

# California Natural Resources Agency takes a sustainable approach



Water is precious, and the California Department of Water Resources (DWR) works to sustainably manage the state's water resources to benefit the people and protect, restore, and enhance the environment.

## OVERVIEW

Company	California Natural Resources Agency
Industry	Government and Non-Profit
Products Used	AP43, Wi-Fi Assurance, Marvis VNA, QFX10008 and QFX10016, QFX5120, EX4300, MX204, Contrail Service Orchestration
Region	Americas

## CUSTOMER SUCCESS AT-A-GLANCE

**Over \$1Million**

saved in network operating expenses in building a shared network infrastructure for its many Agency tenants

**36**

California Natural Resources Agency entities are supported by the new data center, which include 2500 business

**80%**

increase in data center network capacity

**1**

day to refresh IP fabric across data center and headquarters network

### CHALLENGE

## Build the digital roots for 36 natural resource agency entities

“DWR is the technical custodian of the connectivity and communications ecosystem for all the California Natural Resource Agency entities,” says Tim Garza, technology director, California Natural Resources Agency and CIO, California Department of Water Resources.

When DWR’s leadership set out to modernize the IT infrastructure to improve the staff experience and meet a new state mandate, they disrupted the status quo. “We left old-school government thought processes behind,” says Sarb Takhar, CTO of California Natural Resources Agency and CTO, California Department of Water Resources. “We looked at how we would design the data center and office networks as if we were a Fortune 500 corporation.”

A state mandate to enhance business resilience led to the creation of a new Level 3 data centers in Northern California. The data center move coincided with the development of a 20-story building in



downtown Sacramento, which would be home to the Natural Resources Agency, Parks and Recreation, Fish and Wildlife, Water Resources, California Conservation Corps, and others. The networks for nine different organizations were consolidated into one.

These two massive projects were underway when the state issued strict stay-at-home orders to protect against the initial spread of COVID. The work, from design to production, was completed in 13 months.

## SOLUTION

### AI-driven networking brings scale and agility

“We designed a new data center with greater capacity and capabilities, including AI, for today and the future,” says Jim Cooley, Senior Network Engineer at DWR, who was the lead architect for the data center and campus networks.

Business continuity is strengthened across the departments, conservancies, and other entities of the Natural Resources Agency. The data center and new headquarters use an IP network fabric, comprised of EVPN/VXLAN for the overlay network and Juniper QFX10000 Switches for the underlay network, to deliver greater performance, agility, and scalability.

“The data center and campus network design is one of the most innovative in state government, giving us both flexibility and optimization,” says Garza.

The user experience is transformed for the 4200 staff at the new Sacramento building and across the state of California. Juniper access points provide fast, reliable Wi-Fi, while Juniper EX Series Switches provide campus core and access switching.

“We can update the wireless in all of our Southern and Northern California offices in less than an hour,” says Cooley. “Previously, it would have taken us two or three weeks.”

Juniper cloud services also transformed campus network operations, with AI that automates key tasks and proactively addresses networking issues before they impact service levels. IT has detailed insight into user, device, traffic, and application behavior and traffic patterns. “Mist AI helps reduce our mean time to repair when tracing endpoint problems,” says Cooley.

The DWR team manages the enterprise network through the Mist portal, including seamless Wi-Fi management. Additionally, Juniper Contrail provides automated network orchestration and control over the Resources Agency data center fabric.

## OUTCOME

### Sustainable IT outcomes align with agency’s mission

DWR sees sustainability advantages with Juniper networking, which aligns with the agency’s mission. The team reduced power consumption at its data center and other facilities, with AI knowing when to lower output.

“We have saved over \$1 million in operational time and effort,” says Takhar. “We can prevent problems, and we have better capacity, capabilities, and sustainability of the components.”

The new building in Sacramento is zero net energy and LEED Platinum certified. “The way we engineered the network, it requires less power and our carbon footprint is lower,” says Cooley.

AI-driven operations deliver value in surprising ways. “One return on value that people don’t talk about is that AI operations helps us cultivate younger engineers as they are effective in a shorter time,” says Takhar.

**“Having a single network platform ecosystem allows us to reduce capital expenditures and operational overhead, and expand capabilities, and increase sustainability. This is what Juniper provides.”**

**Sarb Takhar**  
CTO, California Natural Resources Agency and CTO, Department of Water Resources

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