Appendix B

Air Quality and Greenhouse Gas Calculations

Construction Emission Calculation Sheets

Operation and Maintenance Emission Calculation Sheets

Emission Factor Calculation Sheets

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Construction Emission Calculation Sheets

Air Quality and GHG Summary Table

Phase 1

Table B-1. Construction Pounds Per Day - Unmitigated

	Pounds Per Day					
	VOC	NOx	CO	PM10	PM2.5	SOX
Terrestrial Portion						
Terrestrial conduit installation	3	8	10	0.5	0.4	0
Directional bores – Terrestrial	3	29	16	1.3	1.2	0
Manhole Installation	1	4		0.1	0.1	0
Ocean ground bed & Beach Manhole	1	9		0.4	0.4	0
Terrestrial innerduct & cable pulling	0	2		0.0	0.0	0
Power feed equipment (PFE) facility (buildout & testing)	11	4	2	0.2	0.2	0
Truck Trips	0	7		0.4	0.2	0
maximum daily localized	*11*	*29*	*16*	*1.3*	*1.2*	*0*
Marine Portion						
State Waters (MHT to 3 nmi)						
HDD Installation Support	16	127	60	5	5	3
Pre-lay grapnel run	61	1,143	131	28	27	28
Marine cable landing	47	882	131	19	18	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (diver-assisted)	16	141	46	6	6	3
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily state waters regional	*150*	*2,844*	*354*	*69*	*65*	*71*
24 NMI CARB Limit (3nmi to 24 nmi)						
Pre-lay grapnel run	37	909	78	18	16	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily 3-24nm	*134*	*2,703*	*308*	*63*	*59*	*68*
Continental Shelf (24 nmi to edge of Shelf)						
Pre-lay grapnel run	37	909	78	18	16	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily 24-shelf	*134*	*2,703*	*308*	*63*	*59*	*68*
200mnmi EEZ (edge of Shelf to 200 nmi)						
Marine cable lay	72	1,922	152	35	32	55
maximum daily shelf to 200nm	*72*	*1,922*	*152*	*35*	*32*	*55*
Max Daily - Regional State Waters	**150**	**2,844**	354	69	**65**	71
Thresholds	75	100	550	150	55	150
Max Daily - Localized	11	29	16	1.3	1.2	0
LSTs	-	91	664	5.0	3.0	-

Table B-2. Construction Tons per Element - Unmitigated

	Tons per Year						MT
	VOC	NOx	CO	PM10	PM2.5	SOX	CO2e
Terrestrial Portion							
Terrestrial conduit installation	0.04	0.06	0.16	0.01	0.00	0.00	8
Directional bores – Terrestrial	0.11	0.96	0.49	0.04	0.04	0.01	115
Manhole Installation	0.02	0.04	0.07	0.00	0.00	0.00	6
Ocean ground bed & Beach Manhole	0.00	0.01	0.00	0.00	0.00	0.00	1
Terrestrial innerduct & cable pulling	0.00	0.01	0.00	0.00	0.00	0.00	1
Power feed equipment (PFE) facility (buildout & testing)	0.01	0.05	0.03	0.00	0.00	0.00	4
Truck Trips	0.01	0.12	0.10	0.01	0.00	0.00	40
Marine Portion							
State Waters (MHT to 3 nmi)							
HDD Installation Support	0.11	0.96	0.49	0.04	0.04	0.01	115
Pre-lay grapnel run	0.02	0.47	0.04	0.01	0.01	0.01	20
Marine cable landing	0.05	0.90	0.14	0.02	0.02	0.02	47
Marine cable lay	0.05	0.82	0.11	0.02	0.02	0.02	37
Marine cable burial (diver-assisted)	0.06	0.49	0.16	0.02	0.02	0.01	32
Marine cable burial (ROV-assisted)	0.04	1.06	0.08	0.02	0.02	0.03	45
total in state waters	**0.51**	**5.95**	**1.88**	**0.19**	**0.18**	**0.13**	**471**
24 NMI CARB Limit (3nmi to 24 nmi)							
Pre-lay grapnel run	0.02	0.44	0.04	0.01	0.01	0.01	19
Marine cable lay	0.33	5.76	0.78	0.15	0.15	0.13	257
Marine cable burial (ROV-assisted)	0.12	3.17	0.25	0.06	0.05	0.09	136
total 3-24nm	**0.47**	**9.38**	**1.07**	**0.22**	**0.21**	**0.24**	**412**
Continental Shelf (24 nmi to edge of Shelf)							
Pre-lay grapnel run	0.02	0.46	0.04	0.01	0.01	0.01	20
Marine cable lay	0.57	9.88	1.34	0.26	0.25	0.23	441
Marine cable burial (ROV-assisted)	0.26	6.87	0.54	0.12	0.11	0.20	295
total 24nm to shelf (100nm)	**0.84**	**17.21**	**1.93**	**0.40**	**0.37**	**0.44**	**755**
200mnmi EEZ (edge of Shelf to 200 nmi)							
Marine cable lay	0.10	2.55	0.20	0.05	0.04	0.07	109
total shelf to EEZ (200 nm)	**0.10**	**2.55**	**0.20**	**0.05**	**0.04**	**0.07**	**109**
Total overall	**1.92**	**35.08**	**5.08**	**0.85**	**0.80**	**0.88**	**1,749**

Phase 2

Table B-3. Construction Pounds Per Day - Unmitigated

	Pounds Per Day					
	VOC	NOx	CO	PM10	PM2.5	SOX
Terrestrial Portion						
Terrestrial conduit installation	3	8	10	0.5	0.4	0
Ocean ground bed & Beach Manhole	1	9		0.4	0.4	0
Terrestrial innerduct & cable pulling	0	2		0.0	0.0	0
Power feed equipment (PFE) facility (buildout & testing)	11	4	2	0.2	0.2	0
maximum daily localized	*11*	*9*	*10*	*0.5*	*0.4*	*0*
Marine Portion						
State Waters (MHT to 3 nmi)						
Pre-lay grapnel run	61	1,143	131	28	27	28
Marine cable landing	47	882	131	19	18	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (diver-assisted)	16	141	46	6	6	3
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily state waters	*150*	*2,844*	*354*	*69*	*65*	*71*
24 NMI CARB Limit (3nmi to 24 nmi)						
Pre-lay grapnel run	37	909	78	18	16	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily 3-24nm	*134*	*2,703*	*308*	*63*	*59*	*68*
Continental Shelf (24 nmi to edge of Shelf)						
Pre-lay grapnel run	37	909	78	18	16	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily 24-shelf	*134*	*2,703*	*308*	*63*	*59*	*68*
200mnmi EEZ (edge of Shelf to 200 nmi)						
Marine cable lay	72	1,922	152	35	32	55
maximum daily shelf to 200nm	*72*	*1,922*	*152*	*35*	*32*	*55*
Max Daily - Regional State Waters	**150**	**2,844**	354	69	**65**	71
Thresholds	*75*	*100*	*550*	*150*	*55*	*150*
Max Daily - Localized	11	9	10	0.5	0.4	0
LSTs	-	*91*	*664*	*5.0*	*3.0*	-

Table B-4. Construction Tons per Element - Unmitigated

	Tons per Year						MT
	VOC	NOx	CO	PM10	PM2.5	SOX	CO2e
Terrestrial Portion							
Terrestrial conduit installation	0.04	0.06	0.16	0.01	0.00	0.00	8
Ocean ground bed & Beach Manhole	0.00	0.01	0.00	0.00	0.00	0.00	1
Terrestrial innerduct & cable pulling	0.00	0.01	0.00	0.00	0.00	0.00	1
Power feed equipment (PFE) facility (buildout & testing)	0.01	0.05	0.03	0.00	0.00	0.00	4
Marine Portion							
State Waters (MHT to 3 nmi)							
Pre-lay grapnel run	0.02	0.47	0.04	0.01	0.01	0.01	20
Marine cable landing	0.05	0.88	0.13	0.02	0.02	0.02	46
Marine cable lay	0.05	0.82	0.11	0.02	0.02	0.02	37
Marine cable burial (diver-assisted)	0.06	0.49	0.16	0.02	0.02	0.01	32
Marine cable burial (ROV-assisted)	0.04	1.06	0.08	0.02	0.02	0.03	45
total in state waters	**0.26**	**3.85**	**0.72**	**0.10**	**0.09**	**0.10**	**194**
24 NMI CARB Limit (3nmi to 24 nmi)							
Pre-lay grapnel run	0.02	0.44	0.04	0.01	0.01	0.01	19
Marine cable lay	0.33	5.76	0.78	0.15	0.15	0.13	257
Marine cable burial (ROV-assisted)	0.12	3.17	0.25	0.06	0.05	0.09	136
total 3-24nm	**0.47**	**9.38**	**1.07**	**0.22**	**0.21**	**0.24**	**412**
Continental Shelf (24 nmi to edge of Shelf)							
Pre-lay grapnel run	0.02	0.46	0.04	0.01	0.01	0.01	20
Marine cable lay	0.57	9.88	1.34	0.26	0.25	0.23	441
Marine cable burial (ROV-assisted)	0.26	6.87	0.54	0.12	0.11	0.20	295
total 24nm to shelf (100nm)	**0.84**	**17.21**	**1.93**	**0.40**	**0.37**	**0.44**	**755**
200mnmi EEZ (edge of Shelf to 200 nmi)							
Marine cable lay	0.10	2.55	0.20	0.05	0.04	0.07	109
total shelf to EEZ (200 nm)	**0.10**	**2.55**	**0.20**	**0.05**	**0.04**	**0.07**	**109**
Total overall	**1.67**	**32.98**	**3.92**	**0.76**	**0.71**	**0.85**	**1,471**

Phase 3

Table B-5. Construction Pounds Per Day - Unmitigated

	Pounds Per Day					
	VOC	NOx	CO	PM10	PM2.5	SOX
Terrestrial Portion						
Terrestrial conduit installation	2	6	10	0.3	0.3	0
Ocean ground bed & Beach Manhole	0	5	4	0.2	0.2	0
Terrestrial innerduct & cable pulling	0	2	1	0.0	0.0	0
Power feed equipment (PFE) facility (buildout & testing)	11	3	1	0.1	0.1	0
maximum daily localized	11	6	10	0.3	0.3	0
Marine Portion						
State Waters (MHT to 3 nmi)						
Pre-lay grapnel run	61	1,143	131	28	27	28
Marine cable landing	47	881	108	19	18	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (diver-assisted)	16	141	46	6	6	3
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily state waters	*150*	*2,844*	*354*	*69*	*65*	*71*
24 NMI CARB Limit (3nmi to 24 nmi)						
Pre-lay grapnel run	37	909	78	18	16	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily 3-24nm	*134*	*2,703*	*308*	*63*	*59*	*68*
Continental Shelf (24 nmi to edge of Shelf)						
Pre-lay grapnel run	37	909	78	18	16	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily 24-shelf	*134*	*2,703*	*308*	*63*	*59*	*68*
200mnmi EEZ (edge of Shelf to 200 nmi)						
Marine cable lay	72	1,922	152	35	32	55
maximum daily shelf to 200nm	*72*	*1,922*	*152*	*35*	*32*	*55*
Max Daily - Regional State Waters	**150**	**2,844**	354	69	**65**	71
Thresholds	*75*	*100*	*550*	*150*	*55*	*150*
Max Daily - Localized	11	6	10	0.3	0.3	0
LSTs	-	*91*	*664*	*5.0*	*3.0*	-

Table B-6. Construction Tons per Element - Unmitigated

	Tons per Year						MT
	VOC	NOx	CO	PM10	PM2.5	SOX	CO2e
Terrestrial Portion							
Terrestrial conduit installation	0.04	0.05	0.16	0.00	0.00	0.00	8
Ocean ground bed & Beach Manhole	0.00	0.00	0.00	0.00	0.00	0.00	1
Terrestrial innerduct & cable pulling	0.00	0.01	0.00	0.00	0.00	0.00	2
Power feed equipment (PFE) facility (buildout & testing)	0.01	0.03	0.02	0.00	0.00	0.00	4
Marine Portion							
State Waters (MHT to 3 nmi)							
Pre-lay grapnel run	0.02	0.47	0.04	0.01	0.01	0.01	20
Marine cable landing	0.05	0.88	0.11	0.02	0.02	0.02	46
Marine cable lay	0.05	0.82	0.11	0.02	0.02	0.02	37
Marine cable burial (diver-assisted)	0.06	0.49	0.16	0.02	0.02	0.01	32
Marine cable burial (ROV-assisted)	0.04	1.06	0.08	0.02	0.02	0.03	45
total in state waters	**0.26**	**3.81**	**0.69**	**0.10**	**0.09**	**0.10**	**195**
24 NMI CARB Limit (3nmi to 24 nmi)							
Pre-lay grapnel run	0.02	0.44	0.04	0.01	0.01	0.01	19
Marine cable lay	0.33	5.76	0.78	0.15	0.15	0.13	257
Marine cable burial (ROV-assisted)	0.12	3.17	0.25	0.06	0.05	0.09	136
total 3-24nm	**0.47**	**9.38**	**1.07**	**0.22**	**0.21**	**0.24**	**412**
Continental Shelf (24 nmi to edge of Shelf)							
Pre-lay grapnel run	0.02	0.46	0.04	0.01	0.01	0.01	20
Marine cable lay	0.57	9.88	1.34	0.26	0.25	0.23	441
Marine cable burial (ROV-assisted)	0.26	6.87	0.54	0.12	0.11	0.20	295
total 24nm to shelf (100nm)	**0.84**	**17.21**	**1.93**	**0.40**	**0.37**	**0.44**	**755**
200mnmi EEZ (edge of Shelf to 200 nmi)							
Marine cable lay	0.10	2.55	0.20	0.05	0.04	0.07	109
total shelf to EEZ (200 nm)	**0.10**	**2.55**	**0.20**	**0.05**	**0.04**	**0.07**	**109**
Total overall	**1.66**	**32.94**	**3.90**	**0.76**	**0.71**	**0.85**	**1,472**

Phase 4

Table B-7. Construction Pounds Per Day - Unmitigated

	Pounds Per Day					
	VOC	NOx	CO	PM10	PM2.5	SOX
Terrestrial Portion						
Terrestrial conduit installation	2	4	10	0.2	0.2	0
Ocean ground bed & Beach Manhole	**0**	3		0.1	0.1	0
Terrestrial innerduct & cable pulling	**0**	1		0.0	0.0	0
Power feed equipment (PFE) facility (buildout & testing)	11	2	1	0.1	0.1	0
maximum daily localized	11	4	10	0.2	0.2	0
Marine Portion						
State Waters (MHT to 3 nmi)						
Pre-lay grapnel run	61	1,143	131	28	27	28
Marine cable landing	47	881	131	19	18	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (diver-assisted)	16	141	46	6	6	3
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily state waters	*150*	*2,844*	*354*	*69*	*65*	*71*
24 NMI CARB Limit (3nmi to 24 nmi)						
Pre-lay grapnel run	37	909	78	18	16	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily 3-24nm	*134*	*2,703*	*308*	*63*	*59*	*68*
Continental Shelf (24 nmi to edge of Shelf)						
Pre-lay grapnel run	37	909	78	18	16	25
Marine cable lay	94	1,646	224	44	42	38
Marine cable burial (ROV-assisted)	40	1,057	84	19	17	30
maximum daily 24-shelf	*134*	*2,703*	*308*	*63*	*59*	*68*
200mnmi EEZ (edge of Shelf to 200 nmi)						
Marine cable lay	72	1,922	152	35	32	55
maximum daily shelf to 200nm	*72*	*1,922*	*152*	*35*	*32*	*55*
Max Daily - Regional State Waters	**150**	**2,844**	354	69	**65**	71
Thresholds	*75*	*100*	*550*	*150*	*55*	*150*
Max Daily - Localized	11	4	10	0.2	0.2	0
LSTs	-	*91*	*664*	*5*	*3*	-

Table B-8. Construction Tons per Element - Unmitigated

	Tons per Year						MT
	VOC	NOx	CO	PM10	PM2.5	SOX	CO2e
Terrestrial Portion							
Terrestrial conduit installation	0.04	0.03	0.16	0.00	0.00	0.00	9
Ocean ground bed & Beach Manhole	0.00	0.00	0.00	0.00	0.00	0.00	1
Terrestrial innerduct & cable pulling	0.00	0.00	0.00	0.00	0.00	0.00	2
Power feed equipment (PFE) facility (buildout & testing)	0.01	0.02	0.02	0.00	0.00	0.00	4
Marine Portion							
State Waters (MHT to 3 nmi)							
Pre-lay grapnel run	0.02	0.47	0.04	0.01	0.01	0.01	20
Marine cable landing	0.05	0.88	0.13	0.02	0.02	0.02	46
Marine cable lay	0.05	0.82	0.11	0.02	0.02	0.02	37
Marine cable burial (diver-assisted)	0.06	0.49	0.16	0.02	0.02	0.01	32
Marine cable burial (ROV-assisted)	0.04	1.06	0.08	0.02	0.02	0.03	45
total in state waters	***0.26***	***3.78***	***0.71***	***0.09***	***0.09***	***0.10***	***195***
24 NMI CARB Limit (3nmi to 24 nmi)							
Pre-lay grapnel run	0.02	0.44	0.04	0.01	0.01	0.01	19
Marine cable lay	0.33	5.76	0.78	0.15	0.15	0.13	257
Marine cable burial (ROV-assisted)	0.12	3.17	0.25	0.06	0.05	0.09	136
total 3-24nm	***0.47***	***9.38***	***1.07***	***0.22***	***0.21***	***0.24***	***412***
Continental Shelf (24 nmi to edge of Shelf)							
Pre-lay grapnel run	0.02	0.46	0.04	0.01	0.01	0.01	20
Marine cable lay	0.57	9.88	1.34	0.26	0.25	0.23	441
Marine cable burial (ROV-assisted)	0.26	6.87	0.54	0.12	0.11	0.20	295
total 24nm to shelf (100nm)	**0.84**	**17.21**	**1.93**	**0.40**	**0.37**	**0.44**	**755**
200mnmi EEZ (edge of Shelf to 200 nmi)							
Marine cable lay	0.10	2.55	0.20	0.05	0.04	0.07	109
total shelf to EEZ (200 nm)	**0.10**	**2.55**	**0.20**	**0.05**	**0.04**	**0.07**	**109**
Total overall	**1.66**	**32.91**	**3.92**	**0.75**	**0.71**	**0.85**	**1,472**

PHASE 1 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	February, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Phase 1																															
1	Terrestrial conduit installation	41	3	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3	3		3
3	Manhole Installation	18				1	1						1	1						1	1					1	1	1			
2	Directional bores – Marine + Terrestrial	42	19	19	19	19	19	19		19	19	19	19	19	19		19	19	19	19	19	19		19	19	19	19	19	19		19
5	Ocean ground bed & Beach Manhole	2																														
4	Terrestrial innerduct & cable pulling	6																														
12	Power feed equipment (PFE) facility (buildout & testing)	41	11	11	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11	11		11
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7																														
11	Marine cable burial (ROV-assisted)	2																														
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0
	Max Daily Regional		33	33	33	34	34	33	0	33	33	33	34	34	33	0	33	33	33	34	34	33	0	33	33	34	34	34	33	0	33
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOX

	Phase and Component	days (from MHW to 3nm)	February, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Phase 1																															
1	Terrestrial conduit installation	41	8	8	8	8	8	8		8	8	8	8	8	8		8	8	8	8	8	8		8	8	8	8	8	8		8
3	Manhole Installation	18				4	4						4	4						4	4					4	4	4			
2	Directional bores – Marine + Terrestrial	42	156	156	156	156	156	156		156	156	156	156	156	156		156	156	156	156	156	156		156	156	156	156	156	156		156
5	Ocean ground bed & Beach Manhole	2																														
4	Terrestrial innerduct & cable pulling	6																														
12	Power feed equipment (PFE) facility (buildout & testing)	41	4	4	4	4	4	4		4	4	4	4	4	4		4	4	4	4	4	4		4	4	4	4	4	4		4
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7																														
11	Marine cable burial (ROV-assisted)	2																														
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	7	7	7	7	7	7		7	7	7	7	7	7		7	7	7	7	7	7		7	7	7	7	7	7		7
	Max Daily Regional		175	175	175	180	180	175	0	175	175	175	180	180	175	0	175	175	175	180	180	175	0	175	175	180	180	180	175	0	175
	Max Daily over Daily Threshold		75	75	75	80	80	75	0	75	75	75	80	80	75	0	75	75	75	80	80	75	0	75	75	80	80	80	75	0	75

PM10

	Phase and Component	days (from MHW to 3nm)	February, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Phase 1																															
1	Terrestrial conduit installation	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0
3	Manhole Installation	18				0	0						0	0						0	0					0	0	0			
2	Directional bores – Marine + Terrestrial	42	6	6	6	6	6	6		6	6	6	6	6	6		6	6	6	6	6	6		6	6	6	6	6	6		6
5	Ocean ground bed & Beach Manhole	2																														
4	Terrestrial innerduct & cable pulling	6																														
12	Power feed equipment (PFE) facility (buildout & testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7																														
11	Marine cable burial (ROV-assisted)	2																														
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0
	Max Daily Regional		7	7	7	7	7	7	0	7	7	7	7	7	7	0	7	7	7	7	7	7	0	7	7	7	7	7	7	0	7
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 1 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	March, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 1																																
1	Terrestrial conduit installation	41	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3													
3	Manhole Installation	18		1	1	1					1	1	1					1	1	1												
2	Directional bores - Marine + Terrestrial	42	19	19	19	19	19		19	19	19	19	19	19		19	19	19	19	19	19												
5	Ocean ground bed & Beach Manhole	2																	1	1												
4	Terrestrial innerduct & cable pulling	6																					0	0	0	0	0	0				
12	Power feed equipment (PFE) facility (buildout & testing)	41	11	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11													
8	Pre-lay grapnel run	1																												61			
6	Marine cable landing	3																													47	47	47
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7																															
11	Marine cable burial (ROV-assisted)	2																															
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0												
	Max Daily Regional		33	34	34	34	33	0	33	33	34	34	34	33	0	33	33	34	35	35	19	0	0	0	0	0	0	0	0	61	47	47	47
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOX

	Phase and Component	days (from MHW to 3nm)	March, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 1																																
1	Terrestrial conduit installation	41	8	8	8	8	8		8	8	8	8	8	8		8	8	8	8	8													
3	Manhole Installation	18		4	4	4					4	4	4					4	4	4												
2	Directional bores - Marine + Terrestrial	42	156	156	156	156	156		156	156	156	156	156	156		156	156	156	156	156	156												
5	Ocean ground bed & Beach Manhole	2																	9	9												
4	Terrestrial innerduct & cable pulling	6																					2	2	2	2	2	2				
12	Power feed equipment (PFE) facility (buildout & testing)	41	4	4	4	4	4		4	4	4	4	4	4		4	4	4	4	4													
8	Pre-lay grapnel run	1																												1143			
6	Marine cable landing	3																													882	882	882
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7																															
11	Marine cable burial (ROV-assisted)	2																															
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	7	7	7	7	7		7	7	7	7	7	7		7	7	7	7	7	7												
	Max Daily Regional		175	180	180	180	175	0	175	175	180	180	180	175	0	175	175	180	188	188	164	0	2	2	2	2	2	2	0	1143	882	882	882
	Max Daily over Daily Threshold		75	80	80	80	75	0	75	75	80	80	80	75	0	75	75	80	88	88	64	0	0	0	0	0	0	0	0	1043	782	782	782

PM10

	Phase and Component	days (from MHW to 3nm)	March, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 1																																
1	Terrestrial conduit installation	41	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0													
3	Manhole Installation	18		0	0	0					0	0	0					0	0	0												
2	Directional bores - Marine + Terrestrial	42	6	6	6	6	6		6	6	6	6	6	6		6	6	6	6	6	6												
5	Ocean ground bed & Beach Manhole	2																	0	0												
4	Terrestrial innerduct & cable pulling	6																					0	0	0	0	0	0				
12	Power feed equipment (PFE) facility (buildout & testing)	41	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0													
8	Pre-lay grapnel run	1																												28			
6	Marine cable landing	3																													19	19	19
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7																															
11	Marine cable burial (ROV-assisted)	2																															
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0												
	Max Daily Regional		7	7	7	7	7	0	7	7	7	7	7	7	0	7	7	7	8	8	7	0	0	0	0	0	0	0	0	28	19	19	19
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 1 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	April, 2016																														
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	2	2	3	3	3	8	2	8	9	30
	Phase 1																																
1	Terrestrial conduit installation	41																															
3	Manhole Installation	18																															
2	Directional bores - Marine + Terrestrial	42																															
5	Ocean ground bed & Beach Manhole	2																															
4	Terrestrial innerduct & cable pulling	6																															
12	Power feed equipment (PFE) facility (buildout & testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1	94																														
10	Marine cable burial (diver-assisted)	7		16	16	16	16	16	16	16																							
11	Marine cable burial (ROV-assisted)	2		40	40																												
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42																															
	Max Daily Regional		94	56	56	16	16	16	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOX

	Phase and Component	days (from MHW to 3nm)	April, 2016																														
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	2	2	3	3	3	8	2	8	9	30
	Phase 1																																
1	Terrestrial conduit installation	41																															
3	Manhole Installation	18																															
2	Directional bores - Marine + Terrestrial	42																															
5	Ocean ground bed & Beach Manhole	2																															
4	Terrestrial innerduct & cable pulling	6																															
12	Power feed equipment (PFE) facility (buildout & testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1	1646																														
10	Marine cable burial (diver-assisted)	7		141	141	141	141	141	141	141																							
11	Marine cable burial (ROV-assisted)	2		1057	1057																												
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42																															
	Max Daily Regional		1646	1198	1198	141	141	141	141	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		1546	1098	1098	41	41	41	41	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM10

	Phase and Component	days (from MHW to 3nm)	April, 2016																														
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	2	2	3	3	3	8	2	8	9	30
	Phase 1																																
1	Terrestrial conduit installation	41																															
3	Manhole Installation	18																															
2	Directional bores - Marine + Terrestrial	42																															
5	Ocean ground bed & Beach Manhole	2																															
4	Terrestrial innerduct & cable pulling	6																															
12	Power feed equipment (PFE) facility (buildout & testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1	44																														
10	Marine cable burial (diver-assisted)	7		6	6	6	6	6	6	6																							
11	Marine cable burial (ROV-assisted)	2		19	19																												
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42																															
	Max Daily Regional		44	25	25	6	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 1 OVERLAP IN STATE WATERS - REGIONAL

PM2.5

	Phase and Component	days (from MHW to 3nm)	February, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Phase 1																															
1	Terrestrial conduit installation	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0			0
3	Manhole Installation	18				0	0						0	0						0	0					0	0	0			
2	Directional bores – Marine + Terrestrial	42	6	6	6	6	6	6		6	6	6	6	6	6		6	6	6	6	6	6		6	6	6	6	6	6			6
5	Ocean ground bed & Beach Manhole	2																														
4	Terrestrial innerduct & cable pulling	6																														
12	Power feed equipment (PFE) facility (buildout & testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0			0
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7																														
11	Marine cable burial (ROV-assisted)	2																														
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0			0
	Max Daily Regional		7	7	7	7	7	7	0	7	7	7	7	7	7	0	7	7	7	7	7	7	0	7	7	7	7	7	7	0	7
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component	days (from MHW to 3nm)	February, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Phase 1																															
1	Terrestrial conduit installation	41	10	10	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10	10			10
3	Manhole Installation	18				4	4						4	4						4	4					4	4	4			
2	Directional bores – Marine + Terrestrial	42	76	76	76	76	76	76		76	76	76	76	76	76		76	76	76	76	76	76		76	76	76	76	76	76			76
5	Ocean ground bed & Beach Manhole	2																														
4	Terrestrial innerduct & cable pulling	6																														
12	Power feed equipment (PFE) facility (buildout & testing)	41	2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2			2
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7																														
11	Marine cable burial (ROV-assisted)	2																														
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	5	5	5	5	5	5		5	5	5	5	5	5		5	5	5	5	5	5		5	5	5	5	5	5			5
	Max Daily Regional		93	93	93	97	97	93	0	93	93	93	97	97	93	0	93	93	93	97	97	93	0	93	93	97	97	97	93	0	93
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component	days (from MHW to 3nm)	February, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Phase 1																															
1	Terrestrial conduit installation	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0			0
3	Manhole Installation	18				0	0						0	0						0	0					0	0	0			
2	Directional bores – Marine	42	3	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3	3			3
5	Ocean ground bed & Beach Manhole	2																														
4	Terrestrial innerduct & cable pulling	6																														
12	Power feed equipment (PFE) facility (buildout & testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0			0
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7																														
11	Marine cable burial (ROV-assisted)	2																														
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0			0
	Max Daily Regional		3	3	3	3	3	3	0	3	3	3	3	3	3	0	3	3	3	3	3	3	0	3	3	3	3	3	3	0	3
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 1 OVERLAP IN STATE WATERS - REGIONAL

PM2.5

	Phase and Component	days (from MHW to 3nm)	March, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 1																																
1	Terrestrial conduit installation	41	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
3	Manhole Installation	18		0	0	0					0	0	0					0	0	0													
2	Directional bores – Marine + Terrestrial	42	6	6	6	6	6		6	6	6	6	6	6		6	6	6	6	6	6													
5	Ocean ground bed & Beach Manhole	2																	0	0													
4	Terrestrial innerduct & cable pulling	6																					0	0	0	0	0	0					
12	Power feed equipment (PFE) facility (buildout & testing)	41	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																												27			
6	Marine cable landing	3																													18	18	18
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7																															
11	Marine cable burial (ROV-assisted)	2																															
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0													
	Max Daily Regional		7	7	7	7	7	0	7	7	7	7	7	7	0	7	7	7	7	7	6	0	0	0	0	0	0	0	0	27	18	18	18
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component	days (from MHW to 3nm)	March, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 1																																
1	Terrestrial conduit installation	41	10	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10														
3	Manhole Installation	18		4	4	4					4	4	4					4	4	4													
2	Directional bores – Marine + Terrestrial	42	76	76	76	76	76		76	76	76	76	76	76		76	76	75	76	76	76													
5	Ocean ground bed & Beach Manhole	2																	5	5													
4	Terrestrial innerduct & cable pulling	6																					1	1	1	1	1	1					
12	Power feed equipment (PFE) facility (buildout & testing)	41	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2														
8	Pre-lay grapnel run	1																												131			
6	Marine cable landing	3																													131	131	131
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7																															
11	Marine cable burial (ROV-assisted)	2																															
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	5	5	5	5	5		5	5	5	5	5	5		5	5	5	5	5	5													
	Max Daily Regional		93	97	97	97	93	0	93	93	97	97	97	93	0	93	93	97	102	102	81	0	1	1	1	1	1	1	0	131	131	131	131
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component	days (from MHW to 3nm)	March, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 1																																
1	Terrestrial conduit installation	41	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
3	Manhole Installation	18		0	0	0					0	0	0					0	0	0													
2	Directional bores – Marine	42	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3	3													
5	Ocean ground bed & Beach Manhole	2																	0	0													
4	Terrestrial innerduct & cable pulling	6																					0	0	0	0	0	0					
12	Power feed equipment (PFE) facility (buildout & testing)	41	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																												28			
6	Marine cable landing	3																													25	25	25
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7																															
11	Marine cable burial (ROV-assisted)	2																															
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0													
	Max Daily Regional		3	3	3	3	3	0	3	3	3	3	3	3	0	3	3	3	4	4	3	0	0	0	0	0	0	0	0	28	25	25	25
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 1 OVERLAP IN STATE WATERS - REGIONAL

PM2.5

	Phase and Component	days (from MHW to 3nm)	April, 2016																												
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	30
	Phase 1																															
1	Terrestrial conduit installation	41																														
3	Manhole Installation	18																														
2	Directional bores - Marine + Terrestrial	42																														
5	Ocean ground bed & Beach Manhole	2																														
4	Terrestrial innerduct & cable pulling	6																														
12	Power feed equipment (PFE) facility (buildout & testing)	41																														
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1	42																													
10	Marine cable burial (diver-assisted)	7		6	6	6	6	6	6	6																						
11	Marine cable burial (ROV-assisted)	2		17	17																											
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42																														
	Max Daily Regional		42	23	23	6	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component	days (from MHW to 3nm)	April, 2016																												
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	30
	Phase 1																															
1	Terrestrial conduit installation	41																														
3	Manhole Installation	18																														
2	Directional bores - Marine + Terrestrial	42																														
5	Ocean ground bed & Beach Manhole	2																														
4	Terrestrial innerduct & cable pulling	6																														
12	Power feed equipment (PFE) facility (buildout & testing)	41																														
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1	224																													
10	Marine cable burial (diver-assisted)	7		46	46	46	46	46	46	46																						
11	Marine cable burial (ROV-assisted)	2		84	84																											
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42																														
	Max Daily Regional		224	129	129	46	46	46	46	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component	days (from MHW to 3nm)	April, 2016																												
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	30
	Phase 1																															
1	Terrestrial conduit installation	41																														
3	Manhole Installation	18																														
2	Directional bores - Marine	42																														
5	Ocean ground bed & Beach Manhole	2																														
4	Terrestrial innerduct & cable pulling	6																														
12	Power feed equipment (PFE) facility (buildout & testing)	41																														
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1	38																													
10	Marine cable burial (diver-assisted)	7		3	3	3	3	3	3	3																						
11	Marine cable burial (ROV-assisted)	2		30	30																											
7	Truck Trips (Tractor Trailer = 30, Worker = 410)	42																														
	Max Daily Regional		38	33	33	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 2 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	September 2016																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 2																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	3	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3	3		3	3
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	11	11	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11	11		11	11
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
	Max Daily Regional		13	13	13	13	13	13	0	13	13	13	13	13	13	0	13	13	13	13	13	13	0	13	13	13	13	13	13	0	13	13
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOX

	Phase and Component	days (from MHW to 3nm)	September 2016																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 2																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	8	8	8	8	8	8		8	8	8	8	8	8		8	8	8	8	8	8		8	8	8	8	8	8		8	8
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	4	4	4	4	4	4		4	4	4	4	4	4		4	4	4	4	4	4		4	4	4	4	4	4		4	4
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
	Max Daily Regional		12	12	12	12	12	12	0	12	12	12	12	12	12	0	12	12	12	12	12	12	0	12	12	12	12	12	12	0	12	12
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM10

	Phase and Component	days (from MHW to 3nm)	September 2016																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 2																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
	Max Daily Regional		1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 2 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	October, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																1	1														
1	Terrestrial conduit installation (if needed)	41	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0							
12	PFE facility (construction and testing)	41	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11														
8	Pre-lay grapnel run	1																										61					
6	Marine cable landing	3																											47	47	47		
9	Marine cable lay	1																														94	
10	Marine cable burial (diver-assisted)	7																															16
11	Marine cable burial (ROV-assisted)	2																															40
		Max Daily Regional	13	13	13	13	0	13	13	13	13	13	13	0	13	13	13	14	14	0	0	0	0	0	0	0	0	61	47	47	47	94	56
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0

NOX

	Phase and Component	days (from MHW to 3nm)	October, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																9	9														
1	Terrestrial conduit installation (if needed)	41	8	8	8	8		8	8	8	8	8	8		8	8	8	8	8														
4	Terrestrial innerduct & cable pulling	6																			2	2	2	2	2	2							
12	PFE facility (construction and testing)	41	4	4	4	4		4	4	4	4	4	4		4	4	4	4	4														
8	Pre-lay grapnel run	1																										1143					
6	Marine cable landing	3																											882	882	882		
9	Marine cable lay	1																														1646	
10	Marine cable burial (diver-assisted)	7																															141
11	Marine cable burial (ROV-assisted)	2																															1057
		Max Daily Regional	12	12	12	12	0	12	12	12	12	12	12	0	12	12	12	20	20	0	2	2	2	2	2	2	0	1143	882	882	882	1646	1198
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1043	782	782	782	1546	1098

PM10

	Phase and Component	days (from MHW to 3nm)	October, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0							
12	PFE facility (construction and testing)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																										28					
6	Marine cable landing	3																											19	19	19		
9	Marine cable lay	1																														44	
10	Marine cable burial (diver-assisted)	7																															6
11	Marine cable burial (ROV-assisted)	2																															19
		Max Daily Regional	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	28	19	19	19	44	25
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 2 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	November, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	16	16	16	16	16	16																									
11	Marine cable burial (ROV-assisted)	2	40																														
		Max Daily Regional	56	16	16	16	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOX

	Phase and Component	days (from MHW to 3nm)	November, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	141	141	141	141	141	141																									
11	Marine cable burial (ROV-assisted)	2	1057																														
		Max Daily Regional	1198	141	141	141	141	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	1098	41	41	41	41	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM10

	Phase and Component	days (from MHW to 3nm)	November, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	6	6	6	6	6	6																									
11	Marine cable burial (ROV-assisted)	2	19																														
		Max Daily Regional	25	6	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 2 OVERLAP IN STATE WATERS - REGIONAL PM2.5

	Phase and Component	days (from MHW to 3nm)	September 2016																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 2																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
		Max Daily Regional	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component	days (from MHW to 3nm)	September 2016																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 2																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	10	10	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10	10		10	10
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2		2	2
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
		Max Daily Regional	12	12	12	12	12	12	0	12	12	12	12	12	12	0	12	12	12	12	12	12	0	12	12	12	12	12	12	0	12	12
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component	days (from MHW to 3nm)	September 2016																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 2																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
		Max Daily Regional	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 2 OVERLAP IN STATE WATERS - REGIONAL PM2.5

	Phase and Component	days (from MHW to 3nm)	October, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0							
12	PFE facility (construction and testing)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																										27					
6	Marine cable landing	3																											18	18	18		
9	Marine cable lay	1																														42	
10	Marine cable burial (diver-assisted)	7																															6
11	Marine cable burial (ROV-assisted)	2																															17
		Max Daily Regional	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	27	18	18	18	42	23
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component	days (from MHW to 3nm)	October, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																5	5														
1	Terrestrial conduit installation (if needed)	41	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10														
4	Terrestrial innerduct & cable pulling	6																			1	1	1	1	1	1							
12	PFE facility (construction and testing)	41	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2														
8	Pre-lay grapnel run	1																										131					
6	Marine cable landing	3																											131	131	131		
9	Marine cable lay	1																														224	
10	Marine cable burial (diver-assisted)	7																															46
11	Marine cable burial (ROV-assisted)	2																															84
		Max Daily Regional	12	12	12	12	0	12	12	12	12	12	12	0	12	12	12	17	17	0	1	1	1	1	1	1	0	131	131	131	131	224	129
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component	days (from MHW to 3nm)	October, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0							
12	PFE facility (construction and testing)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																										28					
6	Marine cable landing	3																											25	25	25		
9	Marine cable lay	1																														38	
10	Marine cable burial (diver-assisted)	7																															3
11	Marine cable burial (ROV-assisted)	2																															30
		Max Daily Regional	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	25	25	25	38	33
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 2 OVERLAP IN STATE WATERS - REGIONAL PM2.5

	Phase and Component	days (from MHW to 3nm)	November, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	6	6	6	6	6	6																									
11	Marine cable burial (ROV-assisted)	2	17																														
		Max Daily Regional	23	6	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component	days (from MHW to 3nm)	November, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	46	46	46	46	46	46																									
11	Marine cable burial (ROV-assisted)	2	84																														
		Max Daily Regional	129	46	46	46	46	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component	days (from MHW to 3nm)	November, 2016																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	3	3	3	3	3	3																									
11	Marine cable burial (ROV-assisted)	2	30																														
		Max Daily Regional	33	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 3 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	September, 2016																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 2																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2		2	2
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	11	11	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11	11		11	11
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
	Max Daily Regional		13	13	13	13	13	13	0	13	13	13	13	13	13	0	13	13	13	13	13	13	0	13	13	13	13	13	13	0	13	13
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOX

	Phase and Component		September, 2020																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 3																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	6	6	6	6	6	6		6	6	6	6	6	6		6	6	6	6	6	6		6	6	6	6	6	6		6	6
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	3	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3	3		3	3
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
	Max Daily Regional		8	8	8	8	8	8	0	8	8	8	8	8	8	0	8	8	8	8	8	8	0	8	8	8	8	8	8	0	8	8
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM10

	Phase and Component		September, 2020																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 3																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 3 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	October, 2016																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0						
12	PFE facility (construction and testing)	41	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11														
8	Pre-lay grapnel run	1																										61					
6	Marine cable landing	3																											47	47	47		
9	Marine cable lay	1																														94	
10	Marine cable burial (diver-assisted)	7																															16
11	Marine cable burial (ROV-assisted)	2																															40
	Max Daily Regional		13	13	13	13	0	13	13	13	13	13	13	0	13	13	13	14	14	0	0	0	0	0	0	0	0	61	47	47	47	94	56
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0

NOX

	Phase and Component		October, 2020																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 3																															
5	Ocean Groundbed installation	2																5	5													
1	Terrestrial conduit installation (if needed)	41	6	6	6	6		6	6	6	6	6	6		6	6	6	6	6													
4	Terrestrial innerduct & cable pulling	6																			2	2	2	2	2	2						
12	PFE facility (construction and testing)	41	3	3	3	3		3	3	3	3	3	3		3	3	3	3	3														
8	Pre-lay grapnel run	1																										1143					
6	Marine cable landing	3																											881	881	881		
9	Marine cable lay	1																														1646	
10	Marine cable burial (diver-assisted)	7																															141
11	Marine cable burial (ROV-assisted)	2																															1057
	Max Daily Regional		8	8	8	8	0	8	8	8	8	8	8	0	8	8	8	14	14	0	2	2	2	2	2	2	0	1143	881	881	881	1646	1198
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1043	781	781	781	1546	1098

PM10

	Phase and Component		October, 2020																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 3																															
5	Ocean Groundbed installation	2																0	0													
1	Terrestrial conduit installation (if needed)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0													
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0						
12	PFE facility (construction and testing)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																										28					
6	Marine cable landing	3																											19	19	19		
9	Marine cable lay	1																														44	
10	Marine cable burial (diver-assisted)	7																															6
11	Marine cable burial (ROV-assisted)	2																															19
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	28	19	19	19	44	25
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 3 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	November, 2016																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 2																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	16	16	16	16	16	16																									
11	Marine cable burial (ROV-assisted)	2	40																														
		Max Daily Regional	56	16	16	16	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOX

	Phase and Component		November, 2020																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 3																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	141	141	141	141	141	141																									
11	Marine cable burial (ROV-assisted)	2	1057																														
		Max Daily Regional	1198	141	141	141	141	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	1098	41	41	41	41	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM10

	Phase and Component		November, 2020																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 3																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	6	6	6	6	6	6																									
11	Marine cable burial (ROV-assisted)	2	19																														
		Max Daily Regional	25	6	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 3 OVERLAP IN STATE WATERS - REGIONAL PM2.5

	Phase and Component		September 2020																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 3																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component		September 2020																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 3																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	10	10	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10	10		10	10
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	1	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1		1	1
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
	Max Daily Regional		12	12	12	12	12	12	0	12	12	12	12	12	12	0	12	12	12	12	12	12	0	12	12	12	12	12	12	0	12	12
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component		September 2020																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 3																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 3 OVERLAP IN STATE WATERS - REGIONAL PM2.5

	Phase and Component		October, 2020																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 3																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0							
12	PFE facility (construction and testing)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																										27					
6	Marine cable landing	3																											18	18	18		
9	Marine cable lay	1																														42	
10	Marine cable burial (diver-assisted)	7																															6
11	Marine cable burial (ROV-assisted)	2																															17
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	27	18	18	18	42	23
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component		October, 2020																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 3																																
5	Ocean Groundbed installation	2																4	4														
1	Terrestrial conduit installation (if needed)	41	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10														
4	Terrestrial innerduct & cable pulling	6																			1	1	1	1	1	1							
12	PFE facility (construction and testing)	41	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1														
8	Pre-lay grapnel run	1																										131					
6	Marine cable landing	3																											108	108	108		
9	Marine cable lay	1																														224	
10	Marine cable burial (diver-assisted)	7																															46
11	Marine cable burial (ROV-assisted)	2																															84
	Max Daily Regional		12	12	12	12	0	12	12	12	12	12	12	0	12	12	12	16	16	0	1	1	1	1	1	1	0	131	108	108	108	224	129
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component		October, 2020																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 3																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0							
12	PFE facility (construction and testing)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																										28					
6	Marine cable landing	3																											25	25	25		
9	Marine cable lay	1																														38	
10	Marine cable burial (diver-assisted)	7																															3
11	Marine cable burial (ROV-assisted)	2																															30
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	25	25	25	38	33
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 3 OVERLAP IN STATE WATERS - REGIONAL PM2.5

	Phase and Component		November, 2020																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 3																															
5	Ocean Groundbed installation	2																														
1	Terrestrial conduit installation (if needed)	41																														
4	Terrestrial innerduct & cable pulling	6																														
12	PFE facility (construction and testing)	41																														
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7	6	6	6	6	6	6																								
11	Marine cable burial (ROV-assisted)	2	17																													
	Max Daily Regional		23	6	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component		November, 2020																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 3																															
5	Ocean Groundbed installation	2																														
1	Terrestrial conduit installation (if needed)	41																														
4	Terrestrial innerduct & cable pulling	6																														
12	PFE facility (construction and testing)	41																														
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7	46	46	46	46	46	46																								
11	Marine cable burial (ROV-assisted)	2	84																													
	Max Daily Regional		129	46	46	46	46	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component		November, 2020																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 3																															
5	Ocean Groundbed installation	2																														
1	Terrestrial conduit installation (if needed)	41																														
4	Terrestrial innerduct & cable pulling	6																														
12	PFE facility (construction and testing)	41																														
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7	3	3	3	3	3	3																								
11	Marine cable burial (ROV-assisted)	2	30																													
	Max Daily Regional		33	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 4 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	September, 2025																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 4																															
5	Ocean Groundbed installation	2																														
1	Terrestrial conduit installation (if needed)	41	2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2		2	2
4	Terrestrial innerduct & cable pulling	6																														
12	PFE facility (construction and testing)	41	11	11	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11	11		11	11
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7																														
11	Marine cable burial (ROV-assisted)	2																														
	Max Daily Regional		13	13	13	13	13	13	0	13	13	13	13	13	13	0	13	13	13	13	13	13	0	13	13	13	13	13	13	0	13	13
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOX

	Phase and Component		September, 2025																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 4																															
5	Ocean Groundbed installation	2																														
1	Terrestrial conduit installation (if needed)	41	4	4	4	4	4	4		4	4	4	4	4	4		4	4	4	4	4	4		4	4	4	4	4	4		4	4
4	Terrestrial innerduct & cable pulling	6																														
12	PFE facility (construction and testing)	41	2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2	2		2	2
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7																														
11	Marine cable burial (ROV-assisted)	2																														
	Max Daily Regional		5	5	5	5	5	5	0	5	5	5	5	5	5	0	5	5	5	5	5	5	0	5	5	5	5	5	5	0	5	5
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM10

	Phase and Component		September, 2025																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 4																															
5	Ocean Groundbed installation	2																														
1	Terrestrial conduit installation (if needed)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
4	Terrestrial innerduct & cable pulling	6																														
12	PFE facility (construction and testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7																														
11	Marine cable burial (ROV-assisted)	2																														
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 4 OVERLAP IN STATE WATERS - REGIONAL ROG

			October, 2025																														
	Phase and Component	days (from MHW to 3nm)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 4																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0						
12	PFE facility (construction and testing)	41	11	11	11	11		11	11	11	11	11	11		11	11	11	11	11														
8	Pre-lay grapnel run	1																										61					
6	Marine cable landing	3																											47	47	47		
9	Marine cable lay	1																														94	
10	Marine cable burial (diver-assisted)	7																															16
11	Marine cable burial (ROV-assisted)	2																															40
	Max Daily Regional		13	13	13	13	0	13	13	13	13	13	13	0	13	13	13	13	13	0	0	0	0	0	0	0	0	61	47	47	47	94	56
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0

NOX

			October, 2025																														
	Phase and Component		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 4																																
5	Ocean Groundbed installation	2																3	3														
1	Terrestrial conduit installation (if needed)	41	4	4	4	4		4	4	4	4	4	4		4	4	4	4	4														
4	Terrestrial innerduct & cable pulling	6																			1	1	1	1	1	1							
12	PFE facility (construction and testing)	41	2	2	2	2		2	2	2	2	2	2		2	2	2	2	2														
8	Pre-lay grapnel run	1																										1143					
6	Marine cable landing	3																											881	881	881		
9	Marine cable lay	1																														1646	
10	Marine cable burial (diver-assisted)	7																															141
11	Marine cable burial (ROV-assisted)	2																															1057
	Max Daily Regional		5	5	5	5	0	5	5	5	5	5	5	0	5	5	5	8	8	0	1	1	1	1	1	1	0	1143	881	881	881	1646	1198
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1043	781	781	781	1546	1098

PM10

			October, 2025																														
	Phase and Component		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 4																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0							
12	PFE facility (construction and testing)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																										28					
6	Marine cable landing	3																											19	19	19		
9	Marine cable lay	1																														44	
10	Marine cable burial (diver-assisted)	7																															6
11	Marine cable burial (ROV-assisted)	2																															19
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	19	19	19	44	25
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 4 OVERLAP IN STATE WATERS - REGIONAL ROG

	Phase and Component	days (from MHW to 3nm)	November, 2025																													
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3	3	8	7	8	9	0	31
	Phase 4																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	16	16	16	16	16	16																									
11	Marine cable burial (ROV-assisted)	2	40																														
		Max Daily Regional	56	16	16	16	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOX

	Phase and Component		November, 2025																														
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3	3	8	7	8	9	0	31
	Phase 4																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	141	141	141	141	141	141																									
11	Marine cable burial (ROV-assisted)	2	1057																														
		Max Daily Regional	1198	141	141	141	141	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	1098	41	41	41	41	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM10

	Phase and Component		November, 2025																														
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3	3	8	7	8	9	0	31
	Phase 4																																
5	Ocean Groundbed installation	2																															
1	Terrestrial conduit installation (if needed)	41																															
4	Terrestrial innerduct & cable pulling	6																															
12	PFE facility (construction and testing)	41																															
8	Pre-lay grapnel run	1																															
6	Marine cable landing	3																															
9	Marine cable lay	1																															
10	Marine cable burial (diver-assisted)	7	6	6	6	6	6	6																									
11	Marine cable burial (ROV-assisted)	2	19																														
		Max Daily Regional	25	6	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 4 OVERLAP IN STATE WATERS - REGIONAL PM2.5

	Phase and Component		September, 2025																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 4																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
		Max Daily Regional	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component		September, 2025																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 4																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	10	10	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10	10		10	10
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	1	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1		1	1
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
		Max Daily Regional	11	11	11	11	11	11	0	11	11	11	11	11	11	0	11	11	11	11	11	11	0	11	11	11	11	11	11	0	11	11
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component		September, 2025																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 4																														
5	Ocean Groundbed installation	2																													
1	Terrestrial conduit installation (if needed)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
4	Terrestrial innerduct & cable pulling	6																													
12	PFE facility (construction and testing)	41	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
8	Pre-lay grapnel run	1																													
6	Marine cable landing	3																													
9	Marine cable lay	1																													
10	Marine cable burial (diver-assisted)	7																													
11	Marine cable burial (ROV-assisted)	2																													
		Max Daily Regional	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 4 OVERLAP IN STATE WATERS - REGIONAL PM2.5

			October, 2025																													
	Phase and Component		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 4																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0							
12	PFE facility (construction and testing)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																										27					
6	Marine cable landing	3																											18	18	18		
9	Marine cable lay	1																														42	
10	Marine cable burial (diver-assisted)	7																															6
11	Marine cable burial (ROV-assisted)	2																															17
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	18	18	18	42	23
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

			October, 2025																													
	Phase and Component		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 4																																
5	Ocean Groundbed installation	2																4	4														
1	Terrestrial conduit installation (if needed)	41	10	10	10	10		10	10	10	10	10	10		10	10	10	10	10														
4	Terrestrial innerduct & cable pulling	6																			1	1	1	1	1	1							
12	PFE facility (construction and testing)	41	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1														
8	Pre-lay grapnel run	1																										131					
6	Marine cable landing	3																											131	131	131		
9	Marine cable lay	1																														224	
10	Marine cable burial (diver-assisted)	7																															46
11	Marine cable burial (ROV-assisted)	2																															84
	Max Daily Regional		11	11	11	11	0	11	11	11	11	11	11	0	11	11	11	16	16	0	1	1	1	1	1	1	0	131	131	131	131	224	129
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

			October, 2025																													
	Phase and Component		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Phase 4																																
5	Ocean Groundbed installation	2																0	0														
1	Terrestrial conduit installation (if needed)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
4	Terrestrial innerduct & cable pulling	6																			0	0	0	0	0	0							
12	PFE facility (construction and testing)	41	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0														
8	Pre-lay grapnel run	1																										28					
6	Marine cable landing	3																											25	25	25		
9	Marine cable lay	1																														38	
10	Marine cable burial (diver-assisted)	7																															3
11	Marine cable burial (ROV-assisted)	2																															30
	Max Daily Regional		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	25	25	25	38	33
	Max Daily over Daily Threshold		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHASE 4 OVERLAP IN STATE WATERS - REGIONAL PM2.5

	Phase and Component		November, 2025																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 4																															
5	Ocean Groundbed installation	2																														
1	Terrestrial conduit installation (if needed)	41																														
4	Terrestrial innerduct & cable pulling	6																														
12	PFE facility (construction and testing)	41																														
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7	6	6	6	6	6	6																								
11	Marine cable burial (ROV-assisted)	2	17																													
		Max Daily Regional	23	6	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO

	Phase and Component		November, 2025																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 4																															
5	Ocean Groundbed installation	2																														
1	Terrestrial conduit installation (if needed)	41																														
4	Terrestrial innerduct & cable pulling	6																														
12	PFE facility (construction and testing)	41																														
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7	46	46	46	46	46	46																								
11	Marine cable burial (ROV-assisted)	2	84																													
		Max Daily Regional	129	46	46	46	46	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOX

	Phase and Component		November, 2025																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Phase 4																															
5	Ocean Groundbed installation	2																														
1	Terrestrial conduit installation (if needed)	41																														
4	Terrestrial innerduct & cable pulling	6																														
12	PFE facility (construction and testing)	41																														
8	Pre-lay grapnel run	1																														
6	Marine cable landing	3																														
9	Marine cable lay	1																														
10	Marine cable burial (diver-assisted)	7	3	3	3	3	3	3																								
11	Marine cable burial (ROV-assisted)	2	30																													
		Max Daily Regional	33	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Max Daily over Daily Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SEA-US Transpacific Fiber Optic Cables
Construction Calculations - Terrestrial
Phase 1 Construction Year 2016

Activity/Equipment Type	Year	Type	Fuel	HP	LF	Number of engines	Hours/ Day	Work Days	Trips/ Day	VMT per	Daily units for calc	metric	Pounds per Day									Tons, Total						Metric Tons, Total			
													VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other	VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other
Terrestrial Operations																																
Trench Construction								*41*					**2.6**	**7.8**	**10.1**	**0.5**	**0.4**	**0.0**	**962**	**0.1**	**0.1**	**0.3**	**0.0**	**0.1**	**0.2**	**0.0**	**0.0**	**0.0**	**7.6**	**0.0**	**0.0**	**0.0**
Concrete/Asphalt Saw	2016	Offroad	D_T	81	0.73	1	2	41	-	-	118.3	hp-hrs	0.2	1.2	0.9	0.1	0.1	0.0	148	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0
Backhoe	2016	Offroad	D_T	98	0.37	1	2	41	-	-	72.16	hp-hrs	0.1	0.8	0.6	0.1	0.1	0.0	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	2	41	-	10	10	vmt	0.0	0.0	0.1	0.0	0.0	0.0	29	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Dump Truck	2016	Onroad	D_T	-	-	1	2	41	-	10	10	vmt	0.1	0.5	0.1	0.0	0.0	0.0	85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
Asphalt Truck	2016	Onroad	D_T	-	-	1	8	4	-	40	40	vmt	0.3	2.1	0.5	0.0	0.0	0.0	342	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Pavement Roller	2016	Offroad	D_T	81	0.38	1	8	4	-	-	241.7	hp-hrs	0.3	3.1	2.0	0.2	0.2	0.0	271	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Handheld Vibratory Compactor	2016	Offroad	D_T	8	0.55	1	1	41	-	-	4.4	hp-hrs	1.6	0.1	5.8	0.1	0.1	0.0	6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Fugitive Dust	2016	Fugitive Dust	-	-	-		0.24	53	-	-	180.8	cy	-	-	-	0.0	0.0	-	-	-	-	-	-	-	-	0.0	0.0	-	-	-	-	
Subsurface Boring - Small HDD								*41*					**1.3**	**5.4**	**7.8**	**0.3**	**0.3**	**0.0**	**785**	**0.2**	**0.1**	**0.5**	**0.0**	**0.1**	**0.2**	**0.0**	**0.0**	**0.0**	**14.6**	**0.0**	**0.0**	**0.0**
Boring Machine	2016	Offroad	D_T	125	0.50	1	10	41	-	-	628.1	hp-hrs	0.4	5.3	4.6	0.3	0.3	0.0	681	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	12.7	0.0	0.0	0.0
One Ton Truck	2016	Onroad	D_T	-	-	1	3	41	-	15	15	vmt	0.0	0.1	0.2	0.0	0.0	0.0	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	3	41	-	15	15	vmt	0.0	0.0	0.1	0.0	0.0	0.0	43	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Handheld Vibratory Compactor	2016	Offroad	D_T	8	0.55	1	0.50	41	-	-	2.2	hp-hrs	0.8	0.0	2.9	0.0	0.0	0.0	3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Manhole Installation								*18*					**1.2**	**4.5**	**4.3**	**0.1**	**0.1**	**0.0**	**655**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**5.4**	**0.0**	**0.0**	**0.0**
Excavator	2016	Offroad	D_T	163	0.38	1	6	18	-	-	372.7	hp-hrs	0.2	3.0	1.0	0.1	0.1	0.0	416	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0
Delivery Truck	2016	Onroad	G	-	-	1	2	18	-	-	10	hp-hrs	0.0	0.4	0.1	0.0	0.0	0.0	65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Dump Truck	2016	Onroad	D_T	-	-	1	4	18	-	-	20	hp-hrs	0.1	1.1	0.2	0.0	0.0	0.0	171	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
Handheld Vibratory Compactor	2016	Offroad	D_T	8	0.55	1	0.50	41	-	-	2.2	hp-hrs	0.8	0.0	2.9	0.0	0.0	0.0	3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Cable and Innerduct Pulling								*6*					**0.3**	**2.3**	**0.9**	**0.0**	**0.0**	**0.0**	**477**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.3**	**0.0**	**0.0**	**0.0**
Cable-Pulling Truck	2016	Onroad	D_T	-	-	1	8	6	-	-	40	hp-hrs	0.3	2.1	0.5	0.0	0.0	0.0	342	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0
Pickup Truck with Reel	2016	Onroad	D_T	-	-	1	4	6	-	-	20	hp-hrs	0.0	0.1	0.2	0.0	0.0	0.0	77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Equipment Truck	2016	Onroad	D_T	-	-	1	3.00	6	-	-	15	hp-hrs	0.0	0.1	0.2	0.0	0.0	0.0	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Marine Horizontal Directional Drill (4 pipes)								*42*					**3.0**	**29.2**	**15.8**	**1.3**	**1.2**	**0.0**	**4716**	**1.2**	**0.5**	**0.5**	**0.0**	**0.5**	**0.2**	**0.0**	**0.0**	**0.0**	**64.0**	**0.0**	**0.0**	**0.0**
HDD Powerplant (AA DD625)	2016	Offroad	D_T	600	0.50	1	10	28	-	-	3015	hp-hrs	1.1	16.7	7.5	0.5	0.5	0.0	3289	1.0	0.4	0.0	0.0	0.2	0.1	0.0	0.0	0.0	41.8	0.0	0.0	0.0
Bull Dozer/Loader	2016	Offroad	D_T	255	0.40	1	2	42	-	-	202	hp-hrs	0.3	3.6	1.2	0.2	0.2	0.0	227	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	3	40	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	43	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Welder	2016	Offroad	D_T	46	0.45	1	8	28	-	-	165.6	hp-hrs	0.6	1.8	2.0	0.1	0.1	0.0	207	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0
Generator	2016	Offroad	D_T	84	0.74	1	10	35	-	-	621.6	hp-hrs	0.8	6.0	4.8	0.4	0.4	0.0	779	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	12.4	0.0	0.0	0.0
Tractor Trailer	2016	Onroad	D_T	-	-	1	4.00	28	-	-	20	hp-hrs	0.1	1.1	0.2	0.0	0.0	0.0	171	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0
Ocean Ground Bed Installation								*2*					**0.7**	**8.6**	**4.7**	**0.4**	**0.4**	**0.0**	**1323**	**0.4**	**0.2**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.8**	**0.0**	**0.0**	**0.0**
Backhoe	2016	Offroad	D_T	98	0.37	1	8	2	-	-	288.7	hp-hrs	0.3	3.3	2.4	0.3	0.2	0.0	325	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Well Drilling Machine	2016	Offroad	D_T	206	0.50	1	8	1	-	-	827.5	hp-hrs	0.4	5.3	2.1	0.2	0.1	0.0	916	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
One Ton Truck	2016	Onroad	G	-	-	1	2	2	-	-	10	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	3.00	2	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	43	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cable Landing Installation								*3*					**1.5**	**13.5**	**9.2**	**1.0**	**0.9**	**0.0**	**1405**	**0.3**	**0.1**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.7**	**0.0**	**0.0**	**0.0**
Backhoe	2016	Offroad	D_T	98	0.37		8	3	-	-	288.7	hp-hrs	0.3	3.3	2.4	0.3	0.2	0.0	325	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	3	3	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	43	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Winch	2016	Offroad	D_T	88	0.34	1	8	1	-	-	240.3	hp-hrs	0.4	3.3	2.1	0.3	0.3	0.0	267	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Crane	2016	Offroad	D_T	226	0.29	1	2	3	-	-	130.3	hp-hrs	0.2	2.1	0.7	0.1	0.1	0.0	146	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Generator	2016	Offroad	D_T	84	0.74	1	8.00	3	-	-	497.3	hp-hrs	0.6	4.8	3.8	0.3	0.3	0.0	623	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Truck Trips - Delivery and Employee								*42*					**0.3**	**7.3**	**5.0**	**0.4**	**0.2**	**0.0**	**2491**	**0.1**	**0.0**	**27.9**	**0.0**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**39.7**	**0.0**	**0.0**	**0.5**
Worker Trips	2016	Onroad-offsite	G	-	-	1	20	42	10	100	1000	hp-hrs	0.1	0.4	4.1	0.1	0.0	0.0	782	0.0	0.0	27.9	0.0	0.0	0.1	0.0	0.0	0.0	14.9	0.0	0.0	0.5
Delivery Truck	2016	Onroad-offsite	D_T	-	-	1	4	30	5	100	500	vmt	0.2	5.8	0.8	0.2	0.1	0.0	1424	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	19.4	0.0	0.0	0.0
Fuel and Misc Delivery	2016	Onroad-offsite	D_T	-	-	1	2.00	42	1	100	100	vmt	0.0	1.2	0.2	0.0	0.0	0.0	285	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0
PFE Facility								*41*					**10.9**	**3.8**	**1.9**	**0.2**	**0.2**	**0.0**	**485**	**0.1**	**0.0**	**0.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**4.2**	**0.0**	**0.0**	**0.0**
Crane	2016	Offroad	D_T	226	0.29	1	2	28	-	-	130.3	hp-hrs	0.2	2.1	0.7	0.1	0.1	0.0	146	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0
Backhoe	2016	Offroad	D_T	98	0.37	1	2	41	-	-	72.16	hp-hrs	0.1	0.8	0.6	0.1	0.1	0.0	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
Equipment Truck	2016	Onroad-offsite	D_T	-	-	1	3	6	2	100	200	vmt	0.1	0.9	0.6	0.0	0.0	0.0	248	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	2	41	-	-	10	hp-hrs	0.0	0.0	0.0	0.0	0.0	0.0	10	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Coatings	2016	-	-	-	-	1	-	1	-	-	-		10.5	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-

SEA-US Transpacific Fiber Optic Cables
Construction Calculations - Terrestrial
Phase 2 Construction Year 2016

Activity/Equipment Type	Year	Type	Fuel	HP	LF	Number of engines	Hours/ Day	Work Days	Trips/ Day	VMT per	Daily units for calc	metric	Pounds per Day										Tons, Total						Metric Tons, Total			
													VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other	VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other
Terrestrial Operations																																
Trench Construction								*41*					**2.6**	**7.8**	**10.1**	**0.5**	**0.4**	**0.0**	**962**	**0.1**	**0.1**	**0.3**	**0.0**	**0.1**	**0.2**	**0.0**	**0.0**	**0.0**	**7.6**	**0.0**	**0.0**	**0.0**
Concrete/Asphalt Saw	2016	Offroad	D_T	81	0.73	1	2	41	-	-	118.3	hp-hrs	0.2	1.2	0.9	0.1	0.1	0.0	148	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0
Backhoe	2016	Offroad	D_T	98	0.37	1	2	41	-	-	72.16	hp-hrs	0.1	0.8	0.6	0.1	0.1	0.0	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	2	41	-	10	10	vmt	0.0	0.0	0.1	0.0	0.0	0.0	29	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Dump Truck	2016	Onroad	D_T	-	-	1	2	41	-	10	10	vmt	0.1	0.5	0.1	0.0	0.0	0.0	85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
Asphalt Truck	2016	Onroad	D_T	-	-	1	8	4	-	40	40	vmt	0.3	2.1	0.5	0.0	0.0	0.0	342	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Pavement Roller	2016	Offroad	D_T	81	0.38	1	8	4	-	-	241.7	hp-hrs	0.3	3.1	2.0	0.2	0.2	0.0	271	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Handheld Vibratory Compactor	2016	Offroad	D_T	8	0.55	1	1	41	-	-	4.4	hp-hrs	1.6	0.1	5.8	0.1	0.1	0.0	6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Fugitive Dust	2016	Fugitive Dust		-	-		0.24	53	-	-	180.8	cy	-	-	-	0.0	0.0	-	-	-	-	-	-	-	-	0.0	0.0	-	-	-	-	
Cable and Innerduct Pulling								*6*					**0.3**	**2.3**	**0.9**	**0.0**	**0.0**	**0.0**	**477**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.3**	**0.0**	**0.0**	**0.0**
Cable-Pulling Truck	2016	Onroad	D_T	-	-	1	8	6	-	-	40	hp-hrs	0.3	2.1	0.5	0.0	0.0	0.0	342	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0
Pickup Truck with Reel	2016	Onroad	D_T	-	-	1	4	6	-	-	20	hp-hrs	0.0	0.1	0.2	0.0	0.0	0.0	77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Equipment Truck	2016	Onroad	D_T	-	-	1	3	6	-	-	15	hp-hrs	0.0	0.1	0.2	0.0	0.0	0.0	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Ocean Ground Bed Installation								2					**0.7**	**8.6**	**4.7**	**0.4**	**0.4**	**0.0**	**1323**	**0.4**	**0.2**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.8**	**0.0**	**0.0**	**0.0**
Backhoe	2016	Offroad	D_T	98	0.37	1	8	2	-	-	288.7	hp-hrs	0.3	3.3	2.4	0.3	0.2	0.0	325	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Well Drilling Machine	2016	Offroad	D_T	206	0.50	1	8	1	-	-	827.5	hp-hrs	0.4	5.3	2.1	0.2	0.1	0.0	916	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
One Ton Truck	2016	Onroad	G	-	-	1	2	2	-	-	10	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	3	2	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	43	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cable Landing Installation								3					**1.5**	**13.5**	**9.2**	**1.0**	**0.9**	**0.0**	**1405**	**0.3**	**0.1**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.7**	**0.0**	**0.0**	**0.0**
Backhoe	2016	Offroad	D_T	98	0.37	1	8	3	-	-	288.7	hp-hrs	0.3	3.3	2.4	0.3	0.2	0.0	325	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	3	3	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	43	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Winch	2016	Offroad	D_T	88	0.34	1	8	1	-	-	240.3	hp-hrs	0.4	3.3	2.1	0.3	0.3	0.0	267	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Crane	2016	Offroad	D_T	226	0.29	1	2	3	-	-	130.3	hp-hrs	0.2	2.1	0.7	0.1	0.1	0.0	146	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Generator	2016	Offroad	D_T	84	0.74	1	8	3	-	-	497.3	hp-hrs	0.6	4.8	3.8	0.3	0.3	0.0	623	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
PFE Facility								*41*					**10.9**	**3.8**	**1.9**	**0.2**	**0.2**	**0.0**	**485**	**0.1**	**0.0**	**0.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**4.2**	**0.0**	**0.0**	**0.0**
Crane	2016	Offroad	D_T	226	0.29	1	2	28	-	-	130.3	hp-hrs	0.2	2.1	0.7	0.1	0.1	0.0	146	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0
Backhoe	2016	Offroad	D_T	98	0.37	1	2	41	-	-	72.16	hp-hrs	0.1	0.8	0.6	0.1	0.1	0.0	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
Equipment Truck	2016	Onroad-offsite	D_T	-	-	1	3	6	2	100	200	vmt	0.1	0.9	0.6	0.0	0.0	0.0	248	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Pickup Truck	2016	Onroad	G	-	-	1	2	41	-	-	10	hp-hrs	0.0	0.0	0.0	0.0	0.0	0.0	10	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Coatings	2016	-	-	-	-	-	-	1	-	-	-		10.5	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-

SEA-US Transpacific Fiber Optic Cables
Construction Calculations - Terrestrial
Phase 3 Construction Year 2020

Activity/Equipment Type	Year	Type	Fuel	HP	LF	Number of engines	Hours/ Day	Work Days	Trips/ Day	VMT per	Daily units for calc	metric	Pounds per Day										Tons, Total						Metric Tons, Total			
													VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other	VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other
Terrestrial Operations																																
Trench Construction								*41*					**2.4**	**5.6**	**10.1**	**0.3**	**0.3**	**0.0**	**1065**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.2**	**0.0**	**0.0**	**0.0**	**8.2**	**0.0**	**0.0**	**0.0**
Concrete/Asphalt Saw	2020	Offroad	D_T	81	0.73	1	2	41	-	-	118.3	hp-hrs	0.1	0.8	0.9	0.0	0.0	0.0	148	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0
Backhoe	2020	Offroad	D_T	98	0.37	1	2	41	-	-	72.16	hp-hrs	0.1	0.5	0.6	0.0	0.0	0.0	76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
Pickup Truck	2020	Onroad	G	-	-	1	2	41	-	10	10	vmt	0.0	0.0	0.1	0.0	0.0	0.0	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Dump Truck	2020	Onroad	D_T	-	-	1	2	41	-	10	10	vmt	0.1	0.4	0.2	0.0	0.0	0.0	110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0
Asphalt Truck	2020	Onroad	D_T	-	-	1	8	4	-	40	40	vmt	0.3	1.7	0.6	0.0	0.0	0.0	441	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Pavement Roller	2020	Offroad	D_T	81	0.38	1	8	4	-	-	241.7	hp-hrs	0.2	2.1	1.9	0.1	0.1	0.0	252	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Handheld Vibratory Compactor	2020	Offroad	D_T	8	0.55	1	1	41	-	-	4.4	hp-hrs	1.6	0.1	5.8	0.1	0.1	0.0	6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Fugitive Dust	2020	Fugitive Dust		-	-		0.24	53	-	-	180.8	cy	-	-	-	0.0	0.0	-	-	-	-	-	-	-	-	0.0	0.0	-	-	-	-	-
Cable and Innerduct Pulling								*6*					**0.4**	**1.8**	**1.0**	**0.0**	**0.0**	**0.0**	**603**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.6**	**0.0**	**0.0**	**0.0**
Cable-Pulling Truck	2020	Onroad	D_T	-	-	1	8	6	-	-	40	hp-hrs	0.3	1.7	0.6	0.0	0.0	0.0	441	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0
Pickup Truck with Reel	2020	Onroad	D_T	-	-	1	4	6	-	-	20	hp-hrs	0.0	0.1	0.2	0.0	0.0	0.0	92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Equipment Truck	2020	Onroad	D_T	-	-	1	3.00	6	-	-	15	hp-hrs	0.0	0.1	0.1	0.0	0.0	0.0	69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Ocean Ground Bed Installation								*2*					**0.5**	**5.5**	**4.4**	**0.2**	**0.2**	**0.0**	**1248**	**0.4**	**0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.7**	**0.0**	**0.0**	**0.0**
Backhoe	2020	Offroad	D_T	98	0.37	1	8	2	-	-	288.7	hp-hrs	0.2	2.1	2.3	0.1	0.1	0.0	302	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Well Drilling Machine	2020	Offroad	D_T	206	0.50	1	8	1	-	-	827.5	hp-hrs	0.3	3.3	1.9	0.1	0.1	0.0	852	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
One Ton Truck	2020	Onroad	G	-	-	1	2	2	-	-	10	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pickup Truck	2020	Onroad	G	-	-	1	3	2	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cable Landing Installation								*3*					**1.0**	**9.1**	**8.6**	**0.5**	**0.5**	**0.0**	**1358**	**0.3**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.6**	**0.0**	**0.0**	**0.0**
Backhoe	2020	Offroad	D_T	98	0.37	1	8	3	-	-	288.7	hp-hrs	0.2	2.1	2.3	0.1	0.1	0.0	302	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Pickup Truck	2020	Onroad	G	-	-	1	3	3	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Winch	2020	Offroad	D_T	88	0.34	1	8	1	-	-	240.3	hp-hrs	0.2	2.2	2.0	0.2	0.1	0.0	249	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Crane	2020	Offroad	D_T	226	0.29	1	2	3	-	-	130.3	hp-hrs	0.1	1.3	0.5	0.1	0.0	0.0	136	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Generator	2020	Offroad	D_T	84	0.74	1	8	3	-	-	497.3	hp-hrs	0.4	3.5	3.7	0.2	0.2	0.0	623	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
PFE Facility								*41*					**10.7**	**2.5**	**1.5**	**0.1**	**0.1**	**0.0**	**458**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**3.9**	**0.0**	**0.0**	**0.0**
Crane	2020	Offroad	D_T	226	0.29	1	2	28	-	-	130.3	hp-hrs	0.1	1.3	0.5	0.1	0.0	0.0	136	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0
Backhoe	2020	Offroad	D_T	98	0.37	1	2	41	-	-	72.16	hp-hrs	0.1	0.5	0.6	0.0	0.0	0.0	76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
Equipment Truck	2020	Onroad-offsite	D_T	-	-	1	3	6	2	100	200	vmt	0.0	0.7	0.3	0.0	0.0	0.0	238	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Pickup Truck	2020	Onroad	G	-	-	1	2	41	-	-	10	hp-hrs	0.0	0.0	0.0	0.0	0.0	0.0	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Coatings	2020	-		-	-	-	-	1	-	-	-		10.5	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-

SEA-US Transpacific Fiber Optic Cables
Construction Calculations - Terrestrial
Phase 4 Construction Year 2025

Activity/Equipment Type	Year	Type	Fuel	HP	LF	Number of engines	Hours/ Day	Work Days	Trips/ Day	VMT per	Daily units for calc	metric	Pounds per Day										Tons, Total						Metric Tons, Total			
													VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other	VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other
Terrestrial Operations																																
Trench Construction								*41*					**2.3**	**3.5**	**10.1**	**0.2**	**0.2**	**0.0**	**1112**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.2**	**0.0**	**0.0**	**0.0**	**8.5**	**0.0**	**0.0**	**0.0**
Concrete/Asphalt Saw	2025	Offroad	D_T	81	0.73	1	2	41	-	-	118.3	hp-hrs	0.1	0.6	0.9	0.0	0.0	0.0	148	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0
Backhoe	2025	Offroad	D_T	98	0.37	1	2	41	-	-	72.16	hp-hrs	0.0	0.3	0.6	0.0	0.0	0.0	76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
Pickup Truck	2025	Onroad	G	-	-	1	2	41	-	10	10	vmt	0.0	0.0	0.1	0.0	0.0	0.0	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Dump Truck	2025	Onroad	D_T	-	-	1	2	41	-	10	10	vmt	0.1	0.2	0.2	0.0	0.0	0.0	119	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0
Asphalt Truck	2025	Onroad	D_T	-	-	1	8	4	-	40	40	vmt	0.3	0.9	0.7	0.0	0.0	0.0	476	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0
Pavement Roller	2025	Offroad	D_T	81	0.38	1	8	4	-	-	241.7	hp-hrs	0.1	1.4	1.8	0.1	0.1	0.0	252	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Handheld Vibratory Compactor	2020	Offroad	D_T	8	0.55	1	1	41	-	-	4.4	hp-hrs	1.6	0.1	5.8	0.1	0.1	0.0	6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Fugitive Dust	2025	Fugitive Dust		-	-		0.24	53	-	-	180.8	cy	-	-	-	0.0	0.0	-	-	-	-	-	-	-	-	0.0	0.0	-	-	-	-	-
Cable and Innerduct Pulling								*6*					**0.4**	**1.0**	**0.9**	**0.0**	**0.0**	**0.0**	**642**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.7**	**0.0**	**0.0**	**0.0**
Cable-Pulling Truck	2025	Onroad	D_T	-	-	1	8	6	-	-	40	hp-hrs	0.3	0.9	0.7	0.0	0.0	0.0	476	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0
Pickup Truck with Reel	2025	Onroad	D_T	-	-	1	4	6	-	-	20	hp-hrs	0.0	0.1	0.1	0.0	0.0	0.0	95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Equipment Truck	2025	Onroad	D_T	-	-	1	3	6	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Ocean Ground Bed Installation								*2*					**0.3**	**3.1**	**4.3**	**0.1**	**0.1**	**0.0**	**1262**	**0.4**	**0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.8**	**0.0**	**0.0**	**0.0**
Backhoe	2025	Offroad	D_T	98	0.37	1	8	2	-	-	288.7	hp-hrs	0.1	1.3	2.2	0.1	0.1	0.0	304	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Well Drilling Machine	2025	Offroad	D_T	206	0.50	1	8	1	-	-	827.5	hp-hrs	0.2	1.7	1.9	0.1	0.1	0.0	859	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
One Ton Truck	2025	Onroad	G	-	-	1	2	2	-	-	10	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pickup Truck	2025	Onroad	G	-	-	1	3	2	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cable Landing Installation								*3*					**0.6**	**5.8**	**8.3**	**0.2**	**0.2**	**0.0**	**1364**	**0.2**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.6**	**0.0**	**0.0**	**0.0**
Backhoe	2025	Offroad	D_T	98	0.37	1	8	3	-	-	288.7	hp-hrs	0.1	1.3	2.2	0.1	0.1	0.0	304	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Pickup Truck	2025	Onroad	G	-	-	1	3	3	-	-	15	hp-hrs	0.0	0.0	0.1	0.0	0.0	0.0	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Winch	2025	Offroad	D_T	88	0.34	1	8	1	-	-	240.3	hp-hrs	0.1	1.3	1.9	0.1	0.1	0.0	249	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Crane	2025	Offroad	D_T	226	0.29	1	2	3	-	-	130.3	hp-hrs	0.1	0.8	0.4	0.0	0.0	0.0	136	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Generator	2025	Offroad	D_T	84	0.74	1	8	3	-	-	497.3	hp-hrs	0.3	2.4	3.7	0.1	0.1	0.0	623	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
PFE Facility								*41*					**10.7**	**1.8**	**1.4**	**0.1**	**0.1**	**0.0**	**458**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**3.9**	**0.0**	**0.0**	**0.0**
Crane	2025	Offroad	D_T	226	0.29	1	2	28	-	-	130.3	hp-hrs	0.1	0.8	0.4	0.0	0.0	0.0	136	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0
Backhoe	2025	Offroad	D_T	98	0.37	1	2	41	-	-	72.16	hp-hrs	0.0	0.3	0.6	0.0	0.0	0.0	76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
Equipment Truck	2025	Onroad-offsite	D_T	-	-	1	3	6	2	100	200	vmt	0.0	0.7	0.3	0.0	0.0	0.0	238	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Pickup Truck	2025	Onroad	G	-	-	1	2	41	-	-	10	hp-hrs	0.0	0.0	0.0	0.0	0.0	0.0	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Coatings	2025	-		-	-	-	-	1	-	-	-		10.5	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-

SEA-US Transpacific Fiber Optic Cables
Construction Calculations -Vessels Phase 1

Construction Year 2016

Activity/Equipment Type	Year	Lay activity	Hours/ Day	Work Days	Pounds per Day									Tons Per Activity						Metric Tons per Activity		
					VOC	NOx	CO	PM10	PM2.5	SO2	CO2	N2O	CH4	VOC	NOx	CO	PM10	PM2.5	SO2	CO2	N2O	CH4
Marine Operations																						
State Waters (MHT to 3 nmi) HDD																						
Installation Support (3 nmi)				**8**	**16.1**	**127.1**	**60.0**	**4.9**	**4.7**	**3.4**	**13093**	**0.5**	**0.6**	**0.1**	**0.5**	**0.2**	**0.0**	**0.0**	**0.0**	**48**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor) Tug	2016		6	8	7.2	69.7	15.6	3.2	3.1	0.9	3371	0.2	0.2	0.0	0.3	0.1	0.0	0.0	0.0	12	0.0	0.0
Boat (Ship of Opportunity) Patrol	2016		5	8	4.1	25.0	19.5	0.7	0.7	1.1	4294	0.1	0.2	0.0	0.1	0.1	0.0	0.0	0.0	16	0.0	0.0
Boat (Ship of Opportunity)	2016		6	8	4.9	32.4	24.9	1.0	1.0	1.4	5428	0.2	0.3	0.0	0.1	0.1	0.0	0.0	0.0	20	0.0	0.0
Prel-lay Grapnel Run Vessel (3 nmi)				**0.25**	**28.7**	**278.7**	**62.5**	**12.7**	**12.4**	**3.5**	**13484**	**0.7**	**0.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2016		24	0.25	28.7	278.7	62.5	12.7	12.4	3.5	13484	0.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	2	0.0	0.0
Cable Landing Support (3 nmi)				**2**	**20.2**	**161.1**	**73.5**	**6.3**	**6.1**	**4.2**	**16026**	**0.6**	**0.8**	**0.0**	**0.2**	**0.1**	**0.0**	**0.0**	**0.0**	**15**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor) Tug	2016		8	2	9.6	92.9	20.8	4.2	4.1	1.2	4495	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	4	0.0	0.0
Boat (Ship of Opportunity) Patrol	2016		5	2	4.1	25.0	19.5	0.7	0.7	1.1	4294	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	4	0.0	0.0
Boat (Ship of Opportunity)	2016		8	2	6.5	43.2	33.1	1.3	1.3	1.9	7237	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	7	0.0	0.0
Main Lay Ship Arrival/Departure and Stationing (3 nmi)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.0	0.4	0.0	0.0	0.0	0.0	18	0.0	0.0
Cable Landing to Shore (3 nmi)				**2**	**27.0**	**720.6**	**57.0**	**13.0**	**11.9**	**20.7**	**33647**	**0.4**	**1.5**	**0.0**	**0.7**	**0.1**	**0.0**	**0.0**	**0.0**	**31**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	10	2	27.0	720.6	57.0	13.0	11.9	20.7	33647	0.4	1.5	0.0	0.7	0.1	0.0	0.0	0.0	31	0.0	0.0
Shore End Cable Burying Support (Diver) (3 nmi)				**7**	**16.0**	**141.1**	**45.6**	**6.0**	**5.8**	**2.6**	**9913**	**0.4**	**0.5**	**0.1**	**0.5**	**0.2**	**0.0**	**0.0**	**0.0**	**31**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor) Tug	2016		10	7	12.0	116.1	26.1	5.3	5.1	1.5	5619	0.3	0.3	0.0	0.4	0.1	0.0	0.0	0.0	18	0.0	0.0
Boat (Ship of Opportunity)	2016		5	7	4.1	25.0	19.5	0.7	0.7	1.1	4294	0.1	0.2	0.0	0.1	0.1	0.0	0.0	0.0	14	0.0	0.0
Cable Laying and Plow (3 nmi)				**1**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.0**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**22**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	1	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.0	0.5	0.0	0.0	0.0	0.0	22	0.0	0.0
Touch-down Monitoring of Main Lay				**1**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.0**	**0.3**	**0.1**	**0.0**	**0.0**	**0.0**	**14**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2016		24	1	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.0	0.3	0.1	0.0	0.0	0.0	14	0.0	0.0
Post-Lay Burial (3nmi) (ROV)				**2**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.0**	**1.1**	**0.1**	**0.0**	**0.0**	**0.0**	**45**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	2	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.0	1.1	0.1	0.0	0.0	0.0	45	0.0	0.0
24 NMI CARB Limit (3nmi to 24 nmi) Prel-lay																						
Grapnel Run Vessel (3 to 24 nmi)				**0.5**	**4.5**	**44.1**	**9.9**	**2.0**	**2.0**	**0.6**	**2135**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2016		3.8	0.5	4.5	44.1	9.9	2.0	2.0	0.6	2135	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
Main Lay Ship Arrival/Departure (3 to 24 nmi) Main				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.0	0.4	0.0	0.0	0.0	0.0	18	0.0	0.0
Cable Laying and Plow (3 to 24 nmi)				**7**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**3.7**	**0.3**	**0.1**	**0.1**	**0.1**	**157**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	7	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.1	3.7	0.3	0.1	0.1	0.1	157	0.0	0.0
Touch-down Monitoring of Main Lay (3 to 24 nmi)				**7**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.2**	**2.1**	**0.5**	**0.1**	**0.1**	**0.0**	**97**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2016		24	7	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.2	2.1	0.5	0.1	0.1	0.0	97	0.0	0.0
Post-Lay Burial (3 to 24 nmi)				**6**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**3.2**	**0.3**	**0.1**	**0.1**	**0.1**	**134**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	6	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.1	3.2	0.3	0.1	0.1	0.1	134	0.0	0.0
Continental Shelf (24 nmi to edge of Shelf) Prel-lay																						
Grapnel Run Vessel (24 nmi to Shelf)				**1.25**	**4.5**	**44.1**	**9.9**	**2.0**	**2.0**	**0.6**	**2135**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2016		3.8	1.25	4.5	44.1	9.9	2.0	2.0	0.6	2135	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.0	0.0
Main Lay Ship Arrival/Departure (24 nmi to Shelf)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.0	0.4	0.0	0.0	0.0	0.0	18	0.0	0.0
Cable Laying/Burying (24 nmi to Shelf)				**12**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.2**	**6.3**	**0.5**	**0.1**	**0.1**	**0.2**	**269**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	12	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.2	6.3	0.5	0.1	0.1	0.2	269	0.0	0.0
Touch-down Monitoring of Main Lay (24 nmi to Shelf)				**12**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.3**	**3.5**	**0.8**	**0.1**	**0.1**	**0.0**	**166**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2016		24	12	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.3	3.5	0.8	0.1	0.1	0.0	166	0.0	0.0
Post-Lay Burial (24 nmi to Shelf)				**13**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.3**	**6.9**	**0.5**	**0.1**	**0.1**	**0.2**	**291**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	13	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.3	6.9	0.5	0.1	0.1	0.2	291	0.0	0.0
200mnmi EEZ (edge of Shelf to 200 nmi)																						
Main Lay Ship Arrival/Departure (Shelf to 200 nmi)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.0	0.4	0.0	0.0	0.0	0.0	18	0.0	0.0
Cable Laying/Burying (Shelf to 200 nmi)				**4**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**2.1**	**0.2**	**0.0**	**0.0**	**0.1**	**90**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	4	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.1	2.1	0.2	0.0	0.0	0.1	90	0.0	0.0

SEA-US Transpacific Fiber Optic Cables
Construction Calculations -Vessels Phase 2

Construction Year: 2016

Activity/Equipment Type	Year	Lay activity	Hours/ Day	Work Days	Pounds per Day									Tons Per Activity						Metric Tons per Activity		
					VOC	NOx	CO	PM10	PM2.5	SO2	CO2	N2O	CH4	VOC	NOx	CO	PM10	PM2.5	SO2	CO2	N2O	CH4
Marine Operations																						
State Waters (MHT to 3 nmi)																						
Prel-lay Grapnel Run Vessel (3 nmi)				**0.25**	**28.7**	**278.7**	**62.5**	**12.7**	**12.4**	**3.5**	**13484**	**0.7**	**0.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2016		24	0.25	28.7	278.7	62.5	12.7	12.4	3.5	13484	0.7	0.6	0.00	0.03	0.01	0.00	0.00	0.00	2	0.00	0.00
Cable Landing Support (3 nmi)				**2**	**20.2**	**161.1**	**73.5**	**6.3**	**6.1**	**4.2**	**16026**	**0.6**	**0.8**	**0.0**	**0.2**	**0.1**	**0.0**	**0.0**	**0.0**	**15**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor) Tug	2016		8	2	9.6	92.9	20.8	4.2	4.1	1.2	4495	0.2	0.2	0.01	0.09	0.02	0.00	0.00	0.00	4	0.00	0.00
Boat (Ship of Opportunity) Patrol	2016		5	2	4.1	25.0	19.5	0.7	0.7	1.1	4294	0.1	0.2	0.00	0.03	0.02	0.00	0.00	0.00	4	0.00	0.00
Boat (Ship of Opportunity)	2016		8	2	6.5	43.2	33.1	1.3	1.3	1.9	7237	0.2	0.3	0.01	0.04	0.03	0.00	0.00	0.00	7	0.00	0.00
Main Lay Ship Arrival/Departure and Stationing (3 nmi)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Landing to Shore (3 nmi)				**2**	**27.0**	**720.6**	**57.0**	**13.0**	**11.9**	**20.7**	**33647**	**0.4**	**1.5**	**0.0**	**0.7**	**0.1**	**0.0**	**0.0**	**0.0**	**31**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	10	2	27.0	720.6	57.0	13.0	11.9	20.7	33647	0.4	1.5	0.03	0.72	0.06	0.01	0.01	0.02	31	0.00	0.00
Shore End Cable Burying Support (Diver) (3 nmi)				**7**	**16.0**	**141.1**	**45.6**	**6.0**	**5.8**	**2.6**	**9913**	**0.4**	**0.5**	**0.1**	**0.5**	**0.2**	**0.0**	**0.0**	**0.0**	**31**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor) Tug	2016		10	7	12.0	116.1	26.1	5.3	5.1	1.5	5619	0.3	0.3	0.04	0.41	0.09	0.02	0.02	0.01	18	0.00	0.00
Boat (Ship of Opportunity)	2016		5	7	4.1	25.0	19.5	0.7	0.7	1.1	4294	0.1	0.2	0.01	0.09	0.07	0.00	0.00	0.00	14	0.00	0.00
Cable Laying and Plow (3 nmi)				**1**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.0**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**22**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	1	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.02	0.53	0.04	0.01	0.01	0.02	22	0.00	0.00
Touch-down Monitoring of Main Lay				**1**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.0**	**0.3**	**0.1**	**0.0**	**0.0**	**0.0**	**14**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2016		24	1	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.03	0.29	0.07	0.01	0.01	0.00	14	0.00	0.00
Post-Lay Burial (3nmi) (ROV)				**2**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.0**	**1.1**	**0.1**	**0.0**	**0.0**	**0.0**	**45**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	2	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.04	1.06	0.08	0.02	0.02	0.03	45	0.00	0.00
24 NMI CARB Limit (3nmi to 24 nmi) Prel-lay																						
Grapnel Run Vessel (3 to 24 nmi)				**0.5**	**4.5**	**44.1**	**9.9**	**2.0**	**2.0**	**0.6**	**2135**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2016		3.8	0.5	4.5	44.1	9.9	2.0	2.0	0.6	2135	0.1	0.1	0.00	0.01	0.00	0.00	0.00	0.00	0	0.00	0.00
Main Lay Ship Arrival/Departure (3 to 24 nmi) Main				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Laying and Plow (3 to 24 nmi)				**7**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**3.7**	**0.3**	**0.1**	**0.1**	**0.1**	**157**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	7	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.14	3.70	0.29	0.07	0.06	0.11	157	0.00	0.01
Touch-down Monitoring of Main Lay (3 to 24 nmi)				**7**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.2**	**2.1**	**0.5**	**0.1**	**0.1**	**0.0**	**97**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2016		24	7	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.19	2.06	0.49	0.09	0.08	0.03	97	0.00	0.00
Post-Lay Burial (3 to 24 nmi)				**6**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**3.2**	**0.3**	**0.1**	**0.1**	**0.1**	**134**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	6	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.12	3.17	0.25	0.06	0.05	0.09	134	0.00	0.01
Continental Shelf (24 nmi to edge of Shelf) Prel-lay																						
Grapnel Run Vessel (24 nmi to Shelf)				**1.25**	**4.5**	**44.1**	**9.9**	**2.0**	**2.0**	**0.6**	**2135**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2016		3.8	1.25	4.5	44.1	9.9	2.0	2.0	0.6	2135	0.1	0.1	0.00	0.03	0.01	0.00	0.00	0.00	1	0.00	0.00
Main Lay Ship Arrival/Departure (24 nmi to Shelf)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Laying/Burying (24 nmi to Shelf)				**12**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.2**	**6.3**	**0.5**	**0.1**	**0.1**	**0.2**	**269**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	12	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.24	6.34	0.50	0.11	0.10	0.18	269	0.00	0.01
Touch-down Monitoring of Main Lay (24 nmi to Shelf)				**12**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.3**	**3.5**	**0.8**	**0.1**	**0.1**	**0.0**	**166**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2016		24	12	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.33	3.54	0.84	0.15	0.14	0.05	166	0.01	0.01
Post-Lay Burial (24 nmi to Shelf)				**13**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.3**	**6.9**	**0.5**	**0.1**	**0.1**	**0.2**	**291**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	13	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.26	6.87	0.54	0.12	0.11	0.20	291	0.00	0.01
200mnmi EEZ (edge of Shelf to 200 nmi)																						
Main Lay Ship Arrival/Departure (Shelf to 200 nmi)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Laying/Burying (Shelf to 200 nmi)				**4**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**2.1**	**0.2**	**0.0**	**0.0**	**0.1**	**90**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	4	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.08	2.11	0.17	0.04	0.03	0.06	90	0.00	0.00

SEA-US Transpacific Fiber Optic Cables
Construction Calculations -Vessels Phase 3

Construction Year: 2020

Activity/Equipment Type	Year	Lay activity	Hours/ Day	Work Days	Pounds per Day									Tons Per Activity						Metric Tons per Activity		
					VOC	NOx	CO	PM10	PM2.5	SO2	CO2	N2O	CH4	VOC	NOx	CO	PM10	PM2.5	SO2	CO2	N2O	CH4
Marine Operations																						
State Waters (MHT to 3 nmi)																						
Prel-lay Grapnel Run Vessel (3 nmi)				**0.25**	**28.7**	**278.7**	**62.5**	**12.7**	**12.4**	**3.5**	**13484**	**0.7**	**0.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2020		24	0.25	28.7	278.7	62.5	12.7	12.4	3.5	13484	0.7	0.6	0.00	0.03	0.01	0.00	0.00	0.00	2	0.00	0.00
Cable Landing Support (3 nmi)				**2**	**20.1**	**160.5**	**51.5**	**6.2**	**6.0**	**4.2**	**16025**	**0.6**	**0.8**	**0.0**	**0.2**	**0.1**	**0.0**	**0.0**	**0.0**	**15**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor) Tug	2020		8	2	9.6	92.9	20.8	4.2	4.1	1.2	4495	0.2	0.2	0.01	0.09	0.02	0.00	0.00	0.00	4	0.00	0.00
Boat (Ship of Opportunity) Patrol	2020		5	2	4.1	25.0	19.5	0.7	0.7	1.1	4294	0.1	0.2	0.00	0.03	0.02	0.00	0.00	0.00	4	0.00	0.00
Boat (Ship of Opportunity)	2020		8	2	6.5	42.6	11.1	1.2	1.2	1.9	7237	0.2	0.3	0.01	0.04	0.01	0.00	0.00	0.00	7	0.00	0.00
Main Lay Ship Arrival/Departure and Stationing (3 nmi)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40378	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Landing to Shore (3 nmi)				**2**	**27.0**	**720.6**	**57.0**	**13.0**	**11.9**	**20.7**	**33647**	**0.4**	**1.5**	**0.0**	**0.7**	**0.1**	**0.0**	**0.0**	**0.0**	**31**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	in transit	10	2	27.0	720.6	57.0	13.0	11.9	20.7	33647	0.4	1.5	0.03	0.72	0.06	0.01	0.01	0.02	31	0.00	0.00
Shore End Cable Burying Support (Diver) (3 nmi)				**7**	**16.0**	**141.1**	**45.6**	**6.0**	**5.8**	**2.6**	**9913**	**0.4**	**0.5**	**0.1**	**0.5**	**0.2**	**0.0**	**0.0**	**0.0**	**31**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor) Tug	2020		10	7	12.0	116.1	26.1	5.3	5.1	1.5	5619	0.3	0.3	0.04	0.41	0.09	0.02	0.02	0.01	18	0.00	0.00
Boat (Ship of Opportunity)	2020		5	7	4.1	25.0	19.5	0.7	0.7	1.1	4294	0.1	0.2	0.01	0.09	0.07	0.00	0.00	0.00	14	0.00	0.00
Cable Laying and Plow (3 nmi)				**1**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.0**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**22**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	laying cable	24	1	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.02	0.53	0.04	0.01	0.01	0.02	22	0.00	0.00
Touch-down Monitoring of Main Lay				**1**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.0**	**0.3**	**0.1**	**0.0**	**0.0**	**0.0**	**14**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2020		24	1	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.03	0.29	0.07	0.01	0.01	0.00	14	0.00	0.00
Post-Lay Burial (3nmi) (ROV)				**2**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.0**	**1.1**	**0.1**	**0.0**	**0.0**	**0.0**	**45**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	laying cable	24	2	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.04	1.06	0.08	0.02	0.02	0.03	45	0.00	0.00
24 NMI CARB Limit (3nmi to 24 nmi) Prel-lay																						
Grapnel Run Vessel (3 to 24 nmi)				**0.5**	**4.5**	**44.1**	**9.9**	**2.0**	**2.0**	**0.6**	**2135**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2020		3.8	0.5	4.5	44.1	9.9	2.0	2.0	0.6	2135	0.1	0.1	0.00	0.01	0.00	0.00	0.00	0.00	0	0.00	0.00
Main Lay Ship Arrival/Departure (3 to 24 nmi) Main				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Lay Vessel (e.g. GM Cable Innovator)	2020	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Laying and Plow (3 to 24 nmi)				**7**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**3.7**	**0.3**	**0.1**	**0.1**	**0.1**	**157**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	laying cable	24	7	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.14	3.70	0.29	0.07	0.06	0.11	157	0.00	0.01
Touch-down Monitoring of Main Lay (3 to 24 nmi)				**7**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.2**	**2.1**	**0.5**	**0.1**	**0.1**	**0.0**	**97**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2020		24	7	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.19	2.06	0.49	0.09	0.08	0.03	97	0.00	0.00
Post-Lay Burial (3 to 24 nmi)				**6**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**3.2**	**0.3**	**0.1**	**0.1**	**0.1**	**134**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	laying cable	24	6	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.12	3.17	0.25	0.06	0.05	0.09	134	0.00	0.01
Continental Shelf (24 nmi to edge of Shelf) Prel-lay																						
Grapnel Run Vessel (24 nmi to Shelf)				**1.25**	**4.5**	**44.1**	**9.9**	**2.0**	**2.0**	**0.6**	**2135**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2020		3.8	1.25	4.5	44.1	9.9	2.0	2.0	0.6	2135	0.1	0.1	0.00	0.03	0.01	0.00	0.00	0.00	1	0.00	0.00
Main Lay Ship Arrival/Departure (24 nmi to Shelf)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Laying/Burying (24 nmi to Shelf)				**12**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.2**	**6.3**	**0.5**	**0.1**	**0.1**	**0.2**	**269**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	laying cable	24	12	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.24	6.34	0.50	0.11	0.10	0.18	269	0.00	0.01
Touch-down Monitoring of Main Lay (24 nmi to Shelf)				**12**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.3**	**3.5**	**0.8**	**0.1**	**0.1**	**0.0**	**166**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2020		24	12	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.33	3.54	0.84	0.15	0.14	0.05	166	0.01	0.01
Post-Lay Burial (24 nmi to Shelf)				**13**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.3**	**6.9**	**0.5**	**0.1**	**0.1**	**0.2**	**291**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	laying cable	24	13	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.26	6.87	0.54	0.12	0.11	0.20	291	0.00	0.01
200mnmi EEZ (edge of Shelf to 200 nmi)																						
Main Lay Ship Arrival/Departure (Shelf to 200 nmi)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Laying/Burying (Shelf to 200 nmi)				**4**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**2.1**	**0.2**	**0.0**	**0.0**	**0.1**	**90**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2020	laying cable	24	4	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.08	2.11	0.17	0.04	0.03	0.06	90	0.00	0.00

SEA-US Transpacific Fiber Optic Cables
Construction Calculations -Vessels Phase 4

Construction Year 2025

Activity/Equipment Type	Year	Lay activity	Hours/ Day	Work Days	Pounds per Day									Tons Per Activity						Metric Tons per Activity		
					VOC	NOx	CO	PM10	PM2.5	SO2	CO2	N2O	CH4	VOC	NOx	CO	PM10	PM2.5	SO2	CO2	N2O	CH4
Marine Operations																						
State Waters (MHT to 3 nmi)																						
Prel-lay Grapnel Run Vessel (3 nmi)				**0.25**	**28.7**	**278.7**	**62.5**	**12.7**	**12.4**	**3.5**	**13484**	**0.7**	**0.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2025		24	0.25	28.7	278.7	62.5	12.7	12.4	3.5	13484	0.7	0.6	0.00	0.03	0.01	0.00	0.00	0.00	2	0.00	0.00
Cable Landing Support (3 nmi)				**2**	**20.2**	**160.5**	**73.5**	**6.2**	**6.0**	**4.2**	**16026**	**0.6**	**0.8**	**0.0**	**0.2**	**0.1**	**0.0**	**0.0**	**0.0**	**15**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor) Tug	2025		8	2	9.6	92.9	20.8	4.2	4.1	1.2	4495	0.2	0.2	0.01	0.09	0.02	0.00	0.00	0.00	4	0.00	0.00
Boat (Ship of Opportunity) Patrol	2025		5	2	4.1	25.0	19.5	0.7	0.7	1.1	4294	0.1	0.2	0.00	0.03	0.02	0.00	0.00	0.00	4	0.00	0.00
Boat (Ship of Opportunity)	2025		8	2	6.5	42.6	33.2	1.2	1.2	1.9	7237	0.2	0.3	0.01	0.04	0.03	0.00	0.00	0.00	7	0.00	0.00
Main Lay Ship Arrival/Departure and Stationing (3 nmi)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Landing to Shore (3 nmi)				**2**	**27.0**	**720.6**	**57.0**	**13.0**	**11.9**	**20.7**	**33647**	**0.4**	**1.5**	**0.0**	**0.7**	**0.1**	**0.0**	**0.0**	**0.0**	**31**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	in transit	10	2	27.0	720.6	57.0	13.0	11.9	20.7	33647	0.4	1.5	0.03	0.72	0.06	0.01	0.01	0.02	31	0.00	0.00
Shore End Cable Burying Support (Diver) (3 nmi)				**7**	**16.0**	**141.1**	**45.6**	**6.0**	**5.8**	**2.6**	**9913**	**0.4**	**0.5**	**0.1**	**0.5**	**0.2**	**0.0**	**0.0**	**0.0**	**31**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor) Tug	2025		10	7	12.0	116.1	26.1	5.3	5.1	1.5	5619	0.3	0.3	0.04	0.41	0.09	0.02	0.02	0.01	18	0.00	0.00
Boat (Ship of Opportunity)	2025		5	7	4.1	25.0	19.5	0.7	0.7	1.1	4294	0.1	0.2	0.01	0.09	0.07	0.00	0.00	0.00	14	0.00	0.00
Cable Laying and Plow (3 nmi)				**1**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.0**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**22**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	laying cable	24	1	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.02	0.53	0.04	0.01	0.01	0.02	22	0.00	0.00
Touch-down Monitoring of Main Lay				**1**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.0**	**0.3**	**0.1**	**0.0**	**0.0**	**0.0**	**14**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2025		24	1	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.03	0.29	0.07	0.01	0.01	0.00	14	0.00	0.00
Post-Lay Burial (3nmi) (ROV)				**2**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.0**	**1.1**	**0.1**	**0.0**	**0.0**	**0.0**	**45**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	laying cable	24	2	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.04	1.06	0.08	0.02	0.02	0.03	45	0.00	0.00
24 NMI CARB Limit (3nmi to 24 nmi) Prel-lay																						
Grapnel Run Vessel (3 to 24 nmi)				**0.5**	**4.5**	**44.1**	**9.9**	**2.0**	**2.0**	**0.6**	**2135**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2025		3.8	0.5	4.5	44.1	9.9	2.0	2.0	0.6	2135	0.1	0.1	0.00	0.01	0.00	0.00	0.00	0.00	0	0.00	0.00
Main Lay Ship Arrival/Departure (3 to 24 nmi) Main				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Lay Vessel (e.g. GM Cable Innovator)	2025	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Laying and Plow (3 to 24 nmi)				**7**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**3.7**	**0.3**	**0.1**	**0.1**	**0.1**	**157**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	laying cable	24	7	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.14	3.70	0.29	0.07	0.06	0.11	157	0.00	0.01
Touch-down Monitoring of Main Lay (3 to 24 nmi)				**7**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.2**	**2.1**	**0.5**	**0.1**	**0.1**	**0.0**	**97**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2025		24	7	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.19	2.06	0.49	0.09	0.08	0.03	97	0.00	0.00
Post-Lay Burial (3 to 24 nmi)				**6**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**3.2**	**0.3**	**0.1**	**0.1**	**0.1**	**134**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	laying cable	24	6	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.12	3.17	0.25	0.06	0.05	0.09	134	0.00	0.01
Continental Shelf (24 nmi to edge of Shelf) Prel-lay																						
Grapnel Run Vessel (24 nmi to Shelf)				**1.25**	**4.5**	**44.1**	**9.9**	**2.0**	**2.0**	**0.6**	**2135**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1**	**0.0**	**0.0**
Work Boat (e.g. MV Endeavor)	2025		3.8	1.25	4.5	44.1	9.9	2.0	2.0	0.6	2135	0.1	0.1	0.00	0.03	0.01	0.00	0.00	0.00	1	0.00	0.00
Main Lay Ship Arrival/Departure (24 nmi to Shelf)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Laying/Burying (24 nmi to Shelf)				**12**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.2**	**6.3**	**0.5**	**0.1**	**0.1**	**0.2**	**269**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	laying cable	24	12	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.24	6.34	0.50	0.11	0.10	0.18	269	0.00	0.01
Touch-down Monitoring of Main Lay (24 nmi to Shelf)				**12**	**54.9**	**589.4**	**140.5**	**24.8**	**24.1**	**7.9**	**30483**	**1.4**	**1.4**	**0.3**	**3.5**	**0.8**	**0.1**	**0.1**	**0.0**	**166**	**0.0**	**0.0**
Support Vessel (e.g. MV Patriot)	2025		24	12	54.9	589.4	140.5	24.8	24.1	7.9	30483	1.4	1.4	0.33	3.54	0.84	0.15	0.14	0.05	166	0.01	0.01
Post-Lay Burial (24 nmi to Shelf)				**13**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.3**	**6.9**	**0.5**	**0.1**	**0.1**	**0.2**	**291**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	laying cable	24	13	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.26	6.87	0.54	0.12	0.11	0.20	291	0.00	0.01
200mnmi EEZ (edge of Shelf to 200 nmi)																						
Main Lay Ship Arrival/Departure (Shelf to 200 nmi)				**1**	**32.4**	**864.8**	**68.4**	**15.6**	**14.3**	**24.9**	**40376**	**0.5**	**1.8**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	in transit	12	1	32.4	864.8	68.4	15.6	14.3	24.9	40376	0.5	1.8	0.02	0.43	0.03	0.01	0.01	0.01	18	0.00	0.00
Cable Laying/Burying (Shelf to 200 nmi)				**4**	**39.5**	**1056.9**	**83.6**	**19.0**	**17.5**	**30.4**	**49348**	**0.6**	**2.2**	**0.1**	**2.1**	**0.2**	**0.0**	**0.0**	**0.1**	**90**	**0.0**	**0.0**
Main Lay Vessel (e.g. GM Cable Innovator)	2025	laying cable	24	4	39.5	1056.9	83.6	19.0	17.5	30.4	49348	0.6	2.2	0.08	2.11	0.17	0.04	0.03	0.06	90	0.00	0.00

Construction Equipment Summary

Equipment	Equip Number for lookups	HP	LF	Source
Concrete/Asphalt Saw	1	81	0.73	Caleemod
Backhoe	2	98	0.37	Caleemod
Pickup Truck	3	-	-	ICF
Dump Truck	4	-	-	ICF
Asphalt Truck	5	-	-	ICF
Pavement Roller	6	81	0.38	Caleemod
Fugitive Dust	7			-
Boring Machine	8	125	0.50	Specs HP, Caleemod LF
One Ton Truck	9	-	-	ICF
Excavator	10	163	0.38	Caleemod
Delivery Truck	11	-	-	ICF
Cable-Pulling Truck	12	-	-	ICF
Pickup Truck with Reel	13	-	-	ICF
Equipment Truck	14	-	-	ICF
HDD Powerplant (AA DD625)	15	600	0.50	Specs for HP, Caleemod LF
Bull Dozer/Loader	16	255	0.40	Caleemod
Crane	17	226	0.29	Caleemod
Welder	18	46	0.45	Caleemod
Generator	19	84	0.74	Caleemod
Tractor Trailer	20	-	-	ICF
Handheld Vibratory Compactor	43	8	0.55	Caleemod HP, nonroad for handheld device
Well Drilling Machine	21	206	0.50	Caleemod
Winch	22	88	0.34	Caleemod
Worker Trips	23	-	-	ICF
Fuel and Misc Delivery	24	-	-	ICF

Earthwork

Majority will be installed by HDD (below). Some small trenching and tie/ins
This crew will primarily support the HDD process
for the HDD entry/exits.
Also, assume 1 route on greenbelt and 1 on city streets
With 41 day HDD process, this crew will work some of each of those days
Hours/day will be small though

	LinearFeet	
Hdd about 500' per day per rig.	9,504	
1.8 miles from 25th St to Verison	11,088	
2.1 miles from Longfellow to Verison	20,592	Total feet
CY calc	247,104.00	linear inches of boring (20,592 x 12)
	4	inch bore
	3.141592654	*pi*
	3,105,200.44	in3 per
	258,766.70	ft3 per
	9,583.95	yd3 per
	53	work days in "trench construction" phase
	180.83	cy soil movement daily; USED FOR DUST CALCULATIONS

Coatings

Method: straight from CalEEMod users guide. For finishing of PFE.

VOC Emissions (E)	10.54	pounds of VOC per day	
Eexterior	7.90		
Einterior	2.63		
EF -exterior	0.007119851	emission factor (lbs per sq. ft.)	
EF - interior	0.007119851	emission factor (lbs per sq. ft.)	
Net new construction	740	ft2 building needed for each PFE, Section 2.2.2.1 of the PD	
days of coatings	1	day	
net construction per day	740	ft2	
Fraction exterior	75%	exterior fraction of surface area. Default is 75% of area is exterior surface and 25% interior	
Fraction interior	25%	interior fraction of surface area. Default is 75% of area is exterior surface and 25% interior	
Cext	150	Exterior VOC content (g/L)	default nonresidential exterior VOC content, SCAQMD
Cint	150	Interior VOC content (g/L)	default nonresidential interior VOC content, SCAQMD
scaling factor for A - surface painting	2		
g/lb	453.59236		
liters per gallon	3.87541178		
	180		

General Assumptions and Conversions

N2O/CO2 Diesel Equipment Ratio	0.000026	Climate Registry 2014
CH4/CO2 Diesel Equipment Ratio	0.000057	Climate Registry 2014
CH4_N2O Other	0.012000	EPA, for passenger vehicles
lbs/gram	0.002204586	
kg/mt	1000	
mt/gram	0.00000100	
ton/gram	0.00000110	
trips_employee	2	
mt/lbs	0.000453592	
ton/lbs	0.0005	
sf_acre	2.30E-05	
CH4 GWP	25	IPCC AR4
N2O GWP	298	IPCC AR4
Employee Trip Mileage (r/t)	100	ICF
Delivery Trip Mileage (r/t)	100	ICF
Onsite Travel Speed	5	mph
trip lengths- workers	100	mi, r/t
trips , workers, daily	10	trips
Trips - Deliveries	30	total delivery trips
	10	trips first week
	5	trips, average day first week
Fuel and Misc Deliveries	1	1 rt/dy for 42 days
Soil throughput for dust calcs	180.83	CY/day for fugitive dust

Operation and Maintenance Emission Calculation Sheets

O&M Summary Tables

Pounds per day (worst-case)

	VOC	NOx	CO	PM10	PM2.5	SOX
Emergency Generator	0	2	1	0	0	0
Cable Repair Arrival	8	216	17	4	4	6
Cable Repair	40	1,057	84	19	17	30
Cable Repair Departure	8	216	17	4	4	6
Employee Vehicle Trips	0	0	1	0	0	0
Total - Worst-case	40	1,059	85	19	18	30
Total - Routine	0	2	2	0	0	0
AQMD Thresholds	*55*	*55*	*550*	*150*	*55*	*150*

Tons Per Year

	VOC	NOx	CO	PM10	PM2.5	SOX
Emergency Generator	0.001	0.010	0.004	0.000	0.000	0.000
Cable Repair Arrival	0.004	0.108	0.009	0.002	0.002	0.003
Cable Repair	0.040	1.057	0.084	0.019	0.017	0.030
Cable Repair Departure	0.004	0.108	0.009	0.002	0.002	0.003
Employee Vehicle Trips	0.003	0.010	0.101	0.003	0.001	0.000
Total - Worst-case	0.051	1.293	0.206	0.026	0.023	0.037
Total - Routine	0.004	0.020	0.106	0.003	0.001	0.000
AQMD Thresholds	*55*	*55*	*550*	*150*	*55*	*150*

Metric Tons per Year

	CO2	CH4	N2O	other	CO2e	Fuel
Emergency Generator	0.83	0.00	0.00	0.00	0.84	diesel
Cable Repair Arrival	4.58	0.00	0.00	0.00	4.64	diesel
Cable Repair	44.77	0.00	0.00	0.00	45.38	diesel
Cable Repair Departure	4.58	0.00	0.00	0.00	4.64	diesel
Employee Vehicle Trips	17.75	0.00	0.00	0.21	17.96	gasoline
Electricity	93.38	0.00	0.00	0.00	93.63	elec
Total - Worst-case	165.88	0.00	0.00	0.21	167.09	
Total - Routine	111.95	0.00	0.00	0.21	112.43	

SEA-US Transpacific Fiber Optic Cables
Operation and Maintenance

Activity	Equipment Type	Year		Hours/ Day	Work Days	lbs per day									tons total						MT total		
						ROG	NOx	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOx	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
Operation and Maintenance																							
Cable Repair Arrival	Main Lay Vessel (e.g. GM Cable Innovator) Main	2016	in transit	3	1	8.09	216.19	17.11	3.89	3.58	6.22	10094	0.12	0.45	0.00	0.11	0.01	0.00	0.00	0.00	4.58	0.00	0.00
Cable Repair	Lay Vessel (e.g. GM Cable Innovator)	2016	laying cable	24	2	39.54	1056.95	83.64	19.01	17.49	30.42	49350	0.61	2.21	0.04	1.06	0.08	0.02	0.02	0.03	44.77	0.00	0.00
Cable Repair Departure	Main Lay Vessel - Main Engines (e.g. GM Cab	2016	in transit	3	1	8.09	216.19	17.11	3.89	3.58	6.22	10094	0.12	0.45	0.00	0.11	0.01	0.00	0.00	0.00	4.58	0.00	0.00

SEA-US Transpacific Fiber Optic Cables
Operation and Maintenance - Terrestrial

Activity/Equipment Type	Year	Fuel	HP	LF	Number of engines	Hours/ Day	Work Days	Trips/Day	VMT per	Daily units for calc	Pounds per Day										Tons, Total						Metric Tons, Total			
											VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other	VOC	NOx	CO	PM10	PM2.5	SOX	CO2	CH4	N2O	other
Operation and Maintenance																														
Power Feed Equipment Station											**0.1**	**1.7**	**0.7**	**0.1**	**0.1**	**0.0**	**153**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1**	**0.0**	**0.0**	**0.0**
Emergency Standby Generator	2016	D	100	0.75	1	1	12	-	-	75	0.1	1.7	0.7	0.1	0.1	0.0	153	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	0.0	0.0	0.0
Employee Vehicle Trips											**0.0**	**0.1**	**0.8**	**0.0**	**0.0**	**0.0**	**156**	**0.0**	**0.0**	**1.9**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**18**	**0.0**	**0.0**	**0.2**
Annual Vehicle Use	2016	G	-	-		2	250	2	100	200	0.0	0.1	0.8	0.0	0.0	0.0	156	0.0	0.0	1.9	0.0	0.0	0.1	0.0	0.0	0.0	18	0.0	0.0	0.2

Electricity

Consumption

	KW	Hrs/day	Days/Year	Kwh	
Power Feed	30	24	365	262800	
Daytime uses	10	8	365	29200	
total				*292000*	kwh/yr
				292	mwh/yr

Emission Calculations

CO2e Emission Rates from SCE Sustainability report:

SF6 based on revised scoping plan and CEC mwh estimates

	CO2e rate (per SCE, 2012. Does not include SF6)		
	SF6	SF6	CO2e
lbs/MWH	705	0.000082	
pounds per year	205860	0.02	
MT per year	93.38	0.00	93.63

				MT/lb	0.000454
				Lb/g	0.002204623
SF6				kWh/GWh	1000000
2010 SF6 Emissions	0.240	MMT CO2e	ARB 2014	MWh/GWh	1000
2010 Electricity	274984.47	Million kWh	CEC 2014	SF6 GWP	23500
2010 SF6 EF	8.728E-07	MT CO2e/kWh		CH4 GWP	25
2010 SF EF	0.000082	lbs SF6/MWh		N2O GWP	298
				ton/lb	0.0005
				MT/G	0.000001

SCE: https://www.sce.com/wps/wcm/connect/68145014-2eba-40c2-8587-6482ce056977/CRR_08202013.pdf?MOD=AJPERES&ContentCache=NONE

CEC: http://www.ecdms.energy.ca.gov/elecbycounty.aspx

ARB: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-12_2014-03-24.pdf

Emission Factor Calculation Sheets

Tug Boats

Taken from Average values from 2012 Port of Los Angeles Inventory

Engine	MY	HP	Number	LF
Propulsion	2008	687	2	0.31
Auxiliary	2009	46	1	0.43

Taken from ARB Harborcraft

Engine	Annual Hours	Useful Life	Deterioration Cap Hours	Deterioration Years
Propulsion	2,274	21	12,000	5.28
Auxiliary	2,486	23	12,000	4.83

Zero Hour emission factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO
Propulsion	5.10	0.15	0.15	0.68	3.73
Auxiliary	5.32	0.30	0.29	2.14	3.73

Fuel Correction Factors

NOx	PM
0.95	0.80
0.95	0.80

Fuel Corrected Zero Hour Emission Factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	4.84	0.12	0.12	0.68	3.73	0.23	873.99	0.042	0.024
Auxiliary	5.04	0.24	0.23	2.14	3.73	0.23	873.99	0.042	0.076

SO2, CO2, N2O and CH4 factors come from Port of Los Angeles inventory

Deterioration Factors

Engine	NOx	PM	ROG	CO
Propulsion	0.21	0.67	0.44	0.25
Auxiliary	0.06	0.31	0.51	0.41

Emission Factors With Deterioration (g/bhp-hr) (For all project years)

Engine	Age	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	7	5.09	0.14	0.14	0.76	3.96	0.23	873.99	0.042	0.024
Auxiliary	6	5.11	0.26	0.25	2.37	4.05	0.23	873.99	0.042	0.076

Already meet ARB Harborcraft rule for compliance

Patrol Boat

Taken from Average values from 2012 Port of Los Angeles Inventory

Engine	MY	HP	Number	LF
Propulsion	2009	595	2	0.38
Auxiliary	2002	54	1	0.32

Taken from ARB Harborcraft Update

Engine	Annual Hours	Useful Life	Deterioration Cap Hours	Deterioration Years
Propulsion	1,796	22	12,000	6.68
Auxiliary	2,265	22	12,000	5.30

Zero Hour emission factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO
Propulsion	5.10	0.15	0.15	0.68	3.73
Auxiliary	7.31	0.58	0.56	1.18	3.59

Fuel Correction Factors

NOx	PM
0.95	0.80
0.95	0.80

Fuel Corrected Zero Hour Emission Factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	4.84	0.12	0.12	0.68	3.73	0.23	873.99	0.042	0.024
Auxiliary	6.93	0.46	0.45	1.18	3.59	0.23	873.99	0.042	0.043

SO2, CO2, N2O and CH4 factors come from Port of Los Angeles inventory

Deterioration Factors

Engine	NOx	PM	ROG	CO
Propulsion	0.21	0.67	0.44	0.25
Auxiliary	0.14	0.44	0.25	0.16

Emission Factors With Deterioration (g/bhp-hr) for 2016

Engine	Age	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	7	5.14	0.14	0.14	0.77	4.01	0.23	873.99	0.042	0.024
Auxiliary	14	7.16	0.51	0.50	1.25	3.73	0.23	873.99	0.042	0.043

Auxiliary engine replaced at the end of 2017 with a 2017 equivalent engine

Zero Hour Emission Factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO
Auxiliary	5.32	0.22	0.21	1.18	3.73

Fuel Correction Factors

NOx	PM
0.95	0.85

Fuel Corrected Zero Hour Emission Factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Auxiliary	5.04	0.19	0.18	1.18	3.73	0.23	873.99	0.042	0.043

Emission Factors With Deterioration (g/bhp-hr) for 2020

Engine	Age	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	11	5.14	0.14	0.14	0.77	1.25	0.23	873.99	0.042	0.024
Auxiliary	3	5.14	0.20	0.19	1.22	3.81	0.23	873.99	0.042	0.043

Emission Factors With Deterioration (g/bhp-hr) for 2025

Engine	Age	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	16	5.14	0.14	0.14	0.77	4.01	0.23	873.99	0.04	0.02
Auxiliary	8	5.21	0.21	0.20	1.25	3.87	0.23	873.99	0.04	0.04

Support Vessel

Surrogate Vessel: American Patriot

Engine	MY	HP	Number	LF
Propulsion	1976	800	2	0.38
Auxiliary	1976	80	2	0.32

Taken from ARB Harborcraft

Engine	Annual Hours	Useful Life	Deterioration Cap Hours	Deterioration Years
Propulsion	675	17	12,000	17.78
Auxiliary	750	23	12,000	16.00

Zero Hour emission factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO
Propulsion	15.34	0.60	0.58	1.05	3.07
Auxiliary	13.00	0.71	0.68	1.71	4.94

Fuel Correction Factors

NOx	PM
0.93	0.72
0.93	0.72

Fuel Corrected Zero Hour Emission Factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	14.27	0.43	0.42	1.05	3.07	0.23	873.99	0.042	0.038
Auxiliary	12.09	0.51	0.49	1.71	4.94	0.23	873.99	0.042	0.062

SO2, CO2, N2O and CH4 factors come from Port of Los Angeles inventory

Deterioration Factors

Engine	NOx	PM	ROG	CO
Propulsion	0.21	0.67	0.44	0.25
Auxiliary	0.06	0.31	0.51	0.41

Emission Factors With Deterioration (g/bhp-hr) (For all project years)

Engine	Age	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	39	17.26	0.72	0.70	1.51	3.83	0.23	873.99	0.042	0.038
Auxiliary	39	12.59	0.62	0.60	2.32	6.35	0.23	873.99	0.042	0.062

Not required to meet ARB Harborcraft rule

Work Boat

Surrogate Vessel: American Endeavor

Engine	MY	HP	Number	LF
Propulsion	1942	350	2	0.38
Auxiliary	1942	60	2	0.32

Taken from ARB Harborcraft

Engine	Annual Hours	Useful Life	Deterioration Cap Hours	Deterioration Years
Propulsion	675	17	12,000	17.78
Auxiliary	750	23	12,000	16.00

Zero Hour emission factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO
Propulsion	16.52	0.70	0.68	1.26	3.07
Auxiliary	13.00	0.71	0.68	1.71	4.94

Fuel Correction Factors

NOx	PM
0.93	0.72
0.93	0.72

Fuel Corrected Zero Hour Emission Factors (g/hp-hr)

Engine	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	15.36	0.51	0.49	1.26	3.07	0.23	873.99	0.042	0.046
Auxiliary	12.09	0.51	0.49	1.71	4.94	0.23	873.99	0.042	0.062

SO2, CO2, N2O and CH4 factors come from Port of Los Angeles inventory

Deterioration Factors

Engine	NOx	PM	ROG	CO
Propulsion	0.21	0.67	0.44	0.25
Auxiliary	0.06	0.31	0.51	0.41

Emission Factors With Deterioration (g/bhp-hr) (For all project years)

Engine	Age	NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
Propulsion	73	18.59	0.85	0.82	1.81	3.83	0.23	873.99	0.042	0.046
Auxiliary	73	12.59	0.62	0.60	2.32	6.35	0.23	873.99	0.042	0.062

Not required to meet ARB Harborcraft rule

Main Lay Vessel

Surrogate Vessel: Global Marine Cable Innovator IMO # 9101132

Diesel-Electric vessel with 5 engines:

3	Wartsila 9R32E	4956 hp	From Sea-Web.com
2	Warsila 6R22/26	1326 hp	

Total HP 17520 hp
Max Speed 16.9 knots

Load Factors calculated from ICF Best Practices

Auxiliary to Propulsion Ratio: 0.269

Propulsion Power 13806
Auxiliary Power 3714

Propulsion Load Factors	speed		LF	Power
Transit	9	knots	0.15	2085
Cable Laying	1	knots	0.02	276

Auxiliary Load Factors	Mode	LF	Power
Transit	(RSZ)	0.27	1003
Cable Laying	(Maneuvering)	0.45	1671

Total Power and Load Factors	LF	Power
Transit	0.18	3088
Cable Laying	0.11	1947

Emission Factors

From ARB OGV Methodology in g/kWh

NOx	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
13.9	0.25	0.23	0.52	1.1	0.4	649	0.029	0.008

Emission Factors (converted to g/hp-hr)

Nox	PM10	PM2.5	ROG	CO	SO2	CO2	N2O	CH4
10.4	0.19	0.17	0.39	0.82	0.30	484	0.022	0.006

Assume all auxiliary engines (Cat 2) using 0.1% sulfur fuel
CO2, CH4 and N2O emission factors taken from Starcrest PoLA 2012 inventory
No Low Load Adjustment factors used because electric drive ship
1 hp = 0.7456999 kW

References for all vessel EFs:

Starcrest Consulting Group, *Port of Los Angeles Air Emissions Inventory – 2012,* July 2013

California Air Resources Board, *Emissions Estimation Methodology for Commercial Harbor Craft Operating in California,* 2007.

California Air Resources Board, *Amendments to the Regulations to Reduce Emissions from Diesel Engines on Commercial Harbor*
California Air Resources Board, *Updates on the Emissions Inventory for Commercial Harbor Craft,* 2009.
ICF International, *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , April 2009.