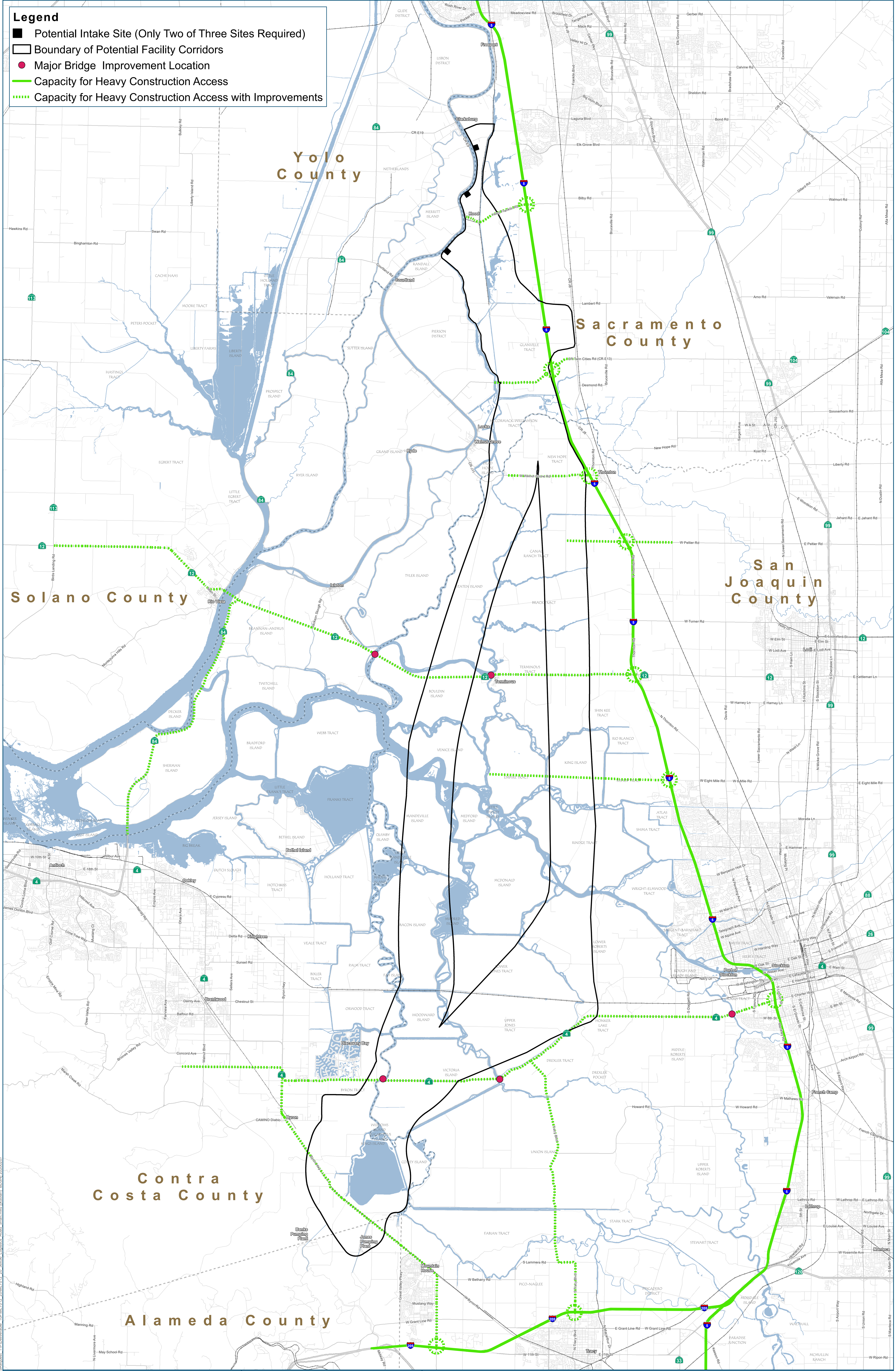




Legend

Potential Intake Site (Only Two of Three Sites Required)

Boundary of Potential Facility Corridors

Railroad Access

Most Favorable Spur Landing Sections

Spur Landings Feasible

No Spur Landings



DELTA CONVEYANCE DESIGN
& CONSTRUCTION AUTHORITY

For Illustration Purposes Only

N

012 Miles

POTENTIAL RAIL ACCESS ROUTES

For Discussion Purposes Only. Subject to Change
Not Reviewed/Approved By DWR, May Not Reflect DWR's Opinion



Logistics Look-Up Table

Flow 3,000 cubic feet per second (cfs)

This look-up table approximates transportation and logistics information. Numbers are for discussion purposes only and subject to change.

GENERAL

Tunnel Diameter (Interior)	25 ft
Tunnel Diameter (External)	28.5 ft
Tunnel Speed	45 ft/day
Days of Operation	5 days/week
Tunneling Speed	2.2 miles/year

SEGMENT LINERS

Liner Ring Length	6 ft
Liner Segment Weight	8.1 tons
Liner Segments Quantity	6.5 #/ring

Daily Delivery (5 days/week; 8 hour day)	Trucks	20 to 25 #/day
	Trains	1 #/week
	Barges	1 #/week

REUSABLE TUNNEL MATERIAL

Daily Production		1,400 cy/day
Total Production Based on Tunnel Drive Length	10 Miles	1,600,000 cy
	15 Miles	2,400,000 cy
Total Stockpile Area Based on Pile Height (5 ft high)	10 Miles	240 acres
	15 Miles	360 acres
Total Stockpile Area Based on Pile Height (10 ft high)	10 Miles	120 acres
	15 Miles	180 acres
Total Stockpile Area Based on Pile Height (15 ft high)	10 Miles	80 acres
	15 Miles	120 acres
Total No. of Off-Site Hauling Trips - 10 Miles	Truck	101,000 trips
	Train	1,200 trips
	Barge	1,200 trips
Total No. of Off-Site Hauling Trips - 15 Miles	Truck	152,000 trips
	Train	1,900 trips
	Barge	1,900 trips
Off-Site Hauling Rate	Truck	85 to 90 trips/day
	Train	5 to 8 trips/week
	Barge	5 to 8 trips/week

Logistics Look-Up Table

Flow 4,500 cubic feet per second (cfs)

This look-up table approximates transportation and logistics information. Numbers are for discussion purposes only and subject to change.

GENERAL

Tunnel Diameter (Interior)	31 ft
Tunnel Diameter (External)	34.5 ft
Tunnel Speed	40 ft/day
Days of Operation	5 days/week
Tunneling Speed	2.0 miles/year

SEGMENT LINERS

Liner Ring Length	6 ft
Liner Segment Weight	8.6 tons
Liner Segments Quantity	7.5 #/ring

Daily Delivery (5 days/week; 8 hour day)	Trucks	20 to 25 #/day
	Trains	1 to 2 #/week
	Barges	1 to 2 #/week

REUSABLE TUNNEL MATERIAL

Daily Production		1,800 cy/day
Total Production Based on Tunnel Drive Length	10 Miles	2,400,000 cy
	15 Miles	3,600,000 cy
Total Stockpile Area Based on Pile Height (5 ft high)	10 Miles	360 acres
	15 Miles	540 acres
Total Stockpile Area Based on Pile Height (10 ft high)	10 Miles	180 acres
	15 Miles	270 acres
Total Stockpile Area Based on Pile Height (15 ft high)	10 Miles	120 acres
	15 Miles	180 acres
Total No. of Off-Site Hauling Trips - 10 Miles	Truck	151,000 trips
	Train	1,900 trips
	Barge	1,900 trips
Total No. of Off-Site Hauling Trips - 15 Miles	Truck	227,000 trips
	Train	2,800 trips
	Barge	2,800 trips
Off-Site Hauling Rate	Truck	110 to 120 trips/day
	Train	7 to 10 trips/week
	Barge	7 to 10 trips/week

Logistics Look-Up Table

Flow 6,000 cubic feet per second (cfs)

This look-up table approximates transportation and logistics information.

Numbers are for discussion purposes only and subject to change.

GENERAL

Tunnel Diameter (Interior)	36 ft
Tunnel Diameter (External)	39.8 ft
Tunnel Speed	40 ft/day
Days of Operation	5 days/week
Tunneling Speed	2.0 miles/year

SEGMENT LINERS

Liner Ring Length	6 ft
Liner Segment Weight	11.3 tons
Liner Segments Quantity	7.5 #/ring

Daily Delivery (5 days/week; 8 hour day)	Trucks	20 to 25 #/day
	Trains	1 to 2 #/week
	Barges	1 to 2 #/week

REUSABLE TUNNEL MATERIAL

Daily Production		2,400 cy/day
Total Production Based on Tunnel Drive Length	10 Miles	3,200,000 cy
	15 Miles	4,700,000 cy
Total Stockpile Area Based on Pile Height (5 ft high)	10 Miles	470 acres
	15 Miles	710 acres
Total Stockpile Area Based on Pile Height (10 ft high)	10 Miles	240 acres
	15 Miles	350 acres
Total Stockpile Area Based on Pile Height (15 ft high)	10 Miles	160 acres
	15 Miles	240 acres
Total No. of Off-Site Hauling Trips - 10 Miles	Truck	198,000 trips
	Train	2,400 trips
	Barge	2,400 trips
Total No. of Off-Site Hauling Trips - 15 Miles	Truck	297,000 trips
	Train	3,700 trips
	Barge	3,700 trips
Off-Site Hauling Rate	Truck	130 to 140 trips/day
	Train	8 to 10 trips/week
	Barge	8 to 10 trips/week

Logistics Look-Up Table

Flow 7,500 cubic feet per second (cfs)

This look-up table approximates transportation and logistics information. Numbers are for discussion purposes only and subject to change.

GENERAL

Tunnel Diameter (Interior)	40 ft
Tunnel Diameter (External)	44.8 ft
Tunnel Speed	35 ft/day
Days of Operation	5 days/week
Tunneling Speed	1.7 miles/year

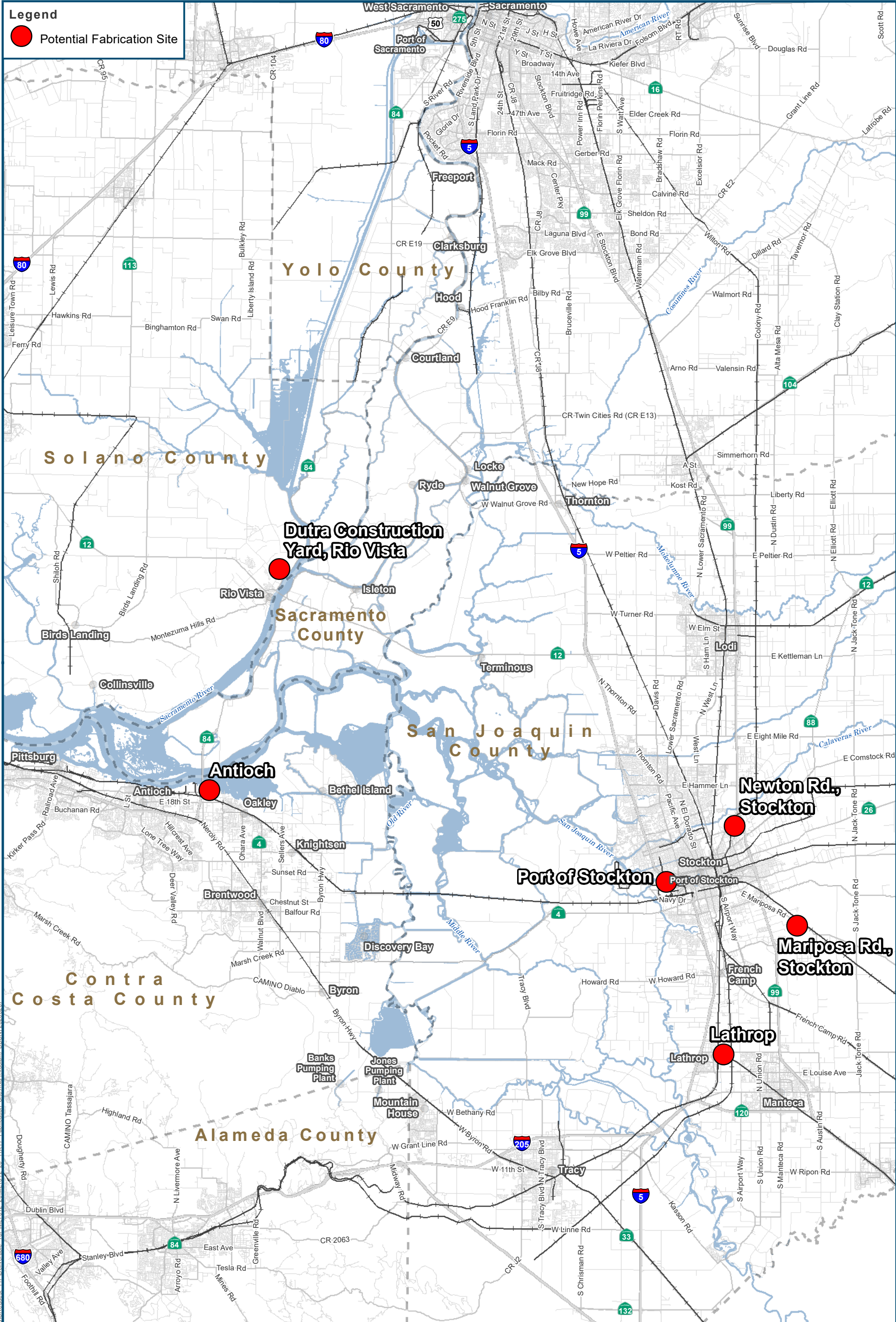
SEGMENT LINERS

Liner Ring Length	6 ft
Liner Segment Weight	14.9 tons
Liner Segments Quantity	8.5 #/ring

Daily Delivery (5 days/week; 8 hour day)	Trucks	45 to 50 #/day
	Trains	2 to 3 #/week
	Barges	2 to 3 #/week

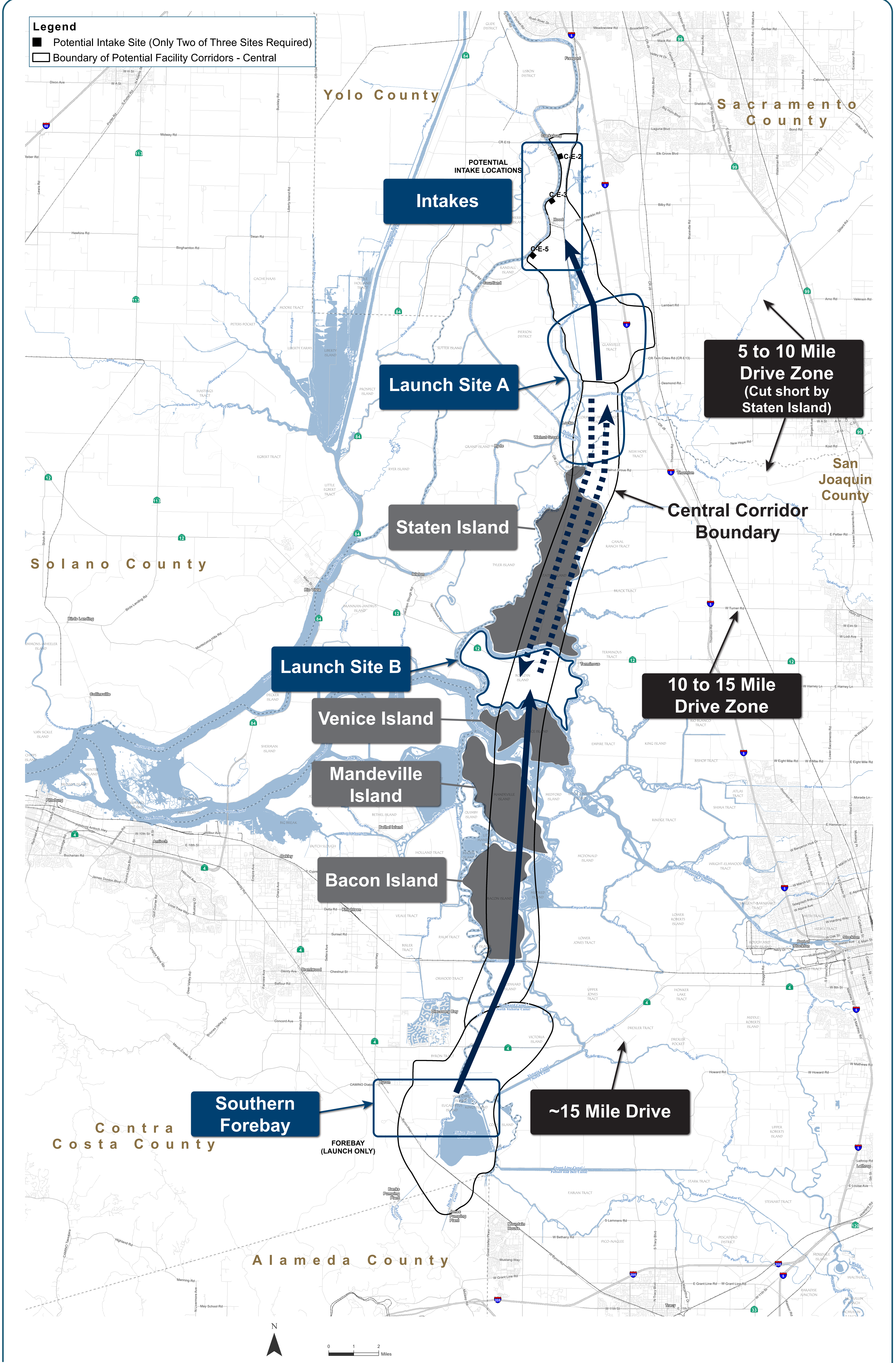
REUSABLE TUNNEL MATERIAL

Daily Production		2,600 cy/day
Total Production Based on Tunnel Drive Length	10 Miles	3,900,000 cy
	15 Miles	5,800,000 cy
Total Stockpile Area Based on Pile Height (5 ft high)	10 Miles	580 acres
	15 Miles	870 acres
Total Stockpile Area Based on Pile Height (10 ft high)	10 Miles	290 acres
	15 Miles	430 acres
Total Stockpile Area Based on Pile Height (15 ft high)	10 Miles	190 acres
	15 Miles	290 acres
Total No. of Off-Site Hauling Trips - 10 Miles	Truck	243,000 trips
	Train	3,000 trips
	Barge	3,000 trips
Total No. of Off-Site Hauling Trips - 15 Miles	Truck	365,000 trips
	Train	4,500 trips
	Barge	4,500 trips
Off-Site Hauling Rate	Truck	160 to 170 trips/day
	Train	10 to 12 trips/week
	Barge	10 to 12 trips/week



Legend

- Potential Intake Site (Only Two of Three Sites Required)
- Boundary of Potential Facility Corridors - Central



Criterion	Importance Factor (I)	Sub-Criterion	Explanation of Ranking
Construction Considerations	NA	Access Suitability for Driveshaft Construction	Y: Site accessible by multiple modes of transportation including high quality road access. N: Site Not accessible by multiple modes of transportation.
	5	Proximity to Existing or New/Improved Roads	5: Adjacent to road with high ranking. 4: Adjacent to road with moderate ranking. 3: New road required to access high ranking road. New road does not require crossing major obstacles. 2: Adjacent to low ranking road OR new road to access moderately ranked road that does not require crossing major obstacles. 1: Site located on island with no or limited existing bridges.
	5	Proximity to Existing Railroad	5: Adjacent to railroad with high ranking. 4: Adjacent to railroad with moderate ranking or access to high ranking railroad with existing crossing or crossing that would otherwise be constructed as part of the project. 3: Access to high ranking railroad requires crossing major highway (i.e. I-5) that does not currently exist or would otherwise not be constructed as part of the project or access to railroad with moderate ranking does not require crossing major highway. 2: Access to moderate ranking railroad requires crossing major highway that does not already exist or access to high ranking railroad requires greater than 5 miles new rail length. 1: Adjacent to railroad with low ranking or no access to moderate or high ranking railroad within 5 miles; would require crossing major obstacles (i.e. waterways, conservation land).
	5	Proximity to Barge Routes	5: Adjacent to high ranking barge route with no obstructions and does not require potential levee enhancements for barge landing. 4: Adjacent to moderate ranking barge route OR access to high ranking barge route but with potential levee enhancements for barge landing without interference with major highways or obstacles 3: Adjacent to high ranking barge route but with potential levee enhancements for barge landing with interference with existing roads or structures. 2: Access to high ranking barge route but with barge landing requiring crossing major highway/obstacles OR access to moderate barge route with no major obstacles. 1: No barge access within vicinity of site or barge landing in vicinity of site has major interference/shallow areas OR access to moderate barge route will require crossing major highway/obstacles.
	4	Proximity to Existing High Voltage Substation and/or Existing High Voltage Transmission Line	5: Existing high voltage transmission line adjacent to site 4: Access to high voltage transmission line less than 3 miles away does not require crossing highways or significant obstacles (waterbodies, conservation land, etc.). 3: Unobstructed access to high voltage transmission line greater than 3 miles away OR access to existing high voltage transmission line with sufficient capacity less than 3 miles away requires crossing significant highway (i.e. I-5). 2: Access to existing high voltage transmission line greater than 3 miles away and requires crossing major highway. 1: Access to existing high voltage transmission line requires crossing major obstacles and would require construction in otherwise unaffected areas.
	4	Condition of Existing Levees	5: Area that do not need to be protected by levees OR has an estimated <1% mean annual probability of failure per Delta Risk Management Strategy. 4: Area protected by levees ranked as Very Low Vulnerability OR has an estimated 1-3% mean annual probability of failure per Delta Risk Management Strategy. 3: Area protected by levees ranked as Low Vulnerability OR has an estimated 3-5% mean annual probability of failure per Delta Risk Management Strategy. 2: Area protected by levees ranked as Moderate Vulnerability OR has an estimated 5-7% mean annual probability of failure per Delta Risk Management Strategy. 1: Area protected by levees ranked as High Vulnerability OR has an estimated >7% mean annual probability of failure per Delta Risk Management Strategy.
Geotechnical/ Geological	5	Geologic Unit	5: Area contains predominately favorable deposits identified by existing geologic mapping (older, consolidated deposits). 3: Area contains both favorable and unfavorable deposits identified by existing geologic mapping (mixture of recent, soft deposits and older, consolidated deposits). 1: Area contains soft, normally consolidated soils (Atwater). Qb, Qpm considered unfavorable soil.
	5	Peat Thickness	5: Area contains <5 feet of peat. 4: Area contains 5-10 feet of peat. 3: Area contains 10-15 feet of peat. 2: Area contains 15-20 feet of peat. 1: Area contains >20 feet of peat.
Property and Land Use	2	Number of Landowners	5: Area contains single parcel or owned entirely by project participants. 4: Area contains 2 parcels. 3: Area contains 3 parcels. 2: Area contains 4 parcels. 1: Area contains >4 parcels.
	3	Future Development	5: Area not within current or 10 year spheres of influence for cities in Sacramento, San Joaquin and Contra Costa counties. 3: Area within 1 mile of existing or 10 year sphere of influence for cities within the counties noted above. 1: Significant portion of area within current or 10 year sphere of influence for cities within the counties noted above.
	4	Farmland Designation	5: No Farmland Designations 3: Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance 1: Williamson Act Farmland Security Zone
	5	Conservation Land, Refuges, Preserves, and Vernal Pool Critical Habitat	5: Area not protected as conservation land, refuge, preserve, or vernal pool critical habitat. 3: Small area of conservation land, refuge or preserve within area (on boundary), or only limited construction activities allowed in a set aside area. 1: Area is protected as conservation land, refuge, preserve, or vernal pool critical habitat.
Existing Infrastructure	3	Existing Linear Infrastructure (Aqueducts, Electrical Transmission Gas Pipelines, Aqueducts)	5: Area does not cross any existing linear infrastructure. 3: Area is slightly impacted by linear infrastructure (lines near boundaries or not affected majority of area). 1: Area bisected by existing linear infrastructure.
	2	Existing Water Supply Wells	5: No record of water supply wells within the area, or only monitoring wells within area. 4: Presence of water supply wells along the border of the area adjacent to roadway. 3: Presence of 0-3, privately-owned water supply wells within the area. 2: Presence of 1 municipal well or 3-5 private wells within area. 1: More than 1 municipal water supply wells or greater than 5 private wells within area.
	3	Existing Structures/Properties (Houses, Barns, Cemetery, Airports, Landfills, Solar, Communication Towers, etc)	5: No existing structures or stockpiled materials/equipment within area. 4: Presence of stockpiled materials or equipment located on border of area. 3: Structures are located on border of area. 2: Presence of occupied houses, barns, solar, schools, stockpiled materials or equipment present within the interior of the area. 1: Presence of cemetery, landfill, airport flight path, communication towers.
	3	Gas Wells or Gas Oil Production Fields	5: No active or abandoned oil production field or gas wells within area. 4: Presence of dry, plugged, and cancelled wells within the area. 3: Less than 1/4 of area within active gas oil field or minor amount of active wells (<5). 1: Greater than 1/4 of area within active gas oil field or > 5 active wells. Idle wells were considered active.

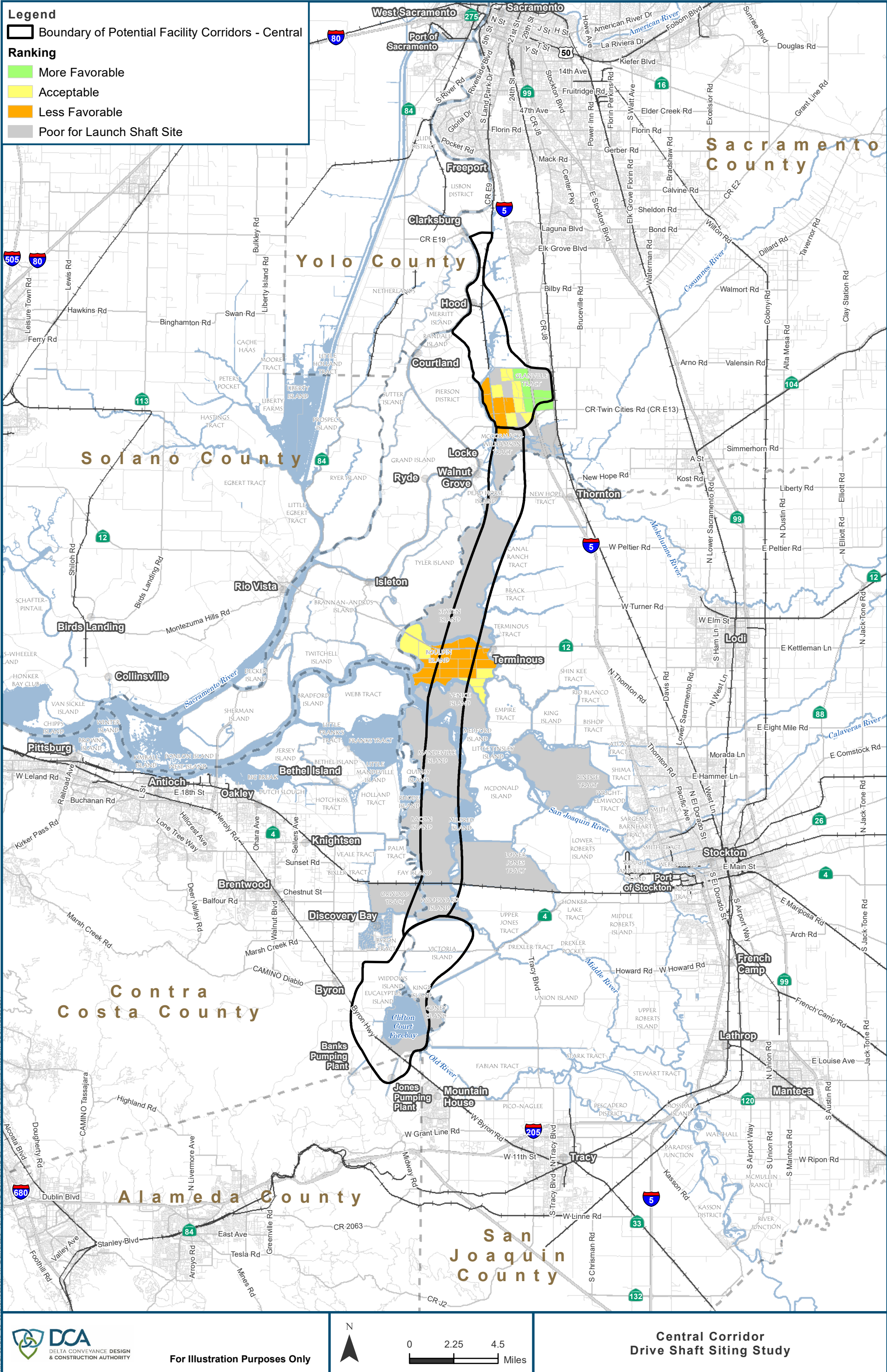
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Criterion	Importance Factor (I)	Sub-Criterion	Central A																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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FINAL RANKING			162	137	154	172	166	188	206	154	186	196	199	230	152	161	179	184	203	224	164	159	190	185	162	164	166	181	164	169	170	180	186	185																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						</

Criterion	Importance Factor (I)	Sub-Criterion	Central B																		
			CB-28	CB-32	CB-33	CB-34	CB-35	CB-36	CB-37	CB-38	CB-39	CB-40	CB-41	CB-42	CB-43	CB-44	CB-45	CB-46	CB-47	CB-48	CB-49
FINAL RANKING			183	172	177	180	180	179	159	168	149	160	160	168	169	173	178	185	169	181	185
Construction Considerations	NA	Access Suitability for Driveshaft Construction																			
	5	Proximity to Existing or New/Improved Roads																			
	5	Proximity to Existing Railroad																			
	5	Proximity to Barge Routes																			
	4	Proximity to Existing High Voltage Substation and/or Existing High Voltage Transmission Line																			
	4	Condition of Existing Levees																			
Geotechnical/ Geological	5	Geologic Unit																			
	5	Peat Thickness																			
Property and Land Use	2	Number of Landowners																			
	3	Future Development																			
	4	Farmland Designation																			
	5	Conservation Land, Refuges, Preserves, and Vernal Pool Critical Habitat																			
Existing Infrastructure	3	Existing Linear Infrastructure (Aqueducts, Electrical Transmission Gas Pipelines, Aqueducts)																			
	2	Existing Water Supply Wells																			
	3	Existing Structures/Properties (Houses, Barns, Cemetery, Airports, Landfills, Solar, Communication Towers, etc)																			
	3	Gas Wells or Gas Oil Production Fields																			

Criterion	Importance Factor (I)	Sub-Criterion	Eastern A																													
			EA-2	EA-4	EA-6	EA-7	EA-8	EA-9	EA-11	EA-12	EA-13	EA-14	EA-15	EA-16	EA-17	EA-18	EA-19	EA-20	EA-21	EA-22	EA-23	EA-24	EA-26	EA-27	EA-29	EA-30						
FINAL RANKING			193	199	194	184	202	219	197	208	214	220	201	216	218	222	207	209	189	180	188	200	178	189	191	188						
Construction Considerations	NA	Access Suitability for Driveshaft Construction																														
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	3	Gas Wells or Gas Oil Production Fields																														

Criterion	Importance Factor (I)	Sub-Criterion	Eastern B																															
			EB-9	EB-10	EB-11	EB-12	EB-13	EB-14	EB-15	EB-16	EB-17	EB-18	EB-19	EB-20	EB-21	EB-22	EB-23	EB-24	EB-25	EB-26	EB-27	EB-28	EB-29	EB-30	EB-31	EB-32								
FINAL RANKING			163	177	184	195	152	157	193	198	178	189	196	203	188	196	182	197	182	196	209	198	207	202	182	183								
Construction Considerations	NA	Access Suitability for Driveshaft Construction																																
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Data Source: DCA, DWR

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