toad. In addition, estimated vegetation types and acreage was extracted from Cal Fire Regional Vegetation Maps.

Psomas' Ecologists and GIS Specialists then developed a searchable database, using existing ecological/geographic data (federal/State/local), to assess the suitability of identified properties as well as other potentially suitable parcels of undeveloped land in the Project region. For this purpose, undeveloped land was defined as parcels that were totally or nearly totally undeveloped.

Several parameters were used to create the database (see below) that are representative of the characteristics/resources on the Project site. Each parameter was assigned a score based on (1) its occurrence on, or in proximity to, the Project site; and (2) its relative importance/priority in achieving the goals of the mitigation program. For several of the parameters, a fraction of the maximum points is awarded—for example, a parcel is awarded 10 points if it falls within a Los Angeles County Significant Ecological Area (SEA), but it is awarded a fraction of that amount if it falls *within one mile* of an SEA. Only parcels that are 50 acres or greater in size were included in the database, except for parcels less than 50 acres in size that are contiguous with parcels that form a combined area of 50 acres or greater.

The parameters used in the database development in order of highest priority/score (see Table 3), included:

(1) A record of the federally-map generated listed Threatened coastal California gnatcatcher (*Polioptila californica californica*) (gnatcatcher) (up to 75 points);
(2) The occurrence of designated Critical Habitat (per U.S. Fish and Wildlife Service) for the gnatcatcher (up to 60 points);
(3) the occurrence of coastal scrub vegetation as designated by the California Department of Forestry and Fire Protection (up to 50 points);
(4) The occurrence within Los Angeles County (40 points);
(5) The watershed location (e.g., Santa Clara River watershed – highest score [30 points]);
(6) The occurrence of a Significant Ecological Area as defined by the County of Los Angeles (up to 10 points);
(7) The occurrence of a California Essential Habitat Connectivity Project area, as defined by the California Department of Transportation and the California Department of Fish and Wildlife (up to 8 points); and
(8) The occurrence within one (1) mile of a National Forest, National Park, State Park, or County Park (natural park) (up to 5 points).

The resulting maps generated from this database (see attached Exhibit 1: Regional Suitability for Mitigation; and Exhibit 2.1 through 2.4: Detail Sheet A, B, C, and D – Local Suitability for Mitigation) present a color-coded display with gradations of high suitability (green) to low suitability (red) that represent the combined score for each qualifying parcel. The maps also display the County Assessor parcel numbers, the watershed boundaries, and other parameters set forth above. The database enables the user to evaluate parcels in the Project region for their potential suitability to provide mitigation acreages for losses of biological/habitat resources that are currently present on the Project site. Exhibits 3.1, 3.2, 3.3, and 3.4 provide a sample of soils data reviewed within potential mitigation opportunity properties and other parcels.

Results of the analysis indicate that properties with the appropriate biological resources and of sufficient acreage are currently available or are in process towards becoming available (based on information obtained by Psomas staff) within the region. As summarized in Table 1, Summary of NorthLake Mitigation Requirements and Partial List of Mitigation Opportunities, and detailed in

Table 2, Detail of NorthLake Mitigation Requirements and Partial List of Mitigation Opportunities, available acreage exceeds mitigation requirements for each impact category and additional properties with suitable habitats are expected to occur as well. A portion of the mitigation acreage is expected to occur on-site (see Exhibit 4) with the balance occurring within off-site lands owned by NorthLake (see Exhibit 5) and other off-site lands potentially available (see Table 2). In addition, the identified properties exhibit biological rankings equivalent to that of the affected habitats on the Project site (see Exhibits 1 and 2 and Table 3, Top 20 High Scoring Parcels from Regional Analysis). This equivalence is an indication of appropriate mitigation replacement values and can also be used to assess additional properties which may become available for mitigation. Biological resources mitigation for the NorthLake Project is, therefore, feasible.

In conclusion, this analysis (as well as the supporting tables and maps) shows that the biology mitigation measures for the NorthLake Project impacts identified in the SEIR are feasible and will mitigate the Project's potentially significant biology impacts.

Attachments:

1. Table 1, Summary of NorthLake Mitigation Requirements and Partial List of Mitigation Opportunities
2. Table 2, Detail of NorthLake Mitigation Requirements and Partial List of Mitigation Opportunities
3. Table 3, Top 20 High Scoring Parcels from Regional Analysis
4. Exhibit 1, Regional Suitability for Mitigation
5. Exhibit 2.1, Detail Sheet A - Local Suitability for Mitigation
6. Exhibit 2.2, Detail Sheet B - Local Suitability for Mitigation
7. Exhibit 2.3, Detail Sheet C - Local Suitability for Mitigation
8. Exhibit 2.4, Detail Sheet D - Local Suitability for Mitigation
9. Exhibit 3.1, Detail Sheet A - Soils
10. Exhibit 3.2, Detail Sheet B - Soils
11. Exhibit 3.3, Detail Sheet C - Soils
12. Exhibit 3.4, Detail Sheet D - Soils
13. Exhibit 4, On-site Mitigation Opportunities
14. Exhibit 5, Off-site Mitigation Opportunities Owned by NorthLake

ATTACHMENT 1

TABLE 1, SUMMARY OF NORTHLAKE MITIGATION REQUIREMENTS AND PARTIAL LIST OF MITIGATION OPPORTUNITIES

TABLE 1
SUMMARY OF NORTHLAKE MITIGATION REQUIREMENTS and PARTIAL LIST OF MITIGATION OPPORTUNITIES

BIOLOGICAL RESOURCE	IMPACTS *	REQUIRED MITIGATION @ 2:1	APPROPRIATE HABITAT CURRENTLY OWNED BY NORTHLAKE: ON-SITE (WITHIN NORTHLAKE BOUNDARY) **	APPROPRIATE HABITAT CURRENTLY OWNED BY NORTHLAKE: OFF-SITE (OUTSIDE NORTHLAKE BOUNDARY) **	REQUIRED MITIGATION NOT CURRENTLY OWNED BY NORTHLAKE	PARTIAL LIST OF OFF-SITE MITIGATION PROPERTIES WITH APPROPRIATE HABITAT NOT OWNED BY NORTHLAKE: A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL OFF-SITE OPPORTUNITIES (A-N) (ACRES)	TOTAL OFF-SITE OPPORTUNITIES (A-N) (% of REQ'D)
VEGETATION TYPE (ACRES)																						
Sage Scrub	635	1269	330	189	751		324	1800	65	10	200	120	300	130	20	35				3004	400%
Native Grassland	24	48	1	3	45	250														250	560%
Annual Grassland	399	798	51	18	729	250	72	700		40	400									1462	201%
Riparian/Open Water Communities	13	27	1	1	24			500			10									510	2146%

	IMPACTS	REQUIRED MITIGATION @ 1:1	TOTAL OFF-SITE OPPORTUNITIES (A-N) (INDIVIDUALS)	TOTAL OFF-SITE OPPORTUNITIES (A-N) (% OF REQ'D)
PLANT SPECIES (INDIVIDUALS)				
Round-leaved Filaree	39	39	No offsite property required	
Paniculate Tarplant	300	300	6600	22000%
Southwestern Spine Rush	300	300	6600	22000%
Slender & Club-haired Mariposa Lily	3000	3000	20500	911%

	IMPACTS *	REQUIRED MITIGATION @ 1:1	TOTAL OFF-SITE OPPORTUNITIES (A-N) (ACRES)	TOTAL OFF-SITE OPPORTUNITIES (A-N) (% OF REQ'D)
JURISDICTIONAL WATER (ACRES)				
Waters of the United States	11	11	26	246%

	IMPACTS	REQUIRED MITIGATION	TOTAL OFF-SITE OPPORTUNITIES (A-N) (INDIVIDUALS)	TOTAL OFF-SITE OPPORTUNITIES (A-N) (% OF REQ'D)
WILDLIFE (INDIVIDUALS)				
Burrowing Owl ***	2	13	No offsite property required	
Coastal California Gnatcatcher	2	2	Will be part of Sage Scrub acreage listed above	
Western Spadefoot Toad	0.5	0.5	No offsite property required	

PARTIAL LIST OF OFF-SITE MITIGATION PROPERTIES WITH APPROPRIATE HABITAT NOT OWNED BY NORTHLAKE

A - Peterson Ranch Mitigation Bank
B - Gilmore Ranch Property Val Verde
C - Temescal Ranch Property, Castaic
D - Castaic APN 3247-010-011
E - Val Verde APN 3247-032-031
F - Santa Clarita San Martinez Grande Canyon Road
G - Acton APN 3217-005-018
H - Lannan Ranch Agua Dulce
I - Tract 42537
J - Castaic APN 3247-010-056
K - Castaic APNs 3247-039-007/3247-039-008
L - Templin Highway Undercrossing APN 3247-008-003
M - Templin Highway Undercrossing APN 3247-005-035
N - Templin Highway Undercrossing APN 3247-009-004

Note: The above properties are either: 1) currently part of an established mitigation bank, 2) currently for sale, or 3) have been known to be for sale on the open market.

Footnotes:

* Acreage numbers includes Permanent and Temporary Impact Areas.

** Acreage numbers includes Non-impacted and Temporary Impact Areas.

*** Burrowing Owl mitigation shown hereon is a conservative estimate. As stated in the SEIR, the actual mitigation amount will be determined by field surveys conducted prior to construction.

ATTACHMENT 2

TABLE 2, DETAIL OF NORTHLAKE MITIGATION REQUIREMENTS AND PARTIAL LIST OF MITIGATION OPPORTUNITIES

Biological Resources	Non-Impacted	Habitat Impacts (Acres/Individuals)						Total:	Total:	Mitigation	Required
		On-Site			Off-Site						
		Permanent	Temporary	Subtotal	Permanent	Temporary	Subtotal				
Vegetation Type (acres)											
Sage Scrub Communities											
Sage Scrub Subtotal	**261.48**	**504.77**	**68.09**	**572.86**	**39.82**	**22.02**	**61.84**	**896.18**	**634.7**	**2:1**	**1,269.39**
Native Grassland Communities											
Native Grassland Subtotal	**0.97**	**23.82**	**0.29**	**24.11**	**0.13**	**0**	**0.13**	**25.2**	**24.23**	**2:1**	**48.47**
Annual Grassland Communities											
Annual Grassland Subtotal	**37.45**	**373.02**	**13.11**	**386.14**	**7.03**	**5.71**	**12.75**	**436.33**	**398.88**	**2:1**	**797.77**
Riparian/Open Water Communities[a]											
Riparian/Open Water Subtotal	**1.28**	**12.42**	**0.06**	**12.48**	**0.66**	**0.11**	**0.77**	**14.54**	**13.26**	**2:1**	**26.51**
Plant Species (individuals)											
California macrophylla (round-leaved filaree)	0	39	0	39	0	0	0	N/A	39	**1:1**	**39**
Deinandra paniculata (paniculate tarplant)	0	~300	0	~300	0	0	0	N/A	~300	**1:1**	**~300**
Juncus acutus ssp. *leopoldii* (southwestern spiny rush)	0	~300	0	~300	0	0	0	N/A	~300	**1:1**	**~300**
Calochortus clavatus var. *gracilis* (slender mariposa lily) and *Calochortus clavatus* var. *clavatus* (club-haired mariposa lily)	0	~3,000	0	~3,000	0	0	0	N/A	~3,000	**1:1**	**~3,000**
Wildlife (acres)											
Athene cunicularia (burrowing owl)	0	2*	0	2*	0	0	0	N/A	**2***	**6.5:1**	**13**
Polioptila californica californica (coastal California gnatcatcher)	0	2*	0	2*	0	0	0	N/A	**2***		
Spea hammondii (western spadefoot toad)	0	0.52	0	0.52	0	0	0	N/A	**0.52**	**1:1**	**0.52**
Jurisdictional Waters (acres)											
Waters of the United States									**10.59**	**1:1**	**10.59**

Biological Resources	Opportunity Properties with Existing Veg for Preservation and Potentially Suitable Habitat for Restoration											
	On-site (Undisturbed)		Off-site Northlake				Peterson Ranch Mitigation Bank[b]	Gilmore Ranch Property (2,193 acres) Val Verde	Temescal Ranch Property Castaic, west of I-5 (approx 4,800 acres)	Unnamed off-site, 70 acres (Castaic, north of Northlake; APN 3247-010-011)	Unnamed off-site Val Verde (52 acres; APN 3247-032-031)	Santa Clarita 28190 San Martinez Grande Canyon Road (616 acres)
	All Areas	TOTAL	Area 1	Area 2	Area 3	TOTAL						
Vegetation Type (acres)												
Sage Scrub Communities												
Sage Scrub Subtotal	261.48	261.48	19.23	1.98	145.69	166.90		324.05	1800	65	10	200
Native Grassland Communities												
Native Grassland Subtotal	0.97	0.97	0.57		2.00	2.57	250					
Annual Grassland Communities												
Annual Grassland Subtotal	37.45	37.45	0.23		12.48	12.71	250	71.74	700		40	400
Riparian/Open Water Communities[a]												
Riparian/Open Water Subtotal	1.28	1.28			1.31	1.31			500			10
Plant Species (individuals)												
California macrophylla (round-leaved filaree)	100	100	50	20	100	170.00	0	1000	2000	300	200	1000
Deinandra paniculata (paniculate tarplant)	100	100	50	20	100	170.00	0	1000	2000	300	200	1000
Juncus acutus ssp. *leopoldii* (southwestern spiny rush)	100	100	50	20	100	170.00	0	1000	2000	300	200	1000
Calochortus clavatus var. *gracilis* (slender mariposa lily) and *Calochortus clavatus* var. *clavatus* (club-haired mariposa lily)	300	300	100	50	300	450.00	0	3000	6000	1000	1000	3000
Wildlife (acres)												
Athene cunicularia (burrowing owl)	25	25	15	15	25	55.00	0	250	1000	25	25	100
Polioptila californica californica (coastal California gnatcatcher)		0				0.00	0					
Spea hammondii (western spadefoot toad)	2	2	1	1	2	4.00	0	2	4	1	1	2
Jurisdictional Waters (acres)												
Waters of the United States		0					26					

Biological Resources	Opportunity Properties with Existing Veg for Preservation and Potentially Suitable Habitat for Restoration (cont.)									On & Off-site Opportunities Combined TOTAL
	Unnamed off-site Acton (155 acres; APN 3217-005-018)	Lannan Ranch Agua Dulce (1,586 acres)	Tract 42537 (320 acres)	Unnamed off-site, 20 acres (Castaic, north of Northlake; APN 3247-010-056)	Unnamed off-site, 40 acres (Castaic, north of Northlake; APNs 3247-039-007, 3247-039-008)	Parcel SW of Templin Hwy Undercrossing (APN 3247-008-003)[c]	Parcel N of Templin Hwy Undercrossing (APN 324-7005-035)[c]	Parcel NE of Templin Hwy Undercrossing (APN 324-7009-004)[c]	TOTAL	
Vegetation Type (acres)										
Sage Scrub Communities										
Sage Scrub Subtotal	120	300	130	20	35				3004.05	3432.43
Native Grassland Communities										0.00
Native Grassland Subtotal									250	253.54
Annual Grassland Communities										0.00
Annual Grassland Subtotal									1461.74	1511.90
Riparian/Open Water Communities[a]										0.00
Riparian/Open Water Subtotal									510	512.59
Plant Species (individuals)										
California macrophylla (round-leaved filaree)	300	1000	300	100	100	100	100	100	6600	6870.00
Deinandra paniculata (paniculate tarplant)	300	1000	300	100	100	100	100	100	6600	6870.00
Juncus acutus ssp. *leopoldii* (southwestern spiny rush)	300	1000	300	100	100	100	100	100	6600	6870.00
Calochortus clavatus var. *gracilis* (slender mariposa lily) and *Calochortus clavatus* var. *clavatus* (club-haired mariposa lily)	1000	3000	1000	300	300	300	300	300	20500	21250.00
Wildlife (acres)										
Athene cunicularia (burrowing owl)	50	300	100	5	10	10	10	10	1895	1975.00
Polioptila californica californica (coastal California gnatcatcher)									0	*
Spea hammondii (western spadefoot toad)	1	2	1	0.05	0.05	0.05	0.05	0.05	14.25	20.25
Jurisdictional Waters (acres)										
Waters of the United States									26	26.00

Note: Columns may not add up to the total shown due to complications regarding rounding. Plant and wildlife individuals and areas listed for potential mitigation is an estimate of potentially suitable habitat based on vegetation types and desk-top aerial review.

* Assumes a less than likely scenario in which not more than 2 acres of wintering habitat is impacted for burrowing owl and 2 gnatcatcher (1 pair) are impacted. These are conservative estimates and true impacts will be determined during person surveys conducted prior to construction. Although the table above describes the mitigation required for impacted CSS habitat, the USFS may require some CAGN occupied CSS habitat within the total. Mitigation will require preservation of CSS habitat.

[a] Vegetation mapping is conducted using general field surveys, supplemented with aerial photographs when necessary, while very detailed measurements are taken for jurisdictional delineations. Therefore, permitting for projects is always based on the results of the jurisdictional delineation. It is anticipated that the actual riparian mitigation requirement (proceeding from relevant Project permits) will be based on the total jurisdictional impacts of 15.04 acres.

[b] Acreage represents mixed vegetation communities of 1000 acres of chaparral/grasslands. It is unknown what portion is native and/or annual grassland communities. It assumed 25% native, 25% non-native and 50% chaparral.

[c] These three parcels are included due high biological value and are considered potentially available properties although current status is unknown.

ATTACHMENT 3

TABLE 3, TOP 20 HIGH SCORING PARCELS FROM REGIONAL ANALYSIS

TABLE 3
TOP 20 SCORING PARCELS

Parcel Number	County	Percent Natural	Percent CSS	Size (Minimum 100 Acres)	Parameters/Scores (See Descriptions Below)								
					CNDDB	Critical Habitat	County	Watershed	SEA	CEHCP	CSS	Nat'l Forest/ Park	Total
3210014026	Los Angeles	99	80	105	75	0	40	30	10	8	40	4	**207**
6150210100	Ventura	100	80	327	75	60	0	16	0	1	40	0	**192**
5000370285	Ventura	94	67	138	75	60	0	16	0	8	33	0	**192**
5800010125	Ventura	99	65	123	75	60	0	16	0	8	32	0	**191**
2848009020	Los Angeles	100	67	303	11	60	40	30	10	4	33	2	**190**
6150210045	Ventura	99	88	908	60	60	0	16	0	0	44	0	**180**
6150160455	Ventura	100	53	160	75	60	0	16	0	0	26	0	**177**
2826018066	Los Angeles	100	56	160	0	60	40	30	10	8	28	0	**176**
2826003026	Los Angeles	100	68	152	60	0	40	30	6	0	34	0	**170**
6190020035	Ventura	97	91	134	43	60	0	16	0	0	45	0	**164**
2827029271	Los Angeles	100	23	142	0	60	40	30	10	8	11	4	**163**
2826019036	Los Angeles	100	54	161	0	43	40	30	10	8	27	3	**161**
2826018034	Los Angeles	100	22	162	0	60	40	30	10	8	11	0	**159**
2827013015	Los Angeles	99	25	106	0	60	40	30	6	8	12	2	**158**
3244014053	Los Angeles	99	82	175	46	0	40	30	0	0	41	1	**158**
6200060155	Ventura	100	79	202	32	60	0	16	0	6	39	0	**153**
2601007800	Los Angeles	100	30	234	0	60	40	22	5	8	15	2	**152**
2821011016	Los Angeles	100	22	185	0	60	40	22	10	6	11	2	**151**
2826018053	Los Angeles	100	27	156	0	48	40	30	10	8	13	2	**151**
5000370575	Ventura	96	24	101	54	60	0	16	0	8	12	0	**150**

Parameter Scoring Summary

CNDDB (California Natural Diversity Data Base): A parcel is awarded 75 points if its geographic center falls within a CNDDB record (1980 or newer), or U.S. Fish and Wildlife Service (USFWS) record, for the coastal California gnatcatcher (*Polioptila californica californica*)(gnatcatcher). A parcel is awarded a fraction of 75 points if it occurs within one (1) mile of a gnatcatcher record location.

Critical Habitat: A parcel is awarded 60 points if its geographic center falls within critical habitat (per USFWS) for the coastal California gnatcatcher. A parcel is awarded a fraction of 60 points if it falls within one (1) mile of gnatcatcher critical habitat.

County: A parcel is awarded 40 points if it occurs within the County of Los Angeles.

Watershed: A parcel is awarded the following points based on the watershed in which it occurs – Santa Clara River (30 points); Los Angeles River (22 points); Calleguas Creek (16 points); Santa Monica Bay (8 points).

SEA (Significant Ecological Area): A parcel is awarded 10 points if it falls within a Significant Ecological Area as defined by the County of Los Angeles. A parcel is awarded a fraction of 10 points if it falls within one (1) mile of an SEA.

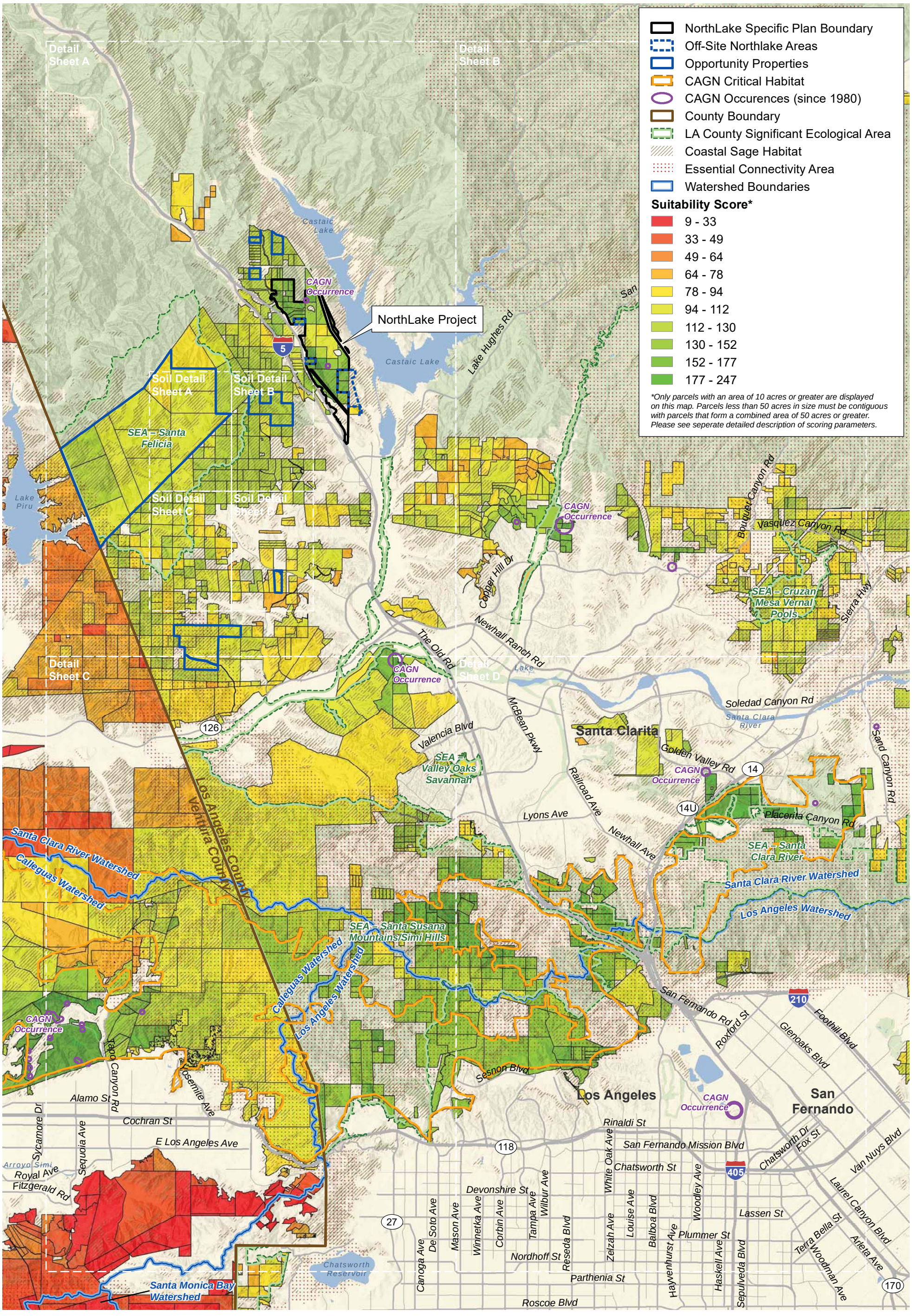
CEHCP (California Essential Habitat Connectivity Project): A parcel is awarded 8 points if it falls within a CEHCP area. as defined by the California Department of Transportation and the California Department of Fish and Wildlife. A parcel is awarded a fraction of 8 points if it falls within one (1) mile of an area designated by the CEHCP.

CSS (Coastal Scrub): A parcel is awarded a fraction of 50 points, equal to the percent of the land area that is covered by the coastal scrub vegetation type, as designated by the California Department of Forestry and Fire Protection (CAL FIRE).

Nat'l Forest/Park: A parcel is awarded a fraction of 5 points if it falls within one (1) mile of a National Forest, National Park, State Park, or County Park (natural park).

ATTACHMENT 4

EXHIBIT 1, REGIONAL SUITABILITY FOR MITIGATION



Regional Suitability for Mitigation

Exhibit 1

NorthLake Specific Plan

N W E S

2 1 0 2 Miles

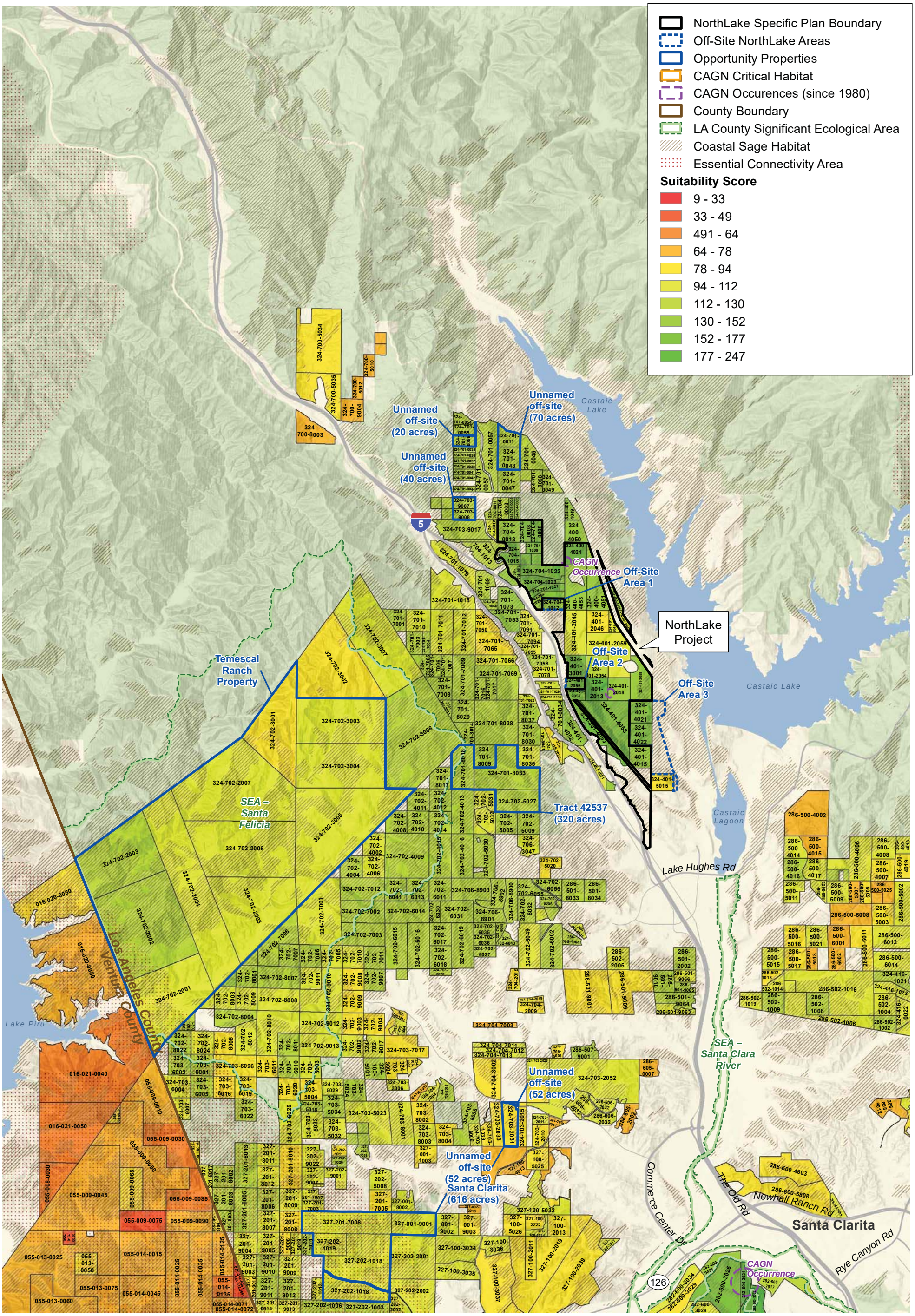
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ATTACHMENT 5

EXHIBIT 2.1, DETAIL SHEET A - LOCAL SUITABILITY FOR MITIGATION



Detail Sheet A – Local Suitability for Mitigation

Exhibit 2.1

NorthLake Specific Plan

N W E S

1 0.5 0 1 Miles

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ATTACHMENT 6

EXHIBIT 2.2, DETAIL SHEET B - LOCAL SUITABILITY FOR MITIGATION

NorthLake Specific Plan Boundary
Off-Site NorthLake Areas
Opportunity Properties
CAGN Critical Habitat
CAGN Occurences (since 1980)
County Boundary
LA County Significant Ecological Area
Coastal Sage Habitat
Essential Connectivity Area

Suitability Score

9 - 33
33 - 49
491 - 64
64 - 78
78 - 94
94 - 112
112 - 130
130 - 152
152 - 177
177 - 247

San Francisquito Canyon Rd
Castaic Lake
SEA – Santa Clara River
CAGN Occurrence
CAGN Occurrence
CAGN Occurrence
Copper Hill Dr
Santa Clarita
Bouquet Canyon Rd
McBean Pkwy
Newhall Ranch Rd
Rye Canyon Rd
Avenue Scott
Lake Lake
Santa Clara River
Vasquez Canyon Rd
Sand Canyon Rd
Sierra Hwy
SEA – Cruzan Mesa Vernal Pools
5

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Detail Sheet B – Local Suitability for Mitigation

Exhibit 2.2

NorthLake Specific Plan

N W E S

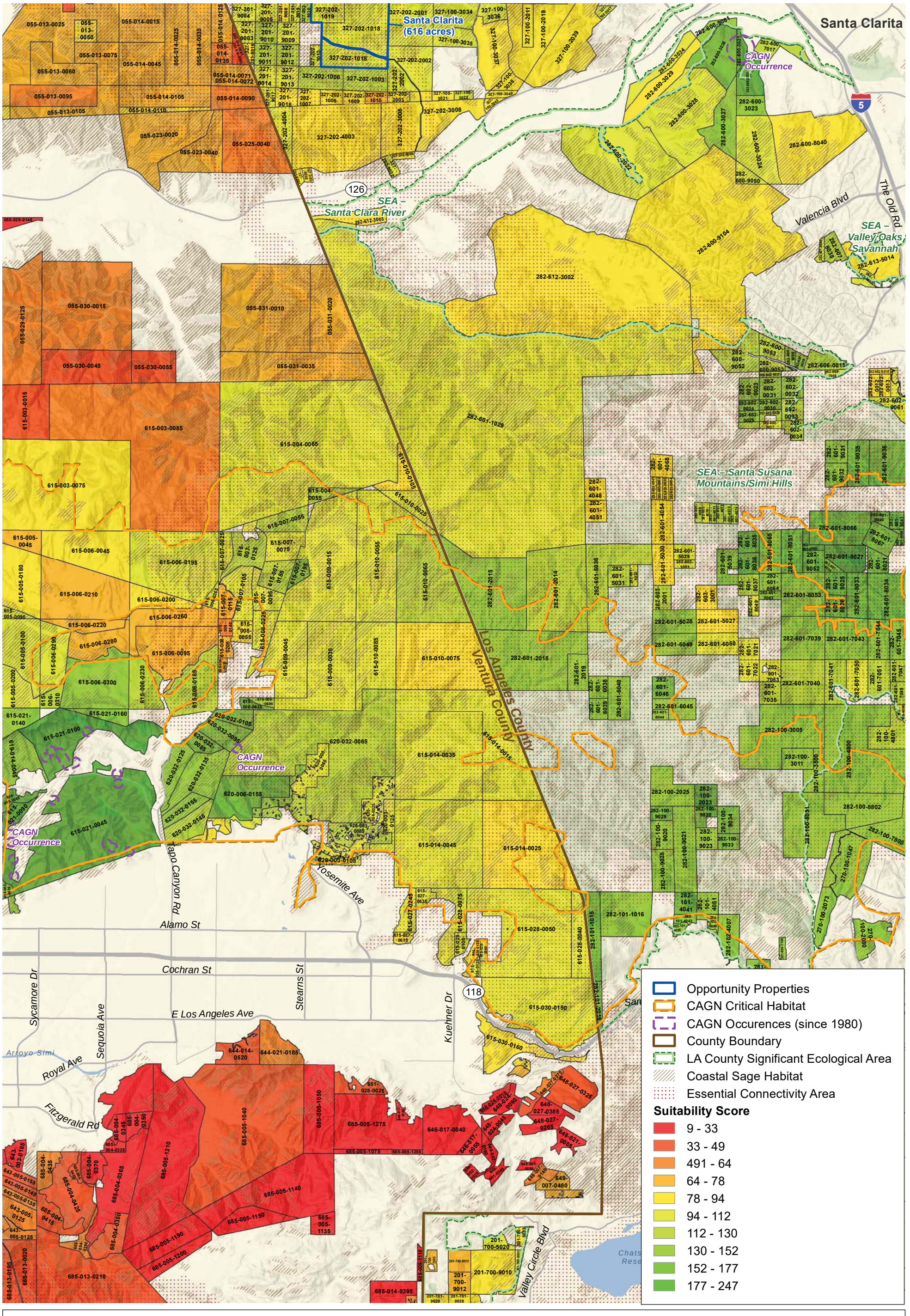
1 0.5 0 1 Miles

PSOMAS

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ATTACHMENT 7

EXHIBIT 2.3, DETAIL SHEET C - LOCAL SUITABILITY FOR MITIGATION



Detail Sheet C – Local Suitability for Mitigation

Exhibit 2.3

NorthLake Specific Plan

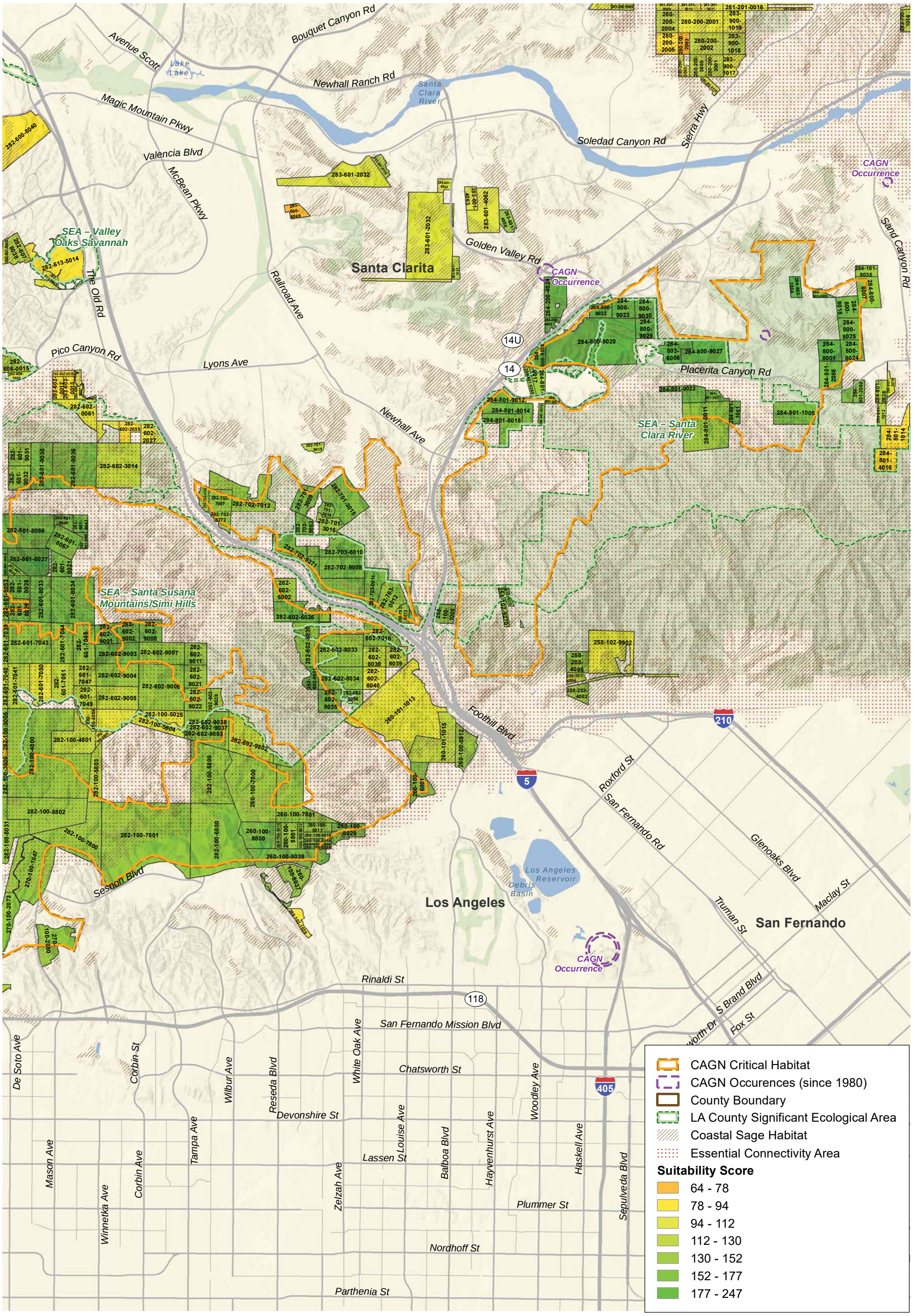
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ATTACHMENT 8

EXHIBIT 2.4, DETAIL SHEET D - LOCAL SUITABILITY FOR MITIGATION



Detail Sheet D – Local Suitability for Mitigation

Exhibit 2.4

NorthLake Specific Plan

N W E S

1 0.5 0 1 Miles

PSOMAS

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ATTACHMENT 9

EXHIBIT 3.1, DETAIL SHEET A - SOILS

Opportunity Properties
County Boundary

Suitability Score

85 - 110
110 - 144

USDA Soil Types

CmE: Castaic-Balcom silty clay loams, 15 to 30 percent slopes
CmF2: Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded
CmF: Castaic-Balcom silty clay loams, 30 to 50 percent slopes
CmG2: Castaic-Balcom silty clay loams, 50 to 65 percent slopes, eroded
CnG3: Castaic and Saugus soils, 30 to 65 percent slopes, severely eroded
CyA: Cortina sandy loam, 0 to 2 percent slopes
ScE: Saugus loam, 15 to 30 percent slopes
ScF2: Saugus loam, 30 to 50 percent slopes, eroded
YoC: Yolo loam, 2 to 9 percent slopes

Temescal Ranch Property

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Detail Sheet A - Soils

Exhibit 3.1

NorthLake Specific Plan

N W E S

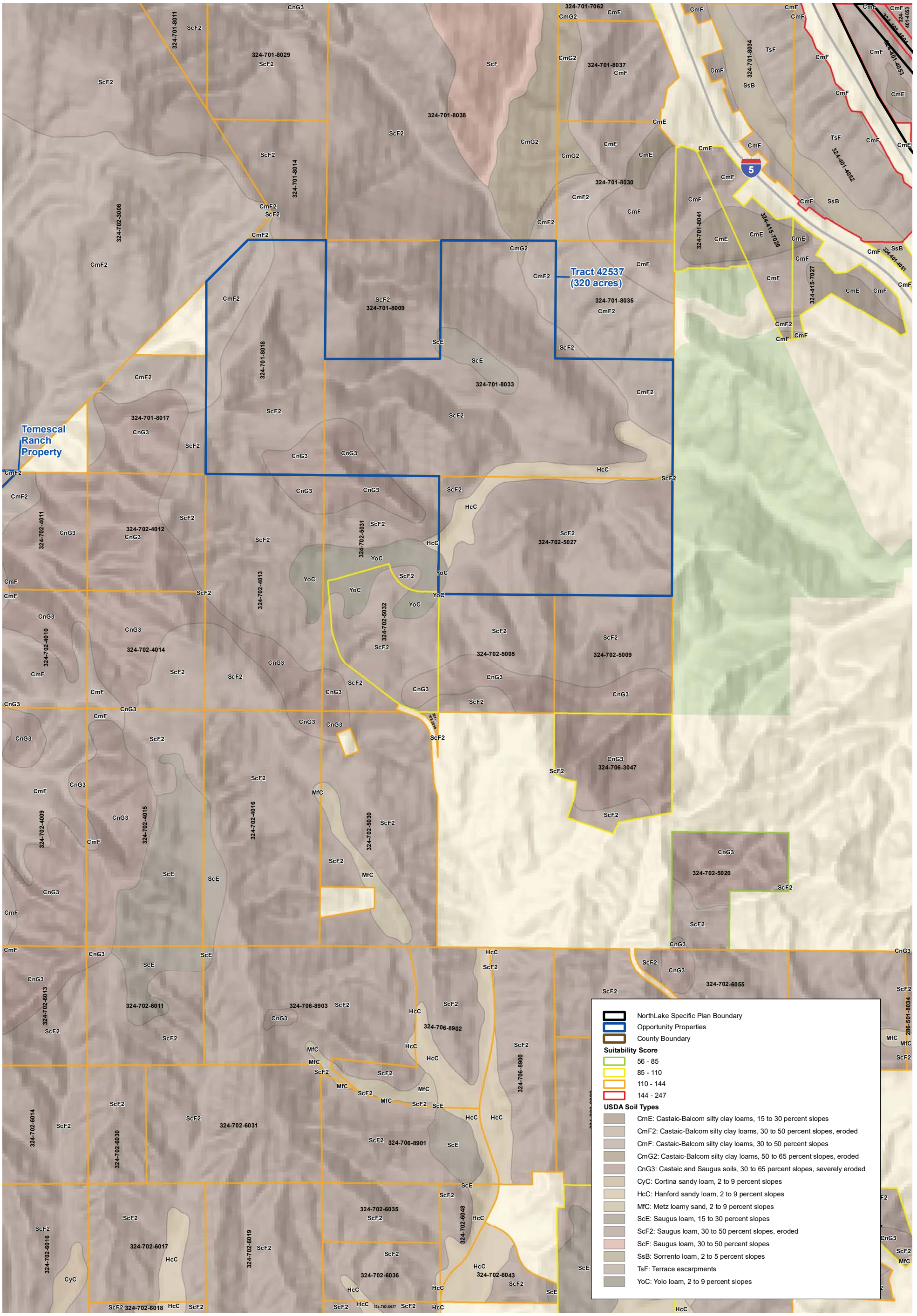
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ATTACHMENT 10

EXHIBIT 3.2, DETAIL SHEET B - SOILS



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Detail Sheet B – Soils

Exhibit 3.2

NorthLake Specific Plan

N W E S

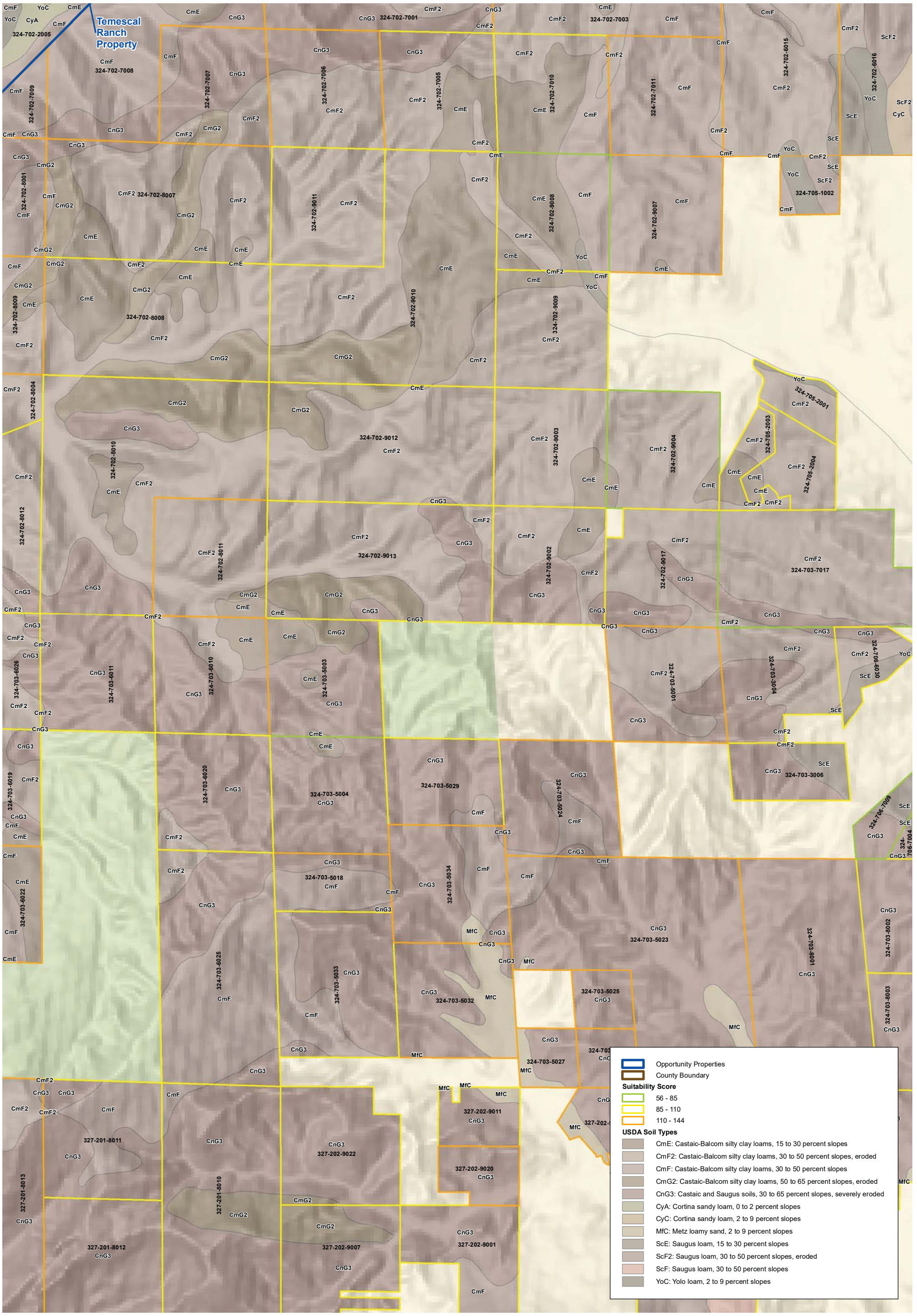
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ATTACHMENT 11

EXHIBIT 3.3, DETAIL SHEET C - SOILS



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Detail Sheet C - Soils

Exhibit 3.3

NorthLake Specific Plan

N W E S

1,000 500 0 1,000 Feet

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ATTACHMENT 12

EXHIBIT 3.4, DETAIL SHEET D - SOILS

Opportunity Properties
County Boundary

Suitability Score

56 - 85
85 - 110
110 - 144

USDA Soil Types

CmE: Castaic-Balcom silty clay loams, 15 to 30 percent slopes
CmF2: Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded
CnG3: Castaic and Saugus soils, 30 to 65 percent slopes, severely eroded
CyA: Cortina sandy loam, 0 to 2 percent slopes
CyC: Cortina sandy loam, 2 to 9 percent slopes
HcC: Hanford sandy loam, 2 to 9 percent slopes
MfC: Metz loamy sand, 2 to 9 percent slopes
ScE: Saugus loam, 15 to 30 percent slopes
ScF2: Saugus loam, 30 to 50 percent slopes, eroded
ScF: Saugus loam, 30 to 50 percent slopes
SsB: Sorrento loam, 2 to 5 percent slopes
YoC: Yolo loam, 2 to 9 percent slopes
ZaC: Zamora loam, 2 to 9 percent slopes

Unnamed off-site (52 acres)

Unnamed off-site (52 acres)

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Detail Sheet D – Soils

Exhibit 3.4

NorthLake Specific Plan

N W E S

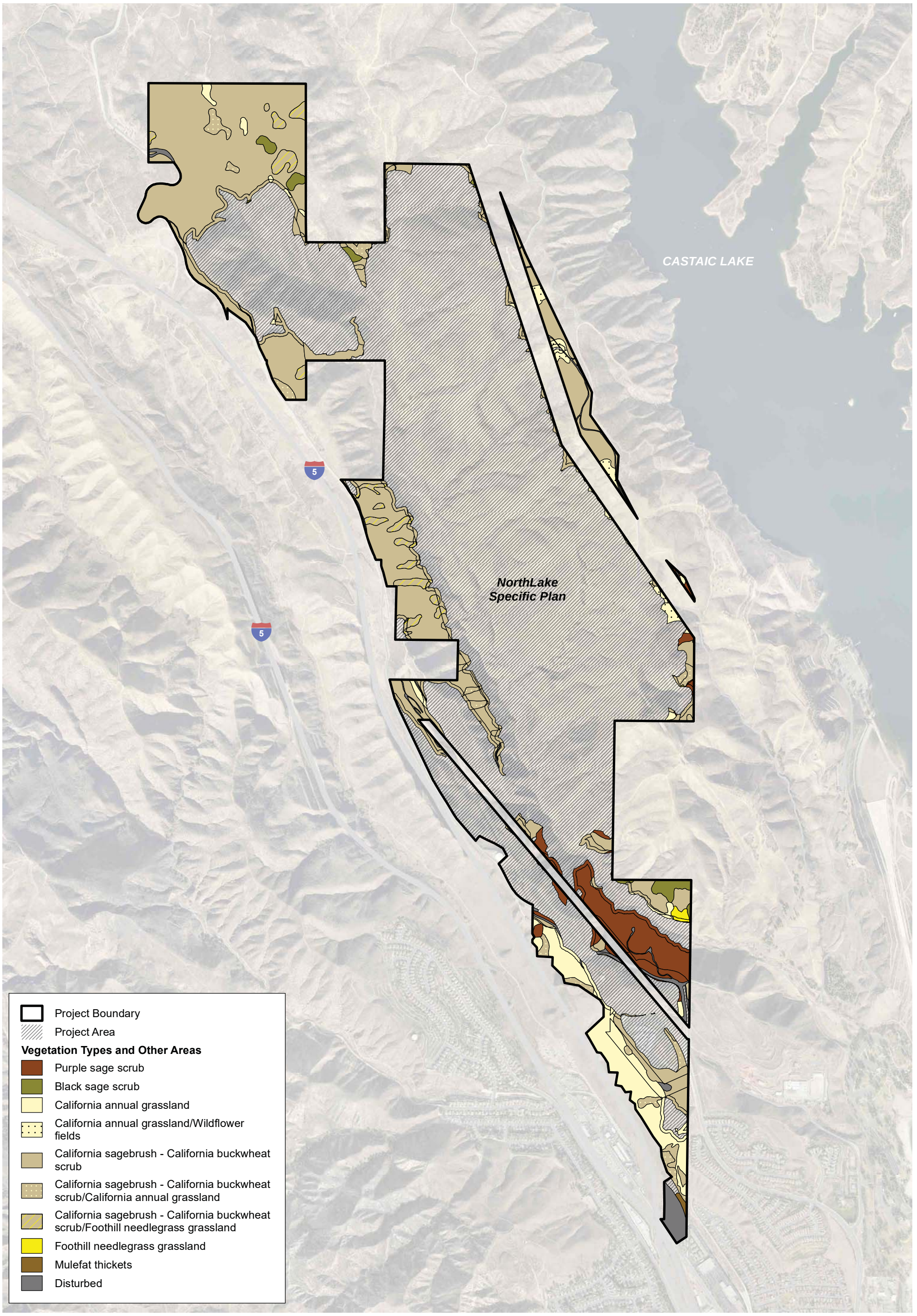
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ATTACHMENT 13

EXHIBIT 4, ON-SITE MITIGATION OPPORTUNITIES



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On-site Mitigation Opportunities

Exhibit 4

NorthLake Specific Plan

N W E S

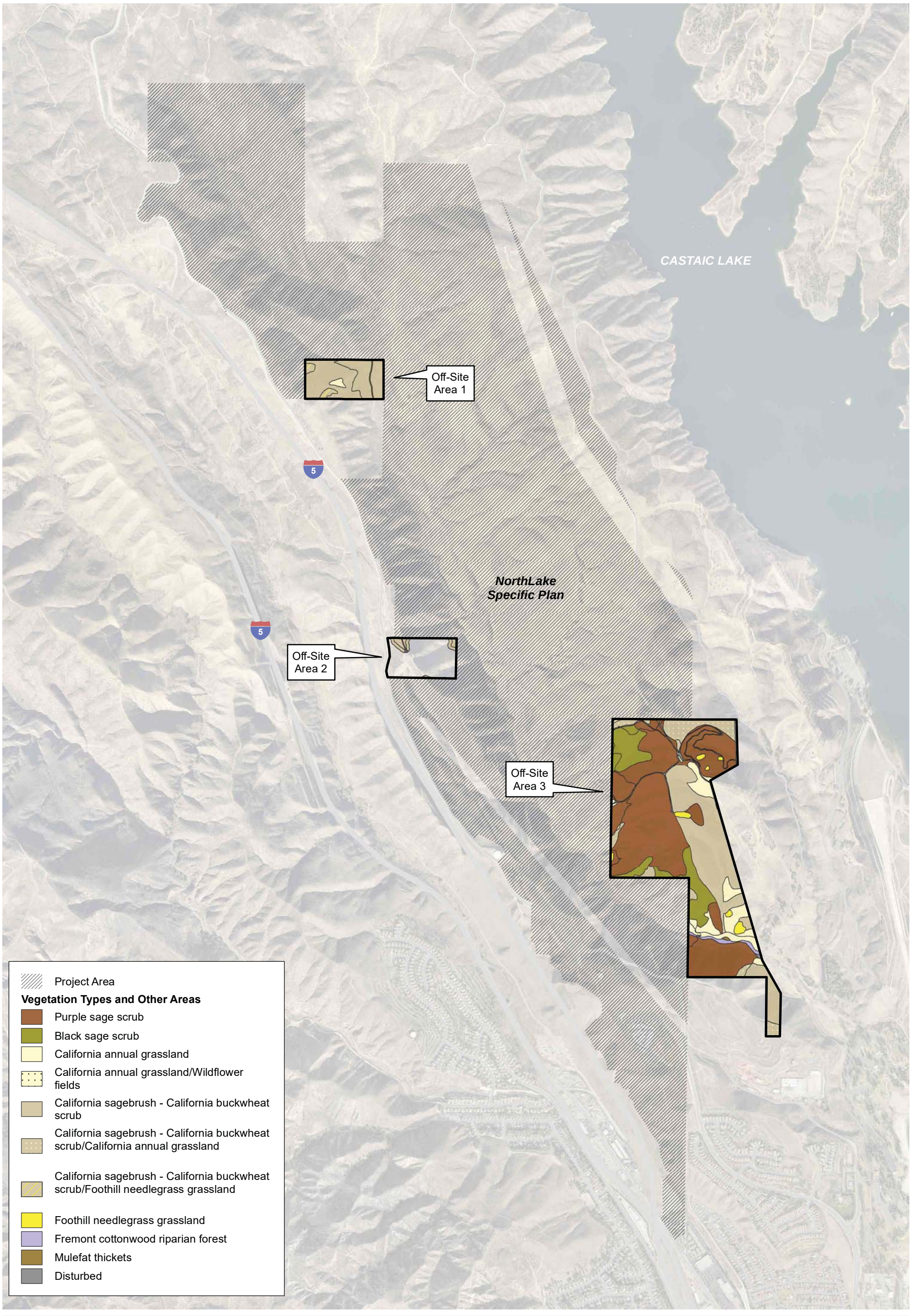
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ATTACHMENT 14

EXHIBIT 5, OFF-SITE MITIGATION OPPORTUNITIES OWNED BY NORTHLAKE



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Off-site Mitigation Opportunities - Owned by NorthLake

Exhibit 5

NorthLake Specific Plan

N W E S

1,500 750 0 1,500 Feet

PSOMAS

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ATTACHMENT C

RESUMES OF SENIOR BIOLOGICAL RESOURCES CONTRIBUTORS

Resumes of Senior Biological Resources Contributors

Ann Johnston

Resource Management Team Leader/Principal

EDUCATION

1989/BA/Biology/California State University, Long Beach

PROFESSIONAL AFFILIATIONS

Women's Transportation Seminar, Orange County Chapter

IRWA Chapter 67

EXPERIENCE

With Psomas: 22 years/With Other Firms for: 7 years

Ann Johnston is the Team Leader of Resource Management projects and a Principal of Psomas. She has 29 years of experience in biological resources inventories/evaluations; sensitive species surveys; mitigation monitoring; resource agency permitting and processing; conservation and strategic planning; and technical peer reviews. Ann's professional experience has focused on finding solutions to development challenges where potential impacts to biological resources may occur, and on the assessment and integration of biological data (particularly on sensitive species) into environmental documentation that complies with the requirements of CEQA, NEPA, FESA, and CESA. Over the past 28 years, she has managed and/or authored the biological resources sections of numerous EIRs; EISs; Biological Technical Reports; Biological Assessments (pursuant to Section 7 consultations with the USFWS); Natural Environment Studies (NESs) (pursuant to Caltrans guidelines); focused surveys for sensitive species; tree reports; resource management plans; mitigation monitoring reports; and general biological assessments and constraints analyses.

Experience

Madrona Project, Biological Technical Report, Brea, CA: Principal-in-Charge/Project Manager for this development project (previously known as Canyon Crest) on 367.5 acres. Ann provided peer reviews of Biological Technical Reports prepared for the proposed project by the Project Applicant; served as an extension of City staff; and provided guidance in regards to the adequacy of the information to be summarized into the Biological Resource Section of the EIR. As part of the project, Ann developed the City's Findings of Significance for project impacts to biological resources based on the CEQA Guidelines and City standards/precedents. With changes to the project, including a new property owner, the City continued to rely on Ann to prepare a revised Biological Technical Report, Biological Resource Section of the revised EIR, a California Rapid Assessment Method (CRAM) analysis and an updated Jurisdictional Delineation Report.

Section 7 Consultation for the Operation and Maintenance of Big Tujunga Dam, Angeles National Forest, Los Angeles County, CA: Principal-in-Charge for the Section 7 Consultation for the Operation and Maintenance of Big Tujunga Dam. The study area includes 13 stream miles between Big Tujunga Dam and Hansen Dam. Focused surveys were conducted for listed plant species, least Bell's vireo, southwestern willow flycatcher, arroyo toad, and Sierra Madre yellow-legged frog. Special status species present in the study area include Santa Ana sucker, arroyo chub, Santa Ana speckled dace, western pond turtle, and two-striped garter snake; the arroyo toad occurs upstream of Big Tujunga Reservoir. Ann provided strategic guidance during the preparation of the BA to assess the effect of the operation and maintenance of Big Tujunga Dam on listed species and/or their critical habitat and is assisting LACDPW in their consultation with the resource agencies.

State Route 241 Extension Project Biological Documentation and Permitting, Orange County, CA: Principal-in-Charge/Project Manager for the proposed extension of State Route 241. This extension is a portion of the project that has also been referred to as the South Orange County Transportation Infrastructure Improvement Project or the Foothill Transportation Corridor-South project. Ann currently serves as an extension of the Transportation Corridor Agencies' (TCA) staff on the proposed extension of State Route 241. Ann has provided the TCA with technical and strategic assistance regarding the biological documentation and permitting processes with the following agencies: the Federal Highway Administration (FHWA), Caltrans, the USACE, the USFWS, the California Coastal Commission (CCC), the CDFW, the RWQCB, and the Marine Corps Base Camp Pendleton. Ann has worked on this project in varying capacities since 1990. She has served as the Lead Biologist on the project, conducting many plant and special status wildlife surveys; overseeing daily scientific activities of other biologists; ensuring approved methodologies are followed and results are accurately documented; and preparing/reviewing multiple versions of the project's Natural Environment Study (NES) in accordance with Caltrans guidelines. She was also responsible for preparing multiple Biological Assessments pursuant to consultation with the USFWS required for various alternatives of the project. Ann has also provided strategic planning for the TCA on biological resources issues related to design alternatives; the entitlement process; consensus building with government agencies; mitigation strategies; and negotiations with resource agencies.

Devers-Colorado Corridor Road Repair Project Biological Clearance Survey, Palm Springs to Blythe, CA: Principal-in-Charge/Project Manager for this Southern California Edison (SCE) project, which consists of re-grading approximately 110 miles of an existing access road along an existing transmission line that stretches between the Cities of Desert Hot Springs and Blythe. Psomas completed surveys that were focused on determining the presence of sensitive plant or wildlife species in the study area to aid in implementing biological resource avoidance measures. Ann managed the staff who conducted pre-construction surveys.

Southern California Edison Substation Projects Biological Services, Southern California, CA: Principal-in-Charge for numerous Southern California Edison (SCE) substation projects. Some of the projects include the Circle City Substation Project in Riverside and San Bernardino Counties; the Falcon Ridge Substation Project in San Bernardino County; the Lakeview Substation Project in Riverside County; the Triton Substation Project in Riverside County; the Mascot Substation Project in Kings County; and the Presidential Substation Project in Ventura County. Ann oversaw jurisdictional delineations; vegetation mapping; general plant and wildlife surveys; focused surveys for numerous special status plant and wildlife species; and biological documentation of the survey results.

Sunset Ridge Park Project Biological Resources Services, Newport Beach, CA: Principal-in-Charge for this project, which proposed to develop the approximate 18.9-acre site with active and passive

recreational uses. In support of the project's EIR, Psomas completed a general biological survey, including vegetation mapping; focused surveys for special status plants, coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and burrowing owl; a jurisdictional delineation and report; and a biological technical report. Biologists also prepared the biological resources portions of the IS and EIR, which included preparing mitigation measures to mitigate for impacts as a result of the park. Psomas also assisted the City in obtaining regulatory permits, including Section 7 permitting, a Section 404 permit, a Section 1602 permit, a Section 401 certification, a CDFW consistency determination, and a Coastal Development Permit. Once the Project was approved and construction began, Psomas reviewed the Lighting Plan and provided biological monitoring services. Ann oversaw all surveys on site and prepared the Biological Technical Report and Biological Resources Section for the project EIR. She also provided strategic planning for the City on biological resources issues related to project design, the entitlement process, mitigation strategies, and negotiations with resources agencies and the California Coastal Commission.

Southern California Gas Company North-South Pipeline Project, Riverside and San Bernardino Counties, CA: Principal-in-Charge/Project Manager for this project, which proposes to construct a new pipeline from Adelanto to Moreno Valley to ensure a reliable supply of gas to Southern California. The project includes the construction and installation of an approximate 65-mile-long, 36-inch-diameter natural gas transmission pipeline, including compressor and pressure limiting stations. Psomas conducted focused surveys and prepared reports for many special status plant and wildlife species, including bat species, burrowing owl, coastal California gnatcatcher, desert tortoise, fairy shrimp, Mohave ground squirrel, raptors, and riparian birds. Psomas also performed small mammal trapping, weed surveys, tree surveys, and a jurisdictional delineation. In addition, Psomas prepared a Biological Technical Report, a Jurisdictional Water Resources Existing Conditions Report, a Biological Assessment/Biological Evaluation (pursuant to U.S. Forest Service Standards), a Hydrology and Water Quality Assessment, and a Land Use Assessment. Psomas also prepared the Application for Federal Clean Water Act Section 401 Water Quality Certification, Pre-Construction Notification under the Federal Clean Water Act Section 404 Nationwide Permit, and Notification of Lake or Streambed Alteration Agreement in accordance with Section 1602 of the California Fish and Game Code. Ann provided technical and project management support in the areas of biology, regulatory, GIS, hydrology, and land-use.

Ortega Highway Safety Improvements Arroyo Toad Surveys/Studies and Invasive Species Control, Cleveland National Forest, CA: Principal-in-Charge for the Ortega Highway Improvements project. The project involved the widening of the existing two-lane State Route (SR) 74 and improvements to San Juan Creek tributary drainage culverts on the Orange County side of the Cleveland National Forest. The project involved a three-year program to evaluate populations of the Endangered arroyo toad in adjacent San Juan Creek. The project required coordination with Caltrans, the U.S. Forest Service (USFS), the USFWS, the County of Orange, and the construction contractor to ensure that monitors were present during construction activities and that mitigation

measures were enforced. As part of the mitigation program required by the USFWS Biological Opinion, annual focused surveys and population studies for the arroyo toad were conducted. An invasive aquatic species control program to remove exotic wildlife species posing an immediate threat to the continued existence of the arroyo toad in San Juan Creek was also instituted. Target species included the red-swamp crayfish, American bullfrog, and African clawed frog. The invasive species control program utilized an adaptive methodology that experimented with several different equipment types and techniques to determine the most efficient means of removal, as well as data collection and analysis of the predatory behavior of the bullfrog in San Juan Creek. Aerials were examined to identify perennial water sources that could facilitate exotic species recruitment within a three-mile radius of the project site. Surveys were conducted at suitable sites to determine target species' presence or absence, and the control program was implemented at occupied sites. Given the success of the program, the USFWS requested continued funding as mitigation for other Caltrans 2010 emergency projects on SR-74. Accordingly, focused surveys and invasive species control in San Juan Creek were funded through 2011.

Falcon Ridge Substation Project Biological Resources Support, San Bernardino County, CA: Biologist for this Southern California Edison (SCE) project, which involved a biological assessment of multiple potential sites for construction of an energy substation and several potential sites for transmission lines to and from the sites in the Cities of Rialto, Rancho Cucamonga, and Fontana and unincorporated San Bernardino County. Ann conducted a special status plant species survey for this project.

Tehachapi Renewable Transmission Project Biological Resources Support, Southern California, CA: Principal-in-Charge for this Southern California Edison project. The Tehachapi Renewable Transmission Project (TRTP) consists of the construction of several substations and a total of 175 miles of transmission lines running from the Antelope Valley through the Angeles National Forest (ANF) and into the City of Ontario. The project's objective is to bring wind and solar sourced energy from the Tehachapi Mountains and western Antelope Valley to the Los Angeles basin. As part of a large, multi-company team, Psomas has provided a full range of biological services including vegetation mapping; focused surveys for plants, trees, birds, herpetofauna, and bats; nesting bird surveys; raptor surveys; pre-construction surveys and construction monitoring; and seed collection. Ann is providing project management and senior support for the portion of the alignment that traverses the ANF. Her responsibilities include technical staff management for focused surveys and construction monitoring; reviews of avoidance and mitigation plans; and guidance on a multitude of other tasks.

Three Oaks (Walnut Hills) Development Mitigation Project, Walnut, CA: Senior Project Manager for this project, which included biological resources and restoration ecology components. Biological surveys were completed to support the Biological Technical Report and EIR for the City of Walnut. The purpose of the surveys and documentation was to identify potential impacts to biological resources and to provide mitigation measures for the project site. Issues analyzed include potential

impacts to several special status resources including walnut trees, oak trees, and the coastal California gnatcatcher. A Biological Assessment was also prepared, and vegetation was cleared from the site in accordance with resource agency permits. Finally, the Walnut Hills Habitat Mitigation Monitoring Plan (HMMP) was created for approximately 120 acres of coast live oak woodland, walnut woodland, coastal sage scrub, and riparian scrub habitat. In accordance with USFWS and USACE consultation processes, Psomas oversaw the development of the mitigation program in project open space areas and on the manufactured slopes within the site. Monitoring activities associated with the HMMP consist of regular evaluations of site conditions and performance; ongoing coordination with the Landscape Contractor regarding site status and performance of remedial measures; and client and resource agency coordination regarding site progress. Ann managed the biological surveys for and the preparation of the Biological Technical Report, which supported an EIR. She also prepared a Biological Assessment for the formal consultation between the USFWS and the USACE. Additionally, Ann coordinated the vegetation clearing on site to avoid direct take of gnatcatchers in accordance with resource agency permits and consulted on site with resource agency personnel.

Newport Banning Ranch Biological Resources Services, Newport Beach, CA: Biological Resources Manager for this development project. In support of the project's EIR, Psomas completed a general biological survey, including vegetation mapping; focused surveys for special status plants, fairy shrimp, coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and burrowing owl; a jurisdictional delineation and report; a biological technical report. Biologists also prepared the biological resources portions of the IS and EIR, which included preparing mitigation measures to mitigate for impacts as a result of the development. Ann conducted peer reviews of technical studies prepared by the Project Applicant; prepared the Biological Technical Report; served as an extension of City staff; and prepared the Biological Resources Section of the EIR. She also provided strategic planning for the City on biological resources issues related to project design, the entitlement process, and mitigation strategies.

Orange County Transportation Authority Baseline Biological Surveys for Acquired Properties, Orange County, CA. Ms. Johnston serves as the Principal-in-Charge for this project, which provides biological support services for the Orange County Transportation Authority (OCTA), including biological surveys and associated documentation. This work effort has allowed OCTA to establish a biological baseline of five acquired properties, with special attention on species covered under the draft OCTA National Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP). Surveys were conducted in a manner that allowed the greatest opportunity to also document non-Covered Species and habitats that add value to a potential conservation area. The specific survey and documentation tasks undertaken to establish the biological baseline include literature review; general biological surveys and vegetation mapping; acquisition, restoration, and management criteria evaluation; special status plant surveys; special status wildlife surveys for coastal California gnatcatcher, coastal cactus wren, least Bell's vireo, southern willow flycatcher, and special status bat species; a jurisdictional delineation and California

Rapid Assessment Method (CRAM) evaluation; and Biological Technical Reports documenting the findings of all these surveys.

Tehachapi Renewable Transmission Project Biological Resources Support, Southern California. From 2009 through 2016, Ms. Johnston provided strategic technical support for Southern California Edison's (SCE's) Tehachapi Renewable Transmission Project, which aims to bring wind and solar-sourced energy from the Tehachapi Mountains and western Antelope Valley to the Los Angeles basin. The project consists of the construction of several substations and a total of 175 miles of transmission lines spanning the Cities of Lancaster and Palmdale; the Antelope Valley in the western Mojave Desert; the Sierra Pelona and San Gabriel Mountains in the Angeles National Forest (ANF); and extending through the San Gabriel Valley to the City of Ontario. Over the course of this project, Ms. Johnston has provided project management and technical staff with senior support for the portion of the alignment that traverses the San Gabriel Mountains and the ANF. Her responsibilities included technical staff management for focused surveys and construction monitoring; reviews of avoidance and mitigation plans; and provision of guidance on a multitude of other tasks.

Santiago Creek Bike Trail North Capital Improvement Project No. 6103, City of Orange, CA. Ms. Johnston was the Project Manager for the biological support services for the Santiago Creek Bicycle Trail North project located in the City of Orange. This project would improve roadway and bicycle safety by constructing a Class 1 off-road bike trail consistent with the alignment adopted by the Bikeways Master Plan for the City of Orange. The bikeway would be constructed from Collins Avenue at Santiago Creek to the Cannon Street Bridge within a three-year time frame established by the County Proposition 1B Agreement. Her team conducted a literature review, general plant and wildlife surveys, vegetation mapping, and a jurisdictional delineation of the project site. A Biological Technical Report and Jurisdictional Delineation Report were prepared to evaluate project impacts on biological resources and resources under the jurisdiction of USACE, CDFW, and RWQCB. Focused surveys were conducted for special status plant species and the coastal California gnatcatcher.

Talega Development Project Environmental Impact Report and Biological Technical Report, San Clemente, CA. Ms. Johnston was the Senior Project Manager for the 3,510-acre Talega Development project in San Clemente. She managed the preparation of the Biological Technical Report and the biological resources section of the Talega Development Project EIR. She also prepared five separate Interim Habitat Loss Permit documents pursuant to Section 4(d) of the Federal Endangered Species Act (FESA). Ms. Johnston documented the development of direct, indirect, and cumulative project impacts and corresponding mitigation measures, which includes the restoration of over 133 acres of coastal sage scrub vegetation. Sensitive resources issues included coastal sage scrub, coastal California gnatcatcher, and thread-leaved brodiaea.

Fagan Canyon Project Biological Surveys and Biological Technical Report, Santa Paula, CA. Ms. Johnston was the Senior Project Manager for this project. The project site is approximately 1,400 acres and is located north and westerly of the City of Santa Paula in the foothills that

border the Santa Clara River Valley. The Fagan Canyon project involved the development of six new neighborhoods, including two schools, limited commercial spaces, six community parks, and other associated infrastructure. Ms. Johnston managed the biological surveys and the preparation of the Biological Technical Report, which supported an EIR for the project. The purpose of the surveys and documentation was to identify potential impacts to biological resources and to provide mitigation measures for the project site. Issues analyzed include potential impacts to several special status wildlife species including the southwestern pond turtle, two-striped garter snake, southwestern willow flycatcher, and least Bell's vireo.

North Yorba Linda Estates Biological Resources Documentation, Yorba Linda, CA. Ms. Johnston was the Project Manager on the Shapell Industries North Yorba Linda Estates project sites (Tentative Tracts 16208, 16209, and 16264) in Yorba Linda. She prepared the biological resources documentation and coordinated focused survey efforts for the 3 project sites, which total approximately 1,600 acres. Issues analyzed include potential impacts to coastal California gnatcatcher and special status habitats such as coastal sage scrub and riparian vegetation types. Ms. Johnston also prepared the Biological Assessment and mitigation programs for the project sites to prepare them for regulatory processing in coordination with the USFWS and USACE.

Northeast Bakersfield Open Space Area Vegetation Mapping, Wildlife Surveys, and Habitat Quality Ranking, Bakersfield, CA. Ms. Johnston was the Project Manager for the Northeast Bakersfield Open Space Area project. Ms. Johnston oversaw vegetation mapping, wildlife surveys, and habitat quality ranking of the approximate 4,700-acre project site. The purpose of the surveys was to characterize the habitat on the project site and identify high-priority areas for acquisition to become a preserve under the Metropolitan Bakersfield Habitat Conservation Plan. Geographic Information System (GIS) technology was used as a tool in order to analyze data collected on vegetation quality; historical and current observations of special status species; wildlife diversity; potential for restoration; and proximity to regional open space. Issues analyzed include potential impacts on special status plant species such as the Bakersfield cactus and special status wildlife such as the San Joaquin kit fox and blunt-nosed leopard lizard.

City of Ontario General Plan Update Biological Resources Component, Ontario, CA. Ms. Johnston served as Senior Project Manager for the development of the biological resources component of the General Plan update for the 8,900-acre sphere of influence area in Ontario. Working closely with planners, Ms. Johnston inventoried and evaluated the potential preservation/enhancement opportunities of the biological resources present in the sphere of influence for (1) incorporation into the Parks and Open Space elements or (2) development as contemplated in the Land Use element of the General Plan. Additionally, Ms. Johnston prepared habitat maps; identified presence or potential presence of Threatened or Endangered biological species; and provided recommendations to ensure that quality biological resources are protected for present and future residents.

Brian Daniels

Senior Biologist/Ornithologist

EDUCATION

1980/BS/Zoology/California State University, Long Beach

CERTIFICATIONS

10(a)(1)(A) Permit for yellow-billed cuckoo, California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher/No. TE821401-5/U.S. Fish and Wildlife Service

Principal Investigator for Psomas' CDFW Entity Scientific Collecting Permit/SC-004535/California Department of Fish and Wildlife

PROFESSIONAL AFFILIATIONS

Western Field Ornithologists

EXPERIENCE

With Psomas: 21 years/With Other Firms for: 18 years

Brian Daniels has been an active Biologist and Field Ornithologist in California for 39 years, with experience throughout the southwestern United States. He has conducted a variety of bird surveys for federal and State agencies, including the U.S. Fish and Wildlife Service (USFWS), the Bureau of Land Management (BLM), and the California Department of Transportation (Caltrans). He is permitted to conduct surveys for the federally listed Threatened coastal California gnatcatcher and federally listed Endangered southwestern willow flycatcher, and least Bell's vireo, and to monitor the nests of the coastal California gnatcatcher and the federally listed Endangered least Bell's vireo. Brian specializes in directed surveys for special status bird species, including the species listed above.

Experience

Centennial Project Biological Resources Services, Los Angeles County, CA: Ornithologist for the development of a planned new community located at the northwestern tip of Los Angeles County along the Kern County border. In support of the project's Environmental Impact Report (EIR)., Psomas mapped vegetation; completed focused surveys for plants, fairy shrimp, special status herpetological species, least Bell's vireo, southwestern willow flycatcher, mountain plover, Swainson's hawk, and spotted owl; managed Tehachapi pocket mouse trapping and grassland studies; completed a jurisdictional delineation and report and an oak tree survey; and completed tricolored blackbird and condor studies. Psomas also prepared a biological constraints analysis and Biota Report and managed the Significant Ecological Area Technical Advisory Committee review process of these documents. Psomas organized and managed the project's Mitigation Preserve Review and created a Conceptual Oak Woodland Mitigation Plan. Finally, the Biological Resources Team prepared the documents Biological Resources EIR Section, which summarized the complete work effort. Brian has conducted bird surveys including focused surveys for the for the Swainson's hawk, southwestern willow flycatcher, least Bell's vireo, and tricolored blackbird. These surveys included the identification and determination of breeding status for five Swainson's hawks that summered on the project site. He assisted in the preparation of a Biological Resources Assessment Technical Report for the Los Angeles County Significant Ecological Area Technical Advisory Committee and the Biological Resources Section of the EIR.

NorthLake Specific Plan Environmental Impact Report, Los Angeles County, CA: Senior Biologist for the development of an approximate 1,330-acre project site near Castaic Lake in unincorporated Los Angeles County. This project involves the development of a mix of single-family units; multi-family units; commercial, industrial, and recreational uses; open space; and school and park facilities. Brian served as Senior Ornithologist for focused surveys for the burrowing owl, southwestern willow flycatcher, coastal California gnatcatcher, and least Bell's vireo.

Additionally, Brian has assisted in other surveys on the project site including focused surveys for the arroyo toad.

Soft-Bottom Flood-Control Channels Feasibility Studies, Los Angeles County, CA: Senior Biologist for Biological Technical Assessment Reports and Recommendations in support of five feasibility studies conducted to satisfy RWQCB Waste Discharge Requirements (WDRs), which mandate that a feasibility study be conducted of all watersheds where the Los Angeles County Flood Control District (LACFCD) maintains soft-bottom flood control channels. The purpose of the feasibility studies is to provide a hydraulic analysis of each soft-bottom channel reach to determine whether or not the reach has the capacity for additional vegetation. Based on the results of the hydraulic analysis and biological studies, appropriate recommendations are developed for channel reaches with capacity for and with insufficient capacity for additional vegetation.

San Gabriel River Master Plan and Program Environmental Impact Report, Los Angeles County, CA: Senior Biologist for this LACFCD project that studied over 30 miles of the San Gabriel River from Cogswell Reservoir in the Angeles National Forest to the River's end in the Pacific Ocean near Seal Beach. Brian provided the biological resources existing conditions, impact analyses, and mitigation components of the San Gabriel River Master Plan and Program EIR. He also participated in the master planning team workshops that compiled biological resource opportunities in the study area.

Arroyo Seco Canyon Project Initial Study/Mitigated Negative Declaration, Pasadena, CA: Senior Biologist for the IS/MND for this project, which proposes improvements in three areas along the Upper Arroyo Seco in the City of Pasadena, north of Devil's Gate Dam. Improvements proposed in Area 1 include habitat restoration along the stream channel, a new nature trail, and a rest area/picnic area, along with demolition of the existing Headworks structure. New diversion and weir structures, a control equipment enclosure, and improvements to the damaged portion of the Gabrielino Trail/access road are proposed in Area 2. A small parking lot, additional and expanded spreading basins, a restroom, and a guard station are proposed in Area 3, which is located within the Hahamongna Watershed Park Master Plan boundaries. The purpose of the project is to increase the water infiltration into the Raymond Basin to supplement Pasadena Water and Power's drinking water supplies. Brian served as Senior Biologist for preparation of a Biological Technical Report. He also served as Senior Ornithologist along the Arroyo Seco for focused surveys for the southwestern willow flycatcher and least Bell's vireo.

Former Whittaker-Bermite Facility Project Focused Plant Surveys and Biological Monitoring, Santa Clarita, CA: Biologist for the approximate 996-acre former Whittaker-Bermite Facility project located in the City of Santa Clarita in Los Angeles County. The project site is a former munitions and explosives manufacturing facility under the jurisdiction of the California Department of Toxic Substances Control, which oversees contamination remediation efforts. Manufacturing activities resulted in perchlorate soil contamination (a Chemical of

Potential Concern) in portions of the site; the proposed project consisted of the excavation of contaminated soils, soil transportation off site for disposal, or on-site soil treatment within the 230 Operable Unit 1 (OU1) remedial site. Brian monitored native and non-native vegetation removal prior to the nesting bird season on the project site.

Mullally Debris Basin Enlargement Project, La Canada Flintridge, CA: Senior Biologist for the Los Angeles County Flood Control Division's Mullally Debris Basin Enlargement Project in the City of La Canada Flintridge. Brian prepared a Biological Assessment/Biological Evaluation for the project since part of the debris basin property was on ANF lands. Additionally, Brian conducted an analysis of the project's impacts on 12 Management Indicator Species identified by the USFS in the ANF Land Management Plan.

Long Point Resort Environmental Impact Report Biological Technical Support, Rancho Palos Verdes, CA: Senior Biologist for preparation of a Biological Technical Report for the Long Point Resort project site on the Rancho Palos Verdes Peninsula. Brain provided baseline biological surveys including focused surveys for the coastal California gnatcatcher.

Santa Clara River South Fork Drop Structure and Rock Groins Project, Los Angeles County, CA: Biologist for this project for the Los Angeles County Department of Public Works (LACDPW). Brain conducted baseline surveys (including habitat assessments to determine the potential for special status species to occur at the project site) used for the preparation of a Biological Technical Report. He also served as an Ornithologist and conducted focused surveys for the southwestern willow flycatcher and least Bell's vireo.

North Park Specific Plan Environmental Impact Report, Moorpark, CA: Senior Biologist for the preparation of an EIR for the North Park Specific Plan. This proposed Specific Plan project would allow for the development of 1,650 residential dwelling units on 769.7 acres of the 3,586.3-acre site. Other proposed related and supporting uses would include a 5-acre neighborhood commercial center; a 12-acre school site; a 29.1-acre public youth sports park; 2 additional public parks; 10 private parks; a publicly accessible 52-acre lake; a fire station site; and a day care/church site. Ancillary land uses would include, but are not limited to, water reservoirs, detention basins, and a fire service helispot. Brian conducted baseline surveys and studies for the preparation of a Biological Technical Report for the project. He managed a wildlife movement study and also served as an Ornithologist for focused surveys for the coastal California gnatcatcher.

Zone 1 Ditch Project, Los Angeles County, CA: Senior Biologist for the Zone 1 Ditch Project Baseline and Focused Surveys. Brian conducted baseline surveys and studies (including habitat assessments to determine potential biological constraints) for the preparation of a Biological Technical Report. He also served as an Ornithologist for focused surveys for the southwestern willow flycatcher and least Bell's vireo.

Brian Daniels (Continued)

Dayton Canyon Project, Los Angeles County, CA: Biologist for the Dayton Canyon project in western Los Angeles County. Brian provided baseline documentation of the biological resources associated with the project and provided text and analysis for the preparation of a Biological Technical Report.

Los Angeles Mission College Golf Course Project, Sylmar, CA: Biologist for the proposed Mission College Golf Course located in the Pacoima Wash. Brain conducted focused surveys for the coastal California gnatcatcher, southwestern willow flycatcher, and least Bell's vireo.

Santa Anita Reservoir Middle Sediment Placement Site Project, Arcadia, CA: Biologist for this project to remove sediment from the reservoir, which filled nearly to capacity following the large fires that occurred in 2009. Brian monitored vegetation removal on the Middle Sediment Placement Site.

Centennial Corridor Biological Resources Services, Bakersfield and unincorporated Kern County, CA: Ornithologist for this project, which proposes to extend the State Route (SR) 58 in a westerly direction from its current terminus at SR-99 to provide an ultimate connection to Interstate (I) 5. Psomas completed vegetation mapping; general plant and wildlife surveys; and focused surveys for special status plants (over multiple years), western burrowing owl, and Swainson's hawk. Psomas prepared the Natural Environment Study (NES) that evaluated project impacts of three alternatives on biological resources and provided mitigation measures consistent with the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP), the Kern Water Bank Habitat Conservation Plan (HCP), and the Kern Valley Floor HCP. Psomas also completed a Biological Assessment (BA) to address project impacts on the San Joaquin kit fox. Brian conducted nesting Swainson's hawk surveys for this project.

Bouquet Canyon Development Project Biological Technical Report and Focused Surveys, Santa Clarita, CA: Senior Biologist for the Bouquet Canyon Development project, a proposed residential development near Santa Clarita in Los Angeles County. The project involved the construction of 334 large-lot, single-family residential dwelling units; parks; 1 elementary school; and approximately 237 acres of open space, including horse trails. Off-site improvements, including water tanks and improvements to Bouquet Canyon Road, would be required to provide sufficient utilities and vehicular access. Brian provided baseline documentation of the biological resources associated with the project, and served as an Ornithologist for focused surveys for the southwestern willow flycatcher, least Bell's vireo, and coastal California gnatcatcher. Additionally, he also helped prepare the Biological Technical Report for the project.

Yerba Buena School Biological Constraints Report, Oak Tree Survey and Focused Surveys, Los Angeles and Ventura Counties, CA: Senior Biologist for a proposed school on the Los Angeles/Ventura County line near the City of Agoura. Brian conducted general wildlife surveys; conducted focused surveys for the least Bell's vireo and southwestern willow flycatcher; and prepared a Biological Constraints Report for the project. During construction, Brian served as biological monitor.

Presidential Substation Project, Ventura County, CA: Senior Biologist for Southern California Edison's project, which involved (1) a biological constraints analysis of two potential sites for construction of an energy substation and of several potential transmission line alignments to and from the potential sites; (2) focused surveys for coastal California gnatcatcher and special status plants in order to determine presence or absence of listed species; and (3) analysis of potential impacts to the Riverside fairy shrimp and its critical habitat along with potential impacts to jurisdictional drainages. Psomas prepared a Biological Resources Technical Report and the Biological Resources section of the Proponent's Environmental Assessment (PEA). Brian performed assessments used to determine which special status species require focused surveys and conducted focused surveys for the coastal California gnatcatcher. Brian also provided support in preparation of a Biological Resources Technical Report for the project.

Mascot Substation Project Biological Services, Hanford, CA: Ornithologist for Southern California Edison's (SCE's) project, which included multiple alternative sites and transmission line alignments in the City of Hanford. This project involved a biological assessment of two potential sites for construction of an energy substation and several potential sites for transmission lines to and from the sites. Brian performed habitat assessments for the project and was Ornithologist for 2012 focused Swainson's hawks surveys.

Mountain Cove Residential Development Project Regulatory Agency Coordination and Mitigation Monitoring, Azusa, CA: Biologist for the regulatory agency coordination and monitoring that mitigates for impacts as a result of this restoration project. The project enhanced and restored over 15 acres of alluvial sage scrub and willow riparian scrub and included a giant reed eradication program in the San Gabriel River. Specific monitoring activities included developing a Landscape Maintenance Manual; training and overseeing the Landscape Contractor regarding the implementation of the Landscape Maintenance Manual; monitoring long-term vegetation growth and health; and developing regular progress reports and annual site-status reports that document site conditions. Brain performed baseline surveys and studies used in preparation of a Biological Technical Report.

Soft-Bottom Channel Project Focused Surveys and Survey Report, Los Angeles County, CA: Senior Biologist for the Los Angeles County Department of Public Works' Soft-Bottom Channel project. Lead Biologist for monitoring of annual clearing activities in over 100 soft-bottom flood control channel reaches maintained by the Los Angeles County Flood Control District (LACFCD). On-going tasks include pre- and post-clearing documentation of biological resources within these channel reaches and monitoring during annual clearing activities to facilitate compliance with permits issued by the USACE, the CDFW, and the RWQCB. On-call tasks have included nesting bird surveys, constraints analysis, and biological assessments of other flood control facilities ranging from structures as large as dams (e.g., Pacoima and Santa Anita Dams) to small outlets in sensitive habitats (e.g., Santa Monica Canyon ocean outlet). Since 2002, Brian has managed and conducted focused surveys for the southwestern willow flycatcher and least Bell's vireo at those soft-bottom flood control channels with

Brian Daniels (Continued)

suitable habitat. He is also the Lead Ornithologist for monitoring of the LACFCD clearing activities in those channel reaches that support occupied least Bell's vireo habitat in accordance with USFWS conditions included in the USACE permit through formal and informal consultations. Brian has also served as the Lead Biologist for managing the performance of focused surveys in these channel reaches for other listed species such as the Santa Ana sucker, unarmored threespine stickleback, and arroyo and red-legged frogs.

Santa Anita Stormwater Management and Seismic Strengthening Project, Biological Technical Report, Focused Biological Surveys, Mitigated Negative Declaration, Biological Assessment/Biological Evaluation, Management Indicator Species Report, Arcadia, Los Angeles County, CA: Ornithologist for this project located in Arcadia. The proposed project would modify Santa Anita Dam, the Headworks facility, and the Debris Dam to strengthen them and to automate operations. The project also includes constructing a helipad and new facility structures at the Dam; repairing a slope and upgrading a water line from a water tank to the Dam facilities; replacing the entrance gate to the Dam facilities and making it automated (including installation of power along the access road to the gate); and replacing a bridge to the Arcadia Wilderness Park. As Senior Ornithologist since 2009 for this project, Brian has conducted focused southwestern willow flycatcher and least Bell's vireo surveys. He has provided biological monitoring during site preparation for a sediment placement site that required the removal of approximately 180 coast live oak and western sycamore trees.

Santa Anita Debris Basin Project Biological Services, Los Angeles County, CA: Senior Biologist for the Los Angeles County Department of Public Works' Santa Anita Debris Basin project. Brian conducted a biological reconnaissance surveys of the debris basin in 2005. Since that time, he has provided a variety of biological services including being a biological monitor for emergency repairs at the debris basin that included construction of a finger levee for diverting flows from a failed slope. He was also the biological monitor for the clearing of a low-flow channel to reach the debris basin tower in accordance with the LACFCD's Long-Term Streambed Alteration Agreement with the CDFW for debris basins. As required by the agreement for this particular debris basin, Brian prepared a vegetation management plan. He has also served as Senior Ornithologists for focused surveys for the southwestern willow flycatcher and least Bell's vireo.

As-Needed Biological Services for Debris Basins, Los Angeles County, CA: Senior Biologist for various tasks at debris basins maintained by the Los Angeles County Department of Public Works Flood Maintenance Division. Tasks under this contract have included baseline biological surveys and habitat assessments of over 150 debris basins located primarily in the watersheds of the Los Angeles, San Gabriel, and Santa Clara Rivers. Brian was the lead for these surveys and habitat assessments. He also performed focused surveys at those debris basins with potentially suitable habitat for southwestern willow flycatcher and least Bell's vireo. Brian prepared environmental documentation that was used to obtain a Long-Term Streambed Alteration Agreement permit from the CDFW for the LACFCD annual

maintenance activities at 162 debris basins from August 18, 2011, to December 31, 2029.

Southern California Gas Company North-South Pipeline Project, Riverside and San Bernardino Counties, CA: Ornithologist for this project, which proposes to construct a new pipeline from Adelanto to Moreno Valley to ensure a reliable supply of gas to Southern California. The project includes the construction and installation of an approximate 65-mile-long, 36-inch-diameter natural gas transmission pipeline, including compressor and pressure limiting stations. Psomas conducted focused surveys and prepared reports for many special status plant and wildlife species, including bat species, burrowing owl, coastal California gnatcatcher, desert tortoise, fairy shrimp, Mohave ground squirrel, raptors, and riparian birds. Psomas also performed small mammal trapping, weed surveys, tree surveys, and a jurisdictional delineation. In addition, Psomas prepared a Biological Technical Report, a Jurisdictional Water Resources Existing Conditions Report, a Biological Assessment/Biological Evaluation (pursuant to U.S. Forest Service Standards), a Hydrology and Water Quality Assessment, and a Land Use Assessment. Psomas also prepared the Application for Federal Clean Water Act Section 401 Water Quality Certification, Pre-Construction Notification under the Federal Clean Water Act Section 404 Nationwide Permit, and Notification of Lake or Streambed Alteration Agreement in accordance with Section 1602 of the California Fish and Game Code. Brian conducted surveys for sensitive avian species including all project surveys for the Endangered southwestern willow flycatcher. He prepared sections of the Project's Biological Technical Report for the Environmental Impact Report (EIR).

Pacoima Dam Sediment Removal Project, Los Angeles County, CA: Ornithologist for various biological surveys associated with this project. The Department of Public Works has proposed to remove excess sediment from Pacoima Reservoir to restore its original water storage capacity by sluicing material to a downstream debris basin. In order to evaluate the impacts associated with sediment removal and dam operations, a variety of biological surveys and analysis have been performed. Brian served as Senior Ornithologist for focused surveys for the southwestern willow flycatcher and least Bell's vireo.

Cogswell, San Gabriel, and Morris Dams Maintenance Project, Los Angeles County, CA: Senior Biologist for a biological constraints analysis of maintenance activities conducted by the LACFCD at Cogswell, San Gabriel, and Morris Dams on the San Gabriel River in the Angeles National Forest. This project required surveys, analysis, and identification of potential biological constraints, if any, at 84 separate maintenance sites for the three dams. The biological constraints analysis provided recommendations for managing the identified biological constraints.

Tehachapi Renewable Transmission Project Biological Resources Support, Southern California, CA: Biologist for this Southern California Edison project. The Tehachapi Renewable Transmission Project (TRTP) consists of the construction of several substations and a total of 175 miles of transmission lines running from the Antelope Valley through the Angeles National Forest (ANF) and into the City of Ontario. The project's objective is to bring wind and solar sourced energy from

the Tehachapi Mountains and western Antelope Valley to the Los Angeles basin. As part of a large, multi-company team, Psomas has provided a full range of biological services including vegetation mapping; focused surveys for plants, trees, birds, herpetofauna, and bats; nesting bird surveys; raptor surveys; pre-construction surveys and construction monitoring; and seed collection. Brian provided biological monitoring services to facilitate geotechnical testing of electrical transmission tower installation sites in the Angeles National Forest (ANF). In 2010 and 2011, Brian conducted habitat assessments for spotted owl and southwestern willow flycatcher along two transmission line corridors through the ANF including areas burned during the 2009 Station Fire. Brian also provided biological monitoring services at material yards that included pre-construction surveys (sweeps) and construction monitoring in vicinity of active bird nests. Additionally, Brian conducted focused surveys for spotted owl, southwestern willow flycatcher, and least Bell's vireo.

Big Tujunga Dam Operation and Maintenance Update Project, Los Angeles County, CA: Ornithologist for the Big Tujunga Dam Operation and Maintenance project. The project involved approval of a revised Operation and Maintenance Plan for water releases from the Big Tujunga Reservoir resulting from seismic retrofit and spillway modifications of the Big Tujunga Dam and the associated increase in reservoir capacity. The impact analysis addressed a 13-mile segment of the Big Tujunga Wash from Big Tujunga Dam to Hansen Dam within the Angeles National Forest and unincorporated Los Angeles County. Brian has served as Senior Ornithologists for focused surveys for the southwestern willow flycatcher and least Bell's vireo.

Marc Blain

Biological Resources Manager/Associate

EDUCATION

1997/MS/Applied Ecology and Conservation Biology/Frostburg State University. Frostburg, MD

1994/BS/Environmental Biology/California State University, Northridge

CERTIFICATIONS

Independent Researcher for Psomas' CDFW Entity Scientific Collecting Permit/SC-004535/California Department of Fish and Wildlife

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals

Union of Concerned Scientists

TRAINING

California Grasses Identification Class Rancho Santa Ana Botanic Garden

Plant Families Class Rancho Santa Ana Botanic Garden

EXPERIENCE

With Psomas: 13 years/With Other Firms for: 13 years

Marc Blain, Biological Resources Manager, has over 26 years of experience in wildlife biology, conservation biology, natural resource planning, and training in various other areas in the environmental field. He has a wide range of knowledge on the plants, wildlife, and vegetation communities of Southern California, especially those listed as Threatened or Endangered. As the Biological Resources Manager, he has managed a wide variety of project types including flood control, utility, private development, transportation, and dam/reservoir project. He is an expert on development of sustainable management practices relative to natural resources. More specific areas of expertise include avian ecology, wildlife movement, and conservation biology. He is also experienced with the natural resources regulations and compliance requirements of the Federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), CEQA, NEPA, NCCP Act, CWA, MBTA, California Fish and Game Code, and other biological statutes of regional Counties and Cities.

Experience

City of Arcadia General Plan Update Program Environmental Impact Report, Arcadia, CA: Biological Resources Manager for the Program EIR for the City's General Plan Update, which emphasized the maintenance of existing land uses and redevelopment in a few select areas, as the City is largely built out. The General Plan was developed to accommodate the Gold Line station proposed in the City and anticipated the revitalization of aging commercial areas through the incorporation of mixed-use zones along major transit corridors. Additionally, the redevelopment of approximately 80 acres of existing quarry along Lower Azusa Road was anticipated in the General Plan. Marc managed the biological resources field studies; assessments for special status species potential; biological resource impact analysis; and the associated documentation presented in the EIR.

Los Angeles County Department of Public Works, Flood Maintenance Division As-Needed Biological Services Contract, Los Angeles County, CA: Project Manager for an As-Needed services contract with the Los Angeles County Department of Public Works (LACDPW), Flood Maintenance Division. Marc is responsible for managing a variety of projects and on-going consultation services. Projects range from focused surveys for special status plants and animals within County-operated flood-control channels to emergency Section 7 Consultations with the USFWS; he has also conducted CEQA documentation for long-term maintenance permits from the CDFW. Responsibilities involve daily communication with LACDPW staff to assist in environmental compliance issues as they arise. Projects frequently require Marc to communicate directly with regulatory agencies such as the USACE, CDFW, RWQCB, and USFWS to resolve potential impacts issues.

Los Angeles County Department of Public Works, West Fork Road Emergency Bank Stabilization Project Biological Mitigation and Monitoring, Los Angeles County, CA: Project Manager for this project for the LACDPW. The project involved potential impacts resulting from repair work to federally Endangered species in a section of the West Fork of the San Gabriel River. Marc coordinated biological monitoring and mitigation requirements among several State and federal agencies and the LACDPW. Biological surveys, fish surveys, and construction monitoring for several special status species were conducted. The project was successfully completed following the submittal of a detailed Biological Assessment, prepared under Marc's direction, to the regulatory agencies.

Los Angeles County Department of Public Works, Bouquet Channel Emergency Clearing and Biological Monitoring, County of Los Angeles, CA: Project Manager for the Bouquet Channel Emergency Clearing project. This project involved potential impacts from repair activities to a State- and federally-listed Endangered fish species and required oversight of the listed species' capture and relocation and the preparation of the associated documents. Marc directed biological monitoring to ensure biological resources protection during channel vegetation clearing activities. He also coordinated among several State and federal agencies and LACDPW maintenance and management personnel, and he negotiated with resource agencies to determine the most appropriate measures to ensure minimal impacts to sensitive resources.

Pitchess Detention Center Women's Village Project Environmental Impact Report, Los Angeles County, CA: Biologist for the Pitchess Detention Center (PDC) Women's Village Project EIR. The proposed Project, which is located in Los Angeles County, would involve the partial demolition and redevelopment of approximately 23 acres of the PDC and the construction of a 1,156-bed medium-security, rehabilitation-based, female inmate detention facility with a 26-bed medical clinic and appurtenant facilities. Several existing structures would remain and be incorporated into the Project, including the Ranch Field Office, the central kitchen, the chapel, and four dormitories, while several other buildings would be demolished. A total of 16 cottages would be constructed and configured as a village-style setting, which maximizes rehabilitative, educational, and vocational opportunities to reduce recidivism and associated long-term detention costs. Areas of special consideration include public outreach and coordination with interested stakeholders; regulatory permitting from the USACE, Los Angeles RWQCB, and CDFW; and utility infrastructure improvements, including the potential expansion of the County's co-generation facility to accommodate increased energy demands. Marc performed biological resources assessment, including general surveys, vegetation mapping, wildlife constraints analysis, and jurisdictional determination

Triton Power Substation Project Focused Surveys and Technical Documents, Temecula, CA: Project Manager for Southern California Edison's (SCE's) project, which involved a biological assessment of 15 potential substation sites and several transmission lines in Temecula. He determined which special status species required focused surveys, implemented and managed focused surveys, and prepared biological

technical documents pursuant to CEQA and suitable for the California Energy Commission. Due to the Client's status as a special participating member of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), Marc conducted a unique analysis that compares the regulatory requirements should the project be pursued under the Western Riverside County MSHCP with the requirements should the project proceed without relying on the Western Riverside County MSHCP. This analysis provided the Client with the means to make an informed decision on how to proceed with environmental compliance.

Brea Area Development, California Environmental Quality Act Biological Assessment, Los Angeles County, CA: Biologist for a CEQA-level assessment of a 3,000-acre property that involved a constraints analysis; vegetation mapping; focused surveys for the federally listed coastal California gnatcatcher, Quino checkerspot butterfly, least Bell's vireo, southwestern willow flycatcher, and sensitive plants; a CEQA Biological Resources Assessment; and a Biota Report for the Los Angeles County Significant Ecological Area Technical Advisory Committee (SEATAC).

Pechanga Reservation Biological Surveys, Riverside County, CA: Biologist for annual avian inventory and special status bird surveys for the coastal California gnatcatcher, southwestern willow flycatcher, and least Bell's vireo throughout the Pechanga Reservation. Project responsibilities include review of annual environmental documentation and a constraints analysis for specific proposed projects. Due to the highly sensitive nature of the property, all surveys are conducted with Cultural Resources Monitors and often involve communication with tribal council leaders and other tribal members. Marc annually provides maps of all raptor nests detected during survey work and actively tracks the status of golden eagles on site.

Arroyo Seco Drainage Improvement Projects, Biological Survey Coordination and Documentation, Pasadena, CA: Project Manager for a series of projects associated with the Arroyo Seco drainage improvements in Pasadena. In the Upper Arroyo Seco, projects included focused surveys for the California red-legged frog, a habitat assessment for the California gnatcatcher, nesting bird surveys, and a review of a CDFW Streambed Alteration Agreement issued for a bridge replacement project. Lower Arroyo Seco projects have consisted of nesting bird surveys, nesting raptor surveys, streambed maintenance monitoring, and individual plant identification for preservation within a restoration area. Marc was responsible for coordinating all biological surveys and documentation associated with the various projects and providing consultation services to City staff.

Portrero 2007 DSP Circuit Project Biological Surveys and Impact Assessment, Ventura County, CA: Biological Resources Manager for biological surveys and evaluated the impact assessment for SCE utility line repairs in Ventura County. He coordinated special status plant surveys to identify special status plant species within the survey area, which includes a 30-foot buffer around each utility pole and the access route from the roadway to the pole along the entire 3-mile alignment.

Rio Vistancia Development Project, Biological Surveys and Construction Monitoring, Needles, CA: Project Manager for the Rio Vistancia Development project. He coordinated focused surveys for special status species and conducted a biological impact assessment. He also conducted protocol surveys for the southwestern willow flycatcher in 2004, which resulted in the detection of Arizona Bell's vireo. Additionally, Marc conducted a desert tortoise habitat assessment, performed construction monitoring, and reviewed the project's CDFW Streambed Alteration Agreement conditions pertaining to wildlife.

Interstate 15/California Oaks Road Interchange Improvement Project, Biological Surveys and Natural Environment Study, Murrieta, CA: Biologist for this project to modify the existing Interstate 15/California Oaks Road interchange by relocating and widening the existing northbound and southbound off-ramps; providing transitions for eastbound and westbound turn pockets to California Oaks Road; and providing northbound and southbound Interstate 15 loop on-ramps. Marc completed a literature review, mapped vegetation, and completed general plant surveys. He also assisted in the completion of a Natural Environment Study for Caltrans.

Castaic Lake Water Agency Recycled Water Master Plan Program Environmental Impact Report, Los Angeles County, CA: Biologist for this Program EIR. The project included the construction of a distribution system throughout the City of Santa Clarita and some unincorporated areas of Los Angeles County; eight aboveground reservoir tanks; recycled water pump station(s); booster pump stations; and aquifer storage and recovery-related facilities. Sources of recycled water would include the Valencia Water Reclamation Plant, the Berry Petroleum Oil Field, and the Newhall Ranch Water Reclamation Plant. The first phase of implementation involved the Northwest Spur Pipeline, which was analyzed at a project level in the EIR. Marc conducted a general plant and wildlife survey and mapped vegetation for the Northwest Spur Pipeline component of the Castaic Lake Water Agency's Recycled Water Master Plan. He also prepared the CEQA-level Biological Resource Assessment, which is included as an appendix to the Program EIR.

Santa Clarita Valley Sanitation District Reduced Discharge Technical Biological Study of the Upper Santa Clara River, Los Angeles County, CA: Project Manager for a biological study, which involved detailed analysis of the existing river conditions throughout the study area, including hydrology, vegetation, substrate, and stream bed morphology. Field studies included monitoring for flow change over 24-hour periods at various locations in the River. Modeling was prepared to assess potential project changes on stream flows within the section of the River. Using the field study results, hydrological modeling, and historical analysis, the potential effects of the projected changes in stream flow were assessed. The findings were documented in detail in a technical report which provided the client with necessary data to proceed with project design and regulatory compliance. As the Project Manager, he was responsible for managing the technical study and directed surveys to determine presence or absence and relative abundance of special status fish species with special attention to the federally Threatened unarmored three-spine stickleback.

Silver Lake Reservoir Improvement Project Biological Study and Public Outreach, Silver Lake, CA: Project Manager for a biological study and outreach program for the Silver Lake Reservoir Improvement project. He managed a study to determine the potential effects on wildlife resources that might result from allowing public access to the "meadow area" of the Silver Lake Reservoir. A substantial element of this project was public outreach, and Marc assisted the City of Los Angeles by speaking to members of the community to reassure them of the project's sensitivity to biological resources. Marc was able to successfully communicate with project skeptics and speak with many members of the public with various opinions at once.

Monk Hill Treatment Project Habitat Assessment, Pasadena, CA: Biologist for a biological assessment of this project. A habitat assessment was conducted to determine potential biological constraints to the proposed pipeline repair project located on the Jet Propulsion Laboratory (JPL) facility in Pasadena. Based on the thorough documentation Marc prepared for the assessment, the City was able to convince the USFWS that protocol surveys for the California gnatcatcher were not warranted. Nesting bird surveys were recommended and successfully conducted within the impact area, and the project was completed with minimal constraints.

Cagney Ranch Focused Survey Reports, Los Angeles County, CA: Senior Biologist for this project, located in the Santa Susana Mountains just north of State Route 118. He prepared the focused survey reports and analyzed potential impacts to coastal sage scrub within the nexus of USACE's jurisdictional waters. Marc also managed the team that monitored riparian and upland habitat and he completed annual surveys and documentation.

Centennial Project Biological Resources Services, Los Angeles County, CA: Biologist for the development of a planned new community located at the northwestern tip of Los Angeles County along the Kern County border. In support of the project's EIR, Psomas mapped vegetation; completed focused surveys for plants, fairy shrimp, special status herpetological species, least Bell's vireo, southwestern willow flycatcher, mountain plover, Swainson's hawk, and spotted owl; managed Tehachapi pocket mouse trapping and grassland studies; completed a jurisdictional delineation and report and an oak tree survey; and completed tricolored blackbird and condor studies. Psomas also prepared a biological constraints analysis and Biota Report and managed the Significant Ecological Area Technical Advisory Committee review process of these documents. Psomas organized and managed the project's Mitigation Preserve Review and created a Conceptual Oak Woodland Mitigation Plan. Finally, the Biological Resources Team prepared the documents Biological Resources EIR Section, which summarized the complete work effort. Marc's primary responsibility involved the preparation of a Biological Resources Assessment Technical Report for the Los Angeles County SEATAC and the biological resources section of the EIR. He is also responsible for directing a team of biologists conducting a diverse array of studies for the biological resources documentation and the assessment of the resources' regional distribution. Marc assists the Client with the development of strategies for biological resources mitigation and with

permit acquisitions from resource agencies; he also represents the Client in consultations with the Los Angeles County Department of Regional Planning.

Westlake Village Business Park Specific Plan Program Environmental Impact Report, Westlake Village, CA: Biological Resources Manager for the preparation of the Program EIR. The proposed Specific Plan would promote the revitalization of underutilized or obsolete properties and the intensification and adaptive reuse of existing developments within a 200-acre planning area north of the Ventura Freeway (Interstate 101). The proposed Specific Plan would allow higher development intensities and mixed use developments to replace the existing land uses, along with infrastructure improvements throughout the planning area. The Program EIR analyzes the indirect impacts of adoption of the Specific Plan on all environmental issues, as associated with future redevelopment and planned infrastructure improvements. Marc manages all aspects of Biological Resources for this project, including managing surveys for the project and the preparation of all biological resources-related documentation.

Tesoro del Valle Supplemental Biological Resources Assessment and Environmental Impact Report, Los Angeles County, CA: Biological Resources Manager for Tesoro del Valle project, which involves the buildout of Phases B and C. The project involves the construction of 710 single-family residential dwelling units; a fire station site; parks and recreational amenities (i.e., clubhouse, pool, trails); and supporting roadway and utility infrastructure within Phases B and C of the Tesoro del Valle project. The project involves a density transfer of 474 un-built residential units from Phase A into Phases B and C. The proposed project would not increase the total 1,791 residential units previously approved for the Tesoro development. A revision to the existing Conditional Use Permit for Hillside Management and Density Controlled Development would be required, as would renewed permits for oak tree and jurisdictional impacts. Areas of special consideration include impacts to biological and jurisdictional resources, land use, and water supply. Marc was responsible for overseeing plant and wildlife focused surveys for Threatened and Endangered species; assessing biological resources impacts of the proposed project; and providing documentation in technical reports and the EIR.

Presidential Substation Project, Ventura County, CA: Biological Resources Manager for Southern California Edison's project, which involved (1) a biological constraints analysis of two potential sites for construction of an energy substation and of several potential transmission line alignments to and from the potential sites; (2) focused surveys for coastal California gnatcatcher and special status plants in order to determine presence or absence of listed species; and (3) analysis of potential impacts to the Riverside fairy shrimp and its critical habitat along with potential impacts to jurisdictional drainages. Psomas prepared a Biological Resources Technical Report and the Biological Resources section of the Proponent's Environmental Assessment (PEA). He is responsible for overseeing the preparation of a Biological Resources Technical Report (recently completed) and the Biological Resources section of a Proponent’s Environmental Assessment (PEA).

Marc Blain
(Continued)

Lancaster Solar Energy Project Initial Study/Mitigated Negative Declaration, Lancaster, CA: Biological Resources Manager for the IS/MND for the development of a Solar Energy Project capable of generating up to two megawatts (MW) of electricity under peak solar conditions, with future expansion to four MW. The project site includes approximately 63 acres of undeveloped portions of 2 County-owned parcels in Lancaster. The initial two-MW facility has been constructed and provides offsets for energy use from the adjacent Mira Loma Detention Center and the Challenger Memorial Youth Center. The site contains a potentially historic on-site wastewater treatment facility, which was avoided during construction. Marc managed the general and focused biological resources field studies; assessments for special status species potential; biological resource impact analysis; and the associated documentation presented in the MND.

Tehachapi Renewable Transmission Project Biological Resources Support, Southern California, CA: Project Manager for this SCE project. The Tehachapi Renewable Transmission Project (TRTP) consists of the construction of several substations and a total of 175 miles of transmission lines running from the Antelope Valley through the Angeles National Forest (ANF) and into the City of Ontario. The project's objective is to bring wind and solar sourced energy from the Tehachapi Mountains and western Antelope Valley to the Los Angeles basin. As part of a large, multi-company team, Psomas has provided a full range of biological services including vegetation mapping; focused surveys for plants, trees, birds, herpetofauna, and bats; nesting bird surveys; raptor surveys; pre-construction surveys and construction monitoring; and seed collection. Marc serves as a consulting project manager and he supports SCE's biology team in all aspects of biological resources. Responsibilities include managing a suite of focused surveys in remote country of the ANF and other project areas; preparing notice to proceed reports to be submitted to the California Public Utility Commission; preparing permit applications for a Special Use Permit from the U.S. Forest Service (USFS); managing construction monitoring; preparing avoidance and mitigation plans; coordinating with construction contractors to ensure compliance with permit conditions; and completing a multitude of other tasks. Due to the presence of several State and federally listed species in the project area, compliance with the State 2081 Incidental Take Permit and the USFWS Biological Opinion requires his constant attention. Marc is an integral part of the management team for TRTP and works daily to keep the project's aggressive schedule on track.

High Desert Health System Multi-Service Ambulatory Care Center Project Environmental Impact Report, Lancaster, CA: Biological Resources Manager for the combined Program and Project EIR for a new High Desert Health System Multi-Ambulatory Care Center facility in the City of Lancaster. The project site included 23 acres of vacant land surrounded by low-density residential and commercial development. The project involved construction of a new 2-story, 142,000-square-foot (sf) medical building with surface parking on 1 parcel and 67,250 sf of supporting public service/commercial uses on a second parcel, potentially including uses such as doctors' offices, senior care services, and mental health services, among others. Other project-related improvements include roadway improvements; landscaping; utility

connections; and a new turn-out for the existing Antelope Valley Transit Authority bus stop on East Avenue I. The project has a Silver-Rated Leadership in Energy and Environmental Design (LEED) certification for its incorporation of solar panels and wind turbines on the parking lot's light fixtures. Marc was responsible for oversight of plant and wildlife focused surveys, the assessment of biological resources impacts of the proposed project, and documentation within technical reports and the EIR.

NorthLake Specific Plan Environmental Impact Report, Los Angeles County, CA: Biological Resources Manager for the development of an approximate 1,330-acre project site near Castaic Lake in unincorporated Los Angeles County. This project involves the development of a mix of single-family units; multi-family units; commercial, industrial, and recreational uses; open space; and school and park facilities.

BRIAN LEATHERMAN
WILDLIFE BIOLOGIST

EDUCATION
California State University, Fullerton, California
Master of Arts, Biological Science, 1993.
Bachelor of Arts, Biological Science, 1991.

PROFESSIONAL EXPERIENCE
Leatherman BioConsulting, Inc. 2006 – present; White & Leatherman BioServices 2000-2006; Psomas and Associates, 1997-2000; Chambers Group 1996-1997; Dames and Moore 1993-1996; Independent Consulting Biologist 1991-1993. Primarily responsible for biological surveys, report preparation, project management, and agency coordination. Specialties include habitat assessments, general wildlife documentation, focused surveys for endangered species, construction and mitigation compliance monitoring, and wildlife corridor assessment and monitoring. Prepares biological technical reports to document field work and propose mitigation strategies to meet requirements of CEQA and NEPA, and to initiate formal consultation under the federal Endangered Species Act.

Guest Lecturer: California State University, Fullerton, Victor Valley College, 2009-present. Prepare and teach two part lecture on federal and state environmental and endangered species laws in California, and how those laws translate into the assessment, focused survey, and monitoring work conducted by professional consulting biologists.

Part Time Instructor: California State University, Fullerton, 1991-1993. General Biological Science Laboratory Instructor.

MEMBERSHIPS
- Society for the Study of Amphibians and Reptiles
- The Desert Tortoise Council
- The Wildlife Society
- Western Field Ornithologists
- Declining Amphibian Populations Task Force
- Southern California Botanists
- California Native Plant Society
- California Botanical Society

CERTIFICATIONS/PERMITS
- Section 10(a)(1)(A) Permit for Southwestern Willow Flycatcher, California Gnatcatcher, Least Bell's Vireo (Permit No. TE827493-6).

- California Department of Fish and Game Scientific Collecting/Trapping Permit #801221-02; MOU for Southwestern Willow Flycatcher, Western Yellow-billed Cuckoo, Least Bell's Vireo; nest monitoring for California gnatcatcher; trapping for southern rubber boa and southwestern pond turtle.
- California Department of Fish and Game Letter of Agreement for Conducting Brown-headed Cowbird Capture and Removal Programs

PUBLICATIONS

- Leatherman, Brian M., and Mark. R. Jennings. 2007. *Actinemys marmorata* (Pacific Pond Turtle) and *Trachemys scripta* (Red-eared Slider): Reproductive Behavior. Herpetological Review 38:327.
- Leatherman, Brian M. 2004. *Spea hammondii* (Western Spadefoot): Geographic Distribution. Herpetological Review 35(4): 407.
- Leatherman, Brian M. 1996. San Diego Horned Lizard (*Phrynosoma coronatum blainvillei*): Conservation. Herpetological Review 27(2): 80.
- Strong, Dennis. J., Brian M. Leatherman, and Bayard H. Brattstrom. 1993. Two new simple methods for catching small fast lizards. Herpetological Review 24(1): 23.
- Leatherman, Brian M. 1993. Impacts of habitat changes on prey species taken by barn owls (*Tyto alba*) in Owens Valley, California. Thesis: California State University Fullerton.

SEMINARS AND SPECIALIZED TRAINING

- 20th Annual Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop. The Desert Tortoise Council. Ridgecrest, California. November 2011.
- Mohave Ground Squirrel Workshop, Sponsored by The Wildlife Society Western Section, Ridgecrest, April 2005
- California Anastraca and Notostraca Identification Class (Fairy Shrimp Workshop). Belk Consulting: Santa Rosa Plateau, January 2005
- The Wildlife Society Western Section Annual Conference: Irvine, March 2003
- The Wildlife Society Western Section Annual Conference: Riverside, March 2000
- Planning for Biodiversity: Bringing Management and Research Together. Cal Poly Pomona, Sponsored by US Forest Service and US Geological Survey. Feb 2000
- 79th Annual Meeting and Symposium of the Western Society of Naturalists, December 1998
- Annual CEQA Workshop. Association of Environmental Professionals, February 1998
- Sensitive herpetofauna of Southern California: San Diego Natural History Museum, March 1997
- Southwestern Willow Flycatcher Field Workshop, U. S. Fish and Wildlife Service and U. S. Forest Service 1996, 1997
- Quino Checkerspot Butterfly Workshop, U. S. Fish and Wildlife Service and Friends of Entomology Research Museum 1997
- Desert Tortoise Survey/Handling Techniques Workshop, Desert Tortoise Council 1993, 1996
- Symposium on the Biology of the California Gnatcatcher, UC Riverside, 1995

GENERAL EXPERIENCE

Mr. Leatherman has twenty years of experience as a professional biologist conducting general and focused avian, herpetological, mammalian, and special status species surveys, and preparing biological reports and biological resources sections for environmental documents. His expertise lies in documenting wildlife diversity and habitat utilization, evaluating habitats for their potential to support rare, threatened, and endangered wildlife species, and analyzing impacts of proposed projects on biological resources. He has designed and implemented studies to monitor wildlife usage of restoration sites and movement corridors, and has developed and implemented relocation efforts for several special status species. He has monitored a variety small- and large-scale construction projects to ensure and document compliance with project permits or mitigation monitoring plans. A list of some of the special status species he has worked with includes the quino checkerspot butterfly, arroyo toad, California red-legged frog, southwestern pond turtle, desert tortoise, southwestern willow flycatcher, least Bell's vireo, California gnatcatcher, San Joaquin kit fox, and many others.

REPRESENTATIVE PROJECT EXPERIENCE

Focused Survey for Least Bell's Vireo and Southwestern Willow Flycatcher, Big Tujunga Canyon, Los Angeles County. BonTerra Consulting. Assisted with focused surveys for the least Bell's vireo and southwestern willow flycatcher under the supervision of a permitted biologist upstream of the Big Tujunga Dam in the San Gabriel Mountains. Documented other special status species observed incidentally including western pond turtle, two-striped garter snake, yellow warbler, and southern California rufous-crowned sparrow.

L.A. Department of Public Works San Gabriel River Brown-headed Cowbird Trapping Program, Whittier. Mr. Leatherman developed the cowbird trapping program plan in 2005 and has conducted the program on an annual basis since that time. LBC anticipates being retained for the remaining years of the ten-year program (through 2014).

Focused Southwestern Willow Flycatcher Surveys, Los Angeles Dept. of Water and Power's Big Tujunga Wash Mitigation Bank, Los Angeles County, Chambers Group, Inc. Conducted focused survey for southwestern willow flycatcher within cottonwood willow riparian forest within the Big Tujunga Wash floodplain upstream of Hansen Dam, where LADWP has purchased and is restoring habitat as mitigation for a variety of projects. Retained contract to conduct surveys for three consecutive years.

Prima Deshecha Landfill Brown-headed Cowbird Trapping Program, BonTerra Consulting and County of Orange Waste Management Department. Under contract to BonTerra Consulting, developed a detailed Brown-Headed Cowbird Management Program for the Waste Management Department to provide a reference for implementing all aspects of a successful trapping program. Conducted the first three year of trapping program since 2002,

which includes daily trap monitoring for six consecutive months; retained to conduct the 2005 program.

Desert Tortoise Studies/Monitoring, Los Angeles Department of Water and Power. Performed preconstruction surveys and monitored for desert tortoise for LADWP during construction of a 200-mile power line in the Mojave Desert through portions of Nevada and California. Provided education training to contractor personnel as needed to comply with conditions of the Biological Opinion. Filed compliance and tortoise report forms on a weekly basis. Tagged and processed desert tortoises, removed tortoises from construction zones, and excavated and constructed desert tortoise burrows.

Southern Water Snake Control Program for Los Angeles Dept. of Public Works, Wilmington Drain, BonTerra Consulting. Contracted to trap and remove the southern water snake (*Nerodia fasciata*) in an effort to control the population in the Wilmington Drain tributary to Lake Machado in San Pedro, Los Angeles County. Effort was coordinated with similar effort by Dr. Robert Reed of the USGS to control/eradicate the population from Lake Machado. Project included use of 30 traps placed along the shore of Wilmington Drain in the spring and summer of 2010 and 2011.

Western Spadefoot Toad Relocation Program, SunCal Companies and BonTerra Consulting. Developed a detailed western spadefoot toad relocation plan to capture and relocate a breeding population of western spadefoot toads from the Northlake development site to a series of created mitigation ponds in northern Los Angeles County. The plan has been reviewed and approved by the California Department of Fish and Game. Currently under contract to implement the plan.

Wildlife Corridor Use Study at Alamos Canyon, Unocal Properties. Designed and implemented a study to document wildlife use of the State Route 118 bridge over Alamos Canyon Road in Simi Valley. Used scent stations and wildlife tracking under the bridge to record wildlife diversity and frequency of travel over a seven night period of July 1999. The undercrossing was identified (conceptually) as a critical wildlife corridor between the Santa Suzanna Mountains and the Simi Hills. A draft report titled Update of Biological Resources, Wildlife Movement Corridors, and Jurisdictional Waters of the US, Streambeds, and Wetlands for Unocal Tentative Tract 4565 was prepared for Unocal.

California Gnatcatcher Survey, Nature Reserve of Orange County, 2011. Leatherman BioConsulting, Inc. was contracted to plan and implement a study to collect baseline data to estimate the current status of the California gnatcatcher on the Central and Coastal Reserves, an area encompassing approximately 37,000 acres. Three rounds of focused surveys were conducted at 150 randomly selected plots located throughout the reserve system, and vegetation data at each of the plots was recorded to develop and evaluate habitat suitability models for the gnatcatcher. Leatherman BioConsulting, Inc. provided oversight of the entire project, including

coordination of access among the many landowners signatory to the NCCP, management of the seven permitted biologists conducting the surveys, data review and compilation, and report preparation.

Cactus Wren Habitat Assessment and Survey, Nature Reserve of Orange County, 2008. Leatherman BioConsulting, Inc. mapped and assessed the quality of the cactus scrub habitat throughout the recently burned and unburned portions of the 19,900-acre Central Reserve. Two rounds of focused surveys for the Cactus Wren were subsequently conducted in all habitat judged to be suitable for nesting wrens. A detailed report of the results of the surveys, including data on the aerial extent of cactus and occupied habitat patches within burned and unburned areas, was prepared for the NROC, and a presentation was given to the Board of Directors.

MICHAEL C. COUFFER
CONSULTING BIOLOGIST

Michael Couffer is a Senior Biologist with 17 years of experience in biological surveys and natural resource photography. He has held the federal and state permits necessary to conduct focused surveys for and monitor the nests of the federally Threatened California gnatcatcher since 1995, and has surveyed over 61,000 acres for the gnatcatcher. Mr Couffer has surveyed over 25,000 acres for the federally Endangered Quino checkerspot butterfly since the species was listed in 1998. Mr. Couffer also conducts surveys for special status species such as the burrowing owl, Hermes copper butterfly, flat-tailed horned lizard, and others. Mr. Couffer has also acted as primary biological field consultant and onsite monitor for numerous coastal sage scrub vegetation removal projects.

Updated July 13, 2010. Multi-year projects are presented in the last year worked. Use Microsoft Word's "Find" function to search the document.

Permits and Listings

- Federal Fish and Wildlife Permit granted 1995 allowing for focused surveys & nest monitoring of federally-threatened coastal California gnatcatcher, and focused surveys for the federally-endangered Quino checkerspot butterfly since that species was listed in 1998
- California Department of Fish & Game (CDFG) Scientific Collecting Permit allowing for capture & release of non-protected small mammals, reptiles, amphibians, freshwater fishes, & invertebrates, as well as "take" of the two listed species above
- On approved Biological Consultant's List for Counties of Riverside and San Bernardino
- Completed Range Safety Officer training for civilian consultants working within & adjacent to US Marine Corps Base Camp Pendleton gunnery ranges
- U.S. Fish & Wildlife Service-approved desert tortoise surveying, handling, & monitoring workshop
- CDFG Letter of Authorization to capture, possess, & transport flat-tailed horned lizard during surveys and biological monitoring

Publications

California Gnatcatcher Feeds Bewick's Wren Nestlings in an Abandoned Rodent Burrow. 2005. Western Birds, Volume 36.

Education Bachelor of Arts, Biology and Journalism, San Diego State University, 1990

Employment History

Independent Biological Consultant - Grey Owl Biological Consulting - 1993 to Present
Grey Owl Pictures, Inc., Partner, Photographer, Stock Photo Manager – 1980 to Present
Scientific Resource Surveys, Paleontological and Archaeological Monitor – 1980

Contact Information

716 Marguerite Avenue
Corona del Mar, California 92625
Email: mikecouffer@roadrunner.com
Phone: (949) 644-7127

2010 Projects

During the spring of 2010, Mr. Couffer was contracted to conduct focused surveys for federally threatened and rare butterfly species from April 1 through June 30 on three different projects in eastern San Diego County. The only days off were when poor weather precluded surveys.

Campo Wind Energy Project, Eastern San Diego County, California. Conducted daily focused surveys for the federally Endangered Quino checkerspot butterfly on a 4,417-acre existing and planned expansion of a wind energy project site on the Campo Band of Mission Indians Reservation. As one of 24 federally-permitted biologists, Mr Couffer located half of all Quino found during the surveys, and over three times as many Quino as any other permitted biologist. Mr. Couffer incidentally located special status bird, reptile, amphibian, and plant species, and found a GPS unit dropped by one of the other project biologists over a month after the unit was lost, retrieving the recorded data within. Received wind turbine safety training for ground crews, and participated with report preparation, editing, and internal planning meetings.

Client: Edaw/AECOM, and Invenergy Wind California, LLC, April to late May, 2010

Manzanita Wind Energy Project, Eastern San Diego County, California. Conducted focused surveys for the federally Endangered Quino checkerspot butterfly on a 1,297-acre project site within the Manzanita Band of Mission Indians Reservation. As one of 22 federally-permitted biologists, Mr Couffer located over one quarter of all Quino found during the surveys of this project site. Mr. Couffer also incidentally located special status bird, reptile, and plant species.

Client: Edaw/AECOM, and Sempra Energy/San Diego Gas & Electric Co., April to late May, 2010

Cleveland National Forest Surveys, Eastern San Diego County, California. Responsible for surveying 13 miles of existing overhead utility alignment for the exceedingly rare Hermes copper butterfly. Mr Couffer made 47 Hermes copper observations on the project site as well as other special status bird, reptile, and plant species. Other Hermes coppers at a personally-located high-elevation reference population on public land was also periodically visited to keep track of Hermes copper flight status near a portion of a given survey alignment.

Client: Chambers Group, Inc., and Sempra Energy/San Diego Gas & Electric Co., late May to July, 2010

Falcon Ridge Sub-station, City of Fontana, San Bernardino County, California. Conducted focused surveys for the western burrowing owl along 9 miles of existing overhead utility alignment and several planned sub-stations.

Client: BonTerra Consulting, and Sempra Energy/San Diego Gas & Electric Company, July, 2010

Tehachapi Renewable Transmission Project, Los Angeles, Orange, San Bernardino Counties. Conducted Clearance Surveys and Biological Monitoring during geotechnical investigations at 103 planned transmission tower locations along five segments of this alignment. Located special status species such as California gnatcatcher and burrowing owl and monitored special status wildlife behavior during adjacent drilling operations. Work was undertaken for Southern California Edison Company between August 2009 and April 2010.

2009 Projects

Southern California Edison Company, Western Riverside County. Conducted protocol-level western burrowing owl surveys along 18 miles of utility alignment during the burrowing owl breeding season of 2009. Located the burrowing owl during the surveys.

Client: Sempra Energy/San Diego Gas and Electric Company, 2009

Imperial Irrigation District, Imperial Valley, Imperial County. Team member participating in Baseline Surveys for Imperial Irrigation District's Draft Habitat Conservation Plan. Focused presence/absence surveys for special status wildlife species were conducted within fixed "Sentinel Sites" (visited annually) and "Rotating Panels" (1/3 of sites visited each year) within a 135,000-acre study area. Work included surveys for flat-tailed horned lizard, special status bird species within agricultural drains and surrounding desert, trapping for Andrew's dune scarab beetle and Yuma hispid cotton rat. Work was contracted through EcoSystems Restoration Associates/AECOM during 2009.

Client: EcoSystems Restoration Associates /AECOM/Imperial Irrigation District, 2009

2008 Projects

Sunrise Powerlink Utility Line, San Diego County. Conducted habitat assessments and presence/absence surveys for the federally-Endanged Quino checkerspot butterfly, and the exceedingly rare Hermes copper butterfly along 15 miles of two proposed utility alignments near Alpine and the Anza Borrego Desert State Preserve. Located 54 butterfly species onsite.

Client: Sempra Energy/San Diego Gas and Electric Company, March to July, 2008

Sunrise Powerlink Utility Line, San Diego County. Conducted a habitat assessment and presence/absence surveys for the exceedingly rare Hermes copper butterfly along 5 1/2 miles of two proposed utility alignments near Alpine. Located 33 butterfly species, including Hermes copper, on the project site. Also conducted habitat assessments and focused presence/absence surveys for the federally-Endangered Quino checkerspot butterfly along 15 miles of this utility alignment and another in the vicinity of Alpine and the Anza Borrego Desert State Preserve.

Client: Sempra Energy/San Diego Gas and Electric Company, March to July, 2008

Sunrise Powerlink Utility Line, Eastern San Diego County. Conducted habitat assessments and presence/absence butterfly surveys for the federally-endangered Quino checkerspot butterfly and the exceedingly rare Hermes copper butterfly along 15 miles of two proposed utility alignments for Sempra Energy/San Diego Gas and Electric Company from March to July of 2008. Identified 64 butterfly species, including Hermes copper.

1800-Acre Tesoro del Valle, Santa Clarita, Los Angeles County. Conducted focused surveys for the California gnatcatcher during 1997, 2005, and 2008. Conducted gnatcatcher surveys, general surveys for sensitive wildlife, and surveys for nesting raptors. Assisted with special

status plant surveys during 2005. Conducted site-wide burrowing owl assessment and burrow survey during 2007 within this project site located near the City of Santa Clarita.

Client: Evans-Collins Community Builders, 1997, 2000, 2005, 2007, 2008

520-Acre Bouquet Canyon Site, Santa Clarita, Los Angeles County. Conducted unassisted focused burrowing owl surveys during 2008. Conducted unassisted focused surveys for the California gnatcatcher during 1999 and 2005. Assisted with rare plant surveys during 2005.

Client: Bouquet Canyon Land Fund, LLC., 1999, 2005, 2008

417-Acre Adelanto Gateway Site, Adelanto, San Bernardino County. Conducted unassisted preconstruction clearance surveys for the desert tortoise, western burrowing owl, and nesting birds prior to vegetation removal. Monitored vegetation removal in order to preserve Joshua trees and nesting birds during the bird nesting season.

Client: RBF Consulting, 2008

2007 Projects

1,330-Acre Northlake Specific Plan Project Site, Castaic, Unincorporated Los Angeles County. Principal Biological Field Consultant and Biological Monitor during vegetation removal operations covering several hundred acres within Grasshopper Canyon and adjacent slopes. Located a previously undocumented population of burrowing owls during the monitoring process. Conducted additional burrow surveys and monitoring of active and previously-occupied burrows to determine whether or not this wintering population remained onsite to breed. These breeding season surveys are currently ongoing. Conducted nesting loggerhead shrike and nesting raptor surveys. Consulted on equipment deployment so as to avoid special status or protected resources such as burrowing owls. Assisted contractors in avoiding breaches of resource agency permit stipulations while assisting construction to proceed.

Client: SunCal Companies, 2007

600-Acre Montebello Hills Oil Field, City of Montebello, Los Angeles County. Biological field consultant and monitor assisting in the conversion of a 600-acre oil field to modern production. Advised field crews on avoiding direct take of coastal California gnatcatchers and coastal sage scrub during the gnatcatcher breeding season. Conducted California gnatcatcher surveys and located and monitored nests to ensure that crews avoided nesting areas. Created educational slide shows designed to assist management and field crews in understanding environmental concerns and in avoiding and minimizing impacts to sensitive resources. Monitored crews clearing weeds and trimming trees for fire protection near sensitive habitat, marked several hundred electrical poles either to be weeded or avoided during the gnatcatcher breeding season, consulted with field crews on avoiding nests, surveyed proposed oil pumping unit sites for nesting gnatcatchers, and consulted on pipe routing to avoid and minimize damage to coastal sage scrub. Mapped road margins to be edged during the breeding season and warned of road margins to avoid due to proximity to gnatcatcher nests. Met with electricians and city fire officials to discuss fire prevention and avoid loss of gnatcatchers due to fire. Surveyed for nesting gnatcatchers near oil pads proposed to be returned to production. Monitored the removal of 1200 non-native trees using an excavator within and adjacent to

coastal sage scrub habitat occupied by the California gnatcatcher as a part of native habitat restoration activities.

Clients: Stocker Resources, Incorporated, 1997, 1998, 1999, 2001
Plains Exploration and Production Company 2007

996-Acre Former Whittaker-Bermite Facility, Los Angeles County. Conducted focused presence/absence surveys for the California gnatcatcher, burrowing owl, special-status plant species, and nesting birds within portions of this former munitions and explosives manufacturing facility. Also conducted focused surveys for burrowing owls across the entire project site. Monitored heavy equipment and teams of hand laborers during vegetation removal. Assisted in planning soil excavation to avoid disturbing special status resources and jurisdictional drainages. Conducted biological monitoring during vegetation grubbing prior to excavation of contaminated soil. Captured and relocated western spadefoot toads during vegetation grubbing. Assisted with vegetation mapping, flagged special status plants and habitat patches for avoidance, and evaluated the site for potential biological constraints to development. Currently on call for biological surveys and construction monitoring.

Client: Camp Dresser and McKee, 2005 to 2007

240-Acre Skyline Drive Project Site, Los Angeles County. Conducted focused presence/absence surveys for the California gnatcatcher across 240 acres of this project site in Santa Clarita.

Client: Pardee Homes, 2007

550-Acre Walnut Village, City of Walnut, Los Angeles County. Mapped vegetation, and conducted focused presence/absence surveys for California gnatcatchers. Located a previously-unknown gnatcatcher population after previous surveys had not located gnatcatchers. Planned and implemented a vegetation clearing strategy on a 550-acre site designed to avoid direct take of California gnatcatchers in accordance with resource agency permits. Orchestrated the movement of heavy equipment and laborers across the site to minimize wildlife losses by herding wildlife into appropriate onsite preserve areas and offsite habitat. Directed heavy equipment, located and monitored California gnatcatchers, and protected the boundaries of designated preserves during heavy equipment operation. Consulted onsite with resource agency personnel.

Client: Standard Pacific Homes, 1998, 2002, 2003, 2007

548-Acre Five Bridges Specific Plan Project Site, City of Beaumont, Western Riverside County. Conducted unassisted focused presence/absence surveys for the burrowing owl across the entire project site. Surveys were conducted in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines. Located evidence of previous occupation by the burrowing owl.

Client: Lennar Communities, 2007

996-Acre Former Whittaker-Bermite Facility, Los Angeles County. Conducted focused presence/absence surveys for the burrowing owl within 132-acres of this former munitions and explosives manufacturing facility. Located evidence of past occupation by the burrowing owl. Currently on call for biological surveys and construction monitoring.

Client: Camp Dresser and McKee, and SunCal Companies, 2007

226-Acre City of Santa Clarita Site, and 20 Acre Via Princessa Roadway Extension, Los Angeles County. Conducted an assessment for the burrowing owl on a 226-acre site as well as a 20-acre roadway extension in the City of Santa Clarita.

Client: SunCal Companies, 2007

1,167-Acre Tapia Canyon Project Site, Los Angeles County. Conducted a habitat assessment and burrow survey for the burrowing owl within potentially-occupied habitat across a project site near the city of Santa Clarita.

Client: Toll Brothers, 2007

2006 Projects

1,530 Acre Prima Deshecha Landfill, South Orange County. Conducted unassisted site-wide focused presence/absence surveys for the California gnatcatcher on this 1,530-acre site. Site-wide surveys were conducted annually from 2003 to 2006.

Client: County of Orange, Integrated Waste Management Department, 2003 to 2006

Talega Development, San Clemente, Orange County. Conducted focused surveys for the California gnatcatcher on the 3,510-acre Talega Development. Conducted pre-construction surveys for gnatcatchers. Conducted surveys for and monitored gnatcatchers during weed removal prior to, during, and upon completion of the installation of 130 acres of restored native coastal sage scrub habitat. Conducted biological constraints analyses for various onsite projects prior to construction. Staked coastal sage scrub habitat for surveyors to determine specific habitat acreage. Consulted on and monitored the removal of weedy vegetation with sensitive coastal sage scrub habitat. Monitored gnatcatchers adjacent to construction. Located nesting gnatcatchers within restored habitat.

Client: Standard Pacific & Talega Associates LLC, 1999 to 2006

Foothill Transportation Corridor South, Orange County. Conducted focused presence/absence surveys for coastal California gnatcatchers along various proposed alignments. Consulted on geotechnical boring site locations adjacent to sensitive habitats, and monitored geotechnical operations along proposed alignments.

Client: Transportation Corridor Agencies, 1999, 2000, 2001, 2002, 2006

300 Acres East of Perris, Western Riverside County. Conducted a Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys for the burrowing owl in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines. Located several previously-occupied owl burrows onsite.

Client: Laing-Sequoia Partners, LLC, 2006

220-Acre McCanna Village 1, Western Riverside County. Conducted a Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys for the burrowing owl in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines. Located previously-occupied owl burrows onsite.

Client: Laing-Sequoia Partners, LLC, 2006

228-Acre Park Place, City of Ontario, Western Riverside County. Conducted a Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys for the burrowing owl on this project site in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines. Located several burrowing owls onsite.

Client: RBF Consulting, 2006

120-Acre McCanna Village 5, Western Riverside County. Conducted a Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys for the burrowing owl in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines. Located a previously-occupied owl burrow onsite.

Client: Laing-Sequoia Partners, LLC, 2006

66-Acre Lake Nuevo Village, Western Riverside County. Conducted a Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys for the burrowing owl in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines. Located a previously-occupied owl burrow onsite.

Client: Laing-Sequoia Partners, LLC, 2005, 2006

Interstate 10 and Jefferson Interchange Project, City of Indio, Riverside County. Conducted surveys for Coachella Valley round-tailed ground squirrel burrows, and burrowing owls on this interchange project. Located nesting burrowing owls on the project site.

Client: RBF Consulting, 2006

Interstate 10 and Jefferson Interchange Project, City of Indio, Riverside County. Conducted surveys for Coachella Valley round-tailed ground squirrels, and burrowing owls. Located nesting burrowing owls on the project site.

Client: RBF Consulting, 2006

32-Acre Deer Canyon Project, Orange County. Conducted onsite biological monitoring and focused surveys related to the California gnatcatcher during geotechnical investigations prior to development.

Client: Stonegate Development Company, LLC, 2004, 2005, 2006

2005 Projects

Rich Haven and West Haven Specific Plans, Ontario, San Bernardino County. Conducted unassisted focused presence/absence surveys for burrowing owls on 720 acres in the City of Ontario. Located a burrowing owl colony, and several other separate pairs.

Client: RBF Consulting, 2005

16 Debris Basins, Los Angeles County. Conducted focused surveys for the California gnatcatcher at 16 debris basins within Los Angeles County.

Client: County of Los Angeles, Department of Public Works, 2005

Crown Valley Parkway Bridge Widening Project, Orange County. Team member participating in various biological monitoring tasks. Conducted focused surveys for and monitored the breeding status of California gnatcatchers prior to and during construction. Conducted focused surveys for nesting owls within the interior of the 800-foot-long concrete bridge, as well as surveys for other nesting birds within a buffer zone surrounding the bridge in order to assist the county in complying with the Migratory Bird Treaty Act. Coordinated with noise monitoring consultants. Field consultant on issues relating to resource agency permits.
Client: County of Orange, 1999, 2004, 2005

Client: County of Orange, 1999, 2004, 2005

Weir Canyon Road and La Palma Avenue Intersection, City of Anaheim, Orange County. Located the federally Threatened California gnatcatcher during focused surveys for the species adjacent to a road intersection to be upgraded.

Client: City of Anahiem, 2005

186-Acre Burnam Site, Santa Clarita, Los Angeles County. Conducted focused presence/absence surveys for the gnatcatcher on a 186-acre site in San Francicquito Canyon, north of the City of Santa Clarita.

Client: SunCal Companies, 2004, 2005

790-Acre Tonner Hills Site, Brea, Orange County. Assisted ECORP Consulting biologists with focused California gnatcatcher surveys on this oil field.

Client: Plains Exploration and Production, 2005

Cao Property, Western Riverside County. Conducted a Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys for the burrowing owl in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines on a 38-acre site in Meade Valley in accordance with Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines. Located the species onsite.

Client: Cadre Environmental Services, 2005

70-Acre Winchester Site, Western Riverside County. Conducted a Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys for the burrowing owl in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines. Subsequently conducted a pre-construction survey prior to the initiation of construction.

Client: Griffin Communities and Stonegate Development Company, 2005

Sun City, Western Riverside County. Conducted a Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys for the burrowing owl in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines on this 10-acre site. Located the species onsite.

Client: Signature Realty Capital Corporation, 2005

26-Acre Mira Loma Site, Western Riverside County. Conducted a Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys for the burrowing owl in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines.

Client: Lyon Homes, 2005

52-Acre Edgemont Community Services District Property, Western Riverside County. Conducted a biological constraints analysis and subsequent burrowing owl Habitat Assessment, focused Burrow Surveys, and focused Crepuscular Surveys in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) guidelines.

Client: Trammel Crow Company, 2004, 2005

Native Habitat Restoration Monitoring, **Orange and Los Angeles Counties*.*** Located the federally Threatened California gnatcatcher within restored coastal sage scrub on seven native habitat restoration sites managed by BonTerra Consulting within Orange and Los Angeles counties.

Client: Various clients, 2005

Upper Chiquita Reservoir Project, Orange County. Conducted onsite biological monitoring and focused surveys related to the California gnatcatcher during geotechnical investigations for the design of an open water storage reservoir. Coordinated onsite with geologists to route equipment so as to avoid and minimize disturbance to special status resources in compliance with agency permits. Assessed impacts to special status vegetation occupied by the gnatcatcher, in accordance with agency permits. This project is ongoing.

Client: Santa Margarita Water District (SMWD), 2005

Other Projects

900-Acre Preissman Property, Perris, Western Riverside County. Conducted unassisted focused surveys for the California gnatcatcher on this 900-acre site prior to implementation of

the Western Riverside County Multiple Species Habitat Conservation Plan. Also mapped vegetation and conducted focused surveys for the burrowing owl.

Client: Liang-Sequoia, LLC, 2004

800-Acre Shell Oil/Aera Energy, LLP oil field conversion, Orange County. Biological field consultant and monitor tasked to ensure that field crews converting an 800-acre oil field to a golf course and residential development over the span of several years proceeded according to a Habitat Conservation Plan and U. S. Fish and Wildlife Service permit written for this specific project site; the project proponents were to avoid directly harming the federally-Threatened coastal California gnatcatcher. Created slide show training sessions designed to assist management, field crews, and geologists in understanding environmental concerns on the project site and in avoiding and minimizing impacts to the California gnatcatcher and its habitat. Collected information on the changing nesting status of 20 gnatcatcher pairs to help crews avoid nests. Planned and implemented a vegetation clearing strategy designed to avoid direct take of California gnatcatchers in accordance with the project's Habitat Conservation Plan and U. S. Fish and Wildlife Service permit. Orchestrated the movement of heavy equipment and laborers across the site to minimize wildlife losses by herding wildlife into appropriate off-site habitat. Supervised and assisted up to five biological monitors directing equipment, monitoring wildlife, and protecting staked open space and property boundaries during three separate phases of the development spanning several years.

Client: Shell Oil/Aera Energy, LLP, and Toll Brothers, LLP, 1996 through 2001

Capistrano Valley Water District South Connector Pipeline, San Juan Capistrano, Orange County. Principal biological monitor for the Capistrano Valley Water District South Connector Pipeline Project. Duties included management of field issues relating to 14 pairs of California gnatcatchers within 500 feet of the pipeline, encompassing 500 linear acres. Conducted focused gnatcatcher surveys, gnatcatcher nest searches and nest monitoring. Assisted contractors in avoiding breaches of resource agency permit stipulations, monitored geotechnical operations, coordinated construction noise monitoring consultants, assisted contractors in avoiding nesting gnatcatchers, special status plant species, nesting raptors, and special status habitat. Monitored construction on a daily basis, and consulted with contractors on avoiding special status resources while assisting construction to proceed.

Client: Capistrano Valley Water District, 2002, 2003

790-Acre Roripaugh Ranch, Western Riverside County. Conducted unassisted focused presence/absence surveys for coastal California gnatcatchers and Quino checkerspot butterflies on the 790-acre Roripaugh Ranch project site. Located both species on the project site. The resulting report was included in a multiple species subarea habitat conservation plan covering the project site.

Client: Hewitt & McGuire, LLP, 1999, 2000

1200-Acre Johnson Ranch, Western Riverside County. Conducted focused surveys for California gnatcatchers and Quino checkerspot butterflies. Documented a previously-unknown metapopulation of Quino. The information was included in the western Riverside County Multiple Species Habitat Conservation Plan; the site was purchased and set aside as a reserve.

Client: Hewitt & McGuire, LLP, 1996, 1998

900-Acre Forster Ranch, Orange County. Co-investigator conducting focused presence/absence surveys for California gnatcatchers and the state-Endangered threadleaf brodiaea plant on the 900-acre Forster Ranch site in San Clemente, Orange County. Located and mapped gnatcatchers and brodiaea patches. Hand-collected over a thousand brodiaea bulbs for storage and transplanting. Planned and implemented a vegetation clearing strategy designed to avoid direct take of California gnatcatchers in accordance with the project's Habitat Conservation Plan and U. S. Fish and Wildlife Service permit. Orchestrated the movement of heavy equipment and laborers across the site to minimize wildlife losses by herding wildlife into appropriate off-site habitat. Supervised and assisted up to five biological monitors directing equipment, monitoring wildlife, and protecting staked open space and property boundaries.

Client: Laing Forster Ranch, 1997, 1998, 2000

157-Acre Obed Project Site, City of Murrieta, Western Riverside County. Conducted focused presence/absence survey for the Quino checkerspot butterfly on the controversial 157-acre "Obed" project site. Located the species onsite. My discovery of Quino on this site was the impetus for the USFWS to open the 1999 Quino flight season for presence/absence surveys in western Riverside County.

Client: Hewitt & McGuire, LLP, 1999

2700-Acre Laborde Canyon Proposed Development Site, Western Riverside County. Assisted with vegetation community mapping and California gnatcatcher habitat assessment and sensitive species surveys.

Client: Douglas Wood and Associates, 1995

150-Acre Whittlesey Doyle Site, Western Riverside County. Conducted a habitat assessment for the Quino checkerspot butterfly on a site in the City of Temecula. Located a previously unknown metapopulation of Quino during the assessment.

Client: Natural Resource Consultants, 1998

900-Acre Preissman Property, Perris, Western Riverside County. Conducted unassisted focused surveys for the burrowing owl on this 900-acre site prior to implementation of the Western Riverside County Multiple Species Habitat Conservation Plan. Also conducted focused surveys for the California gnatcatcher, and mapped vegetation. Located a previously-occupied burrow onsite.

Client: Liang-Sequoia, LLC, 2004

8,200-Acre Ontario Sphere of Influence, City of Ontario, San Bernardino County. Surveyed the 8,200 acre Ontario Sphere of Influence to provide information about the potential of trees and wind rows to afford opportunities for raptor nesting during 1998. Located burrowing owls within the project area.

Client: City of Ontario, 1998

Los Angeles County, Department of Public Works Earthen-bottom Improved Channels project. Field consultant for the Los Angeles County, Department of Public Works' Routine Maintenance Activities in Earthen-bottom Improved Channels project. Assisted County field crews in complying with documentation relating to preservation of native riparian vegetation within Los Angeles County-maintained flood control channels. Crews were to remove non-native vegetation without damaging native riparian vegetation.

Client: Los Angeles County, Department of Public Works, 2000, 2004

Santa Ana River Sewer Line, Orange County. Biological Monitor assisting contractors constructing roads through riparian habitat supporting Threatened and Endangered bird and fish species during maintenance on 19 manholes accessing a sewer line Beneath the Santa Ana River bed. Routes were chosen to minimize damage to special status resources.

Client: County of Orange, Department of Sanitation, 2001

300 Acres in Yorba Linda, Orange County. Conducted focused surveys for the California gnatcatcher prior to and during resource permitting for two adjacent sites totaling 300 acres. Planned and implemented a vegetation clearing strategy designed to avoid direct take of gnatcatchers in accordance with resource agency permits. Orchestrated the movement of heavy equipment and hand laborers across the site to minimize wildlife losses by herding wildlife into appropriate onsite preserve areas and offsite habitat. Directed heavy equipment, located and monitored gnatcatchers, trained and managed biological monitors, and protected designated preserved habitat and property boundaries during heavy equipment operations.

Client: Shapell Industries, 1996, 2000, 2002 through 2004

U.S. Marine Corps Base Camp Pendleton, San Diego County. Specialist Biological Monitor assisting field maintenance crews in avoiding impacts to the federally Endangered Pacific pocket mouse during maintenance activities along transmission lines located within the most densely-occupied habitat currently known for the species.

Client: Sempra Energy/San Diego Gas & Electric Co., 2001, 2002

Dana Point Headlands, Orange County. Specialist hired to assist the U. S. Fish and Wildlife Service trap for the federally-endangered Pacific pocket mouse. Photo-documented occupied habitat, trapping procedures, and tagging of pocket mice.

Clients: Conservation Biology Institute and U. S. Fish and Wildlife Service, 2001

Tijuana Estuary Pacific Pocket Mouse Trapping Survey, San Diego County. Co-investigator hired by the U. S. Fish and Wildlife Service to trap for the Pacific pocket mouse in the Tijuana Estuary National Wildlife Reserve, in San Diego County during 1995.

Client: U.S. Fish and Wildlife Service, 1995

Eagle Mountain Landfill and Adjacent Desert, edge of Joshua Tree National Park, Riverside County - Desert Tortoise Survey. Conducted unassisted focused surveys for nesting ravens within the closed Eagle Mountain mine, the town of Eagle Mountain, along the Eagle Mountain Railroad, and in the surrounding desert as part of a study of desert tortoises. The survey was carried out unassisted in remote areas, and covered approximately 20,000 acres. Assisted biologists permitted to handle the desert tortoise in locating occupied tortoise burrows prior to attaching radio telemetry to investigate tortoise home ranges during 1993. Assisted with focused desert tortoise surveys.

Client: RECON Environmental, 1993

U.S. Marine Corps Base Camp Pendleton, San Diego County. Volunteer periodically assisting the USFWS on an annual basis during mark and recapture trapping studies of the Pacific pocket mouse on USMCB Camp Pendleton from the year the species was discovered onsite in 1994 to 2004.

SANDRA LEATHERMAN
PRINCIPAL BIOLOGIST

EDUCATION
California State University, Fullerton, California

Bachelor of Arts, Biological Science, 1991.

PROFESSIONAL EXPERIENCE
Leatherman BioConsulting, Inc. 2011– present; BonTerra Consulting 1998-2011; P&D Consultants 1993-1998; MBA 1992-1993; USFS Stanislaus 1991. Primarily responsible for biological surveys, report preparation, project management, and agency coordination. Specialties include habitat assessments, general vegetation documentation, vegetation mapping, focused surveys for endangered species, restoration plan development, restoration monitoring, and construction and mitigation compliance monitoring. Prepares biological technical reports to document field work and propose mitigation strategies to meet requirements of CEQA and NEPA, and to initiate formal consultation under the federal Endangered Species Act. Also prepares Habitat Mitigation Plans.

MEMBERSHIPS
- Southern California Botanists (Past President)
- California Native Plant Society
- California Botanical Society
- Society of Ecological Restoration
- California Native Grasslands Association
- California Invasive Plant Council
- The Desert Tortoise Council

PERMITS AND CERTIFICATIONS
- CDFG Rare, Threatened and Endangered Plant Voucher Collecting Permit (No. 06022)

SEMINARS AND SPECIALIZED TRAINING

- Southern California Botanists Symposiums Annually 1991-2012
- California Native Plant Society Conservation Conference January 2012
- 20th Annual Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop. The Desert Tortoise Council. Ridgecrest, California. November 2011.
- California Native Plant Society Conservation Conference November 2009
- SERCAL's 14th Annual Conference "Restoration from Sea to Shining Sea" October 2007
- SERCAL's 13th Annual Conference "Shovel to Science: A Full Range of Restoration Practice in California" October 2006

- California Exotic Pest Plant Council Symposium October 1998
- California Exotic Pest Plant Council Symposium October 1995

GENERAL EXPERIENCE

Sandra Leatherman has twenty years of experience as a professional biologist conducting general biological surveys, focused special status plant surveys, vegetation mapping, and preparing biological reports and biological resources sections for environmental documents. Ms. Leatherman's professional experience has focused on plant ecology and taxonomy. She has conducted and/or managed both general and directed surveys for biological resources, including plants listed as special status or endangered under State and federal laws and regulations. She has been responsible for developing habitat restoration programs and evaluating restoration site conditions on a quantitative and qualitative basis for public-sector and private-sector clients throughout southern California. Ms. Leatherman has developed and monitored numerous restoration projects, six of which were approved by the resource agencies and released from further maintenance and monitoring. Ms. Leatherman has also authored the biological resources sections of numerous environmental impact reports (EIRs) and separate biological reports, including biological assessments (pursuant to Section 7 consultations with the U.S. Fish and Wildlife Service [USFWS]), Natural Environmental Studies (pursuant to California Department of Transportation [Caltrans] guidelines), and reports in accordance with NCCP guidelines (e.g. Western Riverside MSHSP). She has also authored focused survey reports for special status species, tree reports, and general biological assessments.

REPRESENTATIVE PROJECT EXPERIENCE

Project Management/General Biological/Botanical

Santa Anita Dam, Los Angeles County, BonTerra Consulting for County of Los Angeles Department of Public Works

Served as lead botanist for the Santa Anita Dam Proposition 1E Stormwater Management and Seismic Strengthening Project in Arcadia in Los Angeles. Performed vegetation mapping and focused surveys for special status plant species. These studies included preparation of detailed field notes, California Natural Diversity Data Base data forms, mapping population locations, collecting voucher specimens, and related analyses. Responsibilities also included: preparation of detailed special status species report, which included a complete plant list, and preparation of the vegetation descriptions for the Biological Technical report.

On-Call Biological Services, Biological Technical Reports/Biological Constraints Reports/Focused Surveys/Endangered Species Permitting, Los Angeles County Department of Public Works, BonTerra Consulting

Served as the Botanist for an on-call biological services contract with the Los Angeles County Department of Public Works (LADPW). Mapped vegetation of approximately 30 detention basins and conducted focused surveys for numerous others. Conducted focused surveys for

Brauton's milk-vetch, slender-horned spineflower, and Nevin's barberry. Prepared detailed field notes and California Natural Diversity Database (CNDDB) data forms; mapped population locations; collected voucher specimens; and performed other related analyses. Also prepared a detailed Special status species report and vegetation descriptions, and attended several meetings with the California Department of Fish and Game (CDFG). In addition transects were conducted for post and pre-clearing transects for the Los Angeles River and San Gabriel River. This included supervising field crews, data collection and compilation.

Big Tujunga Reservoir Sediment, Los Angeles County, California, BonTerra Consulting
Served as a botanist on the Big Tujunga Reservoir Sediment project site in Los Angeles County. Performed focused surveys for numerous special status plant species. Prepared detailed field notes and California Natural Diversity Database (CNDDB) data forms; mapped population locations; collected voucher specimens; and performed other related analyses for these studies.

Saugus Split Edison Transmission Line, Los Angeles County, California, BonTerra Consulting
Served as the lead botanist for the Saugus Split Line project in Los Angeles County. Performed vegetation mapping and focused surveys for special status plant species. These studies included preparation of detailed field notes, California Natural Diversity Data Base data forms, mapping population locations, collecting voucher specimens, and related analyses. Responsibilities also included: preparation of detailed special status species report, which included a complete plant list.

Tehachapi Renewal Transmission Project, California, BonTerra Consulting
Served as a botanist on the Tehachapi Renewal Transmission Project. Performed focused surveys for numerous special status plant species. Prepared detailed field notes and California Natural Diversity Database (CNDDB) data forms; mapped population locations; collected voucher specimens; and performed other related analyses for these studies.

Whittier Narrows Master Plan, Los Angeles County, California, BonTerra Consulting
Served as lead biologist for the development of the Whittier Narrows Master Plan. Conducted vegetation mapping and assessed the habitats for the revegetation potential. Worked with GIS to develop high and low priority areas for revegetation. Suggested plant palettes and recommendations for restored habitats. Also developed a detailed plant list for the area.

South Fork Lytle Creek Bridge Construction, San Bernardino County, County of San Bernardino
Served as the lead monitor for the biological monitors for the South Fork of Lytle Creek Bridge Construction in San Bernardino County for the protection of the Santa Ana Sucker. Organized monitors for the job, inspected the job site to ensure compliance with California Department of Fish and Game (CDFG), U.S. Army Corps of Engineers, and Regional Water Quality Board. Also conducted meetings with CDFG, County of San Bernardino and on site construction crews.

Seven Oaks Dam Fish Salvage, San Bernardino County, California, Aspen Environmental Group
Served as biologist assisting in salvage of the Santa Ana Sucker with permitted fisheries biologists under the existing agreement with resource agencies.

San Diego County Water Authority and Desalinization Plant and Pipelines, San Diego County, BonTerra Consulting
Served as project manager and lead botanist for the San Diego County Water Authority and Desalinization Plant and Pipelines. Organized field biologists and vegetation mapped several miles of pipeline. Responsibilities also included: compiling and editing the final Biological Technical Report for inclusion in the EIR.

Dayton Canyon EIR, Los Angeles County, BonTerra Consulting
Served as the lead botanist for a approximately 250 acre parcel in Dayton Canyon. Performed focused surveys for Plummer's mariposa lily, slender mariposa lily, and Braunton's milk-vetch. These studies included preparation of detailed field notes, California Natural Diversity Data Base data forms, mapping population locations, collecting voucher specimens, and related analyses. Responsibilities also included: preparation of detailed special status species report, which included mitigation recommendations and a complete plant list, and coordination with USFWS following the finding of the endangered Braunton's milk-vetch.

Bouquet Canyon, Los Angeles County, BonTerra Consulting
Served as the lead botanist for the approximately 400 acre Bouquet Canyon development. Mapped the vegetation on the project site and performed focused surveys for Plummer's mariposa lily, slender mariposa lily, and San Fernando Valley spineflower. These studies included preparation of detailed field notes, California Natural Diversity Data Base data forms, mapping population locations, collecting voucher specimens, and related analyses. Responsibilities also included: preparation of detailed special status species report, which included mitigation recommendations, a complete plant list, and a Biological Technical Report for the EIR.

Pathfinder Road Gap Closure, Los Angeles County, BonTerra Consulting
Served as the lead botanist for the Pathfinder Road Gap project in Los Angeles County and performed focused surveys for special status plant species. Prepared detailed field notes and California Natural Diversity Database (CNDDB) data forms; mapped population locations; collected voucher specimens; and performed other related analyses. Responsibilities also included: preparation of a detailed special status species report, which includes a complete plant list.

Tesoro del Valle Environmental Impact Report, Los Angeles County, BonTerra Consulting
Served as a Botanist for the Tesoro del Valle pre-construction surveys. Performed focused surveys for slender mariposa lily and Nevin's barberry. Prepared detailed field notes and California Natural Diversity Database (CNDDB) data forms; mapped population locations; assisted in the preparation of the Habitat Mitigation Monitoring Program (HMMP); collected

voucher specimens; and performed other related analyses. Prepared a detailed Special Status Species Report, which included mitigation recommendations and a complete plant list.

Interstate 5/State Route 126 Interchange, State Route 126/Commercial Center Drive Interchange and Interstate 5/Hasley Canyon Road Interchange, Los Angeles County, BonTerra Consulting
Served as the lead botanist for the Interstate 5/State Route 126, State Route 126/Commerce Center Drive, and Interstate 5/Hasley Canyon Road infrastructure improvement projects in Santa Clarita. Mapped vegetation and completed detailed plant lists for this project, and Natural Environment Studies (NESs) were prepared for two of these three projects.

Northlake Specific Plan for Northlake Development, Los Angeles County, BonTerra Consulting
Served as the lead botanist for the Northlake Specific Plan project site. Conducted general plant and vegetation mapping of the approximate 2,115 acres of open space in Grasshopper Canyon adjacent to Castaic Lake. Coordinated focused survey efforts on the project site and focused plant surveys for three years. A Biological Technical Report was prepared for the project.

Restoration Mitigation and Monitoring

Peninsula Point Tract #45667 for Vintage Communities, Los Angeles County, BonTerra Consulting
Served as the project manager and biologist for the Peninsula Point coastal sage scrub reference site in Los Angeles County. Responsibilities included: a quantitative evaluation of plant growth performance, data compilation, the development of remedial maintenance measures, and a revised conceptual planting plan. Quantitative monitoring included line intercept transects and seeding count. Conducted field meetings with the U.S. Fish and Wildlife Service (USFWS).

Crown Valley Parkway Widening Project for Rancho Mission Viejo, Orange County, BonTerra Consulting Served as the project manager and lead biologist for the Crown Valley Parkway riparian habitat mitigation site. Conducted qualitative assessments of overall site conditions and quantitative measurements of plant growth performance (including line intercept transects and tree survivability assessments). Conducted meetings with the U.S. Army Corps of Engineers (USACE) and the California Department of Fish and Game (CDFG) for the project.

Pipeline C-1666 and C-1669 Biological Services, Orange County, BonTerra Consulting
Served as the project manager and lead biologist for the Santa Margarita Water District's C-1669 and C-1669 pipeline project in Las Flores, Orange County. Prepared documentation for a 4(d) Permit and a Habitat Mitigation Monitoring Plan for the construction of the pipelines. Conducted field meetings with the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG) and the County of Orange, and prepared a construction monitoring program for compliance with a Streambed Alteration Agreement.

Brief resume of key persons, specialists, and individual consultants anticipated for this project

MICHAEL R. SAN MIGUEL

Ornithologist · Wildlife Biologist

Field biologist for Biological Resources Assessment and Monitoring for 95 Stream Channels throughout Los Angeles County, Los Angeles County Department of Public Works. BonTerra Consulting conducted an evaluation of the biological resources in the natural bottom stream channels to determine the presence of riparian or other sensitive resources in preparation for clearing of vegetation to increase channel capacity for anticipated El Nino storms in winter 1997-1998. Requirements of permits issued to the County of Los Angeles by the U.S. Army Corps of Engineers (USACE) and the California Department of Fish and Game (CDFG) dictated that non-sensitive and invasive species (e.g., Arundo) be considered the key priority for vegetation removal. Sensitive habitat areas that had to be removed to insure adequate channel capacity were mapped in the field to document acres of habitat lost and to set the stage for development of post-clearing mitigation programs (allowed by the USACE and CDFG permits). Impending winter storms required accelerated responses from BonTerra Consulting biologists and overtime/weekend work shifts starting in late October 1997 and continuing through early December. All work requirements were met, and vegetation clearing was completed prior to the onset of the winter storm period. Subsequent to vegetation clearing, BonTerra field-verified habitat maps that were prepared on CADD to document the remaining vegetation in the channels.

Conducted avian surveys in the Puente and Chino Hills, Los Angeles County, to determine the breeding status for the University of California at Riverside.

EDUCATION/EXPERIENCE

1968 B.S. ENGINEERING

3 YEARS EXPERIENCE
BONTERRA CONSULTING

25 YEARS EXPERIENCE
OTHER FIRMS

ACTIVE REGISTRATION

1989
REGISTERED ENVIRONMENTAL ASSESSOR I, (CA REGISTRATION NO. 00988)
U.S. Fish and Wildlife Service Certification (Permit # TE-931910-1) allowing focused surveys of California Gnatcatcher, Southwestern Willow Flycatcher, and Least Bell's Vireo

1966
US FISH AND WILDLIFE SERVICE, MASTER BIRD BANDING PERMIT, (NO. 09466)

OTHER EXPERIENCE AND QUALIFICATIONS RELEVANT TO THE PROPOSED PROJECT:

Mr. San Miguel recently left the Southern California Edison Company after 25 years as an Environmental Engineer/Project Manager. During his successful engineering career, Mr. San Miguel also became one of the leading field ornithologists in California with over 36 years of experience in avian surveys and bird banding. He obtained his Master bird banding permit in 1966 and has banded over 25, 000 birds. Presently, he is an instructor for The Institute for Bird Populations, where he trains students in various bird banding techniques. He is past president of the Western Bird Banding Association and is currently a member of the California Bird Records Committee, Vice President of the Western Field Ornithologists, and is on the Steering Committee for the Los Angeles County Breeding Bird Atlas.

He has managed a large variety of environmental projects, including preparation or management of environmental reports and documentation required for permitting and licensing of electric utility restructuring and several projects involving the clean up of sites contaminated with hydrocarbons and other contaminants.

These projects and others required an in-depth knowledge and expertise of the National Environmental Policy Act of 1969 (NEPA) and California Environmental Quality Act (CEQA).

ATTACHMENT D

RECENT EBIRD RECORD FOR CALIFORNIA CONDOR

eBird Menu

Checklist S45830914

Older | All Checklists | Newer

Location

Old Ridge Route, Castaic, California, US (34.572, -118.663), Los Angeles County, California, US (Map)

Date and Effort

Sat May 19, 2018 11:25 AM

Protocol: Stationary

Party Size: 1

Duration: 20 minute(s)

Observers: **Naresh Satyan**

Comments: Condors!! Sunny with a decent breeze, 70F.

Submitted from eBird Android, version 1.8.2

Species

6 species total

Hide Media

8 California Condor

Condors are unmistakeable and descriptions of the birds are mostly unnecessary, so I will just describe the circumstances of the sighting. I have dozens of photos and videos, some of which I will upload in a day or two. I first saw a single condor low overhead while driving north on the I-5, about a mile south of the Templin Hwy exit. Obvious adult condor, from red head and underside of the wing pattern. I hoped to get a better look and took the Templin Hwy exit and back south on the old Ridge route road. The condor was overhead and I drove up to a point where it looked like it was about to land. As I snapped a couple of pictures from the car a shadow passed overhead and a juvenile condor was 50 feet above me. Soon after, 5 condors took off from the side of the road not far from where I was parked, rising on the thermals. In another 5 minutes, 5 birds became 7, and then there was another perched on the ground on some trash, making it 8 in all. 6 adults and 2 juveniles, undoubtedly from the Sespe sanctuary across the freeway. The count is accurate, though I don't know if I got photos of all the tags. The condors took no notice of me, flapping and soaring within 30 horizontal feet and 50 vertical feet of me. They flew Northeast, deeper into LA county. The sound a condor's wings make when the bird is that close is something else. When they rose on the thermals, it sounded like a car was approaching on the road. I feel privileged to have shared the mountains with them for 20 minutes, just me and the condors. I've seen condors multiple times before, in CA/UT/AZ, but this was easily the most thrilling encounter.

Age & Sex

	Juvenile	Immature	Adult	Age Unknown
Male		**1**	**2**	
Female			**2**	
Sex Unknown		**1**	**2**	



ML101450531 Macaulay Library

© Naresh Satyan
98, male, born San Diego 1998

Age:	Adult
Sex:	Male

1 Turkey Vulture
Passed overhead as I was sat in the car typing notes.

1 Red-tailed Hawk
Juvenile

3 Common Raven

1 Dark-eyed Junco
Heard only

2 Western Meadowlark
Heard only

Are you submitting a **complete checklist** of the birds you were able to identify?

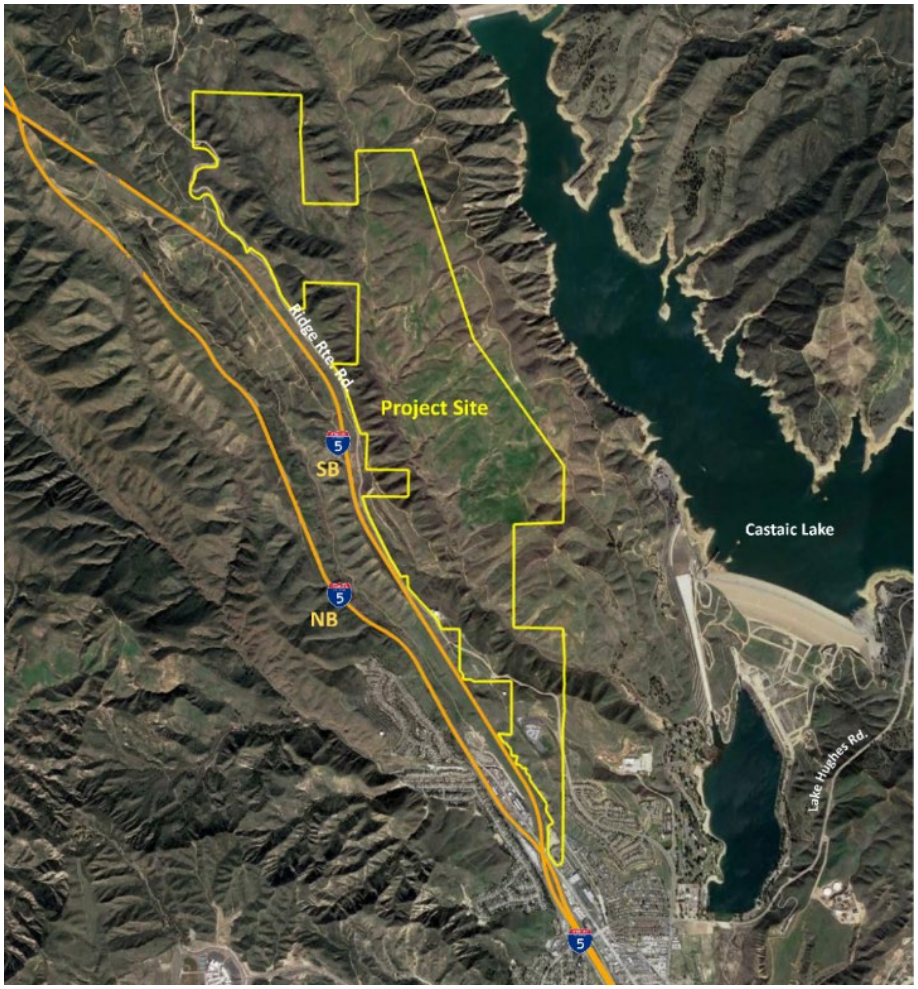
Yes

© Cornell Lab of Ornithology | Contact | FAQ

APPENDIX K

WILDLAND FIRE RISK REPORT NORTHLAKE PROJECT ADDENDUM #1, DECEMBER 2024

Wildland Fire Risk Report
NorthLake Project
Addendum #1



Prepared for:
Northlake Associates, LLC
10250 Constellation Boulevard, STE 2750
Los Angeles, CA 90067

and

Los Angeles County Fire Department

Prepared By:

firesafe PLANNING, INC.

Included in the assessment of exacerbation of wildfire risk (CEQA Guidelines section 15126.2(a)) is the increased wildfire risk from increased human habitation in a wildlife-urban interface as recognized in the recent case, *People of the State of California Ex Rel. Rob Bonta, Attorney General v. County of Lake & Lotusland Investment Holdings, Inc. (Case No. A165677; "Lotusland")).* The following analysis assesses the additional risk from the proposed new project population at the project site and concludes that while the project increases the general potential for human-ignited wildfires, that risk is less than significant based on regulatory compliance, project design and mitigation measures.

It is important to first quantify the increased risk that may be caused by development in areas which have not been previously developed. This needs to be done by describing the "additional wildfire risk factors as compared to existing conditions" that the project would "introduce" to the area. Specific studies for the project site region on this subject are not readily available, however, more regional, national and international findings are available on the general subject.

Bringing in new residents to the largely undeveloped project site increases the risk of human-caused wildfire over the existing baseline risk. This is a well-established fact. **Humans cause nearly 90% of wildfires in the United States according to the latest report from the Congressional Research Service in its report on Wildfire Statistic data June 1, 2023. These fires are primarily from discarded cigarettes, unattended campfires, burning debris, or through equipment malfunctions.**

As noted in the publication, *Conservation Threats Due to Human-Caused Increases in Fire Frequency in Mediterranean-Climate Ecosystems, by* Alexandra D. Syphard, et. Al (May 2009) which indicated that "*human ignitions increase with population density*":

> *The association of people with the spatial distribution of fire occurrence is likely due to the fact that humans now cause the majority of ignitions in all five Mediterranean-climate regions (Bond & van Wilgen 1996), and human ignitions are likely to occur close to roads and human infrastructure (e.g., Yang et al. 2007; Syphard et al. 2008). Nevertheless, our results also showed that fire occurrence consistently peaked where population densities were intermediate, which suggests that fire patterns in Mediterranean-climate regions are related to the spatial arrangement between people, urban development, and fuel. When population density is lowest, human ignitions are also low but increase with population density. Nevertheless, there appears to be a threshold above which fire occurrence declines, possibly due to less open space and fuel fragmentation caused by urban development or other land-use change. Fire-suppression resources also tend to be concentrated near urban areas (Calkin et al. 2005), and intermediate-density housing when located within wildland vegetation is classified as the wildland–urban interface (WUI) in the United States and given special fire-management considerations (Radeloff et al. 2005).*
>
> **Conservation Threats Due to Human-Caused Increases in Fire Frequency in Mediterranean-Climate Ecosystems**, Alexandra D. Syphard, Volker C. Radeloff, Todd J. Hawbaker, Susan I. Stewart, First published: 15 May 2009, **https://doi.org/10.1111/j.1523-1739.2009.01223**

There is no doubt that that increased human habitation in a wildlife-urban interface increases the fire risk from human activities such as arson, children playing with fire, debris-burning; increased vehicular traffic, increased fire risk from sparks, catalytic converters, and smoking/discarded smoking materials and accidental fires. The development itself introduces residences within the site creating a wildland-urban interface that increases the general potential for human-ignited wildfires. All of these factors could expose project occupants to pollutant concentrations from wildfire or the uncontrolled spread of wildfire near or into the development footprint.

The probability of increased ignitions cannot be ignored. However, the reality is that while more opportunities for fires will exist, factors associated with the changes in the wildland fuels and topography will have an offsetting effect.

> *Studies in California show that area burned and number of fires are highest when population and housing densities are intermediate (Keeley 2005; Syphard et al. 2007). Fires initially increase with population and housing density and then decline where a threshold density is reached. There are several interrelated reasons for this. Ninety-five percent of California's fires are human caused; therefore, anthropogenic ignitions are lower in areas with low population density. As population and housing densities increase, fuels are still abundant and contiguous enough to carry fire, and the number and frequency of fires increase (Syphard et al. 2007). As population density increases further and an area is developed, wildland fuel is reduced and fragmented and fire-suppression resources are concentrated, resulting in lower fire frequencies at high population densities. Finally, even if fire frequency remains stable, fires may cluster in certain areas (e.g., human settlements) or land-cover types (Nunes et al. 2005; Forsyth & van Wilgen 2008), resulting in high fire frequency in localized areas.* Syphard, A. D., Radeloff, V. C., Hawbaker, T. J., & Stewart, S. I. (2009). Conservation threats due to human-caused increases in fire frequency in Mediterranean-climate ecosystems. Conservation Biology, 23(3), 758–769.

A study out of Texas (Effects of changing development patterns and ignition locations within Central Texas, Mobley, W, (Feb 2019)) indicated the ignition gradient along lateral development could lower ignition probabilities when the new development areas were nearest to the previous urban development, while outlying development patterns in the wildland had higher probabilities.

This builds on the concept that, at a point of development density, wildland fuels are reduced/eliminated or fragmented to a point where fire suppression effort are more effective. This higher level of development also has a greater concentration of emergency services resources to aid the protective actions needed to bring the incident to a close.

Wildland fires are primarily from discarded cigarettes, unattended campfires, burning debris, or through equipment malfunctions. Restricting smoking in hazardous areas coupled with roadside protection zones will be greatly beneficial to reducing the impacts of smoking materials within the project site. Campfires will not be allowed in the project site nor will solid fuel appliances or open flame devices which do not have spark arrestors in accordance with the Fire Code and local ordinance requirements. Burning of debris will not be allowed within the project site and will be enforced by the project site HOA in addition to the local law enforcement and fire agencies. While it is impossible to stop all of the equipment malfunctions, it is possible

to reduce the impact of equipment failure by regulation of the type and nature of equipment used in or near the wildland interface. Internal combustion engines are required to have spark arrestors under the current fire code, but compliance is a matter of operational orientation. The common areas of the project site will be under the jurisdiction of the HOA and as such, it can and will hold those doing working in the interface, especially the fuel modification zones, accountable for wildland fire safety practices in accordance with Calfire/Local Fire agency and NFPA (Nation Fire Protection Association) standards.

A study out of Canada summed the relationship of population to increased wildland fire ignitions up very well:

> *The prevalence of human-caused wildfires near population centers and in interface areas* is not just a Canadian phenomenon, but *has been observed all over the world. However, the relationship between human population density and wildland fire is complex and has been shown to be non-linear in many regions across the world because population centers can offer both sources of ignition and enhanced protection from wildland fire spread owing to increased suppression activity (Bistinas et al. 2013; Price and Bradstock 2014).*
>
> *In such cases, the incidence of wild land fire ignitions increases with population density up to a local threshold, then decreases. In their research, they found that population centers of all sizes were associated with individual clusters, which further supports the notion that the relationships between human-caused wildfires and population density are non-linear and involve other factors.*
>
> Human- and lightning-caused wildland fire ignition clusters in British Columbia, Canada
> Sean C. P. Coogan A * , Olivia Aftergood A and Mike D. Flannigan B., International Journal of Wildland Fire 1043-1055 https://doi.org/10.1071/WF21177 Published: 11 October 2022

The total number of structures in or near the WUI (Wildland Urban Interface) have increased significantly over the past few decades. If the probability of ignition was increased in a linear manner by the increase in population, it could be assumed that the number of wildland fires would have increased over the same period as well. The opposite has occurred. According the CalFire database (https://www.frontlinewildfire.com/wildfire-news-and-resources/california-wildfires-history-statistics/), the number of wildland fires is trending down over the past 37 years (Figure 1).

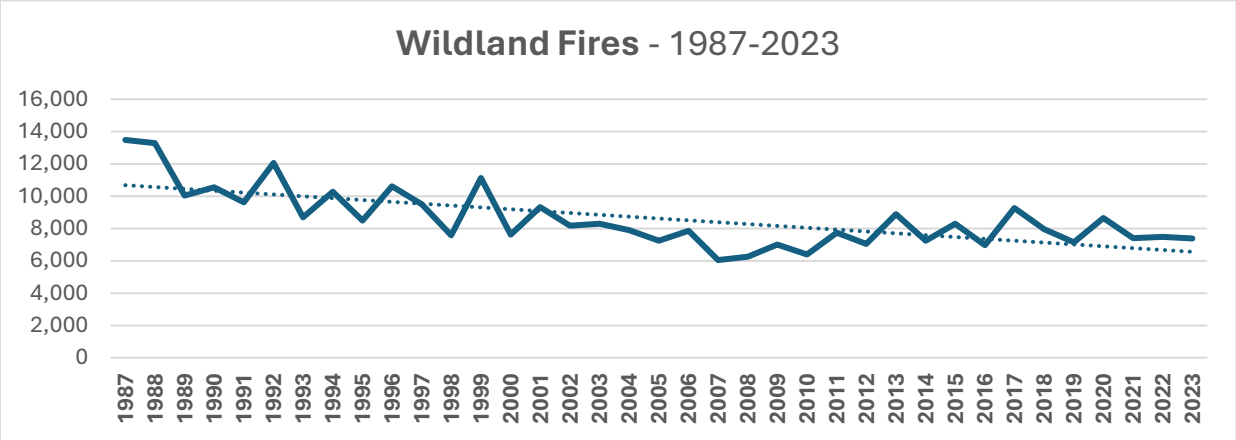


Figure 1 – California Wildland Fires 1987 to 2023

While it is impossible to isolate the WUI factor within the myriad of issues which drive the number of wildland fires in a year, it is possible to say that the inclusion of a large amount of new residential population into the WUI over this period has not produced a significant increase in the number of wildland fires. Correlation is not causation, and this is not presented as proof, but the correlation is one factor to consider.

The impacts to the community are from large wildland fires (100 acres or more) are sustained in many ways. First and foremost is the direct threat of the flames and smoke damaging or destroying structures, property and putting lives at risk. Secondary to that are air and water pollution during and after the fire event. Also potential for flooding and earth movement from the loss of vegetation and other stabilizing aspects of the environment. Each of these impacts has multiple precautions or mitigations that can and do lessen the impact or in many cases eliminate the impacts entirely.

These include:

a) Fuel break and fire breaks in the wildland
b) Fuel modification zones in the wildland interface
c) Defensible space around structures
d) Hardening of structures to be more resistive to wildland fires (Chapter 7A of the Building Code and/or Section R337 of the Residential Code
e) Roadside clearance to create buffers between the roadway and native wildland fuels
f) Use of prescribed fire for fuels reductions
g) Design of the community roadways to include multiple paths of travel for ingress/egress and evacuation
h) Undergrounding of critical infrastructure to make it more resistant to wildland fire impacts (electrical transmission, water supply storage and distribution, wastewater infrastructure, traffic control systems, and petroleum storage and distribution)
i) Protection of emergency medical system components
j) Preplanned evacuation zones and routes
k) Back up systems for continuity of government and provision of emergency services.
l) Public education on wildland hazards, mitigation and improvements (Ready Set Go, Know Your Way, EDITH (exit drills in the home))
m) Annual inspections of interface, at-risk locations and equipment needed to provide essential services
n) Community information and communications system
o) Emergency Alert Systems
p) Community sponsored Clean Up days
q) Firewise Community certification.

Mitigation measures are “feasible changes in any or all activities involved in the project in order to substantially lessen or avoid significant effects on the environment.” (Guidelines, § 15041, subd. (a).)

The CEQA Guidelines define “mitigation” to include:

Avoiding /minimizing the impact

Preventing/reducing potential adverse impacts by protection of values at risk by elimination or suppression of impacts

Reducing or eliminating the impact by preservation, intrinsic design and maintenance operations,

Offsetting/ Countering impacts with features, resources or programs

Intrinsic Safety is a method for ensuring safety by removing or lowering the causes of danger to a level where the risk is significantly reduced; whereas Functional Safety is reducing risks to an acceptable level to ensure safety by changing the form and function of the hazard interface. Both are necessary to achieve the required protection against wildland fires.

The project's design (or mitigation measures) alleviates the stated risks as follows:

Avoidance by:

- Prohibiting smoking in wildland and wildland interface
- Banning solid fuel outfire fires within the community without spark arrestor and only in approved devices.
- Limiting access to vulnerable open space

Minimization/Prevention/ Reduction by providing:

- Fuel Breaks and Fire Breaks which reduce fire intensity and forward progress in the direction of the community
- Undergrounding of utilities, pump stations, switch gear to make them less impacted by wildfires
- Annual inspections for wildland interface (common areas) to insure readiness
- Defensible space inspections to educate and inform homeowners on what can be accomplished to make the structure more resistant to wildland fires
- Community cleanup programs (ongoing) to assist in removing wildland fuels from the interface and the community as a whole
- Back up of critical infrastructure (water, communications, traffic control, electrical) to ensure that they are functional when needed
- Fuel modification zones which slow or stop the forward progression of the wildland fire
- Defensible space which eliminates or greater reduces the fire pathways between the native fuels and the ignition zone around the structure
- Roadside clearance zones which increase the utility of the roads for evacuation while reducing the impact of possible ignition sources by reducing fuels near the roads by creating a buffer area
- New fire suppression resources which are closer/faster to the incident in order to intercede before the fire reaches a point where it exceeds the local resources and become a large wildland fire
- Hardened structures to wildland fire impacts through physical construction, distance and configuration of items on or near the structure which might ignite

- Placement of structures relative to the potential wildland fires to reduce or eliminate the possible ignition of the structure or the vegetation around it

Compensation/Offsetting risk by:

- Increased detection of ignition which result in actions which limit the size and scope of the fire with early intervention by citizens or emergency personnel
- Rapid suppression capabilities (as opposed to longer responses to areas without immediate access)
- Fire prevention and public education programs to reduce, eliminate and prevent wildland fires by changing behavior and practice which could elevate the risk of a wildland fire or its impacts
- Community information and communication systems to keep residents informed and aware of risks, actions needed and increases the ability to plan for future actions such as evacuation prior to being in harm's way
- Preplanned evacuation areas/routes which are known to residents to insure that, if evacuation is needed, it can be completed quickly and in the most efficient and effective manner

Conclusion

The California Governor's Wildland Strike Forse (2014) said it succinctly:

> *California has made progress in developing and adopting stringent wildland building codes. Since 2008, new construction in California's wildlands must use ember-resistant building materials. For homes built before the 2008 standards, CAL FIRE is working to develop a list of low-cost retrofit steps homeowners can take. In addition, the Office of the State Fire Marshal (OSFM) maintains an advisory committee of fire and building officials that continuously considers building code updates to improve fire safety. Most recently, OSFM advanced building code changes including sealing of garage door gaps, sealing skylights and safety improvements to outbuildings.*
>
> *Developing new housing in Very High Fire Hazard Severity Zones presents challenges. Since 2015, CAL FIRE has assisted local governments in land use planning. CAL FIRE is working to identify subdivisions at significant fire risk without secondary evacuation routes and to make recommendations to improve access.*
>
> *Homeowners are encouraged to actively maintain defensible space, which is defined as a minimum 100-foot area around a home. Maintenance is an ongoing task. California inspected more than 217,600 homes for defensible space compliance in 2017-2018 alone.*
>
> *It is critical that roads and other infrastructure be more fire defensible and evacuation ready for the populations in the WUI. All levels of government must establish clear contingency plans with local communities to identify and create temporary refuge areas and shelter-in-place procedures to help fire evacuees survive when unable to escape a wildfire.*

Wildfires and Climate Change: California's Energy Future., A report from Governor Newsom's Strike Force April 12, 2019

All of the issues addressed above are or will be included in the new development areas by the approved design, ordinance, statute or regulation. As such, the increased wildfire risk from human-ignited wildfire is less than significant.