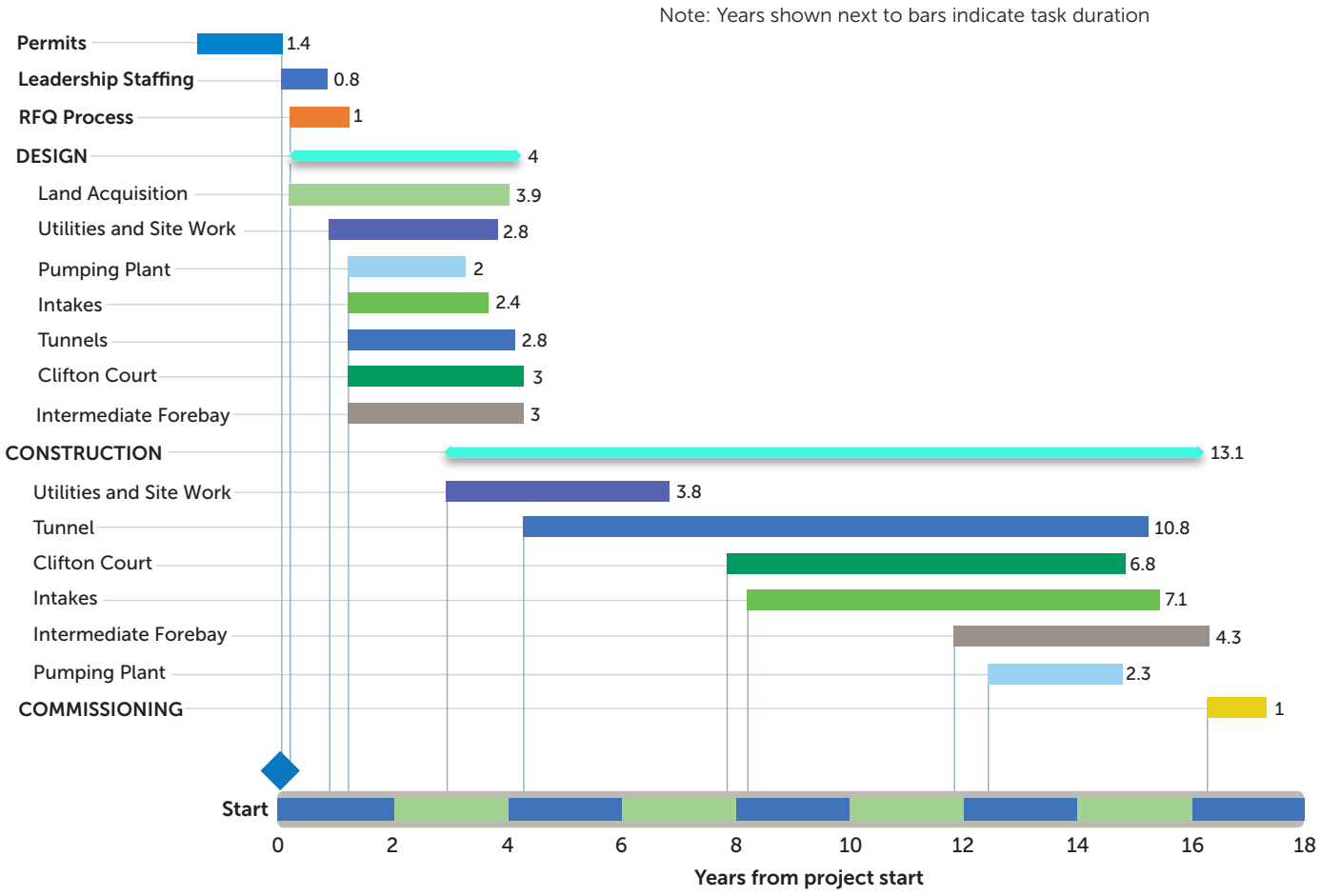

LAND-206

“Coequal goals” means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.
(Water Code 85020)

Schedule

The current schedule estimates it will take 12 to 15 months to fully staff the project, up to four years to complete the design phase and approximately 13 years to complete construction.

California WaterFix - Program Summary Schedule



OUR MISSION

The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

ABOUT METROPOLITAN

The Metropolitan Water District of Southern California is a state-established cooperative of 26 member agencies – cities and public water agencies – that serve nearly 19 million people in six counties. Metropolitan imports water from the Colorado River and Northern California to supplement local supplies and helps its members develop increased water conservation, recycling, storage and other resource management programs.

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Photos courtesy CA Department of Water Resources

CALIFORNIA WATER FIX
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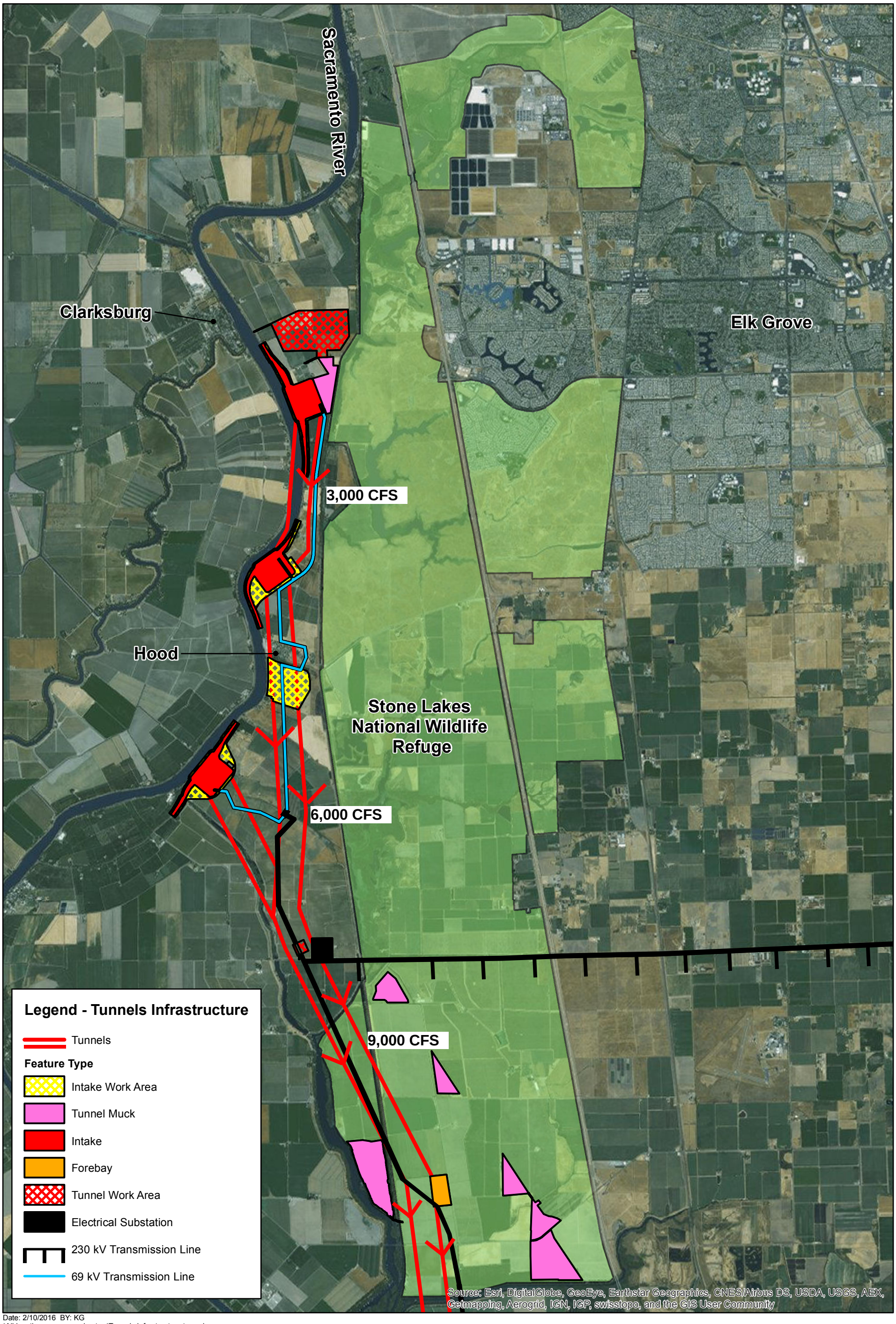
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

The Intakes and State Highway 160

Approximate location of Intake #3

Intake Construction Simulation



Date: 2/10/2016 BY: KG
*All locations are approximate. *Tunnels infrastructure to scale, but tunnels expanded for illustration.
The proposed WaterFix is a DWR project.
Source: Adapted from BDCP 2015.

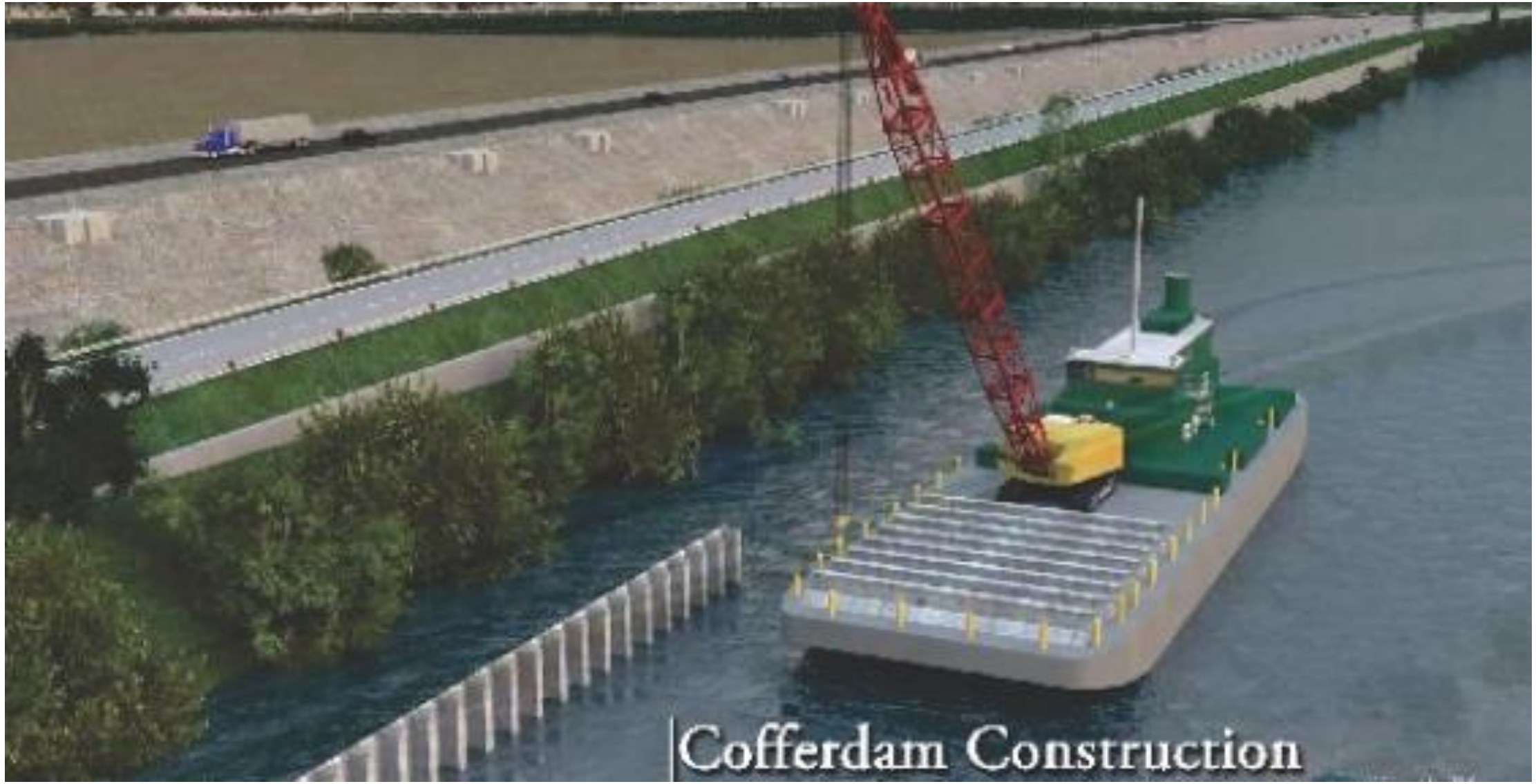
BSK Associates
Engineers & Laboratories

Tunnels/WaterFix Impacts
Sacramento-San Joaquin Delta

N
W E
S

0 2,500 5,000 10,000 Feet

Coffer Dam Construction Simulation



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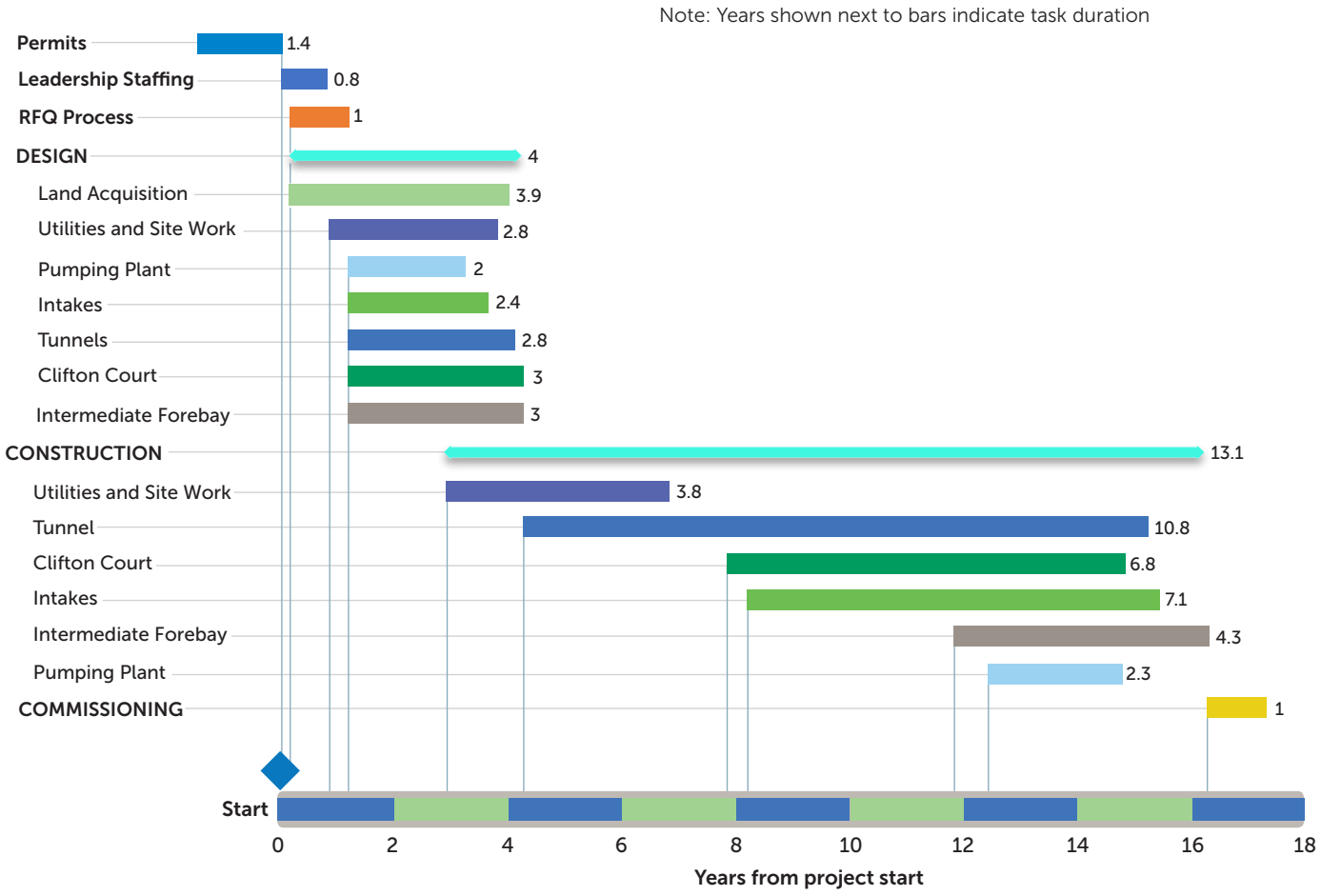

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- Site work: At any time of the day or night.
- Ground improvement: At any time of the day or night.
- Borrow fill: At any time of the day or night.
- Fill to flood height: At any time of the day or night.
- Dispose spoils: At any time of the day or night.
- Dewatering: At any time of the day or night.
- Dredging and Riprap Placement: Between dawn and sunset when performed adjacent to or in water bodies. At any time of the day or night when performed in dry areas or in a previously-cleared area.
- Barge operations: At any time of the day or night.
- Landscaping: Between dawn and sunset.
- Pile Driving: Between dawn and sunset.

Proposed construction-related work entails the use of equipment that may produce in-air sound at levels in excess of the local acoustic background; see the effects analysis (Chapter 6) for detailed analysis of the effects of exposure to in-air sound associated with various activities on listed species.

Several activities required for conveyance construction (e.g., dredging, pile driving, barge operations, geotechnical exploration, etc.) will result in disturbance and redistribution of sediments at and below the surface. There is a potential for some of these sediments to contain existing contaminants, and the disturbance associated with these activities could increase the risk of exposure to contaminants for listed species. Detailed sediment and contaminant characterizations of the specific areas expected to be subject to sediment disturbance are limited and do not provide enough information to support a thorough analysis of effects at this time. Examples of such studies include the maintenance dredging of Discovery Bay and the maintenance dredging of federal navigational channels in San Francisco Bay.

The former study (Central Valley Water Board 2003) considered a site near Clifton Court forebay where sediments are predominantly silt- and clay-sized, with less than 33% sand. Such sediments may be taken as representative of potential contaminants in the Clifton Court Forebay area. Contaminants detected in sediment testing included arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, tributyltin, polycyclic aromatic hydrocarbons, and organochlorine pesticides. Arsenic levels averaged 7.4 mg/kg, which is below average Sacramento-San Joaquin Delta background concentrations. All other constituents were at concentrations significantly below Human Residential and Human Industrial screening values.

The latter study (USACE and San Francisco Water Board 2014) considered a variety of federally maintained navigation channels. Although the channels are located downstream of the

Construction Element/Activity	Key Construction Information or Assumptions			
Tower Construction	Bulldozer, small crane, line truck, water truck, dump truck	Bulldozer, Man 222HD, 100T, 210' Boom (C85MA004), line truck, water truck, concrete truck	Bulldozer, Man 555, 150T, 250' Boom (C85MA005), line truck, water truck, concrete truck	
Line Stringing	Small crane, line truck, other equipment	Line crane, line truck, other equipment	Line crane, line truck, Helicopter (MD 500D/E)	
Pole Tower Spacing (ft)	125-300	450	750	
Pole Tower Height (ft)	35-45	60	95-130	
Pad Footprint	50' x 50'	100' x 150'	100' x 150'	
Permanent Poles (length)	0	10.73 miles	52.62 miles	
Number of Permanent Poles	0	126	370	Total perm. poles: 496
Temporary Poles (length)	22.47 miles	25.02 miles	0 miles	
Number of Temporary Poles	338	171	0	Total temporary poles: 510
	Transmission line construction phasing and activities are assumed to be similar for the Proposed Project and all alternatives, but the number of poles and length of lines would vary by individual alternative. Specifications provided in this table reflect estimates for Alternative 1A.			

Table 3C-2. Assumptions to Evaluate Pile Driving Impacts

Feature	On-land or In-water	Pile Type/ Sizes	Total Piles/ Site	Number of Concurrent Pile Drivers at Site	Piles/ Day	Strikes/ Pile	Strikes/ Day
Intake Cofferdam	In-water	Sheet pile	2,500	4	60	700	42,000
Intake Structure Foundation	In-water	42-inch diameter steel	500	4	60	1,500	90,000
SR-160 Bridge (Realignment) at Intake	On-land	42-inch diameter steel	150	2	30	1,200	36,000
Control Structure at Intake	On-land	42-inch diameter steel	650	4	60	1,200	72,000
Pumping Plant and Concrete Sedimentation Basins at Intake	On-land	42-inch diameter steel	1,650	4	60	1,200	72,000
Barge Unloading Facility	In-water	18-inch diameter steel	800	4	60	1,050	63,000

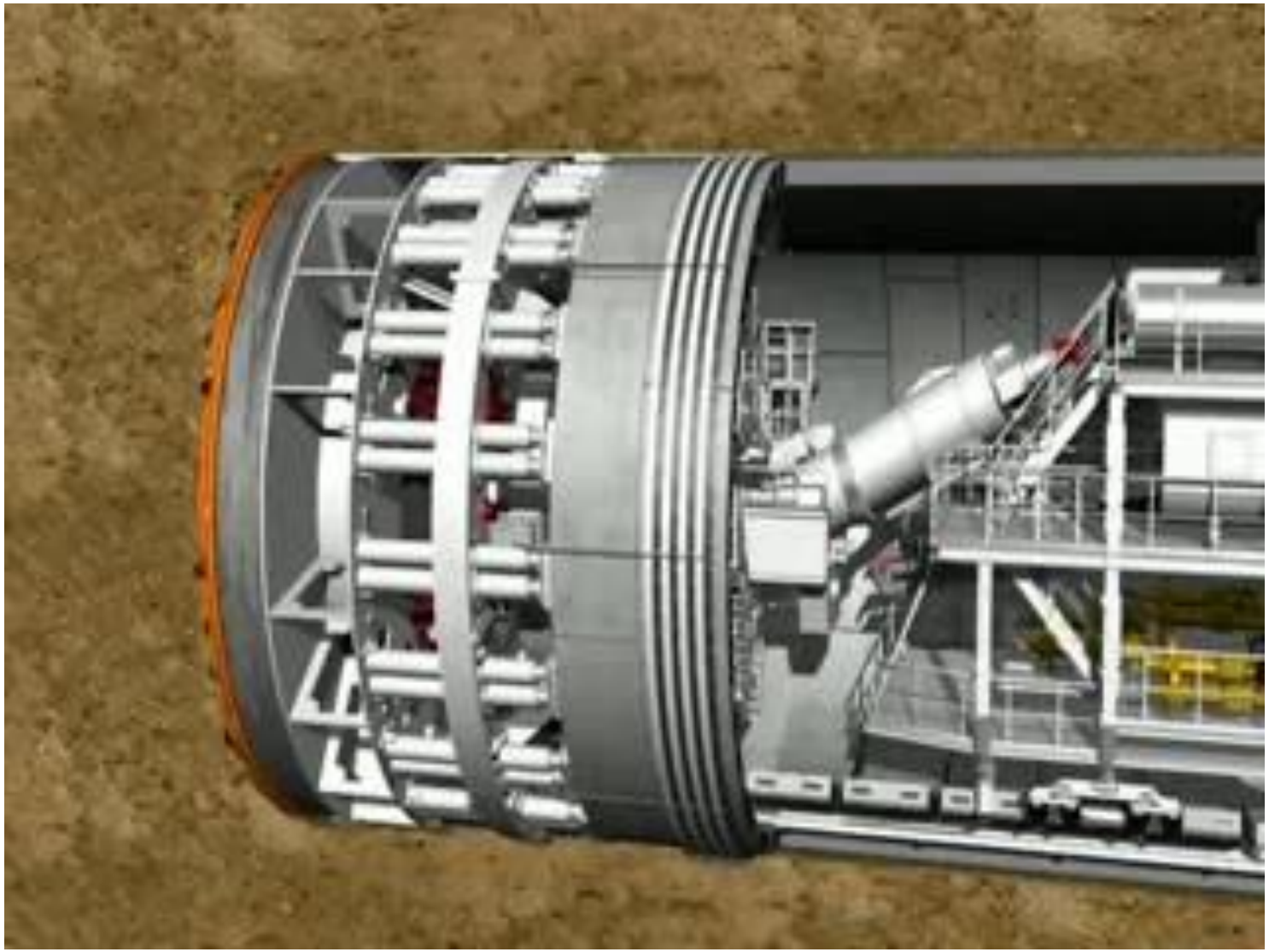
Feature	On-land or In-water	Pile Type/ Sizes	Total Piles/ Site	Number of Concurrent Pile Drivers at Site	Piles/ Day	Strikes/ Pile	Strikes/ Day
Inlet structure at Intermediate Forebay	On-land	14-inch concrete or steel pipe	1,700	2 or more	15	750	11,250
Outlet structure at Intermediate Forebay	On-land	14-inch concrete or steel pipe	1,700	2 or more	15	750	11,250
SR12 Improvement	On-land	14-inch steel pipe	40	1	6	1,500	9,000
Cofferdam for Modified Clifton Court Forebay Embankments	In-water	Sheet piles (AZ-28-700)	22,000	4 or more	60	700	42,000
Divider Wall for Modified Clifton Court Forebay	In-water	Sheet piles (AZ-28-700)	5,000	4 or more	60	700	42,000
Siphon at North Clifton Court Forebay Outlet	In-water	14-inch concrete or steel pipe	2,160	2 or more	30	1,050	31,500
Siphon under Byron Highway	On-land	14-inch concrete or steel pipe	1,600	2 or more	30	1,050	31,500
Cofferdam for Head of Old River Gate	In-water	Sheet piles (AZ-28-700)	550	1	15	700	10,500
Foundation for Head of Old River Gate	In-water	14-inch steel pipe or H-piles	100	1	15	1,050	15,750

Notes: All assumptions will be refined as part of next engineering phase when site-specific geotechnical data is collected.

Assumptions for the inlet and outlet structures at the intermediate forebay represent the worst case scenario. These structures could be supported on shallow foundations with ground improvement (i.e., no pile driving would be needed).

1

Tunnel Boring Machine



Concrete Tunnel Segments

State Highway 160

Paintersville Bridge


LAND-210


LAND-206