THE FUTURE OF FEDERALISM AND FOREIGN POLICY

A CALIFORNIA 100 REPORT ON POLICIES AND FUTURE SCENARIOS

CALIFORNIA 100
VISION & STRATEGY FOR THE NEXT CENTURY
ABOUT CALIFORNIA 100

The California 100 Initiative envisions a future that is innovative, sustainable, and equitable for all. Our mission is to strengthen California’s ability to collectively solve problems and shape our long-term future over the next 100 years.

California 100 is organized around 15 policy domains and driven by interrelated stages of work: research, policy innovation and engagement with Californians. California 100’s work is guided by an expert and intergenerational Commission. Through various projects and activities, California 100 seeks to move California towards an aspirational vision—changing policies and practices, attitudes and mindsets, to inspire a more vibrant future.

This California 100 Report on Policies and Future Scenarios was produced as part of California 100’s research stream of work, in partnership with 20 research institutions across the state. California 100 sponsored grants for data-driven and future-oriented research focused on understanding today and planning for tomorrow. This research, anchored in California 100’s 15 core policy domains, forms the foundation for the initiative’s subsequent work by considering how California has gotten to where it is and by exploring scenarios and policy alternatives for what California can become over the next 100 years.

The California 100 initiative is incubated through the University of California and Stanford.

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READ MORE ABOUT THE FUTURE OF FEDERALISM AND FOREIGN POLICY IN CALIFORNIA

For additional background information, read the related Facts-Origins-Trends report at California100.org. The Facts-Origins-Trends report contains all of the references and citations to support the content of this report.

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CALIFORNIA 100
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This Report is one of 15 reports that will be released in 2022 as part of the California 100 Initiative. We are proud to partner with the following research centers and institutes across California on our work:

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The Bill Lane Center for the American West is dedicated to advancing scholarly and public understanding of the past, present and future of western North America. The Center supports research, teaching and reporting about Western land and life in the United States, Canada and Mexico.
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FOREWORD

“As California Goes, So Goes the Nation, Alas.” That was a headline from a Los Angeles Times opinion column on April 30, 1989, which noted that, even though “Californians have long considered their state the cutting edge of social and political change... [it] no longer seems the vanguard of political innovation. Other states rarely look to California for policy initiatives.”

Fast-forward to 2022, and few would proclaim that California lacks in policy innovation. Quite the contrary. The state has enacted a variety of policies ranging from expansions in immigrant rights and voting rights to health care and higher education, and from large-scale experiments in guaranteed income to ambitious moves towards net-zero emissions in a variety of sectors. And despite the periodic waves of “doom and gloom” reporting about the state, California’s economic output over the last 25 years has grown faster than the national average, and on par with GDP growth for the state of Texas.

Even so, much remains to be done. The California Dream has always been marred by a high degree of racial exclusion, and it remains out of reach for millions in the state—whether measured by health outcomes, unaffordable housing, or massive disparities in income and wealth. California also recognizes that future progress depends on recognizing and correcting historical wrongs. Its Truth and Healing Council, for example, will provide recommendations aimed at prevention, restoration, and reparation involving California Native Americans and the State. If California’s racial diversity represents America’s demographic reality by 2100, our work is essential—not only for the long-term success of the state, but also for our country’s innovative and equitable future.

This future-focused work is especially pressing today. The COVID-19 pandemic has scrambled a state and nation already undergoing significant changes in economics, politics, and society. The harmful consequences of climate change are at our doorstep,
with forest fires and droughts that grow in frequency and intensity each year. The
weakening of local media and the growth of disinformation threaten both our civic
health and our public health. And staggering inequities in income and wealth, home-
ownership and health, threaten the state’s reputation as a haven for migrants, domes-
tic and international alike.

In addition to immediate threats that affect our long-term future, we also see plenty
of opportunity. Record increases in federal and state spending mean that billions of
additional dollars are flowing to state, local, and tribal governments in California. Many
jurisdictions are looking to invest in infrastructure that meets the long-term needs of
their communities. Philanthropic institutions and individual donors are also looking to
make transformative investments that have enduring impact. We have an opportunity
to inform and enrich all of these plans and conversations.

Most institutions and organizations in California are focused on immediate challenges,
and don’t have the luxury of time, dedicated talent, and resources to focus on long-
term futures. California 100 is grateful for the opportunity to provide added value at
this critical time, with actionable research, demonstration projects, and compelling
scenarios that help Californians—government agencies, stakeholder groups, and res-
idents alike—to envision, strategize, and act collectively to build a more innovative and
equitable future.
Federalism is a system of government where the same geographic territory is controlled by at least two levels of government. In California, there are sometimes four levels of government, international, national, state, and local. Nowhere is this more evident than in Southern California where water comes from the Colorado River that flows through seven states and ends in the Gulf of Mexico. The allocation of Colorado River water is governed by the 1944 Water Treaty between Mexico and the U.S. that created the International Boundary and River Commission and the Colorado River Compact of 1922 signed by these seven American states. Many of the dams on the river, including the two largest—the Hoover Dam...
Although federalism is one way to deal with the scope of different policy issues, some problems do not follow local, state, or even national boundaries. (Lake Mead) and Glen Canyon Dam (Lake Powell)—were constructed by the U.S. Bureau of Reclamation that is part of the U.S. Department of the Interior. Water from the Colorado River is delivered via the Colorado River Aqueduct to Southern California through the Metropolitan Water District (MWD) of Southern California that spans 5,200 square miles and includes parts of six counties (San Diego, Orange, Riverside, San Bernardino, Los Angeles, and Ventura). Altogether, two nations, seven states, six counties, and 13 cities and twelve water districts who are members of MWD are involved in the allocation and distribution of Colorado River water.

Although federalism is one way to deal with the different scope of policy issues, this example shows that some problems do not follow local, state, or even national boundaries. Immigration, by definition, occurs across governmental boundaries. To be efficient and resilient, energy power grids must cut across boundaries, especially when renewables such as wind or solar are being used to generate power. In addition, the federal government has attempted to shape policies such as K-12 education, policing, and health care through grants and subsidies even though those policy areas have traditionally been state and local government responsibilities. States and cities have engaged with foreign governments to forge agreements over shared rivers and aquifers,
global warming, emergency preparedness, and many other tasks that normally belong to the national government. Cities have used Memorandums of Understanding and formal Joint Powers Authority to collaborate with one another on police, fire and flood control, compromising their sovereign powers in order to solve collective problems more efficiently and effectively. In each policy area, a balance must be struck among local, state, national, and even international authorities and between public and private control.

California faces two fundamental governance problems related to federalism in the next century. Within its boundaries it must improve its ability to coordinate state and local government bodies to solve pressing problems such as climate change, water, housing, and health. With its welter of local governments, tradition of only partly thought-out populist solutions, and growth of restrictive regulations affecting almost any action, California faces gridlock and inaction while it confronts problems that require regional, statewide, national, and even international action.

Outside its boundaries California must establish its position in the American federal system and in the world. Within the American federal system, California is the largest state in total population, third largest in land area, richest in terms of GDP, the most diverse in terms of ethnic and racial groups, and certainly one of the most environmentally sensitive, and yet it is dramatically under-represented at the national level because it only has two Senators—the same as every other state no matter how small—in a powerful Senate whose everyday actions affect California in fundamental ways. Within these constraints, California must consider how it will define itself and interact with other states, with the federal government, and even with jurisdictions outside the United States in order to move forward its distinct vision of governance.
With its face toward Asia and Latin America, with its role as the center of innovation in the world, and with its ties to Asia and Latin America through immigration and trade, California is already actively pursuing relationships—a foreign policy—around the world, and it must consider how to do this within the confines of American federalism. We consider these issues in this report.

After describing American federalism and California governance as it exists today and exploring principles for the allocation of functions and powers across jurisdictions that can ensure their successful operation, we go on to consider problems created by the profusion of governments with overlapping powers by considering two important policy areas, energy and water policy where jurisdictional authority is especially complicated given the regional nature of the problems, climate change, and new technologies. Through examination of water and energy management, we identify key challenges of California’s intergovernmental relations and propose solutions that ensure resilience and reliability of the state’s invaluable natural resources.

Because of its size and importance, California occupies a unique position in American federalism. Although the analogy is far from exact, California’s position in the United States is similar to that of the province of Quebec in Canadian federalism during the last half of the twentieth century. As a large, arguably under-represented, and powerful entity, Quebec objected to its circumstances within its federal system and it fought, by and large successfully, to improve these circumstances. It did so by developing a clear vision of what it meant to be a Quebecker within the Canadian system and by working with other provinces, the government of Canada, and foreign governments to advance this vision. With this dramatic example in hand, we end by considering California’s future within the American federal system and the world.
Caught in 1787 between the failures of the weak Articles of Confederation in which each state government could abstain from its duties and the threat of recreating the tyranny rejected by the Declaration of Independence, the founders called a Constitutional Convention and established a federation of the “United States of America.” In this federation, states retained many of their powers including the power to preserve slavery and curtail various freedoms, but certain powers such as taxing, regulating commerce, naturalization of citizens, declaring war, and raising and maintaining armed forces (Article I, Section 8, Clauses 1-17) were enumerated, delegated to, and reserved for the national...
government so that it would be powerful enough to accomplish great deeds. To counterbalance this concentration of authority, the states would also retain many of their powers as guaranteed in the Tenth Amendment to the Constitution: “The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.” For California and other states, these powers and policy areas have traditionally included education, policing and corrections, elections, transportation, the judiciary, regulation of industry, and natural resource management.

California has been a leader in some of these policy areas, but it did not conflict much with the Federal government even as federal influence increased in the past 80 years. The Federal government since the 1960’s has used federal funding to incentivize states to follow national standards using legislation such as the Voting Rights Act of 1965, Medicaid in 1965, Clean Air Act of 1970, and the incentivization of Common Core in K-12 education in the 2009 stimulus package. By and large, California accepted these increases in federal power until recently when Sacramento and local California governments have defied the Federal government, especially the Trump Administration, over issues that have been important to Californians such as federal drug law enforcement (marijuana legalization), immigration (limiting state and local cooperation with enforcement of federal laws), and natural resource management in the face of climate change. This poses the question addressed later of whether California will or should clash in the future with the federal government in order to advance its policy priorities. Before doing that, we describe California’s governmental system.

CALIFORNIA’S GOVERNMENTS

In California, both the state and local governments raise revenues and engage in direct expenditures about equally—about $6,000 per Californian by the state and $8,000 per Californian by local governments.

The state raises somewhat more money overall than local governments, and local governments spend somewhat more overall in direct expenditures that are partly funded by the state and federal government. There are four kinds of local governmental units: 58 counties, 482 cities, 1011 school districts, and thousands of special districts. Each is responsible for about one-quarter of the spending on local government in California. Taken alone, there is a strong rationale for each, but taken together the result over the past 172 years has been a complicated crazy-quilt of governmental entities that makes coordination difficult because the average Californian is in a city within a county, served by a separate local school district, and provided services such as fire protection, water supply, sanitation, and parks by many special districts.
Like all American states, California created counties, ultimately 58 of them, covering the entire land area of the state, providing for governmental jurisdiction in every area. Counties, however, have only limited powers and the state legislature exerts close control over them. Many functions of government are taken over by cities or towns when they incorporate, leaving the county with responsibility only in the unincorporated areas.
Through an elected Board of Supervisors that has delegated legislative and executive powers (and some quasi-judicial powers as well), about one-quarter of counties’ budgets are devoted to policing and the courts and another one-quarter to public assistance (see Figure 1). Mental and public health services comprise about one-sixth of their budgets as do enterprise activities such as airports, hospitals, and golf courses. Almost half their revenues come from either the state or federal government and one-fifth from property taxes.

**Figure 1** Expenditures and Revenues of California County Governments

**Public Protection and Public Assistance Combined Account for Over Half of County Expenditures, 2015-16**

- Public Protection: 28.1%
- Public Assistance: 26.5%
- Health: 15.2%
- Enterprise Activities: 15.5%
- Other: 3.8%
- General: 7.8%
- Public Ways & Facilities: 3.0%

**State and Federal Funds Combined Comprise Nearly Half of Total County Revenues, 2015-16**

- State Funds: 31.4%
- Federal Funds: 15.7%
- Property Taxes: 19.5%
- Enterprise Revenues: 14.8%
- Charges for Current Services: 8.8%
- Other: 9.7%

* Business-type activities, such as airports and hospitals. ** Roads, transportation systems, and parking facilities. *** Debt service, recreation and cultural services, education, and sanitation.

**NOTE:** Excludes the City and County of San Francisco. Percentages do not sum to 100 due to rounding.

**SOURCE:** California Budget and Policy Center, [County Budgets](#), [County Expenditures](#), [County Revenues](#).
CITIES

Over 80 percent of Californians live in one of the 482 incorporated cities and towns. Cities spend a bit over one-quarter of the total amount spent on local government in California. Thirteen cities have populations of 300,000 or more and comprise one-quarter of the state’s population. Over 300 cities have populations of 50,000 or less. Incorporated cities have much greater powers than counties because of the 1879 California Constitution’s provision for “home rule” which means that cities have broader taxing powers and can pass statutes as long as they do not conflict with state law. If they do not, they are enacted. Cities typically have responsibility for local land use, roads, policing, fire protection, parks and recreation, and perhaps also sanitation (sewerage and solid waste management), and utilities such as water, gas, and electricity but it is common for some of these activities to be undertaken by special districts or even private companies.

SCHOOL DISTRICTS

Districts are limited purpose local governments, separated from cities and counties. In California there are 1,011 independent school districts according to the Census of Governments. School districts provide elementary and secondary education for students in their areas. They spend somewhat less than one-quarter of the total amount spent on local government in California. School Districts vary in size from fewer than 100 en-
rolled pupils (Alpine County Unified School District) to over half a million students (Los Angeles Unified School District). Although in some places, cities run the schools (New York City), all California public schools are operated through 1,011 school districts with elected, independent School Boards that hire a Superintendent to run the schools. School districts are funded through property taxes, other local taxes, substantial state funding, and federal funds. Before Proposition 13 limited increases in property taxes in 1978, California’s per pupil spending exceeded the national average and most of the funding for schools was through local property taxes. With limitations on property tax increases from Proposition 13, the only source of funding that could equalize and maintain funding for schools in California was the state government so that by 2018–19, California public schools received a total of about $100 billion in funding from three sources: the state (58%), property taxes and other local sources (32%), and the federal government (9%).

**SPECIAL DISTRICTS**

There are 2,894 special districts in California, according to the Census of Governments. Special districts deal with fire protection, water, sewage, parks, recreation, cemeteries, libraries, and even mosquito abatement. They spend a little bit less than about one-quarter
of the total amount spent on local government in California. About 85 percent of these special districts are single-function districts that provide only one service, the rest are multi-function districts that offer two or more services. Special districts vary in size from a few acres to thousands of square miles such as the Metropolitan Water District of Southern California.

Special districts and school districts typically provide one or a small number of functions so that they can focus on those functions. Consequently their costs for performing these functions (typically covered by special taxes or fees) can be readily linked to the benefits provided. But these districts can also be too small to be efficient or to be good decision-makers (in recent times with respect to pension benefits), and their functions could often be taken over effectively by local municipalities or county governments. In fact, roughly a quarter of them are “county-wide” service districts. They can fly “beneath people’s radar” because they do not get much media coverage, and they can hamper regional planning because they do focus on just one issue, not the overall welfare of a region. The story of special districts is a mixed one.

Districts placed on top of counties and cities at the local area within a state that is within a nation exacerbate an already messy jurisdictional fracture problem. Within its state government, California’s executive branch includes over 230 agencies. In addition to these state agencies, the state has 58 counties, 482 cities and towns, a thousand school districts, and thousands of special districts. Creating harmony and solving problems in this welter of jurisdictions is a major problem for the federal system.

**STATE-LOCAL RELATIONSHIPS**

States are at the center of both the federal-state and state-local relationships. States in their relationship with the federal government retain some exclusive powers and sovereignty that is denied to local governments within a state. The federal government is ultimately a federation of the supposedly “lower-level” states, but localities are definitely the creatures of the (“higher-level”) states and states are not federations of localities. As a result, California has the power to reshape local governments to improve performance and coordination, and it has powers and rights within the federal system.

**TRIBAL NATIONS AND INTERGOVERNMENTAL RELATIONS**

Native Americans present an important and distinct set of governing issues given their special status in the United States and their large numbers in California. In the 2020 census, two percent or 778,593 members of the California population identified themselves as either solely or partially of American Indian or Alaskan Native (AI/AN) background. California has more native peoples than any other state. Although only about 3 percent (21,869 people) of California’s Native Americans live on the 104 federally recognized tribal lands in California, tribal lands and nations play an outsized role for Native Americans through their linkages to tribal members and to the history and culture.
of their people. Tribal lands in California comprise about 520,000 acres or 0.5 percent of the total land in California—about the size of Orange or Solano Counties.

Native Americans have a unique relationship with the federal government through their association with Indian nations. The Constitution of the United States places state governments and Indian nations on the same footing with respect to the federal government with the assertion that Congress has the power “to regulate commerce with foreign nations, and among the several states, and with the Indian tribes.” In a series of Supreme Court cases from 1823 to 1832, the Court affirmed the sovereignty of Indian nations including their right of self-governance and their right to occupy their own territory to the exclusion of the citizens of the state in which they are located.

California’s federally recognized tribal nations and their lands are mostly in rural areas in California, although with the growth of population, some of them, especially in the south of the state, have been engulfed by suburbs. Tribal lands are located where they are because tribal nations were displaced from their ancestral lands as a result of colonization, the duplicitous and genocidal policies of the United States and California during the nineteenth century, and the policy of treating Indian nations as “wards of the federal government” instead of as equal sovereign nations. This is not the place to recount fully that sorry, tortured, and tragic history, but a few aspects help explain the current situation in California.

In the midst of the Gold Rush in 1852, 18 treaties were negotiated with Native Americans across California. These treaties promised the
tribal groups new permanent tribal lands and payment for the ceded land from the government in return for the tribes renouncing any future claims to ancestral lands. If ratified, the treaties would have reserved about 7.5 million acres of California land as tribal lands—about 14 times the current amount. Despite the lopsided deals that were proposed, the treaties were not ratified by the Senate and payments for land taken from Native Americans were not made. Except for some relatively small federal appropriations in the early 20th century to fund Indian Rancherias, the die was cast, and California’s tribal nations control a small fraction of their ancestral lands. The second major historical fact is that many Native Americans ended up outside these tribal lands. Many of them never made it to the new tribal lands in the first place because they remained in their ancestral areas—albeit without any ownership rights. Because life on tribal lands was difficult, many Native Americans left for other places. Finally, in the 1940s and 1950s, the Bureau of Indian Affairs began a project of dismantling and terminating tribal sovereignty that led to the Indian Re-location Act of 1956 with the goal of assimilating Native Americans into urban life. As a result, most Native Americans in California live far away from their tribal lands.

Starting in the 1960s, a new approach by the federal government aimed to help Indian nations instead of terminating them. The 1975 Indian Self-Determination and Education Assistance Act provided a way that the federal government could provide funding for programs and enter into contracts with Tribal Nations to implement these federal programs, thus providing a greater degree of self-determination.

Many Native Americans now have the opportunity for dual citizenship in both their Indian nations and the United States. Membership and citizenship in tribal nations is entirely controlled by these nations as sovereign entities. Membership in a tribe does not require residence on a reservation, and it provides access to services from the Bureau of Indian Affairs and participation in the governance of that tribe.

All Native Americans born in the United States or naturalized now have U.S. citizenship rights, but these rights developed slowly. The Fifteenth Amendment to the Constitution, ratified in 1870, guaranteed the right to vote to all U.S. citizens regardless of race or color, but many states still denied Native Americans the right to vote. Native Americans in California did not have the right to vote until the federal Citizenship Act of 1924 made all Native Americans born in the United States citizens.

California has now entered a new era where dual citizenship, in which they combine their tribal and U.S. citizenship, is available for Native Americans. Dual citizenship allows for a form of identity whereby individuals express their cultural involvement with both a tribal nation and the federal government, thus strengthening the bonds of society and creating opportunities for more imaginative policy-making. One of the governance challenges of the next 100 years is to continue this rethinking of citizenship.
California relates to Native Americans as citizens of the United States in which capacity they vote in elections, pay income taxes, enjoy the rights and privileges of Americans, and receive services indirectly (e.g., roads and infrastructure) or directly (e.g., Bureau of Indian Affairs) through federal and state agencies. California also relates to Native Americans as members of sovereign tribal nations that have their own law courts, their own tribal lands, and provide services to their members. Recognizing this, through Executive Order B-10-11 in 2011, Governor Jerry Brown created the Governor’s Tribal Advisor within the Office of the Governor with the duties of implementing “effective government-to-government consultation between my Administration and Tribes on policies that affect California tribal communities.”

Through Executive Order N-15-19 on June 18, 2019, Governor Gavin Newsom acknowledged and apologized on behalf of the state for the historical “violence, exploitation, dispossession and the attempted destruction of tribal communities.” Following up on this Executive Order, on September 25, 2020, the Governor put forth a policy of “co-managing,” whenever possible, ancestral lands now under the control of the state. With these steps, California has recognized both the importance of Native Americans to the state and the need to interact with their tribal nations as sovereign states. The nexus of issues surrounding governance and citizenship make the state’s relationship with tribal governments especially interesting and important.
Table 1 displays the sources of revenues for the state of California and all its local governments (counties, cities, and districts) for 2017 based upon the most recent Census of Governments. It is often thought that governments rely entirely upon taxes and fees, but this chart makes it clear that there are three other important sources of funding:

- Intergovernmental transfers
- Insurance and trust funds
- Utilities that provide services.

Indeed, the most remarkable feature of this table is that both California and its local governments get slightly less than half their total revenues from their own taxing efforts. The state government gets about a quarter of its revenues from insurance and trust funds, most of which (85%) comes from employee retirement funds and the remainder primarily from Unemployment and Workers’ Compensation funds (8%). Most notably, the state gets almost another quarter of its revenues from federal intergovernmental transfers for programs such as Food Stamps, Medicaid, and TANF. Local governments (most notably counties and school districts) get an even larger portion (36%) of their revenues from intergovernmental transfers, almost all from the state
Sources of Revenues for California State and Local Governments-2017

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<th>State (%)</th>
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<td>TOTAL REVENUES</td>
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<td>Intergovernmental transfers</td>
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<td>Local</td>
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<td>Revenues from Utilities</td>
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<td>8.48%</td>
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**Source:** Authors’ calculations from U.S. Census Bureau, “2017 State & Local Government Finance Tables.”

**Note:** Indented percentages add to non-indented category just above them. These percentages are fractions of the total sources of revenues.

government (90%) but some from the federal government (10%). Intergovernmental transfers are a big deal in the federal system.

The prevalence of inter-governmental revenue across the three layers of American government, federal, state, and local epitomizes one of the features of the American federalism first noted by political scientist Morton Grodzins in his report to the 1960 Presidential Commission on National Goals. The federal system is not a “three-layer cake” with each layer performing its own functions, albeit with the federal government on top, the states in the middle, and the local governments on the bottom. Instead, it is more like a “marble cake” with taxing, fund transfers, functions, and expenditures interpenetrating all three levels. Grodzins used the term “cooperative federalism” to describe how each layer has some distinct characteristics, but they are ultimately intermingled and must cooperate with another.
SOURCES OF SELF-GENERATED FUNDS: TAXES AND FEES

For the half of their budgets that come from their general revenues as taxes or fees, state and local governments also rely upon different sources. In some cases such as counties, local governments are limited in their possible sources of tax revenues but in others the history of property taxes in the state affects revenues. Since the passage of a state income tax in 1935, the California state government has relied more and more upon corporate and income taxes while local governments relied upon property taxes and sales taxes, partly because property is local, hard to assess without local knowledge, and immobile. Similarly, commerce is local so that some forms of sales taxes could be best imposed locally. Table 2 shows the distribution of general revenues from own sources which includes taxes, charges, and miscellaneous general revenue.
Table 2: General Revenues from Own Sources—California State and Local Government-2017

<table>
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<tr>
<th>Source: Authors' calculations from U.S. Census Bureau, “2017 State &amp; Local Government Finance Tables.”</th>
<th>State</th>
<th>Local</th>
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<td><strong>TOTAL REVENUES FROM OWN SOURCES</strong></td>
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<td><strong>TAXES</strong></td>
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<td>Property</td>
<td>1.37%</td>
<td>37.95%</td>
</tr>
<tr>
<td>General Sales</td>
<td>19.73%</td>
<td>9.07%</td>
</tr>
<tr>
<td>Selective Sales (e.g., gas, public utilities)</td>
<td>6.44%</td>
<td>3.91%</td>
</tr>
<tr>
<td>Income</td>
<td>42.91%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Corporate</td>
<td>5.15%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Motor Vehicle</td>
<td>2.17%</td>
<td>0.04%</td>
</tr>
<tr>
<td>Other</td>
<td>3.28%</td>
<td>4.51%</td>
</tr>
<tr>
<td><strong>CHARGES AND USER FEES</strong></td>
<td>14.18%</td>
<td>35.13%</td>
</tr>
<tr>
<td>Hospitals</td>
<td>5.73%</td>
<td>10.13%</td>
</tr>
<tr>
<td>Higher Education</td>
<td>5.58%</td>
<td>0.76%</td>
</tr>
<tr>
<td>Airports, Ports, Highways, Parking</td>
<td>0.03%</td>
<td>4.46%</td>
</tr>
<tr>
<td>Sewage and Solid Waste</td>
<td>0.00%</td>
<td>7.27%</td>
</tr>
<tr>
<td>Natural Resources/Parks and Recreation</td>
<td>0.69%</td>
<td>1.40</td>
</tr>
<tr>
<td>Other Charges</td>
<td>2.15%</td>
<td>11.11%</td>
</tr>
<tr>
<td><strong>MISC. GENERAL REVENUES</strong></td>
<td>4.76%</td>
<td>9.39%</td>
</tr>
</tbody>
</table>
Local government depends upon property taxes (38%) and sales taxes (13%) which constitute just over half of its self-generated revenues. But charges and user fees also matter, especially for local governments for which they are over one-third of total self-generated revenues.

The first major change in California’s tax system was the passage of the income tax in 1935 so that today income taxes are the major tax in California. The passage of Proposition 13 in 1978 that limited property taxes also increased the state’s reliance on income and sales taxes.
Local governments in California spent a total of $323 billion in 2017 (with much of the funding coming from the state) while California’s state government spent $242 billion. Figure 2 shows that the overwhelming function of the state is to provide funds for public welfare—Medicaid for the poor, Temporary Assistance for Needy Families and associated programs. Much of the funding for this actually comes from the federal government. The next biggest function is running state retirement programs that are for government employees, some of whom work at the local level. Higher education is a substantial fraction of the budget, partly because tuition payments (from individual students) and research grants (typically from the federal government) are counted as revenues and then, in this table, as expenditures by public colleges and universities.
State activity is primarily (a) redistributive programs such as Medicaid, TANF, UI, and health and hospitals accounting for 50% of its expenditures, (b) retirement programs for another one-sixth, and (c) higher education and corrections accounting for another one-sixth – a total of over 80 percent of the budget. These state activities involve redistribution (e.g., Medicaid), providing for the future (e.g., retirement), or economies of scale (e.g., corrections) or in some cases all three (e.g., higher education).

Local governments have a much different profile. Their largest expenses are elementary and secondary education (27%), direct services like utilities (transit, water, and electric systems at 13%), hospitals and public health (12%), police and fire protection (8%), sewage-solids waste and parks and recreation (6%), and transportation (mostly highways) at 5% for a total of about 70 percent of their budget. Local governments specialize in providing immediate services at a neighborhood scale.

FACTORS AFFECTING RELATIONSHIPS WITHIN A FEDERAL SYSTEM

The allocation of state and local spending within California shows that there have been efforts to locate governmental programs at optimal levels. Local governments deal with direct and immediate services to people. The state government provides redistributive programs, manages retirement programs, constructs large infrastructure projects on a long time scale, and deals with regional problems. The federal government sets standards for redistribution, provides resources for it, ensures individual rights, and deals with multi-state regional problems. Nevertheless, these assignments of functions can fail when the nature of problems or solutions to them change. Nowhere is this more clearly evident in the areas of energy and water that form our case studies. These case studies illustrate three kinds of tensions that occur in federal systems, tensions whose interpretation often depend upon one’s political point of view:

- **Encroachment** – The higher level power encroaches on the powers of the lower level unit and reduces its ability to independently solve problems. The Trump administration’s actions to take away California’s ability to regulate automobile emissions is an illustration. Another is the Obama Administration’s Affordable Care Act whose requirements for the expansion of health care access were deemed
so onerous by some states that, despite an exceptionally generous funding formula, they did not take it up.

- **Shirking** – The lower level unit shirks its responsibilities (sometimes because it believes that encroachment is occurring) and cannot be compelled to fulfill them. California’s actions with respect to immigration limiting cooperation with federal enforcement is considered by some to be shirking, but by others to be legitimate rejections of encroachment. California cities and counties have been given targets for building housing, but very few jurisdictions are meeting them.

- **Burden Shifting** – A lower level unit shifts its problems to other lower level units through actions that affect the other units. California’s actions with respect to Colorado River water appear to be burden shifting to many. For years, California took more Colorado River water than its entitlement, and it still has not done much to help other states as the Colorado River flow suffers from reduced flow due to drought. California cities that have large-lot zoning and restrictions on building housing are shifting the burden of the housing crisis to other cities by being unwilling to build more affordable housing.

Even in the best designed federal systems, tensions of these sorts will inevitably arise. In systems that have been somewhat haphazardly designed over decades and centuries, the tensions are even more acute, especially as problems such as climate change, immigration, or housing become acute.
ENERGY AND WATER CASE STUDIES

Water and energy represent two ends of the intergovernmental spectrum in California: water policy is highly constrained and fractionalized by an antiquated system of water rights and innumerable water agencies. Electricity, by comparison, was until recently heavily dominated by large, vertically integrated utilities. They are similar in other respects. Both of them involve the delivery of a commodity to individuals and businesses through complicated transmission systems that involve land-use and rights-of-way. Both of them involve complex questions of property rights for natural resources. For water, the rights are to aquifers, rivers, and lakes. For electricity, the rights are to clean air. Because individuals, companies, and communities can lay claim to the land and to these natural resources, local governments have substantial influence in controlling natural resource development and land use. Finally, both areas are being affected by new concerns such as global warming and new technologies such as solar or wind power and recycling or desalinization.

TECHNICAL FEATURES OF THE SYSTEMS

The State and federal governments built an elaborate system of water conveyance in California and continue to subsidize agricultural water use. The challenge settlers faced coming to live and work in California was how to deliver water from where it was plentiful to the many areas of the state where it was not. This involved building an elaborate system of pumps, canals, aqueducts, reservoirs and dams to collect, store and redistribute the water (see Figure 3). Snow would deposit on the mountains in the winter, then melt in the spring and be used in the dry summer months until the precipitation came back the next winter. When water was in short supply during periods of low precipitation, the diminished surface water supply was apportioned to agriculture according to a system of appropriative rights with the first allocations going to senior rights holders (i.e., those who had established the earliest claims in time). Junior rights holders could often offset their surface water losses by pumping water up from the aquifer below their land.

Due to droughts and the fact that the federal government, as with most western states, owns much of the state’s land (47%), California has also had to rely on federal partnership and funding to build this elaborate system of water conveyance. The federal government has provided substantial subsidies to California’s agricultural sector since the enactment of the Reclamation Act of 1902. It is estimated for instance that 6,800 Central Valley farms receive annual subsidies worth $416 million dollars. Most of this highly subsidized water goes to large commercial farms at a price that is only 2 – 3 percent what residents in Los Angeles and San Francisco pay. During droughts, the price disparity between residential and agricultural water users typically becomes much more salient to the public, causing critics on the left to question whether the agricultural allocation and subsidies should be reduced and critics on the right to object to the amount of environmental flows to protect fisheries and scenic rivers. Currently, 50 percent of water use in California goes to environmental flows, 40 percent to agriculture and 10 percent to urban/suburban areas.
Figure 3: Aqueducts, Canals, and Reservoirs in California

Largest aqueducts:
- Some 2,000 miles of canals, pipelines, and aqueducts carry water to the state's thirsty regions.

**WATER DELIVERED IN 2005**

- **All-American Canal**: 82 miles, 3 million acre-feet
- **Delta-Mendota Canal**: 117 miles, 2.7 million acre-feet
- **Friant-Kern Canal**: 162 miles, 1.8 million acre-feet
- **Colorado River Aqueduct**: 2,422 miles, 875,000 acre-feet
- **California Aqueduct**: 444 miles, 2.6 million acre-feet

**SOURCE:** National Geographic, *California’s Pipe Dream*. 

**Water distributed**
- Millions of acre-feet, 2005
- (One acre-foot = 325,851 gallons)
Transmission Lines in California and Linkages with Other States and Mexico

Figure 4

Source: Global Energy Network Institute, California’s State Electricity Grid.
Electricity is also conveyed along an elaborate grid system that transmits and distributes energy from where it is generated to where it is used. Like water, electricity is distributed across the state with an extensive system of transmission and distribution lines. With the exception of behind-the-meter rooftop solar, most renewable and fossil fuel power is generated at the utility scale inside or outside the state, and then transported by transmission lines to retail service providers and distributed to customers. As with surface water, California’s electricity crosses many jurisdictional boundaries inside the state, the country, the Western region and across the international border with Baja California (see Figure 4). These transmission lines are largely owned and maintained by the Investor Owned Utilities (IOUs). Community Choice Aggregators (CCAs) are a hybrid form of Load Serving Entity (LSE) that contracts for power but does not own or manage any transmission lines.

A critical difference in this regard with respect to water and energy is that the grid must always balance supply and demand since any imbalance can result in blackouts and service disruptions. The responsibility for this rests with the approximately 40 balancing authorities in the Western region. The water system is more flexible and forgiving, allowing for emergency water curtailments, for instance, in order to divert power used for pumping water along the state water canal to the grid when there are emergency shortages.

Another key difference is that interstate water supplies (e.g., Colorado River water) are fixed in any given year and must be divided between California and the upstream states. The interstate energy market is competitively priced, and the amount of energy can usually be ramped up or tamped down to adjust to demand. Depending on water that flows through other states can be contentious: energy transmission across the western interconnection by comparison increases grid reliability as a whole by opening up additional out-of-state supplies of power.
California Reservoir Conditions as of March 31, 2022

**SOURCE:** California Department of Water Resources, *Reservoir Conditions*, March 31, 2022
California is trying to rely less on dams and reservoirs and more on water recycling and aquifer replenishment. The seasonality of California’s weather means that the state needed to find ways to store water in the winter when it is most likely to rain for use in the summer when precipitation is rare. Not only must dams and reservoirs be built throughout the state to store the winter water, but also aqueducts and canals must be built to convey it. That infrastructure is now aging, prone to breaking down (e.g., the recent damage to the Oroville Dam spillway) and harder to replace due to concerns about environmental impacts and costs. The drought in 2012-17 took its toll and reduced water levels in the reservoirs. As Figure 5 shows, the current level of water in California’s reservoirs is well below both capacity level and historical averages for March. Groundwater, the backup when surface water is scarce, has dropped significantly over time due to overuse and low precipitation. While California has made more effort in recent years to replenish its depleted aquifers, water subtraction still exceeds natural and mechanical replenishments, creating a cumulative water deficit.

At the same time, it has become harder politically to build reservoirs and dams. The last large reservoir constructed in California was the New Melones on the Stanislaus River in 1979. Dam construction has also slowed to minuscule levels while some dams have been or will be torn down because they have filled with silt or in order to restore the ecology of the area that was flooded when the dam was constructed. As a consequence, California water policy is turning towards recycled water and desalination, despite the higher cost and personal aversion some people have to drinking treated water.

California is trying to rely less on fossil fuels and more on green energy. For most of the 20th century, the power companies’ goals were to provide reliable energy at the cheapest cost. Now there are additional requirements such as switching to clean energy, ensuring the resilience of the transmission system to wildfires, building storage and resource adequacy to offset the extra demands due to extreme weather or the daily cycles of solar energy, and ensuring greater equity across race and class in this transition. Greening the grid is an essential first step because many of the next decarbonization steps will increase the total demand for electricity.

Emissions from the electricity sector only contribute 15 percent of total carbon emissions in the state. Transportation alone accounts for 41 percent, which is why the state has committed to getting 5 million zero-emissions vehicles (ZEVs) on the road and building 10,000 DC Fast-Charging stations. But building out charging stations requires siting the chargers strategically, acquiring the land and making it through the state’s cumbersome environmental permitting processes. The CARB can provide funds and incentives towards these goals, but it will require working with local government officials and dealing with inevitable objections from some residents. Potentially, the CCAs could facilitate this process as many of them have programs to promote ZEV use, but CCAs vary enormously in their commitment to decarbonization and their capacity to do anything about it.
Beyond the transportation sector, decarbonizing the agricultural and manufacturing sector will cost California businesses substantially, and many of them worry about their competitiveness with companies outside the state. Engineers can propose lots of possible technical ways to lower the carbon footprint for each of the sectors, but there are large costs associated with many of these ideas. Methane emissions from livestock could be reduced with anaerobic digesters. Carbon capture and storage could reduce emissions from cement production. Electrifying trucks and fueling them with green hydrogen could lessen the carbon footprint for many businesses. But many of these measures would raise the costs for the companies and make them less competitive with firms from other states. There are market constraints to what California can achieve on its own if other states do not also decarbonize at the same time.

Severe droughts affect both surface and groundwater supplies. Another aspect of droughts is the enhanced risk of large wildfires that burn watershed areas, potentially affecting both the supply and quality of water. Rain may not follow the plow as people thought in the 19th century, but wildfires follow the people. Human activity is the greatest source of wildfire ignition. Construction in new areas requires new electricity transmission and distribution lines, which raises the odds of more ignitions and potential harm to vital watersheds. Wildfires can cause extensive damage to watershed areas by impacting water quantity, water quality, snowpack, debris flow and aquatic ecosystems.

All of this poses significant challenges for water resource management. Planning and building water infrastructure requires anticipating and adjusting to these challenges but with a fair degree of uncertainty about where
and when fires will occur. Water infrastructure planning must account for changing climate conditions that will likely increase the frequency and intensity of extreme weather events like drought and fire. The data about water conditions in the state exist in abundance, but the effort to improve planning about water resources on a watershed scale had a shaky start in the IRWM program. The capacity of the state, or indeed regional entities, to get local communities to operate collaboratively when the state is not in an emergency situation is still too weak for the likely extreme weather challenges ahead.
The electricity system is a cause of wildfires but is also impacted by them as well. When the Diablo and Santa Ana winds are blowing hard, transmission lines can fall or be struck by trees and spark a fire. As a precautionary measure, the grid operators can call for Public Safety Power Shutoffs (PSPS) that stop the flow of electricity to businesses and residences until conditions improve (see Figure 6). If the danger persists for several days, it can be very...
It may be even more disruptive in the future if we electrify everything in order to move away from dependence on gas and fossil fuels. Complicating matters further, wildfires in other states can affect California’s energy supply due to the western grid interconnection. Wildfires are a regional problem.

There are ways to improve vegetation management around transmission lines. Sensors and dynamic line rating systems can identify transmission problems more quickly. And there are efficient ways to cut off power during wildfire emergencies while minimizing customer inconvenience and economic loss. But taking these steps is largely left up to the utility companies and is not controlled by any government entity. Once again, we run into a core intergovernmental issue: to what extent should coordinating organizations have stronger means to either influence and compel LSEs to undertake measures that could enhance electricity reliability and resilience.

CENTRALIZATION/DECENTRALIZATION OF WATER AND ENERGY GOVERNANCE

WATER GOVERNANCE IS HIGHLY FRACTURED

Water is regulated primarily by the Department of Water Resources (DWR), the State Water Resources Control Board (SWRCB) and the California Public Utilities Commission (CPUC). The California Water Plan prepared by the Department of Water Resources is an impressive compilation of data and information about water resources in the state. The Department of Water Resources (DWR) has a hand in both the Integrated Regional Water Management (IRWM) and Groundwater Sustainability Agencies (GSA) programs. And the State Water Resources Control Board (SWRCB) along with the governor’s office played a central role in designing drought policy in the critical 2012-2017 period. But neither of these agencies can control water usage policy in non-emergency periods.

There are 16 other state agencies with regulatory authority over various aspects of water governance, and as many as 2,895 separate local water entities with different governance structures. This agency heterogeneity is less problematic during a drought emergency because of the governor’s emergency powers. It is more problematic when there is the need for collaborative planning but no immediate
emergency. The state’s Integrated Regional Water Management (IRWM) program has tried to bring local water entities together to develop joint projects and watershed-level planning, but with mixed results.

As a consequence, the state continues to build new housing and commercial developments in water-stressed parts of the state such as the Central Valley. Some of them in Southern California include artificial lakes and golf courses, and Central Valley counties permit farmers to plant fruit and nut trees that cannot go fallow in dry years and depend on increasingly depleted groundwater supplies. These water governance problems foreshadow some of the obstacles that the state will encounter to a greater degree in the future when it tries to decarbonize the economy beyond the grid such as by building more dense housing along rail lines in order to cut down on car emissions or eliminating end use gas in family and commercial residences. Local governments carefully guard their sovereignty over local roads, economic development and zoning, and tend to resist state interference. They are particularly resistant to unfunded regulatory mandates that require them to make changes at their own expense. Most of the successful state efforts to enhance local water resource capacity building have provided public bond funding and matching grant programs that incentivize rather than require local cooperation.

ELECTRICITY GOVERNANCE IS LESS FRACTURED AND HAS BEEN MORE EFFECTIVE IN GUIDING THE STATE TOWARDS A SUSTAINABLE, CLEAN ENERGY POLICY.

California’s electricity governance is not as complex and varied as in the case of water – but neither is it simple. The state has much firmer regulatory control over the electricity market.

Five state agencies play a significant role in energy: the California Energy Commission, the California Public Utilities Commission, the California Air Resources Board, the California Independent System Operator, and the Department of Water Resources. The state has set ambitious decarbonization goals, and these agencies have done an admirable job implementing them to date. The rise of Community Choice Aggregators (CCAs) has complicated the picture somewhat. Most CCAs are local governments singly or in a Joint Powers Arrangement that purchase power for their communities while relying on the transmission and distribution systems of the Investor-Owned Utility (IOU) in their territory. These CCAs vary greatly in their technical capacity and their
dedication to decarbonization goals: in wealthier liberal communities, the CCAs are rushing ahead to establish all clean energy portfolios, while in other less-advantaged communities they are struggling to stay afloat financially and still meet the state’s minimum renewable portfolio standards. Looming on the horizon is the more difficult task of working closely with local governments on deeper decarbonization steps to reduce emissions beyond the electricity sector.

With the state’s ambitious decarbonization goals, the electricity sector faces the formidable challenge of shifting its energy profile from fossil fuels to clean energy according to recent benchmarks set by the governor and legislature. These goals have become progressively more ambitious over time with respect to lowering emissions as compared to 1990 levels and achieving carbon neutrality by 2045. Much of the progress to date in meeting these goals is due to regulatory pressure on the LSEs to meet renewable portfolio standards (RPS). In addition, the state has tried to encourage the voluntary green incentives (i.e., renewable goals above the RPS floor levels) through its CCA program.

While the record of achievement to date has been impressive, there are tensions between meeting the state energy goals and the necessity of maintaining a balanced portfolio of energy options in order to deal with steep evening ramp-ups when the sun goes down or prolonged heat waves in the Western region that can affect the availability and cost of energy imports. The state’s current renewable energy definition precludes certain forms of clean energy such as large hydro and nuclear that provide for a more resilient electricity supply. Electricity regulation was much simpler when the state could work through the large Public and Investor Owned Utilities (POUs and IOUs), but the proliferation of local CCAs in recent years has raised the transaction costs (i.e., the time and effort devoted to negotiation between agencies and stakeholder groups) and lessened the state’s control over retail purchases.

The electricity system represents only 15 percent of the state’s emissions so making a dent in that overall emission’s goal will require taking on transportation and industrial sectors of the economy, efforts that will put much more pressure on state-local government relations. But given that the long long-term plan is to electrify many more things in the future, the success of the decarbonization effort hinges crucially on greening the grid as quickly as possible. The rationale is pretty straightforward: if, for example, Californians electrify the transportation sector but still depend to some significant degree upon important imported power generated by gas or coal in order to charge vehicles at night, the state is undercutting the overall emissions goal.
ENVIRONMENTAL JUSTICE ISSUES

THE STATE HAS BEEN SLOW OR IGNORING SUBSTANTIAL ENVIRONMENTAL JUSTICE ISSUES WITH RESPECT TO WATER AND ENERGY GOVERNANCE AND POLICY.

Poorer communities tend to have bad water resources, both in terms of quality and quantity. This is particularly true for rural communities in the Central Valley and along the Central Coast from Santa Cruz to Santa Barbara that are dependent upon groundwater supplies. Some disadvantaged communities lack the capacity to install money-saving efficiencies or infrastructure improvements. During droughts, higher-income people can cut usage by letting their lawns go brown whereas poorer people must cut back on uses like bathing and cooking. The communities that could benefit the most from programs that would subsidize the water costs for the poorest residents lack the revenue to institute such subsidies or the capacity to enact the surcharges that could pay for them. The increasing diversity of the
legislature has helped to some degree with water justice problems. But poorer cities often lack the internal capacity to go after technical water grants or private funding matches.

The state California Alternate Rates for Energy (CARE) and Family Electric Rate Assistance Program (FERA) provide subsidies to low income families. CARE offers a 30-35 percent discount on electricity bills and 20 percent on natural gas. Those who are struggling to pay their utility bill can qualify for Low Income Home Energy Assistance Program assistance, which pays up to $1,000. These programs are important in light of the fact that California’s electricity rates are higher than in the country as a whole.

Another problem for electricity is the low rate of take-up for disadvantaged communities compared to better-off communities in rooftop solar or Zero Emissions Vehicles programs. Designing these programs so that they reach more low-income communities is not just a matter of fairness but also of scaling up: California cannot scale up decarbonization without moving opportunities down the socio-economic ladder.
Water issues have long been a source of contention between California and Mexico. One that dates back to the 19th century is apportioning water Colorado river water shares between the two countries. The Treaty of 1944 gave Mexico a guarantee of 1.5 million acre feet of water, and potentially more under certain circumstances. It also established the International Boundary and Water Commission (IBWC) as the agency tasked with addressing and overseeing the resolution of binational water disputes. The IBWC has the ability to adopt minutes that have the force of treaty and can address issues as they arise such as water salinity, the construction of new dams along border rivers, and the design of drought measures. There have been 170 minutes adopted since that time.

With water scarcity likely to become even more problematic given climate change in the southwest and Mexico, issues related to the Colorado River are likely to become more contentious. Baja already suffers from severe water shortages, and climate projections suggest that it could receive 60 percent less precipitation in the future. As a consequence, Baja has constructed large desalination plants, including near the San Diego border. San Diego also has constructed a desalination plant...
in Carlsbad. Given the various problems with the outflow of residual brine and the intake of biota, both sides of the border will need to coordinate the operation of these and future plants to minimize these problems.

Energy also flows between the United States and Mexico. A wind farm was built in Baja based on a power purchase agreement by San Diego Gas & Electric to purchase $820-million over 20 years in 2015. This 1,200 MW plant was comparable to that of the largest wind plant in the US, giving Mexico a bigger footprint in the energy market and providing the surrounding communities with essentially passive income from the profits of renting out the land to a private energy company. Siting windfarms in Mexico is easier than in the United States due to laxer environmental standards with respect to protecting migrating birds from the turbines.

The Western Interconnection is the energy grid that spans more than 1.8 million square miles in all or part of 14 states, the Canadian provinces of British Columbia and Alberta and the northern portion of Baja California in Mexico. The Western Interconnection is governed by the Western Electricity Coordinating Council (WECC). Baja California, a WECC member, has two international power connections clusters with California, one at the Tijuana-Miguel border and another at the La Rosita-Imperial Valley border. Baja California’s international gas border crossings, a crucial component of its energy portfolio, comprise a combined volume of 2 billion cubic feet of natural gas per day.
PROPOSALS FOR CHANGE

In 2010, the Little Hoover commission argued that successful management of water would require reorganization of water agencies and that “water planning, management, rights and enforcement need not only to be located together, but fully integrated.”

The report noted that without better management, California would be subject to court-imposed legal solutions to meet environmental and contractual obligations. The Commission recommended that a new Department of Water Management become the state’s lead agency for water policy by taking on the planning and management functions in the Department of Water Resources and the responsibility for water rights and their enforcement residing in the State Water Resources Control Board. They argued that this would enable the state “to improve planning, better track progress on water conservation and efficiency, and improve the state’s ability to develop incentives to change the way Californians use water.” It would also “help streamline the water transfer process.” To do this, the Delta Water Master, a position created by the Sacramento-San Joaquin Delta Reform Act of 2009, would also become part of the new department to further improve coordination. And other units such as the instream flow unit from the Water Branch of the Department of Fish and Game would also become part of the Department of Water Management.

The report also recommended an expanded role for the California Water Commission to have oversight over resource-related general obligation bonds. It would also set guidelines for “minimum qualifications and competitive criteria for Integrated Water Management plans to separate the development of guidelines from the Department of Water Management that would administer grant and loan programs. Finally, the Commission proposed that the State Water Project, within the Department of Water Resources, become a separate organization operated outside the new Department of Water Management as a state-owned entity with an independent board. Locating the State Water Project outside the Department of Water Management "would remove the structural conflict to joining the water rights function and the water and management planning functions while also allowing the Department of Water Management to have independent regulatory oversight of the project through the added perspective of statewide management and planning.” The Commission argued that these moves would avoid the conflict of interest inherent in having a planning and regulatory agency running a project that provides water. In general, the report argued that there should be a strong separation between those entities that provide water to users and the Department of Water Management which would plan, manage, and regulate those entities.
Over a decade later, there has not been much progress either on the Hoover Commission’s specific recommendations or towards achieving a more coherent water planning process generally. While the state’s water plan serves an informational purpose, it does not provide any enforceable planning guidance, especially on the problematic issues of water storage and water distribution due to future extreme weather. Efforts to stimulate better water planning through bond funded grant competitions and strengthened groundwater monitoring have had some success in the years since 2010, but for the most part, California has not achieved the kind of planning coherence and implementation influence needed.

In both water and energy, governance is still divided between the CPUC and other agencies (e.g., the California Energy Commission, State and Regional Water Resources Control Board, etc.). Especially in the instance of water, some consolidation of all the various local water entities would lower the total transaction and implementation costs. Australia is an example of a country that has accomplished some degree of local water board consolidation, reminding us that it is possible.

In retrospect, trying to reorganize water governance before there was a real commitment to a more coherent planning, implementation and enforcement process was doomed to be undermined. At some point, it will become more apparent that we do not have the planning processes for the energy and water systems that we need to deal with climate change effectively. The fact that California handled the 2012-16 drought so effectively using the Governor’s emergency powers suggests that if things get bad enough, the problems of fracture can be overcome. The key to success is that someone or some entity must have real authority to formulate a plan and enforce it. Similarly, we cannot make energy choices without a coherent effort to link energy choices at the local level regarding generation and storage with the state’s overall energy needs for resource adequacy, reliability, and resilience. Instead of considering agency jurisdictional issues first, perhaps water and energy governance planning needs to be more focused on what tasks and functions will be needed to plan and prepare for future climate change related demands, and then address the organizational issues that would make that happen.

For California to meet the multiple challenges of climate change it needs governing institutions that work across borders. These “trans-border institutions” must deal with problems at the level where they can be effectively managed. Water policy must consider watersheds, energy policy must consider transmission networks, and wildfire management must encompass entire forests. More generally, in the areas such as immigration, transportation, housing, and public safety, California must develop ways of working across borders that includes all the relevant decision-makers. The challenge will be to respect local control while brokering agreements that sometimes hurt local interests in order to avoid tragedies of the commons where everyone acting in their own narrow self-interest creates a collective catastrophe.
TRENDS IN THE AMERICAN FEDERAL SYSTEM

Over the past 230 years of American federalism, four trends have shaped the federal system. First, with population growth and industrialization, there has been a growing scope of problems with respect to global commerce, climate change and the environment, poverty and inequality, water policy, and even homeland security as domestic security threats have become real. Second, reflecting the growth in the scope of problems, the federal government has become more and more involved in state and local problems with actions such as the Interstate Commerce Act (1887), the 16th Amendment’s authorization of the income tax (1913), the New Deal’s programs to deal with the Depression (e.g., Unemployment Insurance, Welfare, Social Security, the Wagner Act for labor, regulation of banks), and the Great Society (e.g., Food Stamps, Medicaid, environmental legislation). Third, the state has become more involved in local affairs, partly reflecting the growth of federal programs funneled through the states (e.g., Medicaid and Food Stamps) but also reflecting the passage of Proposition 13 in 1978 that necessitated the growing involvement of California state government in funding local activities, especially education, but also police and basic services. In addition, local governments (especially counties) have become involved in administering federal government programs such as Medicaid or the Supplementary Nutrition Assistance Program (CalFresh in California). Fourth, there has been an intertwining of powers across all three levels with the federal government often enlisting the states or localities in administering its program. And increasingly states and localities play important roles in foreign policy (e.g., climate change efforts), national security (e.g., immigration regulation), and the funding of basic research (e.g., stem cell research) – areas that have historically been thought of as national responsibilities.

The first three trends suggest that higher levels of government are taking over from local levels, but the fourth trend indicates that the situation is more complicated than that. Lower levels are substantially more trusted than higher levels and their local knowledge, proximity, or contacts are often essential to the administration of a program. In addition, solutions have to be tailored to local conditions. They also have powers at the margins to affect policies by making decisions to provide sanctuaries to immigrants, offer marriage...
licenses to gay couples, and to set their own public health standards. Consequently, the challenge for the next 100 years is to find ways that will keep programs as local as possible, while implementing solutions that take into account regional, state-wide, national and global conditions and trends. Doing this is especially important for California.

**CALIFORNIA’S UNIQUENESS**

As the largest U.S. state in population, the largest U.S. state in GDP only exceeded by the national economies of the U.S., China, Japan, and Germany, the third largest in land area—only Alaska and Texas are bigger, and the most diverse population except for Hawaii, California is exceptional. It has the highest mountain in the continental United States, the third longest shoreline of any state, and extensive forests, deserts, and farmlands. It is the nation’s leading center for technological innovation, the greatest producer of agricultural goods, the greatest importer of goods, and the second greatest state in exports with only Texas bigger.

And situated as it is on the western edge of the North American continent on the Pacific Ocean, bordering on Mexico, and separated from the rest of the continent on the north and east by high mountains, California faces China, Japan, and India across the Pacific instead of the European powers across the Atlantic that were the preoccupation of the original 13 states. Although California’s history of exploiting its indigenous peoples, ravaging its environment, and excluding immigrants is of a piece with America’s history of xenophobia, racism, and careless use of its natural resources, in the past 50 years California has been a leader among the states in environmental legislation, in trying to reduce educational inequality, in making health care available to all, and in welcoming immigrants. And California’s innovations in technology, bio-medicine, space-flight, entertainment, and electric vehicles have led the world. Lord Bryce’s 1888 observation about California in *The American Commonwealth* still rings true. Of all the American states, only California could be a separate, self-sustaining nation.

California, simply because of its sheer size, sends more taxes to Washington, DC than any other state as well, and it is less dependent on federal dollars than three-quarters of the other states. But a better measure of its relationship with the federal government is the number of dollars that California receives for each tax dollar sent back east. Here California breaks-even – a recent study concluded that California gets one dollar back for each one dollar it sends to the federal government. Because it breaks-even in its tax dollars and it is not very dependent upon federal largesse, California could be an independent nation.

Yet, because of the Constitutional agreement that provided two Senators per state California is the least well represented state in the Senate so that the average Californian’s representation in the Senate is about one-68th of the smallest state, Wyoming. When a unit within a federation has vastly different power
than other units in a crucial institution such as the Senate, the federalism literature speaks of “asymmetric federalism” that can create complications in the federal system. The problem for American federalism is exacerbated because there is a systemic asymmetry that disadvantages Democratic-voting states in several institutions, and California is decidedly Democratic. In the 2020 Presidential election 63 percent of Californians voted for the Democrat and 34 percent voted for the Republican.

When Republicans control the Senate and the Presidency because of the asymmetries in the American federal system (which was arguably true in 2019-2021 in the 116th Congress), then states such as California can feel under-represented. Matters are made worse when the President puts forth policies, such as those of Donald Trump, to increase taxation on states such as California with income taxes or to limit California’s independence with respect to environmental legislation by rolling back its right that it has had for 50 years, to set automobile emissions’ standards exceeding the federal standard. Because California has different needs and aspirations than many other states, it feels unrepresented in these circumstances.

**QUEBEC AS A MODEL FOR OPERATING IN A FEDERAL SYSTEM?**

The province of Quebec in Canada provides an example of how a state might think about its place in a federal system when it feels disadvantaged. Quebec has been involved in its own efforts to define its identity and its place within Canadian federalism. On the 150th anniversary of the Canadian Federation in 2017, the Quebec government released a report entitled “Quebeckers: Our Way of Being Canadian.” This report recounts the ways that Quebec has defined itself. Starting in 1961, it undertook foreign missions despite the Canadian government’s opposition. At the same time, it created a secretariat to focus on Quebec’s relations with other provinces and the Canadian Government (the 2017 report was produced by the Secretariat). This Secretariat developed special relationships with Canada and other provinces on taxes, health, electricity, trade, the fight against climate change, and immigration. Recently, the Secretariat has turned to working with civil society to create youth programs related to Quebec identity and to push forth in the media a distinctive story about Quebec. Over the past 60 years, Quebec has become increasingly active in working in all directions – with foreign governments, with other provinces, with the Canadian government, and most recently with civil society – to advance the interests of Quebec.

**What California is Doing:** California is following Quebec’s example in a number of ways. The federal government has, since the 1970s, accorded California a unique role in setting automobile emissions standards that exceed the federal standard, through a waiver of the federal Clean Air Act. Recently, California has expanded immigrant rights on a variety of issues, including access to health benefits, in-state tuition, and financial aid, and the right to practice various occupations that far exceed the national standard and serve as a benchmark for other states.
Like Quebec, California has engaged in substantial legal action to roll-back federal policies it finds inimical. During the Trump years, the California Attorney General spent at least $41 million to file 110 lawsuits contesting federal government actions with respect to climate change, consumer rights, immigration, and other areas. After the Trump Administration withdrew the U.S. from the 2016 Paris Climate Accord, Governor Jerry Brown partnered with Washington and New York governors to found the United States Climate Alliance: a bipartisan coalition of states and unincorporated self-government territories in the U.S. that are committed to upholding the objectives of the Paris Climate Accord. This independent action by California has been consistent with other foreign policy actions taken by the state which have all been mostly motivated by California’s priority to fight climate change.

California has also created new positions to engage internationally. On February 28, 2019, Governor Gavin Newsom designated Lt. Governor Eleni Kounalakis as the Governor’s Representative for International Affairs and Trade Development and created the International Affairs and Trade Development Interagency Committee. Los Angeles has appointed a Deputy Mayor for International Affairs, Nina Hachigian who is a former U.S. Ambassador to the Association of Southeast Asian Nations (ASEAN). The Office focuses on increasing foreign investment and tourism to the city, building stronger relationships with the diplomatic corps of over 50 foreign consulates operating in the city, and working directly with other global cities on solutions to combating growing inequality and addressing climate change.

The International Affairs and Trade Development Interagency Committee led by the Lt. Governor focuses on foreign trade and investment and the movement of people and goods across the Mexico-U.S. border and into the air and water ports. In addition, given the composition of the committee, there is an emphasis on the impacts of climate change on agriculture, the environment, energy production, and emergency preparedness (e.g., wildfires). MOU’s figure prominently in the discussions: The August 27, 2019 minutes talk about eight MOUs with Mexico in the past six years on clean air, energy, the economy, emergency services, and tourism.

Trade missions, trade fairs, international delegations, and other forms of international contact are also mentioned repeatedly. It is clear that this Committee serves an important purpose in facilitating and encouraging foreign trade and investment, working with Mexico, and providing leadership on issues related to climate change.

California is just beginning to find a footing in what has come to be called “public diplomacy.” The University of Southern California offers a master’s degree in “public diplomacy” and it has a Center on Public Diplomacy. The City of Los Angeles is a leader in this public diplomacy effort. In April 2018, the USC Center on Public Diplomacy partnered with the Los Angeles Mayor’s Office of International Affairs to bring together city leaders from 17 U.S. cities with a responsibility for international relations to discuss city diplomacy. That conference identified five ways in which cities (especially large cities) are involved in public diplomacy: developing international trade and investment, working with consulates in the city, hosting international events such as
the Olympics, engaging in civic empowerment through programs such as “sister cities,” and collaborating with organizations of cities such as the Cities Alliance, Under2 Coalition, and the Global Covenant of Mayors.

The report concludes, as this list suggests, that “The current landscape of city diplomacy is diverse and primarily function driven.” This same statement could be made about public diplomacy at the state level. The report goes on to say that public diplomacy works best when it is policy driven with a clear vision. The Quebec example demonstrates this. Quebec has a clear-cut notion of what it wants and how it will proceed to get there. The challenge for California is to develop a similar vision. Leadership on climate change is certainly a trademark for California, but more needs to be done to produce a broader vision of what California is and what it can be. Although there is consultation among the Governor, the State Attorney General, the Lt. Governor, and the Deputy Mayor in Los Angeles, more could be done to bring these separate efforts together. By doing this, California could make a case for why it should be given distinctive powers and rights within the U.S. federal system that are commensurate with its needs, with its size and population, and with its leadership role.

CALIFORNIA’S FUTURE RELATIONSHIP WITH CHINA

Journalist Matt Sheehan has called California’s relationship with China “The Transpacific Experiment” that is “the living laboratory for a new breed of grassroots superpower diplomacy. It is the fluid ecosystem of students, entrepreneurs, investors, immigrants, and ideas bouncing back and forth between the Golden State and the Middle Kingdom. It’s the Chinese undergrads expanding their horizons on California campuses, and the Silicon Valley start-ups scratching for a toehold in China; the California mayors courting Chinese factory investment, and the Chinese Governors studying California carbon markets.”

In a deep and profound way, the California-China relationship involves the clash of two separate systems that are now organizing the world and two distinct ways to think about the world and those systems. The two systems are the traditional nation-state system of separate nations with prerogatives and perquisites and the internet which organizes the world in networks of people, enterprises, and things. The nation-state system is based upon geographical boundaries, powerful hierarchical nation-states, and an emphasis upon security and protection of its populations even if that means limiting freedoms. The creators of the Internet in Silicon Valley envisaged a world where people-to-people communication would empower people and allow for more freedom and democracy. The Internet knows no boundaries (and less-and-less so as AI makes possible the immediate translation of languages), it creates grass-roots social networks, and it focuses on free flow of information even if that means creating disinformation, allowing bullying, and facilitating the activities of terrorist organizations.
The two ways to think about the world are, on the one hand, the West’s long-standing commitment to liberalism, free trade, free speech, democracy, and globalization and, on the other hand, China’s traditional concerns for order and hierarchy hardened by communism’s distrust of democracy, faith in the dictatorship of the proletariat, and belief in the leading role of the Communist Party. The West’s commitment to its worldview increased with the end of the Cold War in 1991 that made it seem truly possible to have a liberal world order with free trade, democracy, and globalization. For Americans, the Internet appeared to be part of this strategy that would empower the world’s populations. The Chinese Communist Party’s commitment to order and hierarchy were increased with shocks from the Tiananmen Square protests (1989), the dissolution of the Soviet Union (1991), the Arab Spring in the early 2010s where the Internet brought people together to overthrow their governments, and the revelations of Edward Snowden in 2013 that showed that the U.S. National Security Agency had created “backdoors” to American Internet software that facilitated its spying on users. These and other events have led China to reject a free and unregulated internet.

With the ascendance of President Xi Jinping in 2012, China developed a new model for the internet called “Internet Sovereignty” or “Cyber Sovereignty.” In the past eight years, China has vigorously enforced censorship on the web, and used it to monitor the actions of its citizens. With the rise of disinformation on the web, calls for internet regulation have gained a foothold in the United States as well, and one of the great challenges of the next decade will be developing better ways to govern the internet while both respecting and limiting state power so that the internet can be as free as possible. California will undoubtedly be at the center of these efforts that will constitute an important kind of public diplomacy.

THE FUTURE OF CALIFORNIA’S RELATIONSHIPS WITH ASIA AND LATIN AMERICA

California will have ever greater relationships with Asia and Mexico in the future. Among the top 20 countries in population in 2022, nine of them are in Asia and two are in Latin America: China (number 1), India (2), Indonesia (4), Pakistan (5), Brazil (6), Bangladesh (8), Mexico (10), Japan (11), Philippines (13), Vietnam (15), and Thailand (20). Many of these already are important trading partners for California (China, India, Indonesia, Mexico, Japan, Philippines, Vietnam, Thailand, and Brazil) along with South Korea, Taiwan, Hong Kong, Singapore, and Malaysia. Shaping and defining these relationships is an important task of public diplomacy as the world navigates toward a world order that is more resilient and sustainable, that continues to innovate, and that one hopes becomes more equitable while respecting diversity. California is an important player in these efforts, and it needs to develop a vision regarding people, education, trade, culture, and the internet that will ensure its future prosperity.
California must solve some difficult intergovernmental relations problems within its borders during the next 100 years. As chronicled above, it has had substantial success in energy where it has been a leader in the move toward renewable energy sources. It has also been successful in health care where its implementation of the Affordable Care Act has been a model for the nation, but it still faces two big challenges in controlling health care costs and making the California health care system more coordinated and accessible. California’s criminal justice reforms have demonstrated the possibility of substantially reducing prison populations without increasing crime, but it has not decreased prison costs by very much. And the devolution of criminal justice implementation to counties has led to a patchwork of policies relating to incarceration for lower-level offenses. California’s higher education system still leads the world, and it has built a highly innovative economy on that system and other advantages. It has had some success with improving its K-12 system through the Local Control Funding Formula, but there is a long way to go given the underfunding of K-12 compared to other states. It faces challenges in the solution of its water problems as described above, and it faces great difficulties in solving its housing and homelessness, transportation, poverty, and water problems. The state also has to develop ways to sustain the flow of immigrants, to welcome them to California, and to coordinate its policies with the federal
government. Finally, California has to develop a coherent policy for the arts that recognizes both its economic and cultural value.

Solutions to these problems require thinking harder about the assignment of responsibilities across levels of the federal system, providing more power to coordinating and planning agencies, developing better methods of coordination horizontally and vertically, and ensuring that the federal government facilitates solutions. Yet California seldom thinks about its governance in this way. The state’s Little Hoover Commission is specifically authorized to help the Governor think about organizational matters, but it has focused on policy, personnel, and administration more than on organization with some notable exceptions. It seems likely that the state of California is underinvesting in thinking about its governance, and more could be done to challenge researchers to think about ways to improve California’s organization and governance.

ADDRESSING INTERGOVERNMENTAL RELATIONS PROBLEMS OUTSIDE ITS BORDERS

California must also develop a perspective on its identity and role within the U.S. federal system, develop ways to function effectively with a federal government that might be unfriendly at times, and develop linkages with foreign governments who can help it resolve problems and provide it with allies in its quest to solve problems. Quebec provides a model for what might be done. Central to this effort is the development of a California identity that can guide its efforts. The Attorney General’s lawsuits against the Trump administration reflect certain priorities such as dealing with climate change and immigration, but they are not put forth as part of an overall vision. Governor Newsom’s naming of the Lt. Governor as Representative for International Affairs and Trade Development and Mayor Garcetti’s naming of a Deputy Mayor for International Affairs in Los Angeles reflect a realization about the importance of linkages beyond California, but these efforts could grow beyond facilitating trade and international exchanges if they were thought of as part of a coherent strategy to develop an identity for California within the U.S. federal system and the world.

DEVELOPING AN INTERGOVERNMENTAL, TRANS-BORDER VISION

A satisfactory vision for California’s future should include continued intergovernmental policy leadership on climate change, criminal justice, and health care. It should include innovative policies in education, housing, transportation, water, and other policy areas. Beyond that, It should develop an agenda for public diplomacy with other countries that ties together innovative immigration policies such as expanding voting rights and issuing work authorizations for immigrants with astute thinking about how a state at the epi-center of the internet revolution can help to develop better ways to govern the digital world and to relate to its partners in Asia and Latin America and around the world.
THE FUTURE OF FEDERALISM AND FOREIGN POLICY IN CALIFORNIA

FOUR ALTERNATIVE SCENARIOS
SCENARIOS FROM THE FUTURE
FEDERALISM AND FOREIGN POLICY IN CALIFORNIA

Foresight practitioners use scenarios to help make future possibilities more vivid and tangible, immersing the reader in the particular details of a future world so that they can mentally situate themselves in what it would feel like to live there. Without scenarios, the signals, trends, and other research that underlie strategic foresight work can feel distant and abstract. Scenarios can be used to center a group conversation in a positive and concrete picture of a future state so that stakeholders can pursue a shared vision for how to respond to that possibility, or mobilize action to avoid an undesirable outcome.

To explore potential futures for a topic as broad as federalism, we have chosen two specific governance issues that highlight the tensions between federal and local authorities: energy and water policy in California. The scenario matrix presented below can be generalized somewhat to other state issues where federal authority comes into play.

The vertical dimension represents the frequency and severity of the problem. We specifically focus on climate events such as extreme heat, flooding, sea-level rise, wildfires, and the like.

The horizontal dimension is the degree of authoritative collaboration at the federal, state, regional, and local levels. For example, as the dangers of wildfires increase throughout the state and across state borders, a heavier demand is placed on coordinating efforts at thinning or emergency services.
As greenhouse gases accumulate, extreme weather events such as extended droughts and heatwaves, extensive floods, sea-level rise, and more intense wildfires proliferate dramatically, but trans-border cooperation does not increase. Control of resilience measures resides primarily with local government officials, as do other decarbonization decisions (e.g., infrastructure for zero-emission vehicles). Differences in city capacity and ideology result in uneven implementation of decarbonization and resilience measures.

Past experiences with housing, schooling, health care, and air quality policy suggest that community responses to climate change will also vary widely unless action is taken to override local powers. In the past, the California Legislature has stepped in to some degree to limit these local inequalities with statewide programs and requirements. Still, as the costs of dealing with extreme weather soar, local communities retreat to protecting themselves and touting their decarbonization virtue without helping poorer communities.

### HISTORICAL PRECEDENTS

- **2001-2:** California Alternative Rates for Energy (CARE) enabled low-income energy customers to get discounted energy bills.
- **2008:** Water bond process amended to give preference to disadvantaged communities.
- **2019:** Bills addressing housing crisis relieve some pressure.

### FUTURE DRIVERS

#### Extreme Weather

The costs of dealing with extreme weather events rise dramatically.

#### Inequality

Demographic and economic trends will increase income inequality among Californians.

#### Disparate Water Access

Wealthier communities tend to be located in coastal areas, while less-advantaged ones are pushed into parts prone to excessive heat.

### SIGNALS

#### Wealthy communities benefit from strong CCAs

**WHAT:** CCAs with greenest energy profiles are liberal, upper-income communities like Marin, Sonoma, and Palo Alto.

**SO WHAT:** Ownership of solar panels and ZEVs are strongly correlated with socioeconomic status.

*Lawrence Berkeley Lab*

#### Low-income communities experience effects of climate change first

**WHAT:** Wildfire smoke impacts those who live in poorly insulated homes, work outside, and cannot afford air purifiers.

**SO WHAT:** Low-income communities will experience the worst effects of climate change first.


#### Statewide framework for groundwater management

**WHAT:** In 2014, California’s Sustainable Groundwater Management Act created a statewide framework for groundwater management, which leaves control in the hands of local entities.

**SO WHAT:** California could employ a similar tactic to address other issues that cross jurisdictional boundaries that allow local governments to retain controls, such as for land-use decisions.

*waterinthewest.stanford.edu*
Given the failure so far in the United States and elsewhere to make a strong enough commit-
ment to decarbonization, extreme weather disasters worsen and put many parts of the U.S.
under a state of constant emergency powers. Most states give governors wide executive
powers to deal with natural disasters. These powers include suspending laws and regulations
that slow or inhibit an effective emergency response. While these measures clear the way
for more action, they tip a precarious state-local balance in California as emergency powers become
permanent, opening the door to unchecked abuse and political manipulation and a loss of individual
freedoms. This leads to strong time-of-use control by the system operator on electricity and strict limitation
of water use for any outdoor purposes. These actions affect the state’s ability to provide new housing and
impact its appeal to people and businesses that might have otherwise considered relocating to California.

### Historical Precedents

1942: Executive Order 9066 forced Japanese citizens into remote camps throughout the West.

2015: Statewide water restrictions imposed a 25% reduction in water use on the state’s local water supply agencies.

2021: Emergency Proclamation on Energy expedited clean energy projects and worked to relieve demand on the electrical grid during extreme weather events.

### Future Drivers

**Political Shifts:** The length of emergency conditions and the shortening of intervals between them due to worsening global warming.

**Migration:** Willingness to relocate from wildland urban interface and flood zone areas.

**Decarbonization:** The rate at which the world can reduce carbon emissions.

**Technology:** The state of technology to monitor individual behavior for compliance with energy and safety regulations.

### Signals

**California emergency proclamations have increased in number and length**

**WHAT:** Due to wildfires and droughts, California’s emergency proclamations have increased significantly.

**SO WHAT:** California may continue to experience longer and more frequent emergency orders, which might lead to a permanent state of natural disasters and a permanent state of emergency.

[library.ca.gov](library.ca.gov)

**Residents in wildland urban interface zones have trouble getting wildfire insurance**

**WHAT:** Insurers dropped nearly 350,000 California homeowners with wildfire risk as of 2019.

**SO WHAT:** Homeowners living in the wildland urban interface may continue to face challenges insuring their homes, particularly if they lose their homes in a wildfire, which adds additional obstacles to rebuilding.

[sacbee.com](sacbee.com)
PAROCHIAL INEFFECTIVENESS

Milder climate impacts with low interagency collaboration

Extreme weather begins to get people’s attention in the form of prolonged droughts and more destructive wildfires, but climate change is not as devastating as some have predicted. Tomorrow looks a lot like today, and trans-border coordination remains at the same level as today. Local communities continue to guard their land-use powers closely, farmers still retain their water rights, and communities increasingly opt for local control over energy purchases by forming Community Choice Aggregators (CCAs). California’s efforts to achieve decarbonization are constrained by a lack of participation from the rest of the western region, as out-of-state energy continues to have a high fossil fuel profile. States fight over surface water rights.

HISTORICAL PRECEDENTS

1998: California Independent System Operator was established to regulate energy industry.

2001-02: California AB 117 enabled the creation of Community Choice Aggregators (CCAs), weakening state power.

2010s: The top five most devastating wildfires in California history occurred during this decade.

FUTURE DRIVERS

Demographics: Continued population growth increases the demands for water and energy.

Extreme Weather: Droughts and wildfires strain both the energy and water supplies.

Technology: Innovations in batteries and distributed energy systems based on wind and solar and utility-scale renewables strain the resiliency and finances of California’s grid.

Policy Shifts: State has ambitious energy goals of 60% renewables by 2030 and zero-carbon energy supply by 2045, but these efforts are hampered by widespread greenwashing.

SIGNALS

Despite wildfires, California also has years of low wildfire effects

WHAT: Although California has experienced severe wildfires in recent years, it has also experienced some less destructive wildfire years.

SO WHAT: If the effects of wildfires are gradual enough, the state can limp along with the current structure of water and energy governance as circumstances gradually erode due to decreased pressures in less destructive wildfire years.

Wealthy communities create alternatives to traditional water sources

WHAT: The state continues to fight against efforts to reduce its water share from the Colorado River while wealthy communities on the coast turn to water reclamation and desalination.

SO WHAT: As the rest of the state struggles to find water for agriculture and human consumption, California’s wealthy communities turn inward with their own costly alternatives.

Conflicts continue over California’s waterscape

WHAT: A decades-long conflict between hundreds of water agencies over California’s water supply are often proxy wars for land-use disputes, particularly around housing.

SO WHAT: Tensions between environmental flows and agricultural interests increase over time, paralyzing progress.

parscalmatters.org
California moves toward better trans-border collaboration in water and energy, but without the urgency of a dramatic, widely-recognized upturn in extreme weather events. The state builds on its Integrated Regional Water Management Planning Act, established watershed-scale planning processes, and funded collaborative water projects with several rounds of bond measures to achieve better sharing of water resources. Even more significantly, the state takes the final steps toward regulating groundwater, creating a stronger regulatory structure over the Groundwater Sustainability Agencies established in 2017 to prevent the over-drawing of aquifers.

### NASCENT TRANS-BORDER EFFORTS

**Milder climate impacts with high interagency collaboration**

#### SIGNALS

**Rapid closure of last remaining nuclear facility in favor of desalination**

**WHAT:** In 2016, PG&E announced that it planned to close the two Diablo Canyon Nuclear Plant reactors in 2024 and 2025 because the plant was considered uneconomical.

**SO WHAT:** Losing Diablo Canyon will create significant challenges to ensuring reliability off the grid without resorting to more fossil fuel usage.

energy.stanford.edu

**Long-term drought impacts efficiency of hydroelectric plants**

**WHAT:** Because of the severe drought in the state, hydropower generation declined by nearly 14 percent in 2021 compared to 2020.

**SO WHAT:** Drought effects on hydroelectric plants will continue to lower the supply of an important green energy source.

eia.gov

**Extreme water scarcity along Colorado River**

**WHAT:** In September 2021, the first-ever Colorado River water shortage declaration occurred, sparking water cuts throughout the southwestern U.S.

**SO WHAT:** The low water levels on the Colorado River signal potential problems for the Imperial Valley and San Diego, in particular.

fb.org

#### HISTORICAL PRECEDENTS

**2002:** SB 1672 created 48 regional management groups covering 87% of the state’s area and 99% of its population.

**2014:** Sustainable Groundwater Management Act (SGMA) requires local agencies to implement Groundwater Sustainability Plans (GSPs).

**2006-18:** California passes a series of historic goals for decarbonizing the economy.

#### FUTURE DRIVERS

**Technology:** Rates of battery storage improve, and offset the intermittency of wind and solar. Water storage and reuse become more efficient.

**NIMBY Resistance:** Siting utility-scale solar and off-shore wind remains difficult in a state with many dedicated environmental groups and complex permitting processes.

**Economy:** Downturns in the economy and the problem of leakage to other states if decarbonization puts California firms at a competitive disadvantage.

**Public Attitudes:** Public attitudes toward drinking recycled wastewater or opposition to expanded desalination yield limited progress in water supply issues.
FUTURE POLICY OPTIONS FOR CALIFORNIA IN FEDERALISM AND FOREIGN POLICY

Choices among governmental policies depend partly upon which future scenarios seem most attractive to us, but they also depend upon our perspectives on the proper role of government, on the resources available to government, and on the likelihood that government will succeed in its endeavors. Doing nothing is sometimes the best policy option, but doing nothing often uncritically accepts the current mix of policies and the future they entail without considering the alternatives. Over the past seventy-five years in California, that meant accepting discriminatory racial housing covenants, restrictive zoning laws, few restrictions on air or water pollution, “separate but equal” schooling, the dismantling of transit systems, and many more things that are now thought to have been wrong or misguided. We have also seen aggressive policy measures in California that have had unintended consequences, from the impacts of Proposition 13 on local government budgets to the way the California Environmental Quality Act has affected housing supply and manufacturing.

Because we are thinking about the future and we do not want to be hemmed in by the status quo or a lack of imagination, we put forth an array of alternative policies, and we tie them to different scenarios. Readers can decide which ones (or combinations of them) they prefer. Our discussion of the policy tradeoffs below will favor scenarios that continue to view federalism and foreign policy as an opportunity for California to create a strategic plan for its future, and look critically at approaches that do not. Readers should consider which scenario best captures the California they want to live in, and evaluate which policy recommendations they believe will get us there.

As previously discussed, the scientific consensus is that a changing climate will lead to an increase in extreme weather events over time. What remains uncertain is the timing and impact of such changes, as well as the societal and governmental response in California and beyond. Will local jurisdictions in California band together in the face of accelerating climate impacts? Or will they be left to fend for themselves? The scenarios described above represent a range of collaboration across jurisdictional boundaries. The policy recommendations discussed below for each scenario attempt to move California towards a middle ground – a blend of top-down and bottom-up coordination in which the state provides overall coordination and regulatory guidance to foster trans-border collaboration while stopping short of permanent authoritative control.
PAROCHIAL INEFFECTIVENESS

Given the constraints of status quo institutions and current levels of extreme weather, the desired outcome is to encourage more bottom-up collaboration between local entities. The state continues to incentivize with grants and regulatory guidelines, but leaves the choice of whether and how to collaborate to the local governments themselves. Ideally in water policy, this means more collaboration at the watershed or aquifer scale. In energy, the state encourages CCAs to combine into larger entities in order to provide the scale necessary to undertake the financial risks associated with undertaking power purchase agreements and to provide a more coordinated energy profile. In addition, all California communities start the process of implementing the state’s ambitious goals with respect to electrifying the transportation sector. Where appropriate, local jurisdictions take measures to make their communities more resilient to floods, fires, heat and drought.

Retire Legacy Energy Contracts: The state uses its resources to retire legacy energy contracts and wildfire liability so that energy prices more clearly reflect demand, shaping time-of-use policy that encourages energy use patterns that compensate for the intermittency problem (too much solar in the day and none at night).

Low-Income Funds for Climate Adaptation: The state uses its funds to help poor families make their homes habitable during heat waves and extended periods of wildfire smoke.

Support for Local Government Coordination Efforts: Local governments study the advantages of more coordinated extreme weather protection, emergency actions and recovery processes. A good example of this is the newly formed Marin Wildfire JPA which could be the blueprint for forming more permanent agreements among cities and counties that want to work together to solve wildfire and flooding issues.

Water Collaboration Project Bonds: The state continues to put bonds forward to fund more water collaboration projects through the IRWMs and GSAs.
NASCENT TRANS-BORDER EFFORTS

There are limits to bottom-up planning, especially since there are wide variations in local government capacity and political orientation. The frameworks for more top-down direction and more regional coordination already exist but are bolstered in this scenario. Both on the Mexican border and in domestic inter-state treaties, there are existing mechanisms for negotiations with respect to surface and groundwater. What is missing is information about how climate change will alter the water storage situation. Moreover, there is a need for a recalibration of expectations about future surface water supply, more aggressive strategies of water reuse and some guidelines about land use as it relates to future water supply. With energy, there is an even better framework to build on as the Western Governors Association (WGA), the Western Interstate Energy Board (WIEB) and the Western Electricity Coordinating Council (WECC) all provide multistate forums for forging strong ties between the energy choices and generation strategies across the states. California can only do so much with respect to decarbonization without support from the other Western states. One important tool of energy reliability is the ability to import energy from other states, but if those states remain committed to fossil fuels it will undercut California’s efforts. And if California insists that clean energy jobs remain in the state, it will undercut the incentive for other states to develop their wind and solar resources.

**Top-Down Nudging Policies**

*Data Sharing Between Entities:* The WIEB and the WECC obtains more authority to compel Load Serving Entities to share data on and accept more sensing devices that measure the resilience of their transmission systems, which are often the source of wildfire ignitions.

*Expansion of Department of Water Resources Authority:* The Department of Water Resources is given more authority to examine what climate change will do...
to imported water supplies, especially from the Colorado River, to demand that the state’s Integrated Regional Water Management program come up with forward-looking water plans that take these projections into account.

**Agricultural Water Protections at State Level:** The state government takes on water rights and agricultural subsidies before the matter becomes a ballot measure. Agriculture products constitute only 2 percent of the state’s GDP and farming communities are dwarfed in political and electoral power by the other interest groups and the state’s population. If push comes to shove, the needs of urban and suburban residents and businesses will have the final say, and the terms at that point, are unlikely to be very favorable for the agricultural sector.

**Expansion of California Independent System Operator Authority:** The current processes for energy resource planning in the state have become highly political and complicated. The state explores whether – like the Federal Reserve with respect to monetary policy in the United States – the California Independent System Operator should have more authority over the orderly retirement of gas plants, large hydroelectric facilities and the last remaining nuclear facility. It also explores implementing the 2010 recommendations of the Little Hoover Commission to create a Water Resources Management Agency with expanded powers.

**SEPARATE AND UNEQUAL**

Global warming accelerates, and as conditions have worsened, communities with more capacity take measures to protect themselves from extreme weather and those with less suffer the consequences to a greater degree. The failure to strengthen coordination from the top creates great disparity in outcomes. In the best case scenario, this accelerates the bottom-up processes described in the Parochial Ineffectiveness scenario. There is some evidence that democracies respond more effectively with a crisis, and the state is aided in its goal of encouraging more individual effort. But there is needless suffering in disadvantaged communities, and the costs of dealing with ill-prepared communities makes an “every community for itself” policy more expensive over time for the state as a whole. The
salience of the problem eases the path to a solution, but the delay in action will make everything more expensive and, in some cases, result in too little too late.

**Hybrid policy outcomes** — In this scenario, many state policies by necessity are reactive responses to dire climate effects.

**Cut Agricultural Water Allocations:** The state severely cuts agricultural water allocations in many places in the Central Coast and Central Valley. Farming is restricted to areas of adequate water supply.

**Increase Recycled Water and Desalination Efforts:** Coastal areas increase recycled water use and desalination efforts. This means abandoning so-called purple pipe systems—in which recycled water is used for specific purposes like landscaping—and putting reclaimed water to potable use.

**Targeted Public Safety Power Shutoffs:** The state rationalizes the grid system to do public safety power shutoffs in a more targeted way in order to limit wildfire ignition events and develop backup battery systems to serve communities that are likely to have frequent power interruptions in the summer.

**Increased Smoke Requires Personal Protective Equipment:** Masking is common through the summer, and new homes are required to have air purifying systems throughout the house.

Still, as in the Parochial Ineffectiveness scenario, there may be opportunities to encourage collaboration between local communities. For example, “carrots” like state funding opportunities could be tied to collaborative efforts.

Similarly, the “stick” of state intervention might encourage local governments to work together. The 2014 Sustainable Groundwater Management Act (SGMA)
provides a potential model here. SGMA created a statewide framework for groundwater management, but leaves the control in the hands of local entities. The law uses the threat of state intervention or litigation from local stakeholders to encourage local agencies to act and to collaborate with other stakeholders. A similar tactic might be used to address other issues that cross jurisdictional boundaries but where local governments retain control, such as land use.

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**A STATE OF PERMANENT NATURAL DISASTER EMERGENCY**

Under this scenario, global warming accelerates and the situation is so dire that it requires a dramatic increase in central coordination, perhaps similar to a war-room operation. The federal government institutes mandatory clean energy policies, banning the use of fossil fuels despite the economic consequences. Regional entities are given the power to coordinate electricity use in the home using computerized algorithms and businesses electrify or close down. Unless there is progress on cleanly produced hydrogen or truck battery systems, economic services have to become less globalized and more locally sourced and supplied. Water is reallocated to sustain the needs of businesses and homes and much of the agriculture shifts to the Southeast where rains are plentiful.

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**Emergency policies:**

 Longer Weather-Related Emergency Proclamations: At the federal level, states are allowed to extend weather related emergency proclamations throughout longer periods of the year than before.
**Authority for Strategic Retreat:** State and local governments obtain the authority to demand strategic retreat from risky flood and fire areas and to relocate residents and businesses to safer zones.

**Extended Water Rationing:** Water rationing is extended for long periods of time

**Increased Executive Power:** The power of the executive branches at all levels are increased to deal with emergencies and transparency requirements need to be modified or waived to expedite action.

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**Policy Recommendations to Limit Adverse Effects:**

**Checks and Balances:** In order to limit the potential for executive overreach, the state should ensure that any emergency powers granted to the governor be periodically renewed by the state legislature.

**Incentives Over Mandates:** As much as possible, state policies should incentivize rather than mandate. For example, the state should encourage a strategic retreat from wildfire-prone areas through insurance and zoning instead of forcing people to leave. Compulsion should be the last resort.
CONCLUSIONS:

IMPLICATIONS FOR CALIFORNIA’S ROLE IN THE INTERGOVERNMENTAL SYSTEM

The examples of energy and water have larger implications for California’s place in the federal system. Unless California develops its own solutions to problems, it risks the federal government stepping in to solve them for it. And failing to solve these and many other problems – immigration, housing, health, transportation, education, and poverty – will create a downward spiral in which worsening quality of life and increasing segregation of communities means fewer people and businesses come to California and the state becomes poorer and increasingly unable to solve its problems. The lesson is that California needs to think about developing a vision that will mobilize its population, define its position within the federal and international system, and lead to action to solve problems in a more coordinated fashion that balances international, federal, state, and local involvement. California’s lawsuits with the federal government and its development of a “foreign policy” are steps towards developing such a vision, but much more has to be done.