

IN CASE YOU MISSED IT (ICYMI): SWIP IS FIRST OF ITS KIND



ICYMI: Santa Monica, California, recently celebrated the opening of a first-of-its-kind advanced water treatment and recycling facility that adds a drought-resilient water supply of up to 1,600 acre-feet per-year of purified water, or roughly 10% of the city's total water supply.

Kiewit Infrastructure West Co. led construction efforts on the project, known as the Sustainable Water Infrastructure Project (SWIP).

You can learn a lot about SWIP by learning a few more acronyms. Get to know some interesting details about this unique project and add a few terms to your vocabulary.

WHAT IS THE SUSTAINABLE WATER INFRASTRUCTURE PROJECT (SWIP)?

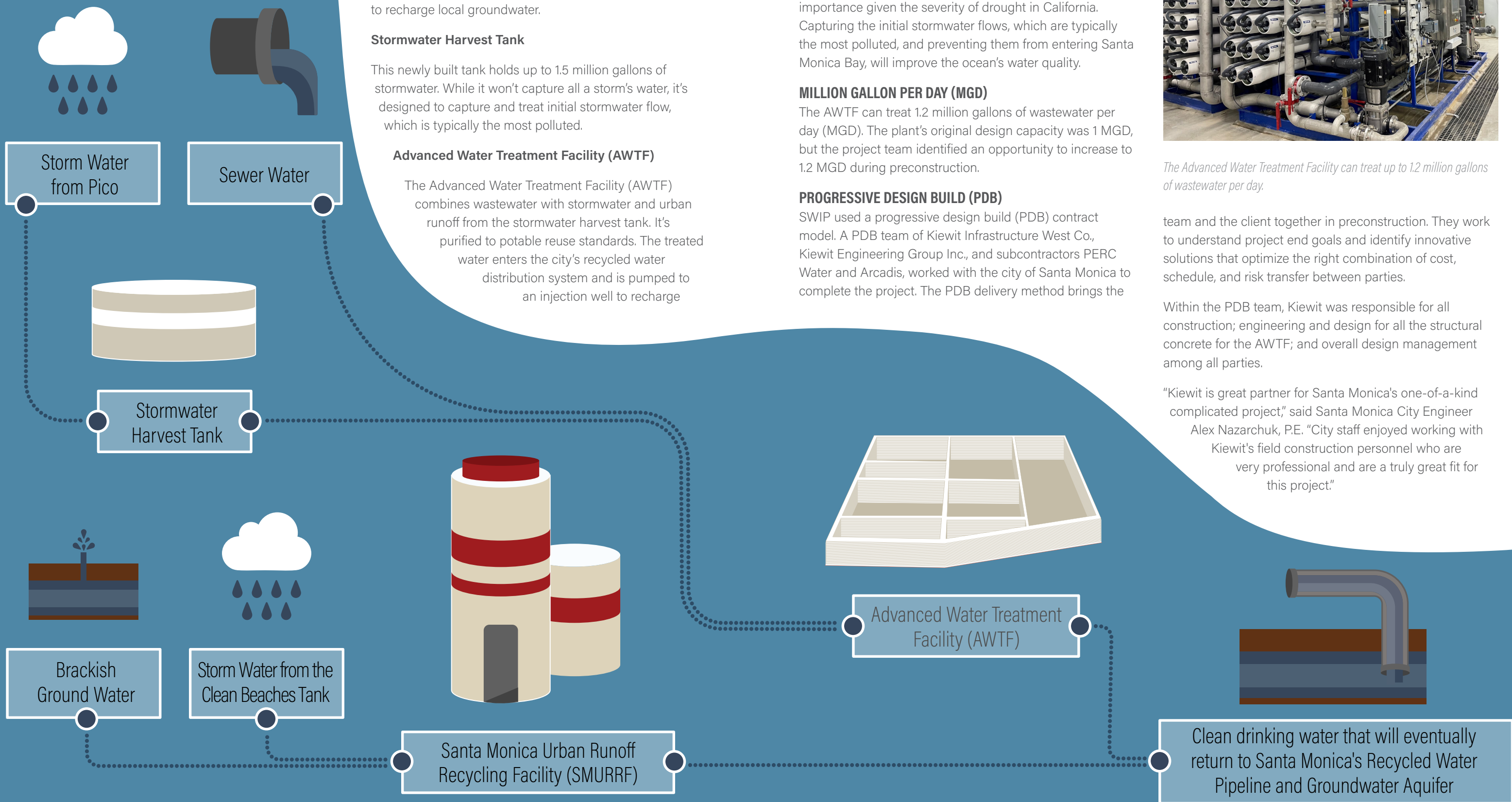
SWIP is the city's \$96 million project for its stormwater harvesting and advanced water treatment and recycling facility that collects, treats, and combines brackish groundwater, stormwater, dry weather urban runoff and municipal wastewater to restore local groundwater supplies. It is the first stormwater harvesting project in California to meet potable reuse standards and directly inject the treated stormwater into the groundwater aquifer.



1. Regional officials celebrate the opening of SWIP at a ribbon-cutting ceremony. 2. This photo shows the completed Advanced Water Treatment Facility, or what's visible of it from the streets of Santa Monica. Due to its proximity to the beach, parking couldn't be eliminated to make way for the facility, so building the plant underground at the site of an existing parking lot was the best option. Now that the facility is complete, there's still a parking lot in the same location.



A droplet's journey



SWIP INCLUDES THREE MAJOR COMPONENTS.
Santa Monica Urban Runoff Recycling Facility (SMURRF)

This project upgraded the existing Santa Monica Urban Runoff Recycling Facility (SMURRF). From here, treated stormwater will be distributed to the city's recycled water system and eventually injected into the groundwater basin to recharge local groundwater.

Stormwater Harvest Tank

This newly built tank holds up to 1.5 million gallons of stormwater. While it won't capture all a storm's water, it's designed to capture and treat initial stormwater flow, which is typically the most polluted.

Advanced Water Treatment Facility (AWTF)

The Advanced Water Treatment Facility (AWTF) combines wastewater with stormwater and urban runoff from the stormwater harvest tank. It's purified to potable reuse standards. The treated water enters the city's recycled water distribution system and is pumped to an injection well to recharge

the local groundwater supply. It is the first below-grade AWTF designed to treat raw wastewater and stormwater to groundwater recharge standards all within one facility.

SWIP allows Santa Monica to manage its water supply using sustainable and environmentally friendly methods. Treating stormwater and wastewater to reuse standards diversifies the city's water portfolio. That has significant importance given the severity of drought in California. Capturing the initial stormwater flows, which are typically the most polluted, and preventing them from entering Santa Monica Bay, will improve the ocean's water quality.

MILLION GALLON PER DAY (MGD)

The AWTF can treat 1.2 million gallons of wastewater per day (MGD). The plant's original design capacity was 1 MGD, but the project team identified an opportunity to increase to 1.2 MGD during preconstruction.

PROGRESSIVE DESIGN BUILD (PDB)

SWIP used a progressive design build (PDB) contract model. A PDB team of Kiewit Infrastructure West Co., Kiewit Engineering Group Inc., and subcontractors PERC Water and Arcadis, worked with the city of Santa Monica to complete the project. The PDB delivery method brings the



The Advanced Water Treatment Facility can treat up to 1.2 million gallons of wastewater per day.

team and the client together in preconstruction. They work to understand project end goals and identify innovative solutions that optimize the right combination of cost, schedule, and risk transfer between parties.

Within the PDB team, Kiewit was responsible for all construction; engineering and design for all the structural concrete for the AWTF; and overall design management among all parties.

"Kiewit is great partner for Santa Monica's one-of-a-kind complicated project," said Santa Monica City Engineer Alex Nazarchuk, P.E. "City staff enjoyed working with Kiewit's field construction personnel who are very professional and are a truly great fit for this project."



Kiewit's workforce on the project peaked at 13 staff and nearly 70 trade craft employees. Subcontractors brought the total craft workforce to nearly 100.

Kiewit Project Manager Arturo Kaloyan will remember SWIP for the great team effort between the PDB team and the city of Santa Monica.

"We had a really good project team, one where we all worked together toward a common goal," Kaloyan said. "When we had hiccups, we took a collaborative approach to ensure the success of the project. We had a lot of fun doing a really successful job."

COVID-19 - YES, THAT'S TECHNICALLY AN ACRONYM

SWIP's construction ran from 2020 to 2022, during the peak of the COVID-19 pandemic. The project was designated as essential work, so construction continued.

Santa Monica's economy centers on tourism. City streets were mostly empty during the worst of the pandemic. As a result, the city allowed construction to open street work earlier and with less restrictions than planned. This accelerated the project schedule and minimized impacts to the public.

"Working together through hard times during the pandemic helped solidify the teamwork between us — the city, our engineering partners and Kiewit," said Project Sponsor Julien Jeannel. "The strong team we developed during the early months of the pandemic ensured we could successfully meet any challenges we encountered in the future."

RECOGNIZED FOR OUTSTANDING WORK

In early 2023, SWIP applied for Envision Platinum distinction. The Institute for Sustainable Infrastructure oversees Envision certifications, which recognize the sustainability and resiliency of civil infrastructure. Platinum is the highest distinction.

Sustainable construction practices are criteria considered for Envision certification. On SWIP, this included:

- Balancing earthwork — By stockpiling the material that was excavated onsite for later use as backfill dirt, more dirt didn't have to be imported to the site. This eliminated truck trips and the associated air emissions, noise and wear on city streets.
- Waste diversion
- Mitigation of fugitive dust and sound pollution

The American Public Works Association (APWA) Southern California Chapter named SWIP its Best Project of the Year Award recipient for Water/Wastewater Projects \$50 million to \$100 million. The American Council of Engineering Companies (ACEC) California Chapter presented SWIP its Honor Award, recognizing engineering excellence. SWIP is now a contender for national-level awards from both organizations. **K**

