DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

DELTA CONVEYANCE PROJECT: SUSTAINABILITY

June 2025

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY (DCA)

The DCA is a joint powers authority created by 16 California public water agencies to assist with the design and construction of a modernized Delta Conveyance Project (DCP). The DCA is currently focused on the design and engineering needed to support permitting. As a public agency, the DCA is subject to the Brown Act and the Public Records Act.

DCA Member Agencies

Metropolitan Water District of Southern California
Kern County Water Agency
Santa Clara Valley Water District

Class 2
Alameda County Flood Control Zone 7 Water District
Alameda County Water District

Class 3 and 7
Santa Clarita Valley Water Agency
Dudley Ridge Water District

Class 8
Antelope Valley-East Kern Water Agency
Coachella Valley Water District
Crestline-Lake Arrowhead Water Agency
Mojave Water Agency
San Gabriel Valley Municipal Water District
San Bernardino Valley Municipal Water District
Desert Water Agency
San Gorgonio Pass Water Agency
Palmdale Water District

California is Preparing Today for Tomorrow's Water Needs

California is a global leader in addressing climate change, from setting ambitious greenhouse gas (GHG) reduction goals, to investing in actionable climate science and identifying place-based, community-driven adaptation and resilience actions.

The Delta Conveyance Project will modernize water infrastructure in the Sacramento-San Joaquin Delta (Delta) by securing the State Water Project – protecting California's largest supply of clean and affordable water against earthquakes and climate threats such as sea level rise.

The Delta Conveyance Design and Construction Authority (DCA) is tasked with planning, designing, and constructing a state-of-the-art, sustainable, resilient, environmentally responsive, and cost-effective Delta Conveyance Project.

The DCA is committed to developing the project using sustainably-balanced design and construction principles that will ultimately lead to a more resilient project, with a reduced environmental footprint. By resolving the long-standing need to assure affordable State Water Project reliability, the project will serve future generations of Californians in a way that respects the uniqueness of the Delta as a place while supporting long-term economic viability for all of California.

Building Resilience

The Delta Conveyance Project will help create long-term resiliency of California's water supply in the wake of anticipated climate change and earthquakes.

- Climate Change: Extreme weather is expected to increase droughts, wildfires, severe storm events, flooding, and sea level rise
- Seismic Activity: The aging State Water Project is susceptible to earthquakes causing catastrophic disruption that could threaten prolonged access to safe drinking water for residents throughout California

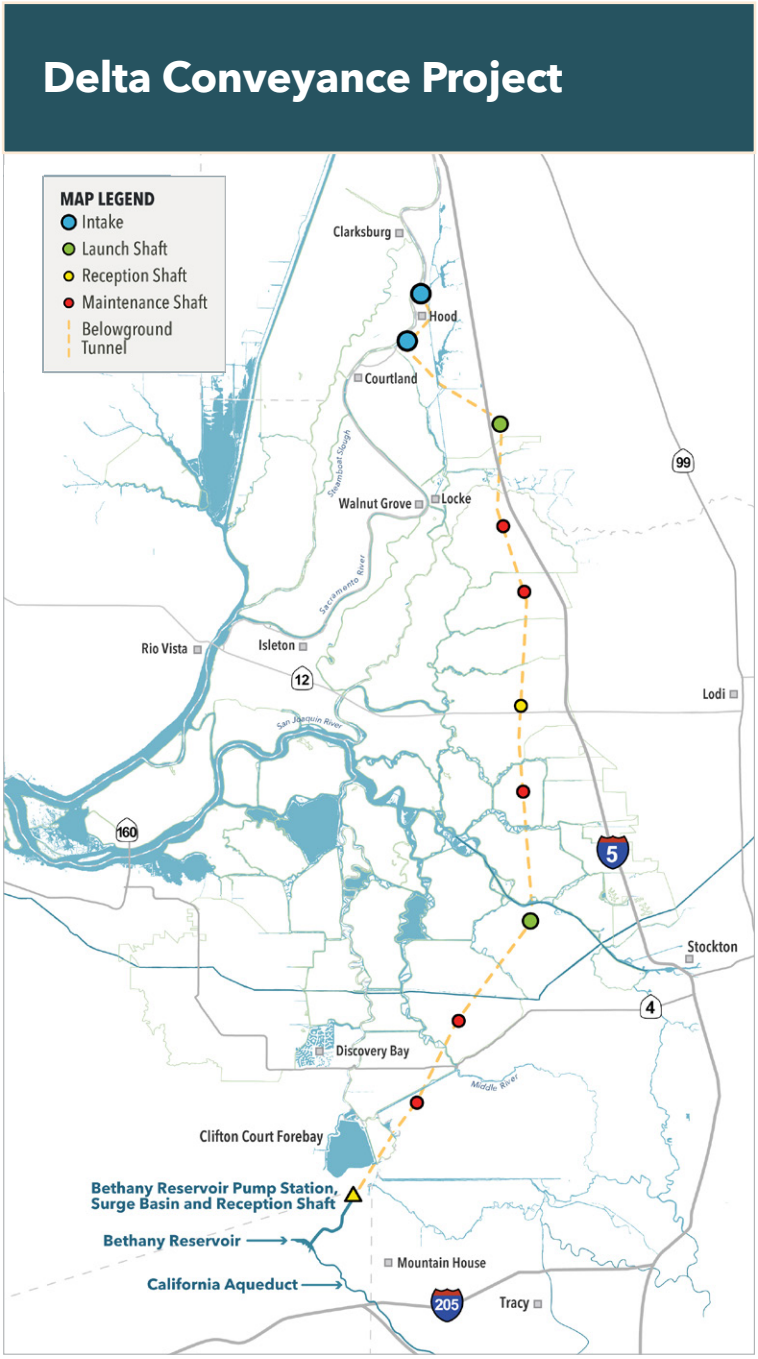
What is the Delta Conveyance Project?

The Delta Conveyance Project is a 45-mile, single tunnel system that will securely capture and move water during periods of high flow in the Sacramento River. The system, operated according to state and federal environmental standards, will deliver clean water to the State Water Project, supporting drinking water reliability for 27 million people – including 8 million in under-resourced communities – and 750,000 acres of farmland.

The Delta Conveyance Project is very different from previous proposals. It has been downsized, rerouted, and designed to minimize adverse effects to the natural and built environment. DWR led a rigorous environmental process, finalizing an Environmental Impact Report (EIR) in 2023 selecting the Bethany Reservoir Alignment as the approved project.

The Delta Conveyance Project includes the following main construction components:

- Two 3,000 cubic feet per second (cfs) intake facilities (6,000 cfs total) along the Sacramento River
- A single 45-mile-long tunnel with an inside diameter of 36 feet, constructed on the eastern side of the Delta
- Two dual launch shafts from which tunnel boring machines (TBMs) will be launched
- Six maintenance shafts which provide access to the TBMs for maintenance
- Three reception shafts from which TBMs are retrieved after completion of the boring
- One pumping plant and surge basin
- Additional facilities to support connections to existing infrastructure along the alignment, and other features such as 26 miles of new or improved roads and levee improvements, to support construction activities
- One aqueduct comprised of approximately 2.5 miles of four parallel, aboveground buried pipes with an inside diameter of 15 feet
- One new discharge structure on Bethany Reservoir



Sustainability Policy

In June 2023, the DCA Board of Directors adopted a Sustainability Policy, outlining a sustainability commitment and sustainability goals.

Sustainability Commitment

In balance with other Program goals, the DCA will consider a range of factors to maximize opportunities to deliver the Delta Conveyance Project in a sustainable manner by embedding sustainability goals and strategies from the organizational level through project implementation.

Sustainability Goals

Develop program / project plans to define objectives/metrics for design, construction

Conduct activities in coordination with regulatory and environment commitments

Regularly review and report on sustainability activities

Consider strategies to reduce energy and water consumption, conserve natural resources, and minimize waste generation

Consider community and social context and support the local economy

Understand the environmental impacts of the supply chain and project implementation choices

Prioritize health and safety for everyone: the public, DCA staff, and contractors

Defining Sustainability and Resilience

For purposes of this project, sustainability and resilience will be defined as follows:

- **Sustainability:** Optimizing opportunities to design and deliver the DCP in a manner that evaluates and reduces impacts to communities, natural systems, and local economies, in balance with other program objectives. Incorporating clean technology, low-carbon or carbon-neutral strategies, innovative engineering concepts, efficient logistics, and other factors, to the extent practicable.
- **Resilience:** Planning and designing DCP with an understanding of the risks posed by acute and chronic stresses related to climate change and other hazards. Proactively preparing to withstand, adapt, and recover from the impacts of these events to ensure continuity of service, long-term capacity of the infrastructure, and the physical and economic wellbeing of affected communities.

Sustainability Principles in Implementation

California leaders reject the notion that we have to choose between safeguarding natural resources, such as special-status species, and protecting the water supply for two-thirds of the state's population. The Delta Conveyance Project aims to do both.

Planning Process

The planning process embraces sustainability:

- **The Bethany Reservoir Alignment** was selected as the least environmentally impactful alternative
- The DCA established the **Stakeholder Engagement Committee** to meaningfully involve diverse stakeholders early in the project

Engineering Design

Engineering concepts that enhance sustainability include:

- **Innovate and refine design** to reduce amount of concrete used and soil displaced
- **Select products and materials with reduced embodied carbon** to decrease total GHG emissions associated with the DCP

Construction

Construction practices that enhance sustainability include:

- **Use innovative technologies** for typically high-impact construction activities to manage noise
- **Reuse materials, infrastructure, and roads** to decrease raw material demand and emissions from truck trips

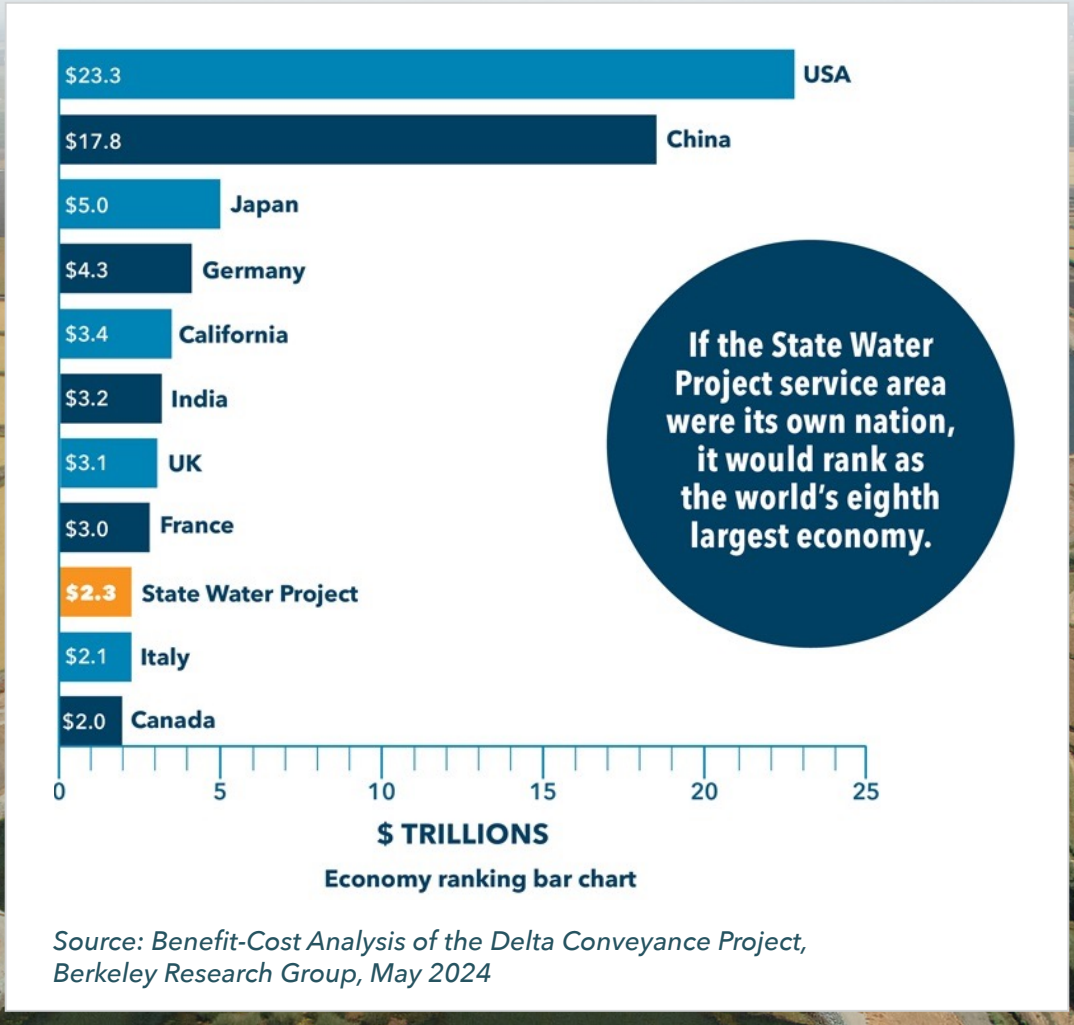
Supporting California's Economic and Social Resilience

For 60 years, the State Water Project has supported a service area with an economy currently valued at $2.3 trillion, making it the eighth largest economy in the world if it were its own nation – larger than Italy and Canada.

The Delta Conveyance Project will fortify against potential water shortages and limit the severity of service disruptions for two-thirds of Californians, including more than 8 million people in disadvantaged communities, directly affecting public health, environmental resilience, and long-term economic stability.

The long-term social implications of the Delta Conveyance Project include:

- Secures access to clean, affordable water for drinking, sanitation, agricultural, and industrial needs for households, businesses, and public institutions
- Minimizes water supply disruptions during seismic events, preventing further public health crises and economic losses
- Supports water quality, reducing public health risks of waterborne diseases and contamination
- Manages salinity levels in exported water, benefiting both residential consumers and agricultural users
- Enhances water capture and storage capabilities to bolster water supplies during periods of wet weather, which helps California adapt to prolonged droughts and extreme weather events, protecting water security for future generations
- Creates up to 5,000 high-paying jobs in construction, engineering, and project management roles, along with indirect employment opportunities in supporting industries such as manufacturing and transportation



Source: Benefit-Cost Analysis of the Delta Conveyance Project, Berkeley Research Group, May 2024

- In April, 2025 California became the 4th largest economy in the world.

The Path to Building Sustainably

As the project has progressed through conceptual design, environmental review, planning, and permitting phases, the DCA has put into motion a path to implement a meaningful, measurable Sustainability Program. Following the adoption of the DCA Sustainability Policy in 2023, the DCA is now developing a Programmatic Sustainability Plan, which will create metrics, targets, and program-wide practices. This plan will then inform Project-Level Sustainability Management Plans, that will be developed for each of the Delta Conveyance Project features, such as the intakes and the launch shafts.

DCA Sustainability Policy

- Developed and managed by DCA
- Adopted in 2023

DCA Programmatic Sustainability Plan

- Developed and overseen by DCA
- Finalized by the end of permitting

Benchmark & Set Targets

Project Sustainability Management Plans

- Developed and managed by project delivery consultant teams, per project
- Staggered based on project schedules

Measure & Report

Efforts captured and measured in the DCA Sustainability Program are intended to be inclusive. In many cases, sustainability efforts are also part of the CEQA mitigations and environmental commitments included in the Final EIR (FEIR) and/or part of permitting compliance. It is important to ensure all efforts – both mandated and voluntary – are captured.

Metrics in Development

Baseline Type:
A seriously considered project alternative, industry standard, or pre-construction condition

Metric Type:
Qualitative or quantitative

Units of Measurement:
Examples include waste in tons, acres of land, or cubic yards of soil

Target:
A realistic goal that supports project performance and decision making

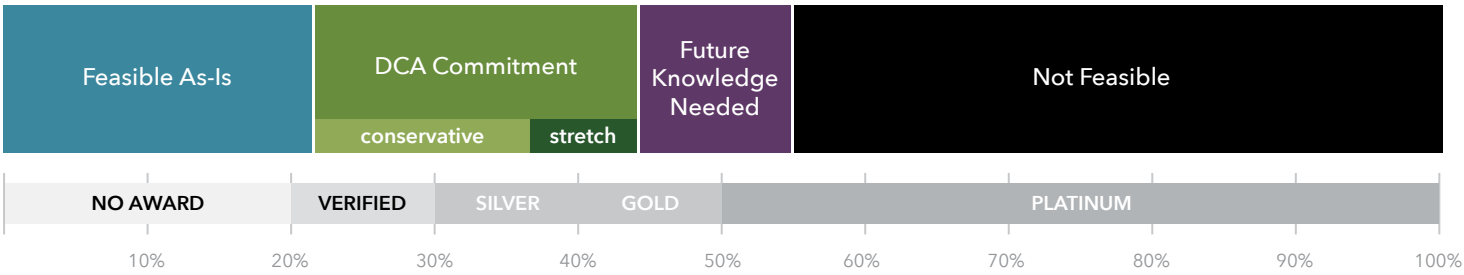
Benchmark, Set Targets, Measure & Report

The DCA uses the Envision Framework as a tool to benchmark the project across its five categories of sustainability: **Quality of Life, Leadership, Resource Allocation, Natural World, and Climate & Resilience**. These categories collectively address areas of human wellbeing, mobility, community development, collaboration, planning, economy, materials, energy, water, conservation, ecology, emissions, and resilience. These indicators have become the foundation of what constitutes sustainability in infrastructure.

The DCA has benchmarked the project's adopted environmental commitments and mitigations against Envision's 64 credit strategies, providing an early review of the project's level of achievement based on the approved project. Note this current assessment does not include engineering innovations that are already being considered, nor future plans and technology.

DCA Commitments to date are consistent with the Envision Gold Level Award; once engineering innovations are approved an implemented, the Platinum Level may be in reach.

Delta Conveyance Project Benchmarked Against Envision Framework



What is Envision?

Envision is a proven sustainability framework developed by the Institute for Sustainable Infrastructure to enhance performance and resilience of physical infrastructure by establishing guideposts for measurement and decision making.

- Evaluates a broad range of sustainability indicators across environmental, social, and economic aspects
- Uses a holistic and collaborative approach involving owners, engineers, architects, planners, contractors, and other stakeholders
- Applies to civil infrastructure projects of varying size and scope, including water distribution
- Can be used as a self-evaluation benchmarking tool or undergo third-party review and verification by the Institute for Sustainable Infrastructure. The DCA is still contemplating at what level it will utilize Envision.

ENVISION™

Institute for Sustainable Infrastructure

Environmental Mapping

DCA staff is working to align sustainability practices to Board-adopted sustainability goals. As the project is refined and the sustainability plans are implemented, the DCA will report planning, design, and construction practices utilizing visual tools to assure transparency and accountability.

Demonstrating alignment of DCP (approved design and environmental commitments) with Sustainability Policy Goals	*Sustainability Goals*								*Resilience*	
	Conserve Natural Resources	Reduce Water Use	Reduce Energy Use	Minimize Waste	Prioritize Health & Safety	Consider Community & Social Context	Support Local Economy	Materials & Supply Chain Choices	Greenhouse Gas (GHG) Emissions	Durability & Resilience
Establish Planning Phase Stakeholder Engagement Committee	■		■	■	■	■	■			
Reuse RTM and soils, reduce raw materials extraction, minimize soil transport	■		■	■				■	■	
Reduce carbon emissions by using electric construction equipment and vehicles	■		■		■	■	■	■	■	
Implement Erosion & Sedimentation Control Plans	■				■	■				
Design for 100-year operational life	■			■					■	■
Design stormwater to meet 200-year flood event					■	■				■
Use EV shuttles to reduce traffic with Park & Rides for construction employees					■	■			■	
Require low emission, fuel efficient Tier 4 diesel engines in construction equipment			■		■	■		■		
Mitigate dust and particulates from construction, trucks, and equipment using recycled water	■	■	■		■	■			■	
Create site specific construction measures to reduce air quality impacts						■	■		■	

Sustainability Principles Already Being Factored into the Delta Conveyance Project

Stakeholder Engagement Committee

In 2019 the Board directed staff to initiate a Stakeholder Engagement Committee (SEC) in an effort to elevate local voices in the conceptual design of the DCP.

The SEC was made up mostly of people who were actively opposed to the project, including local residents and business owners, representatives from non-governmental organizations (NGOs), and subject matter experts. The group met 19 times from November 2019 to December 2021. Meetings included more than 65 presentations, cultivating detailed conversations about the project, its components, design constraints, and community concerns. Discussion was documented and used to support design initiatives that have sought to minimize impacts and optimize community and environmental benefits and opportunities.

Based on comments from the SEC, the following are some of the design and logistics measures that were integrated into the proposed DCP:

- Removal of barge landings to avoid effects on Delta recreational boaters
- Changes to the intakes' construction phase cofferdam to minimize the number of impact driven sheet piles and the associated noise
- Elimination of construction traffic, except for employee shuttle buses or vans and small trucks, on Hood-Franklin Road due to traffic congestion concerns, and to minimize noise, light pollution, and air quality effects on greater sandhill crane populations and the Stone Lakes National Wildlife Refuge headquarters
- Avoidance of using levee roads for heavy construction traffic to reduce potential impacts to levees
- Relocation of the tunnel maintenance shaft from Brack Tract to Canal Ranch Tract to minimize disturbance along migration paths of greater sandhill cranes and other birds between units of the Woodbridge Ecological Reserve
- To avoid traffic congestion concerns on SR-4, no large construction trucks will be allowed between the bridges on the eastern and western sides of Victoria Island
- Modifications to Byron Highway to alleviate traffic congestion concerns

As the project team continues to refine the project, how these measures are implemented will also be aligned with sustainability and resilience principles in many cases.

The DCA SEC included up to 20 members representing a wide array of interests and geographies in the following 18 areas:

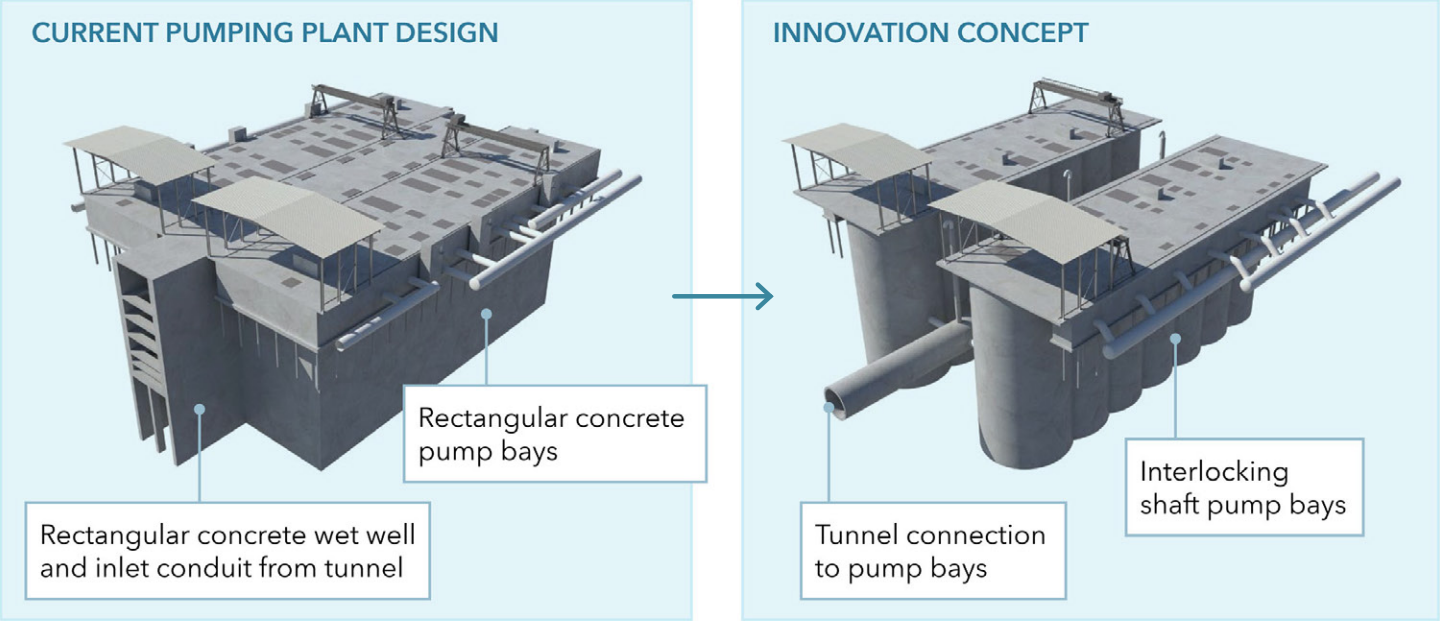
- ✓ Agriculture
- ✓ Recreation
- ✓ Sports Fishing
- ✓ Environmental NGO – Terrestrial
- ✓ Environmental NGO – Aquatic
- ✓ Environmental Justice
- ✓ North Delta Local Business
- ✓ South Delta Local Business
- ✓ Delta History & Heritage
- ✓ Tribal Government Representative
- ✓ Delta Water District
- ✓ At Large – Yolo County Resident
- ✓ At Large – Solano County Resident
- ✓ At Large – San Joaquin County Resident
- ✓ At Large – Sacramento County Resident
- ✓ At Large – Contra Costa County Resident
- ✓ Public Safety
- ✓ Ex-Officio

Smaller Project Footprint

Proposals to address conveyance, storage, and the need to modernize the State Water Project have been anticipated and conceptualized for decades. The Peripheral Canal included a large surface structure, while subsequent plans such as WaterFix included two underground tunnels.

In 2019, Governor Gavin Newsom directed DWR and DCA to to evaluate new Delta conveyance concepts to decrease impacts, using a single-tunnel model. Extensive facility siting studies were performed to develop the project alternatives that considered a wide range of factors including land use, existing infrastructure, and sensitive habitat. The selected alternative, the Bethany Reservoir Alignment, was determined to be the least environmentally impactful option, particularly as it relates to avoiding Delta waterways, minimizing disturbance to land uses and wildlife, and reducing construction and operational noise.

	Peripheral Canal (1982)	California WaterFix (2017)	Delta Conveyance Project (2023)
Conveyance	43 miles of above-ground, open channel with approximately 1,000-foot right-of-way width	Two tunnels, 35 miles each	One tunnel, 45 miles
Operation Type	Fully isolated with no through-Delta operations	Dual conveyance, allowing for through-Delta operations. North Delta Diversion prioritized	Dual conveyance, allowing for through-Delta operations. South Delta Diversion prioritized
Capacity	23,000 cfs	9,000 cfs	6,000 cfs
Number of Intakes	1	3	2
Alignment	Along east side, avoiding central Delta	Through center of Delta	Along east side, avoiding central Delta
Fish Screens	1 (addressing salmon and striped bass only) 6,000 feet long	3 intakes, linear fish screens with cleaning apparatus visible above water line 2,000 feet long	2 intakes, t-shaped fish screens, with cleaning apparatus below surface 1,500 feet long
Potential Agricultural Land Impact	Approximately 6,600 acres	Approximately 3,550 acres	Approximately 2,400 acres
Construction Traffic on SR 160	Yes	Yes	No
Forebays Needed	None, connect directly to Clifton Court forebay	Yes, 2	None, connect directly to the California Aqueduct
Number of Barge Landings	N/A	3 intakes and Victoria island	None
Tunnel Launch Shaft Sites	N/A	Located at intakes and sites away from intakes	Located away from intakes



Potential Innovations

As part of the development of the DCP Cost Estimate, DCA considered potential design and construction innovations to further reduce construction schedule, costs, and/or project footprint to improve constructability. While sustainability was not a stated goal of these innovations, many would result in improvements that would make the project more sustainable.

- **Approved Project (Baseline):** DCA engineers and environmental scientists took a conservative approach to design and construction in the Engineering Project Report (EPR) for the Approved Project, analyzing likely worst-case scenarios in the EIR
- **Project Design Innovations (Still Under Consideration):** DCA engineers have identified 19 reasonable innovations for DWR's consideration as project design and engineering progresses. These innovations have not yet been incorporated as the Approved Project goes through necessary permitting processes. However, preliminary figures estimate that these innovations could potentially further reduce construction impacts to local communities and collectively reduce the project cost by up to $1.2 billion

To select potential design innovations for further development, each innovation concept was considered through a multi-step process that included screening, ranking, and preliminary evaluation in collaboration with DWR

- Innovations generally focused on potential alternative design or construction approaches aimed at reducing overall community and environmental effects, schedule, cost, or risk
- Evaluation of all potential innovations focused on reducing construction materials, labor hours, and optimizing sequencing and construction activities to streamline the process while adhering to project requirements. Note that reducing concrete (cement) directly contributes to the decarbonization of the project by avoiding unnecessary carbon emissions

Community Benefits

Out of recognition that the water supply benefits of the Delta Conveyance Project extend across much of the state, but the impacts of construction and operation are concentrated locally in the Delta, the Delta Conveyance Project includes a commitment to a comprehensive Community Benefits Program that is distinct from but complementary to mitigation measures. Many of these concepts are anticipated to also support sustainability efforts.

The goal of the program is to develop ways to identify, fund, and implement local projects that can support Delta resilience by providing tangible, lasting, and valuable economic and social benefits to the residents, businesses, and organizations affected by the Delta Conveyance Project. In addition, a Community Benefits Program would provide opportunities for Delta communities to engage and articulate ways the Delta Conveyance Project can alleviate potential conflicts with local Delta land uses related to the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.

Examples of possible projects that could be part of the Community Benefits Program include:

- Projects falling under the categories of recreation, water and air quality, public safety and emergency response, habitat conservation, culture and history, economy, infrastructure, education and work-force development, and levee maintenance and improvement
- Economic development projects and objectives, including targeted hiring, job training, business participation programs, and scholarship programs
- Leave behind infrastructure, such as park and rides, emergency response facilities, communications lines, etc.

Moving Forward

The Delta Conveyance Project represents a critical investment in California's future, balancing the need for modern infrastructure with a commitment to sustainability and resilience. By integrating clean technology, innovative engineering, and best practices in environmental stewardship, the project aims to enhance water reliability while minimizing its ecological footprint.

Through the implementation of the DCA Sustainability Policy, the project is setting forth measurable goals and strategies to guide its planning, design, and construction. These efforts will not only reduce greenhouse gas emissions and resource consumption but also ensure that the project aligns with California's broader climate adaptation and mitigation objectives. Additionally, the emphasis on stakeholder engagement and community benefits underscores a commitment to transparency, local involvement, and long-term positive impacts for the Delta region.

As the project moves forward, the DCA will continue to refine and expand sustainability initiatives, measure and track progress through rigorous metrics, and report on outcomes to maintain accountability. By prioritizing resilience, environmental responsibility, and social equity, the Delta Conveyance Project is working to safeguard natural resources and local communities while securing a reliable water supply for future generations.

DELTA CONVEYANCE **DESIGN**
& CONSTRUCTION AUTHORITY

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