“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)
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

Note: Years shown next to bars indicate task duration

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
The Intakes and State Highway 160
Approximate location of Intake #3
Intake Construction Simulation
Tunnels/WaterFix Impacts
Sacramento-San Joaquin Delta

Legend - Tunnels Infrastructure

- Tunnels
- Intake Work Area
- Tunnel Muck
- Intake
- Forebay
- Tunnel Work Area
- Electrical Substation
- 230 kV Transmission Line
- 69 kV Transmission Line

- 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.

Sacramento River
Clarksburg
Hood
Stone Lakes National Wildlife Refuge
Elk Grove

Date: 2/10/2016  BY: KG
Coffer Dam Construction Simulation
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.

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Photos courtesy CA Department of Water Resources
Chapter 3. Description of the Proposed Action
Conveyance Facility Construction

• 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
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

<table>
<thead>
<tr>
<th>Feature</th>
<th>On-land or In-water</th>
<th>Pile Type/ Sizes</th>
<th>Total Piles/ Site</th>
<th>Number of Concurrent Pile Drivers at Site</th>
<th>Piles/ Day</th>
<th>Strikes/ Pile</th>
<th>Strikes/ Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intake Cofferdam</td>
<td>In-water</td>
<td>Sheet pile</td>
<td>2,500</td>
<td>4</td>
<td>60</td>
<td>700</td>
<td>42,000</td>
</tr>
<tr>
<td>Intake Structure Foundation</td>
<td>In-water</td>
<td>42-inch diameter steel</td>
<td>500</td>
<td>4</td>
<td>60</td>
<td>1,500</td>
<td>90,000</td>
</tr>
<tr>
<td>SR-160 Bridge (Realignment) at Intake</td>
<td>On-land</td>
<td>42-inch diameter steel</td>
<td>150</td>
<td>2</td>
<td>30</td>
<td>1,200</td>
<td>36,000</td>
</tr>
<tr>
<td>Control Structure at Intake</td>
<td>On-land</td>
<td>42-inch diameter steel</td>
<td>650</td>
<td>4</td>
<td>60</td>
<td>1,200</td>
<td>72,000</td>
</tr>
<tr>
<td>Pumping Plant and Concrete Sedimentation Basins at Intake</td>
<td>On-land</td>
<td>42-inch diameter steel</td>
<td>1,650</td>
<td>4</td>
<td>60</td>
<td>1,200</td>
<td>72,000</td>
</tr>
<tr>
<td>Barge Unloading Facility</td>
<td>In-water</td>
<td>18-inch diameter steel</td>
<td>800</td>
<td>4</td>
<td>60</td>
<td>1,050</td>
<td>63,000</td>
</tr>
<tr>
<td>Feature</td>
<td>On-land or In-water</td>
<td>Pile Type/ Sizes</td>
<td>Total Piles/Site</td>
<td>Number of Concurrent Pile Drivers at Site</td>
<td>Piles/ Day</td>
<td>Strikes/Pile</td>
<td>Strikes/ Day</td>
</tr>
<tr>
<td>---------------------------------------------</td>
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<td>--------------</td>
</tr>
<tr>
<td>Inlet structure at Intermediate Forebay</td>
<td>On-land</td>
<td>14-inch concrete or steel pipe</td>
<td>1,700</td>
<td>2 or more</td>
<td>15</td>
<td>750</td>
<td>11,250</td>
</tr>
<tr>
<td>Outlet structure at Intermediate Forebay</td>
<td>On-land</td>
<td>14-inch concrete or steel pipe</td>
<td>1,700</td>
<td>2 or more</td>
<td>15</td>
<td>750</td>
<td>11,250</td>
</tr>
<tr>
<td>SR12 Improvement</td>
<td>On-land</td>
<td>14-inch steel pipe</td>
<td>40</td>
<td>1</td>
<td>6</td>
<td>1,500</td>
<td>9,000</td>
</tr>
<tr>
<td>Cofferdam for Modified Clifton Court Forebay Embankments</td>
<td>In-water</td>
<td>Sheet piles (AZ-28-700)</td>
<td>22,000</td>
<td>4 or more</td>
<td>60</td>
<td>700</td>
<td>42,000</td>
</tr>
<tr>
<td>Divider Wall for Modified Clifton Court Forebay</td>
<td>In-water</td>
<td>Sheet piles (AZ-28-700)</td>
<td>5,000</td>
<td>4 or more</td>
<td>60</td>
<td>700</td>
<td>42,000</td>
</tr>
<tr>
<td>Siphon at North Clifton Court Forebay Outlet</td>
<td>In-water</td>
<td>14-inch concrete or steel pipe</td>
<td>2,160</td>
<td>2 or more</td>
<td>30</td>
<td>1,050</td>
<td>31,500</td>
</tr>
<tr>
<td>Siphon under Byron Highway</td>
<td>On-land</td>
<td>14-inch concrete or steel pipe</td>
<td>1,600</td>
<td>2 or more</td>
<td>30</td>
<td>1,050</td>
<td>31,500</td>
</tr>
<tr>
<td>Cofferdam for Head of Old River Gate</td>
<td>In-water</td>
<td>Sheet piles (AZ-28-700)</td>
<td>550</td>
<td>1</td>
<td>15</td>
<td>700</td>
<td>10,500</td>
</tr>
<tr>
<td>Foundation for Head of Old River Gate</td>
<td>In-water</td>
<td>14-inch steel pipe or H-piles</td>
<td>100</td>
<td>1</td>
<td>15</td>
<td>1,050</td>
<td>15,750</td>
</tr>
</tbody>
</table>

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).
Tunnel Boring Machine
Concrete Tunnel Segments
State Highway 160
Paintersville Bridge
Bridge over Sutter Slough

Renovated Cold Storage Warehouse, Hood