

Nature-based solutions for a climate smart future

“ We live in a climate emergency and must accelerate our efforts to combat it.”

– San José Mayor Sam Liccardo

THE CLIMATE CRISIS REQUIRES OUR IMMEDIATE RESPONSE

The climate crisis has been recognized by governments worldwide – including Climate Emergency Declarations by the State of California, County of Santa Clara, and City of San José – all calling for swift, coordinated action to avoid even more extreme impacts.

We are running out of time to create a climate smart future.

Nature-based solutions are an important tool to address the climate emergency by helping meet climate goals, mitigate effects of climate change, increase resilience, and address inequities and other community priorities. Work in the Santa Clara Valley can serve as a model for the kinds of actions we must take now.



NATURE-BASED STRATEGIES ARE EFFECTIVE AND EFFICIENT

Protecting natural and working lands **avoids greenhouse gas (GHG) emissions**. For example, vehicle miles traveled (VMT) are expected to increase in the City of San José through 2040. However, the City is proposing to take actions such as redirecting growth away from Coyote Valley and into transit-oriented infill development, a move that would avoid 1.5 million VMT (relative to the current general plan) and more than 600,000 metric tons of CO₂ equivalent (MTCO₂e) by 2040 (Climate Smart San José *Natural and Working Lands Element Technical Report*, 2021).

Restoring and managing natural and working lands is one of the least expensive ways to **sequester carbon from the atmosphere** (Lawrence Livermore National Labs) and provides valuable ecosystem services like improved air and water quality, water quantity, wildlife habitat, recreation, and other benefits. For example, land restoration and enhanced land management across San José's natural and working lands could sequester over 9% (6.9 million metric tons CO₂ equivalent) of the City's emissions between now and 2040, and would continue to sequester significant amounts of atmospheric carbon for decades after that (Climate Smart San José *Natural and Working Lands Element Technical Report*, 2021).

“ Nature-based solutions are actions that work with and enhance nature to help address societal challenges. This recognizes that healthy ecosystems provide benefits on which human well-being depends.”

– CA Natural Resources Secretary Wade Crowfoot



Redirecting growth to infill avoids GHG emissions



Open space sequesters carbon and increases climate resilience



Protected, connected habitat supports biodiversity and adaptation



Restored floodplains offer natural flood protection and clean water supply



Investments in resource protection provide green jobs



Farms and ranches benefit local food security



Open space and trails promote equitable public health and wellbeing





Photo: Derek Neumann

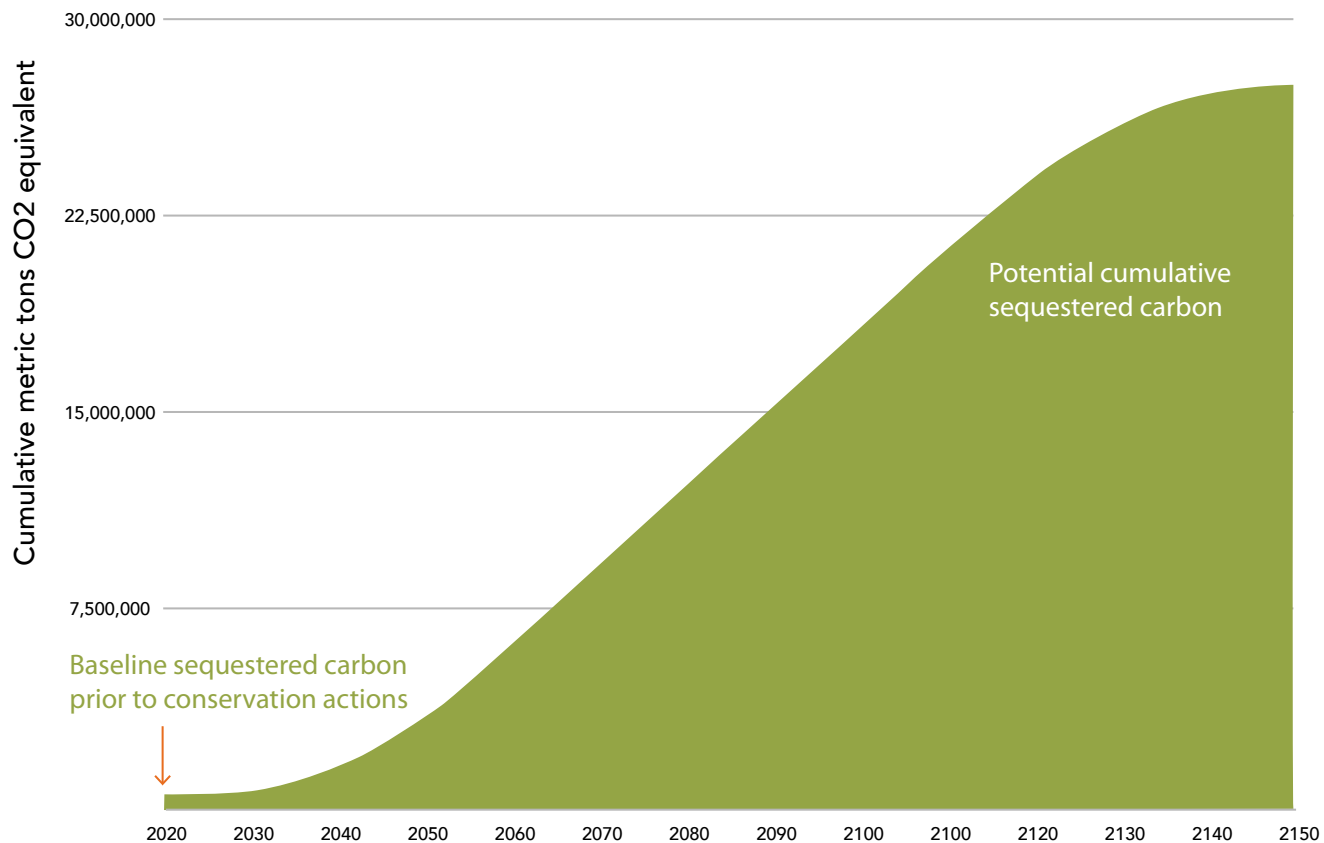


Photo: David Mauk

Cumulative carbon sequestration grows significantly over time. This graph shows the cumulative results of large-scale restoration and carbon farming opportunities in Coyote Valley in 2020, sequestering over 27 million metric tons of CO₂ equivalent, more than 5x the annual amount of greenhouse gases currently emitted by the City of San José.

Data and graph from Woodsong Associates analysis for the San José /Santa Clara Climate Resilience Credits Program.

Coyote Valley Carbon Sequestration Potential



The climate smart future of Coyote Valley, at the southern edge of San José, is being created with a mix of public and private funding, a long list of partners, coordinated land use policy updates, and regional planning to protect and restore natural and working lands as an investment for the entire Santa Clara Valley.

An innovative public-private partnership led by the Santa Clara Valley Open Space Authority, Peninsula Open Space Trust (POST), and the City of San José is helping redirect growth from Coyote Valley, which the state declared a resource of statewide significance in 2019 ([AB 948, Kalra](#)), by permanently protecting nearly 1,500 acres of open space.

Coyote Valley serves as a model of how landscape-scale nature-based solutions can provide significant benefits and help create a climate smart future.

- **Redirecting growth from Coyote Valley** into the Google Village project in downtown San José **cuts vehicle miles traveled in half** for each worker, resulting in 10 million fewer miles driven each year (the equivalent of 14,000 MTCO₂e) while **supporting reinvestment and economic development** in an underutilized transit oriented corridor ([Urban Footprint](#)).
- **Continued public and private investments** through **innovative funding** programs like San José's Measure T, a \$650M infrastructure bond that included \$50M for land acquisition for the purposes of protecting natural infrastructure in Coyote Valley, are accelerating efforts to implement nature-based solutions at the scale necessary to address climate change.
- **Restoration of the Laguna Seca wetland and Fisher Creek floodplain** can provide natural **flood protection**, reducing peak flood flows in vulnerable communities along Coyote Creek up to 9% and delaying flood peaks up to 3 hours ([Coyote Valley Water Resource Investment Strategy](#)).
- **Land use policies and incentive programs** such as Santa Clara County's new Climate Change Overlay Zone in Mid- and South Coyote Valley will support **local agriculture and healthy food supplies**, increase **food security**, and offer incentives to landowners that bolster our agricultural economy and promote agricultural practices that **sequester carbon**.
- **Investments that support wildlife movement** and habitat restoration will reestablish **safe movement corridors and habitat** that allow plants and animals to adapt to climate change. Local conservation partners and the California High Speed Rail Authority are planning wildlife crossings at ten locations along the Monterey Highway corridor.
- **Open space and trails** will be carefully sited and connected to transit to provide **equitable access** to nature-based education and exercise.
- **Respectful engagement with indigenous communities** will help tribal partners apply their **traditional ecological knowledge and cultural stewardship** practices to restore the landscape and provide climate resilience.
- **Resource protection and restoration** can promote **green jobs and workforce development**. Climate resilience investments provide roughly \$2 in economic output for every \$1 invested (Bay Area Council Economic Institute, [Linking the Environment and the Economy](#)). Each \$1M invested in wildfire/forest health, water, coastal resilience, and extreme heat/community resilience projects, produces some 12 to 16 full-time equivalent jobs.
- **The Coyote Valley Conservation Areas Master Plan** will engage communities to create a **roadmap for the future** of Coyote Valley's conserved lands. The Plan will be managed by the Santa Clara Valley Open Space Authority in partnership with POST and the City of San José.

THERE IS SUPPORT FOR INVESTMENTS IN NATURE-BASED SOLUTIONS

A number of state and local **policies**, cross-jurisdictional **partnerships**, and public and private **funding** support using nature-based solutions to create a climate smart future.

POLICIES

STATE-LEVEL POLICIES

Many state policies support investments in nature-based solutions – for example, Governor Newsom’s **30x30 Executive Order** sets the goal of protecting, respectively, at least 30% of the state’s lands and waters by the year 2030, enlisting natural and working lands in the fight against climate change.

The California Natural Resources Agency (CNRA) **Natural and Working Lands Climate Smart Strategy** works in conjunction with the 30x30 target by employing nature-based solutions that deliver on climate mitigation goals and other critical priorities, such as improving public health and safety, securing our food and water supplies, and increasing equity. The CNRA’s **Cutting Green Tape** initiative seeks to catalyze land conservation and restoration actions that address climate change by reducing permitting requirements and streamlining approval processes.

SB 27 Carbon Sequestration: State Goals: Natural and Working Lands (Skinner, 2021) directs the California Air Resources Board to include carbon sequestration targets for 2030 and beyond in the next **AB 32 Climate Change Scoping Plan**. It also requires the CNRA to establish carbon

“California’s beautiful natural and working lands are an important tool to help slow and avert catastrophic climate change.”

– CA Governor Gavin Newsom

sequestration goals for natural and working lands by July 2023, create a registry of natural and working land carbon sequestration projects for potential public and private investment, and track the

carbon benefits of the projects. Local entities will have opportunities to submit their natural and working land carbon sequestration projects for state funding consideration.

Investments in climate resilience provide significant employment and economic stimulus, including jobs across the wage spectrum, according to [Linking the Environment and the Economy](#), a report from the Bay Area Council Economic Institute.



COUNTY AND CITY-LEVEL POLICIES

Some city and county land use and related policies also consider the role of nature-based solutions for climate adaptation and mitigation; **there is great opportunity for continued leadership.**

In Coyote Valley – which includes lands both within the City of San José and unincorporated lands in Santa Clara County – the City and County are considering coordinated land use policy updates (for adoption fall 2021) that promote a climate smart future for the region.

The City of San José is taking steps towards amending its General Plan to reallocate some 35,000 planned jobs from Coyote Valley to downtown San José. By allowing for denser infill development in urban areas, the City can “downzone” natural and working lands in Coyote Valley to Agriculture and Open Space, effectively stopping sprawl while still meeting economic development goals. The City is now exploring an environmental credits program that could create new funding streams for land conservation and restoration in Coyote Valley, while also facilitating development in infill locations.

The County of Santa Clara is meanwhile implementing recommendations from the Santa Clara Valley Agricultural Plan by adding a “Climate Change Overlay Zone” that will require development to be compatible with agricultural uses in order to preserve resources and reduce greenhouse gas emissions. In parallel, the County intends to pilot new agriculture preservation tools and incentive programs that are being considered in the County and Open Space Authority’s forthcoming Agricultural Preservation Strategy.

These strategies cover the spectrum from direct land conservation to public engagement to bold local land-use policy. Together, they prevent sprawl by guiding growth to the urban core, where it not only reduces emissions but also more equitably serves future residents, who are then nearer to transit and other urban services.

“Protecting agricultural lands in our county helps us address the growing needs for food security, especially in our most vulnerable communities.”

– Santa Clara County Supervisor Cindy Chavez

Urban nature-based solutions can help close equity gaps. Planting trees reduces temperatures in urban neighborhoods, **protecting vulnerable communities** from disproportionate impacts of extreme heat events, saving energy while also providing multiple benefits like **sequestering carbon, capturing stormwater, and improving air quality.**

A recent study by the San Francisco Estuary Institute ([*Integrating Planning with Nature*](#)) estimated that it is possible to double or triple tree canopy in Bay Area urban neighborhoods and suburbs, mitigating rising temperatures while also leaving room for more housing for residents.



PARTNERSHIPS

Collaboration, especially across multiple jurisdictions and economic sectors, helps ensure that projects meet multiple community goals, build on organizational strengths, and address issues at a regional level. In particular, the integration of urban and rural planning has the power to amplify and reinforce the benefits in each region.

For example, in November 2019, 937 acres in Coyote Valley were permanently protected through collaboration of the Santa Clara Valley Open Space Authority (the Authority), Peninsula Open Space Trust (POST), and the City of San José. The \$93.46 million acquisition deal was funded in part by the City's 2018 infrastructure bond, Measure T, which set aside \$50 million for the purposes of conserving natural floodplains and sensitive groundwater areas in Coyote Valley for the benefit of vulnerable communities downstream.

The Authority, POST, and the City are now working in partnership to develop a Groundwater Sustainability Assessment Process to ensure that the water needs of groundwater-dependent ecosystems in Coyote Valley are considered during operation of the City's nearby municipal groundwater wells. This work is being done in coordination with Valley Water, which is examining how its aquifer management activities steward groundwater-dependent ecosystems such as those in Fisher Creek and Laguna Seca.

The Authority, City of San José, and County of Santa Clara are also collaborating to align policies to ensure a consistent vision for a robust agricultural economy.

“ Investments in these climate resilience categories also have the potential to save billions of dollars in the long term by preventing or reducing the magnitude of damage that climate-induced natural disasters will cause.”

– Bay Area Council Economic Institute

Coordinated planning and management of greenbelts around cities can **buffer developed areas from extreme fire events**, provide space to **divert floodwaters** away from communities and into aquifer recharge areas, and **preserve local food systems**, while also steering development to **transit-oriented infill** and maintaining **habitat connections** for wildlife.



Photo: Tyler MacNiven

FUNDING

The state is leading the way in investing in climate resilience and a green economy. In September 2021, Governor Newsom signed a set of landmark bills that provide **\$15B in funding to reduce climate risk and invest in a green economy**, especially in the most climate vulnerable communities, while transitioning to a carbon neutral economy by 2045.

This investment will help build climate resilience buffers around urban areas by supporting protection of natural and working lands. It also funds urban greening projects that reduce urban heat islands in communities disproportionately impacted by climate change.

Specific funding allocations that support nature-based solutions include:

- \$1.5B for Wildfire and Forest Resilience projects to reduce wildfire risk and improve forest and wildland health.
- \$5.2B for Water and Drought Resilience projects that improve water supply and quality, and projects to support wildlife and habitat restoration efforts, among other nature-based solutions.
- \$3.7B Climate Resilience Package for urban greening projects that help reduce urban heat islands, coastal protection and adaptation, efforts to protect and conserve ecosystem diversity, and local climate action projects in disadvantaged communities.
- \$1.1B to support Climate Smart Agriculture that promotes livestock methane reduction efforts, development of farm conservation management plans, and expanding healthy food access for students and seniors.

State-level funding can be leveraged with investments from local agencies, foundations, and nonprofits. For example, the state has invested more than \$32M in Coyote Valley as a model landscape for biodiversity and urban floodplain management through the California Natural Resources Agency (CNRA), Department of Conservation, Strategic Growth Council, Wildlife Conservation Board, and the State Coastal Conservancy. Added to this are \$43M of San José taxpayer funds raised through Measure T (2018), more than \$20M in private donations raised by POST, and additional funding from other partners such as Santa Clara County Parks and Recreation Department and Santa Clara Valley Habitat Agency.

GO.

The climate crisis is dire and growing, and we cannot conduct business as usual.

We have models, support, and funding for nature-based solutions – now is the time to lead and innovate.

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