



San Diego's **PureWater** Program

The City of San Diego is a leader in the potable reuse industry – the City is implementing a complex water reuse program that addresses both San Diego's water and wastewater challenges.

The Pure Water San Diego Program is a phased, multi-year program that uses proven technology to produce a safe, reliable and cost-effective water supply for the City.

At full implementation in 2035, the Pure Water Program will provide 1/3 of San Diego's water supply locally and will reduce the City's ocean wastewater discharges by 1/2.

the Program

The Pure Water San Diego Program (Pure Water) is a safe, reliable and cost-effective investment for the City of San Diego (City). It provides multiple benefits for San Diego residents:



Environmental

Pure Water will decrease the amount of ocean discharges by maximizing the amount of water the City reuses.



Financial

Pure Water will lessen the impacts of rising imported water costs and will save the City \$1.8 billion in upgrades to its wastewater treatment system.



Reliability

Because Pure Water is locally produced and controlled, it increases the reliability and resiliency of the City's water supply.

why

The City faces two considerable water challenges:

- 1. Lack of Local Control Over its Water Supply:** 85% of the City's water must be imported from the Colorado River and Northern California Bay Delta. The cost of imported water has tripled in the last 15 years and is expected to continue to rise. The lack of local control will have significant water cost impacts in the future and leaves San Diego's water supply vulnerable to droughts, climate change and natural disasters such as earthquakes.
- 2. Unique Regulatory Arrangement for Point Loma Wastewater Treatment Plant (Point Loma):** Due to Point Loma's comprehensive industrial source control, deep ocean outfall and ocean monitoring program, the U.S. Environmental Protection Agency and the San Diego Regional Water Quality Control Board have granted San Diego modified permits for the last 20 years, allowing the City to continue operating Point Loma at an advanced primary treatment level. A demonstrated reduction in wastewater discharges is a vital part of securing the City's next permit. Without the permit, the City would need to spend \$1.8 billion to upgrade Point Loma to secondary treatment and would produce no new water.





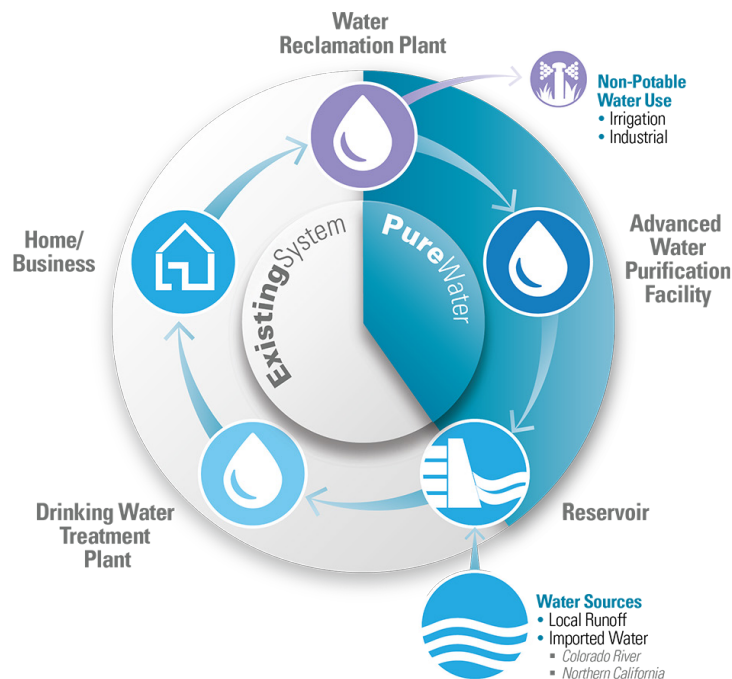
Did you know? From 2009-2013, the City conducted a number of studies to determine the feasibility for a full-scale Pure Water Program. This included the construction and operation of the 1-million-gallon-per-day (mgd) Demonstration Advanced Water Purification Facility.

The results? More than 28,000 water quality tests confirmed the advanced water purification process reliably meets all federal and state drinking water standards. The State Water Board and Division of Drinking Water granted conditional approval of the concept in 2012 and 2013.

how

With San Diego's existing water system, around 8% of the water leaving homes and businesses is recycled; the rest is treated at Point Loma and discharged into the ocean.

The Pure Water Program will direct wastewater flows away from Point Loma to the City's water reclamation plants for treatment. From there, most of the recycled water will be sent to advanced water purification facilities. The resulting purified water will then be conveyed to a reservoir where it will be blended with the City's imported water supplies before it is treated again at one of the City's standard drinking water treatment plants and distributed to consumers throughout the City.



where&when

The Pure Water Program will be implemented in two phases over a 20-year period. The facilities are grouped into geographical areas to facilitate delivery: North City, Central Area and South Bay. The North City projects will be the first group of projects completed, with construction beginning in 2019.

Phase 1 North City

- Completion: 2021
- Pure Water Production: 30 mgd
- Additional Reduction in Point Loma Ocean Discharges: ~45 mgd
- Pure Water Delivered to San Vicente or Miramar Reservoir



Phase 2 Central Area & South Bay

- Completion: 2035
- Pure Water Production: 53 mgd
- Additional Reduction in Point Loma Ocean Discharges: ~55 mgd
- Pure Water Delivered to San Vicente or Lake Murray via Central Area
- Pure Water Delivered to Lower Otay Reservoir via South Bay (as needed)



WRP = Water Reclamation Plant
AWPF = Advanced Water Purification Facility
WWTP = Wastewater Treatment Plant

the Benefits

The City planned the Pure Water Program in order to maximize benefits to its residents and the environment. There are three primary types of benefits that Pure Water offers: environmental, financial and reliability.

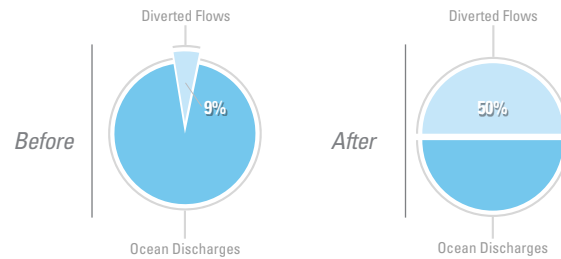


environmental

From decreasing ocean discharges to maximizing water reuse, Pure Water focuses on sustainability and environmental protection.

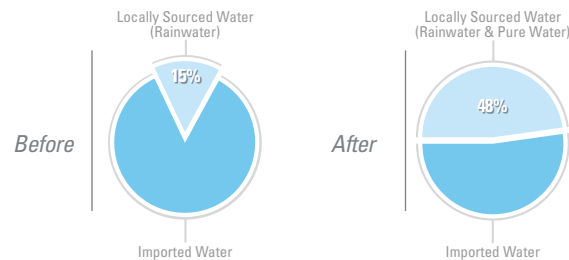
50% Reduction in Ocean Discharges

Pure Water decreases ocean discharges by approximately 100 mgd by maximizing the amount of water that is reused. This is a 50% reduction in future ocean discharges.



83 mgd of Pure Water

The Pure Water Program reduces the City's reliance on imported water from the Colorado River and the Northern California Bay Delta.



Environmental Commitments Accelerated

The City made three Pure Water flow commitments to local environmental groups; however, we are accelerating Pure Water delivery goals to achieve faster results.

Original Program Goals

| | Output | Location |
|---------|---------------------------|--------------|
| Phase 1 | 15 mgd by 2023 | North City |
| Phase 2 | Additional 15 mgd by 2027 | South Bay |
| Phase 3 | Additional 53 mgd by 2035 | Central Area |
| Total | 83 mgd | |

Accelerated Program Goals

| | Output | Location |
|---------|---------------------------|--|
| Phase 1 | 30 mgd by 2021 | North City |
| Phase 2 | Additional 53 mgd by 2035 | Central Area South Bay (as needed) |
| Total | 83 mgd | |



Pure Water Benefits = Local Support

Pure Water's award-winning education and outreach program has helped inform the public about the benefits of Pure Water, increasing local support. Outreach activities include tours of the demonstration plant, presentations, social media pages, event participation and youth and college engagement programs. Nearly 10,000 people have toured the Demonstration Advanced Water Purification Facility.



Nearly 75% of San Diegans support adding purified water to the drinking water supply.



Pure Water is supported by San Diego's environmental community, which includes San Diego Coastkeeper, Surfrider Foundation, Coastal Environmental Rights Foundation and San Diego Audubon Society.



Pure Water is supported by San Diego's business community, which includes the San Diego County Taxpayers Association, Regional Chamber of Commerce and Regional Economic Development Corporation.



In November 2014, the San Diego City Council voted unanimously to proceed with the Pure Water Program.



financial

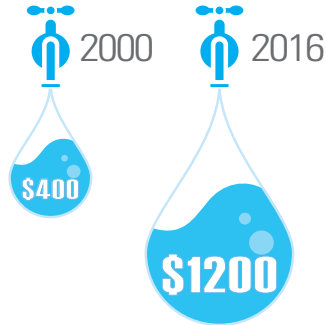
Pure Water helps lessen the impacts of rising imported water costs and solves multiple challenges with one investment.

\$1.8B in Point Loma Upgrades Avoided

Pure Water mitigates the need to upgrade Point Loma, which would be very costly and does not provide a new, reliable water source.

Imported Water Costs Offset

Pure Water lessens our reliance on imported water, which has tripled in cost over the last 15 years. These costs are expected to continue to rise in the next few decades.



Imported water cost per acre-foot



reliability

Because Pure Water is locally produced and controlled, it increases the reliability and resiliency of the City's water supply.

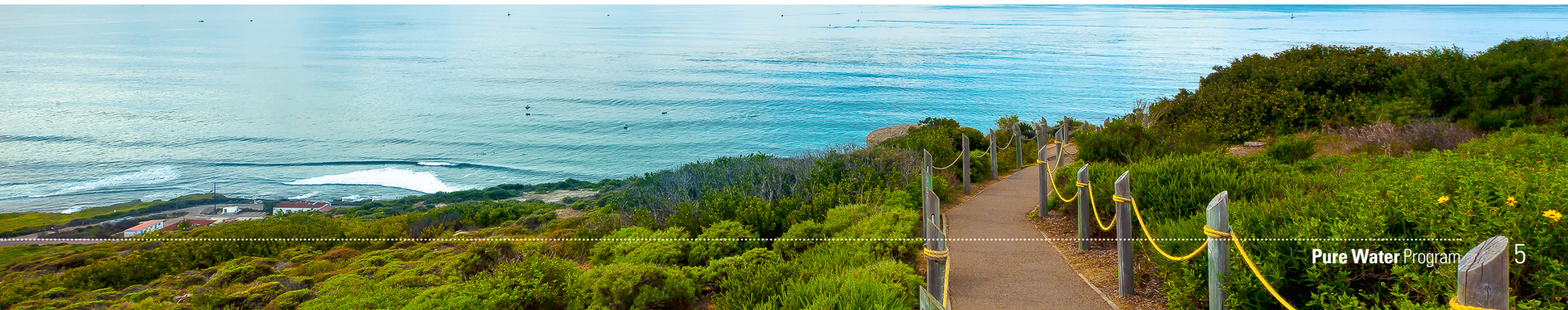
33% of City's Water Supply Created

Pure Water will account for 83 mgd, or 1/3 of the City's water supply. This means that Pure Water is:

Resilient: Pure Water helps mitigate the effects of natural disasters, such as earthquakes, by providing a local water source.

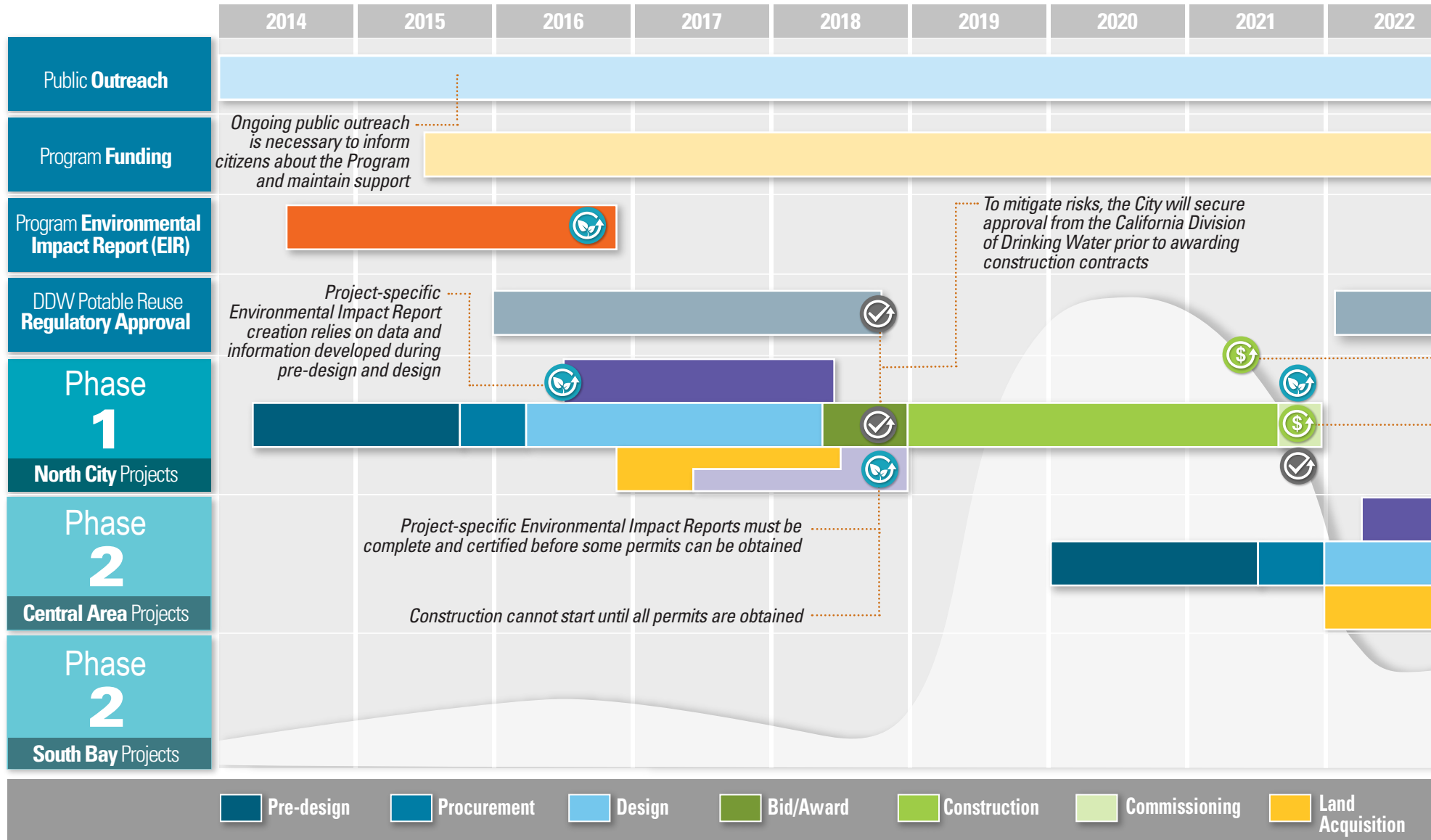
Drought Proof: Pure Water will be available regardless of drought or rain, making it a consistent water source for San Diego.

Locally Controlled: Because Pure Water is locally produced and controlled, it is not subject to heightened competition for limited water resources.



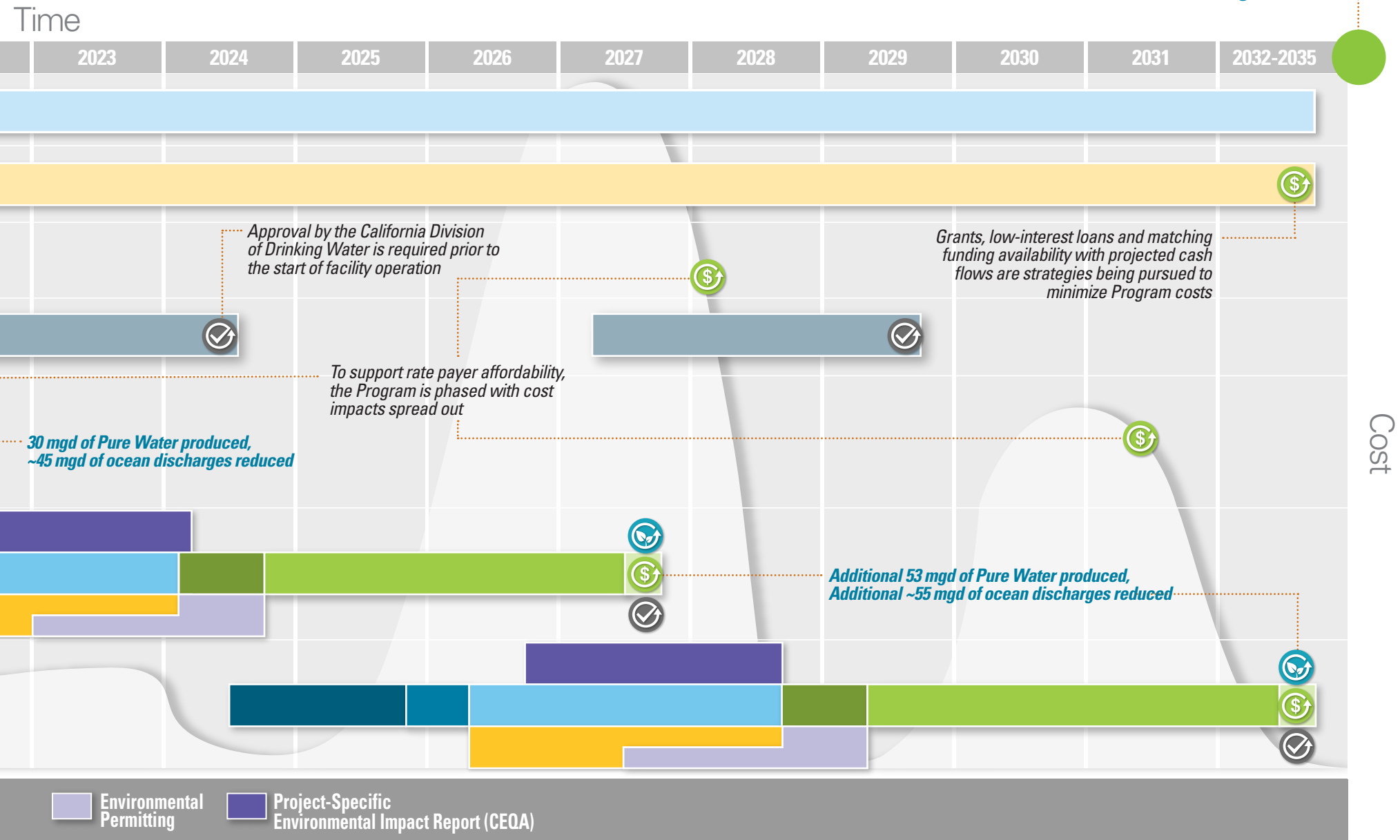
the Path

The path to successful program completion is complex. Nearly all delivery tasks are interconnected and the start date of one task often times depends on the completion of another task. These interconnected tasks drive the program schedule. The main drivers of the Pure Water Program schedule are 1) regulatory approvals, 2) environmental tasks such as California Environmental Quality Act compliance and 3) cost impacts to ratepayers.



* The schedules shown are for illustration purposes only; the Phase 2 implementation schedule has yet to be finalized.

Successful Program Completion!
83 mgd of Pure Water produced,
50% reduction of ocean discharges





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The City of San Diego is committed to the Pure Water Program to ensure a reliable water future for San Diego residents.

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Want to Know More?

Visit www.PureWaterSD.org and sign up for a free tour of the Advanced Water Purification Facility!



Pure Water San Diego



PureWaterSD



@PureWaterSD

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