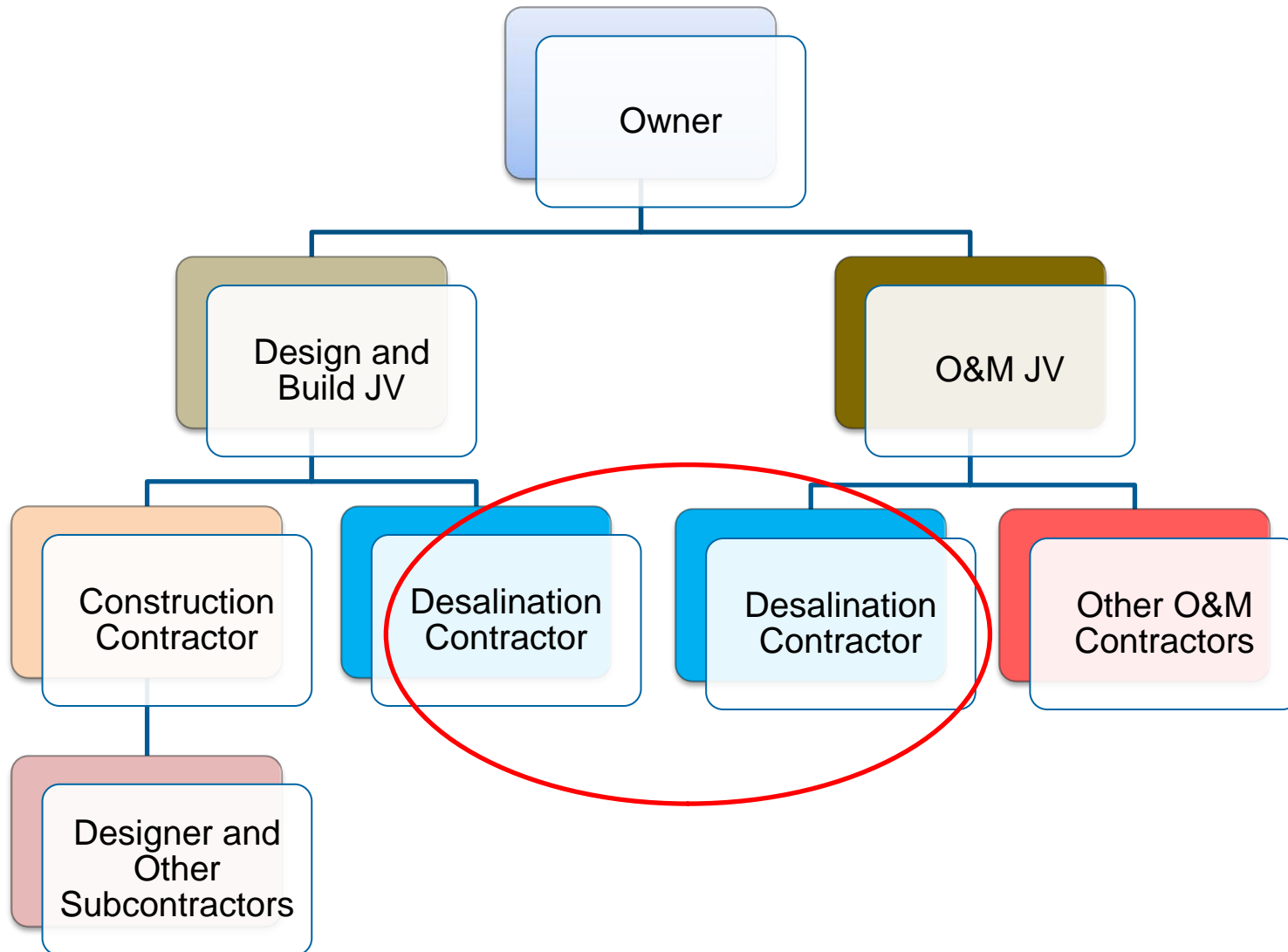


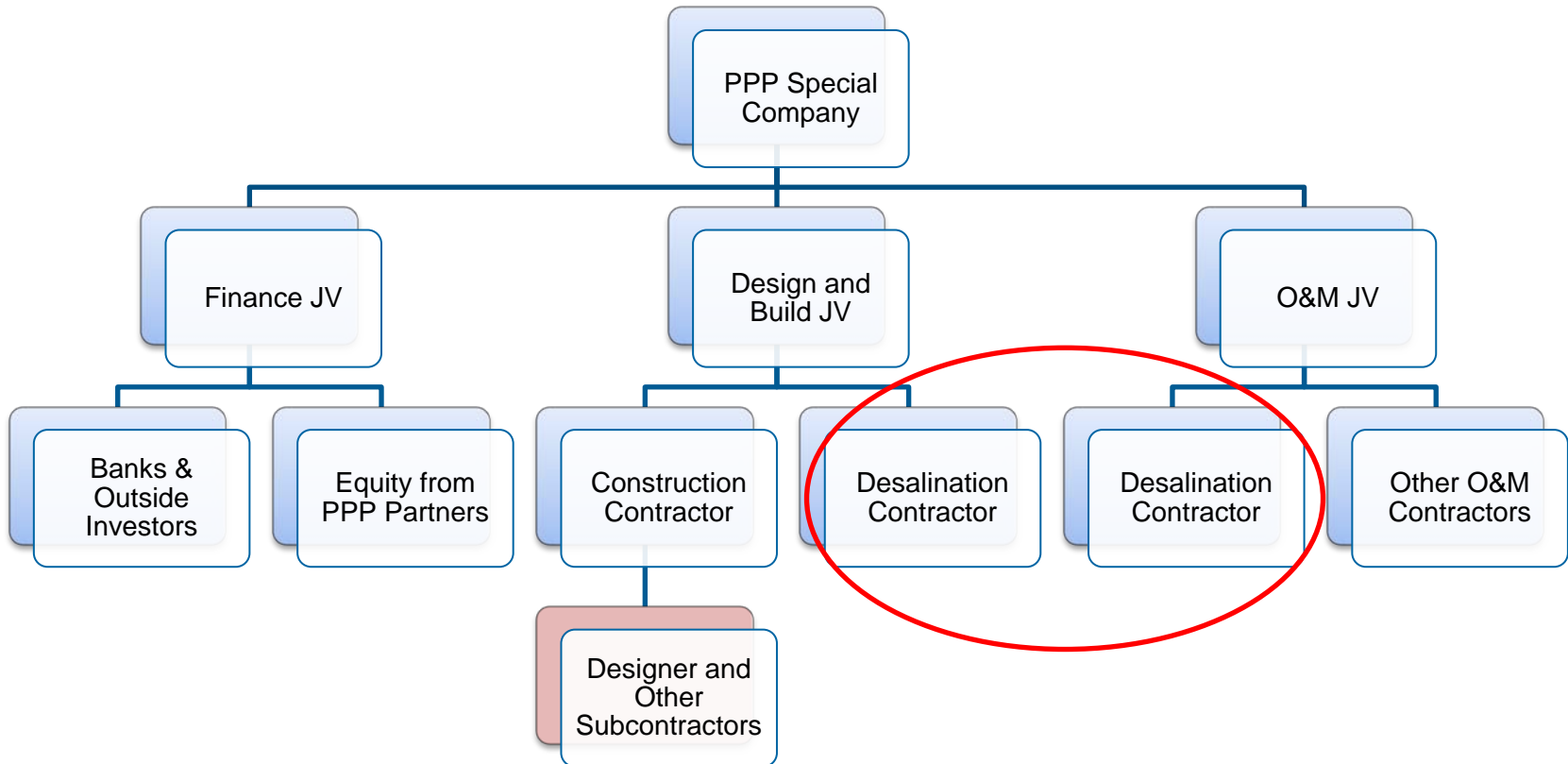


# Seawater Desalination Project Delivery

# Design, Build Operate and Maintain. (JV = Joint Venture)



PPP: Finance, D&B, O&M. Contract Term Typically 20 years or more.



# Case Studies

- Monterey Peninsula Water Supply Project – California American Water Ocean Desalination Component
- City of Santa Barbara Seawater Desalination Plant Reactivation
- Carlsbad Seawater Desalination Project

# Monterey CalAm Ocean Desalination Project Delivery

- Project broken out into several components
- Various contracting methods were used
  - Allowed for firms to focus on core competencies
  - Resulted in best balance of overall cost and risk to CalAm

	<b>Project Component</b>	<b>Contracting Method</b>
1	Slant Wells	Design/Bid/Build
2	Raw Water Conveyance	Design/Bid/Build
3	Seawater Desalination Plant	Design/Build
4	Product Water Pumping, Distribution, Storage; Brine Return	Numerous Packages

# Monterey CalAm Ocean Desalination Project - Risks

	<b>Project Risk</b>	<b>Responsible Party</b>
1	Slant well construction and start up	Contractor
2	Long term slant well water quality and quantity	CalAm (Owner)
3	Pipeline construction	Contractor
4	Desalination Plant design and construction	Contractor
5	Desalination Plant initial operational requirements (Performance Test)	Contractor
6	Power costs	CalAm (Owner)
7	Operating and Maintenance Expenses	CalAm (Operator)

# City of Santa Barbara Seawater Desalination Plant – Project Delivery

	<b>Project Component</b>	<b>Contracting Method</b>
1	Entire work package <ul style="list-style-type: none"><li>- All design work</li><li>- Modify open ocean intake</li><li>- Upgrade/supply new plant equipment</li><li>- Operate and maintain plant for 5 years with renewal options</li></ul>	Single Design/Build/Operate contract with IDE Americas

# City of Santa Barbara Seawater Desalination Plant - Risks

	<b>Project Risk</b>	<b>Responsible Party</b>
1	Construction cost overruns	Contractor
2	Feed water quality	Santa Barbara
3	Product water quality and quantity	Contractor
4	Permitting	Shared
5	Power costs	Santa Barbara
6	Operating & Maintenance cost	Contractor



# Carlsbad Seawater Desalination Plant – Project Delivery

<b>Project Component</b>	<b>Contracting Method</b>
Public-Private Partnership between Poseidon and San Diego County Water Authority	30 Year Water Purchase Agreement
Design and Construction of Desalination Plant and Pipeline	EPC Contract between Poseidon and Kiewit-Shea Desalination (KSD)
30 years Operation and Maintenance	O&M Contract between Poseidon and IDE

# Carlsbad Seawater Desalination Project - Risks

	<b>Project Risk</b>	<b>Responsible Party</b>
1	Permitting	Poseidon / shared
2	Demand (Guaranteed Minimum Purchase)	SDCWA
3	Desalination Plant design and construction	Poseidon/KSD
4	Power costs	Shared
5	Operating and Maintenance	Poseidon/IDE
6	New pipeline design and construction	Poseidon/KSD
7	New pipeline operation and maintenance	SDCWA
8	Necessary design and construction upgrades to existing SDCWA regional water delivery system	SDCWA
9	Change in Law	Shared

# Summary of Risk Allocation

<b>Risk</b>	<b>Cal Am</b>	<b>Santa Barbara</b>	<b>CARLSBAD</b>
Construction Cost Over Runs	Contractor	Contractor	Contractor
Feed water Quality + Quantity	Owner	Owner	Owner
Product Water Quality + Quantity	Contractor	Contractor	Contractor
Power Cost	Owner	Owner	Owner
Power Consumption	Contractor	Contractor	Contractor



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