Appendix A

Appendix A presents the air quality and greenhouse gas (GHG) emissions modeling assumptions and estimates for the revised Project. The original project was analyzed in the mitigated negative declaration (MND) that the California State Lands Commission (Commission or CSLC) adopted in June 2020 (Item 50, June 23, 2020). This Appendix is using the same quantification methodologies that were described in the MND (refer to Appendix B, *Air Quality Analysis Methods and Results*).

The Addendum to the MND (Addendum) analyzes revised Project components of adding two more subsea fiber optic cables (Landing pipes [LPs] #5 and #6). Even though the construction timing of installing these subsea fiber optic cables is currently not known, it would most likely be installed within the next 5 years. The Addendum analysis conservatively assumes the following activities would be happening concurrently during the third quarter of 2022:

- Install all four subsea fiber optic cables (to be pulled through LPs #3, #4, #5, and #6 as seen in Addendum Figure 1.2-2).
- Install all other elements proposed under the revised Project, as described in Table 1.1-1 of the Addendum.

The revised Project was modeled alongside pulling of the Guam to California subsea fiber optic cable, which is part of the proposed Project and was assumed to occur during the third quarter of 2022 in the MND Air Quality Analysis. Because full construction of the revised Project components is likely to occur over many quarters and years, aggregating activities and associated emissions into a single quarter is a conservative representation of potential air quality impacts.

The revised Project would not change any of the air quality analysis for pulling the Asia or Australia subsea fiber optic cables to California and installation of associated infrastructure (Reported as "Phases 3 and 4"[1] in the MND). Accordingly, these components are not analyzed in this Addendum or included in the data tables of this Appendix.

Table A-1 summarizes the construction schedule assumed in the emissions modeling for terrestrial and marine construction within 3 nautical miles (nm) from the U.S. coastline. Table A-2 summarizes the construction schedule for marine activities between 3 and 24 nm from the U.S. coastline.

[1] The MND analyzed the original Project in phases. The phase approach does not work for the revised Project because some of the remaining Project components are not yet determined. Therefore, the Addendum and Appendix A analyze all remaining Project activities at the same time and not as part of any specific phase.

Table A-1. Revised Project's Schedule for Terrestrial and Marine Construction within 3 NM from the U.S. Coastline

Activity ID and Description		Start Date	End Date	Working Days
2-A	Terrestrial conduit installation	7/1/2022	9/22/2022	60
2-B	Directional bores – marine	7/1/2022	8/25/2022	40
2-1	OGB and LMH installation	8/1/2022	8/15/2022	14
2-2	Terrestrial cable pulling	8/7/2022	8/14/2022	7
2-3	CLS facility (construction and testing)	8/15/2022	8/20/2022	5
2-4	Pre-lay grapnel run	8/21/2022	8/22/2022	1
2-5	Marine cable landing	8/26/2022	8/27/2022	1
2-6	Marine cable lay	8/28/2022	8/29/2022	1
2-7	Marine cable burial (diver-assisted)	8/30/2022	9/1/2022	2
2-8	Marine cable burial (ROV-assisted)	9/2/2022	9/4/2022	2
2-9	Worker/Delivery	8/1/2022	9/4/2022	34

Source: Brungardt pers. comm.
Terms:
CLS =Cable Landing Station
LMH = landing manhole
OGB = ocean ground bed
ROV = remotely operated vehicle

Table A-2. Revised Project's Schedule for Marine Construction between 3 and 24 NM

Activity ID and Description		Start Date	End Date	Working Days
2-4	Pre-lay grapnel run	8/23/2022	8/25/2022	2
2-6	Marine cable lay	8/30/2022	9/7/2022	6
2-8	Marine cable burial (ROV-assisted)	9/5/2022	9/10/2022	4

Source: Brungardt pers. comm.
Term: ROV = remotely operated vehicle

Table A-3 summarizes the off-road equipment inventory assumed in the emissions modeling for constructing the revised Project.

Table A-3. Revised Project's Off-road Equipment Inventory for Terrestrial Construction

Activity ID	Equipment	#/Day	Hours/Day	Horsepower
2-A	Concrete/Industrial Saws	1	2	81
2-A	Tractors/Loaders/Backhoes	1	8	97
2-A	Rollers	1	2	80
2-A	Plate Compactors	1	1	8
2-B	Bore/Drill Rigs	1	10	600
2-B	Excavators	1	2	158
2-B	Welders	1	8	46
2-B	Generator Sets	1	10	84
2-1	Tractors/Loaders/Backhoes	1	8	97
2-1	Bore/Drill Rigs	1	4	221
2-1	Plate Compactors	1	1	8

Source: Brungardt pers. comm

Table A-4 summarizes on-road vehicle inventory assumed in the emissions modeling for constructing the revised Project.

Table A-4. Revised Project's On-Road Vehicle Inventory for Terrestrial Construction

Activity ID	Vehicle	Vehicles/Day	Trips/Day	Miles/Day
1-A	Pickup Truck	1	2	10
1-A	Dump Truck	1	2	20
1-A	Asphalt Truck	1	2	10
1-B	Pickup Truck	1	2	15
1-B	Tractor Trailer	1	2	20
1-1	One Ton Truck	1	2	10
1-1	Pickup Truck	1	2	15
1-1	Delivery Truck	1	2	10
1-1	Dump Truck	1	2	10
1-2	Cable-Pulling Truck	1	2	40
1-2	Pickup Truck with Reel	1	2	20
1-2	Equipment Truck	1	2	15
1-5	Pickup Truck	1	2	15
1-9	Tractor Trailer	2	5	500
1-9	Fuel and Miscellaneous Delivery	1	1	100

Activity ID	Vehicle	Vehicles/Day	Trips/Day	Miles/Day
1-9	Employee Vehicle	10	10	1,000

Source: Brungardt pers. comm.

Table A-5 summarizes the earthmoving and paving quantities assumed in the emissions modeling for constructing the revised Project.

Table A-5. Revised Project's Earthmoving and Paving Quantities for Terrestrial Construction

Activity ID	Grading (acres/day)	Cut/Fill (cubic yards/day)	Paving (square
2-A	0.07	44	0.003
2-B	0.09	0	0
2-1	0	14	0

Source: Brungardt pers. comm.

Table A-6 summarizes the marine vessel inventory assumed in the emissions modeling for constructing the revised Project.

Table A-6. Revised Project's Marine Vessel Inventory

Activity ID	Vessel	Hours per Day
U.S. Coastline to 3 Nautical Miles (Air quality impact analysis)		
2-B	Work Boat	6
2-B	Tug Boat	5
2-B	Patrol Boat	6
2-4	Main Lay Vessel (laying)	24
2-5	Main Lay Vessel (transit)	10
2-6	Main Lay Vessel (laying)	24
2-7	Support Vessel	24
2-8	Main Lay Vessel (laying)	24
3 to 24 Nautical Miles (Greenhouse gas impact analysis)		
2-4	Main Lay Vessel (laying)	20
2-4	Main Lay Vessel (transit)	4
2-4	Support Vessel	12
2-6	Main Lay Vessel (laying)	20
2-6	Main Lay Vessel (transit)	4
2-8	Main Lay Vessel (laying)	20
2-8	Main Lay Vessel (transit)	4

Source: Brungardt pers. comm.

Table A-7 presents the criteria pollutants generated by construction activities under the revised Project out to 24 nm. Consistent with the analysis conducted for the proposed Project, this information is included for informational purposes.[2]

Table A-7. Revised Project's Informational Criteria Pollutant Emissions Generated by Terrestrial and Marine Activities Out to 24 NM

Source	Tons per Year					
	ROG	NOx	CO	PM10	PM2.5	SO_2
Terrestrial	<1	1	1	<1	<1	<1
Marine vessels (0 to 3 NM)	<1	5	2	<1	<1	<1
Marine vessels (3 to 24 NM)	<1	7	1	<1	<1	<1
Total [b]	1	13	3	<1	<1	<1

Terms:
CO = carbon monoxide
NO_X = nitrogen oxides
PM10 = particulate matter with a diameter of 10 microns or less
PM2.5 = particulate matter with a diameter of 2.5 microns or less
ROG = reactive organic gases
SO_2 = sulfur dioxide
NM = nautical miles

References

Brungardt, Chris. Senior Vice President. RTI Infrastructure. November 2, 2021—email message to ICF.

[2] The criteria pollutant impact analysis is limited to emissions generated with 3 nm from the U.S. coastline. This is consistent with the regulatory authority of the CSLC under CEQA.