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Steering California's Transportation Future: A Report on Possible Scenarios and Recommendations

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Steering California's Transportation Future: A Report on Possible Scenarios and Recommendations

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16. Abstract To investigate possible future transportation and land use scenarios for California as well as their likely precipitating policies and potential consequences, we convened a panel of 18 experts and used a novel variation of the Delphi method to systematically explore four specific scenarios and probe the desirability and likelihood of each. The scenario that panel members collectively thought most desirable for California (one with diverse transportation options and higher-density development) was also the one they thought least likely to materialize by 2050. This report describes the findings of the three surveys and two meetings that our method entailed and summarizes some of the discussion among panelists. We include reflections on the salient but unexpected finding that panelists viewed trust in government as both critical to effecting the scenario they considered most desirable and also lacking to such an extent that pursuing that desirable outcome could cause unintended consequences or outright failure. Accordingly, we discuss possible implications and outline policy recommendations for improving both processes and conditions that can instill in California's government more trust, without which a future of multimodal transportation and higher-density, mixed land uses is unlikely to succeed.					
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The University of California Institute of Transportation Studies (UC ITS) is a network of faculty, research and administrative staff, and students dedicated to advancing the state of the art in transportation engineering, planning, and policy for the people of California. Established by the Legislature in 1947, ITS has branches at UC Berkeley, UC Davis, UC Irvine, and UCLA.

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The California Resilient and Innovative Mobility Initiative (RIMI) serves as a living laboratory—bringing together university experts from across the four UC ITS campuses, policymakers, public agencies, industry stakeholders, and community leaders—to inform the state transportation system’s immediate COVID-19 response and recovery needs, while establishing a long-term vision and pathway for directing innovative mobility to develop sustainable and resilient transportation in California. RIMI is organized around three core research pillars: Carbon Neutral Transportation, Emerging Transportation Technology, and Public Transit and Shared Mobility. Equity and high-road jobs serve as cross-cutting themes that are integrated across the three pillars.

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The UCLA Institute of Transportation Studies acknowledges the Gabrielino/Tongva peoples as the traditional land caretakers of Tovaangar (the Los Angeles basin and So. Channel Islands). As a land grant institution, we pay our respects to the Honuukvetam (Ancestors), ‘Ahihirom (Elders) and ‘Eyoohiinkem (our relatives/relations) past, present and emerging.

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Steering California's Transportation Future: A Report on Possible Scenarios and Recommendations

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Introduction

How Californians get around in the future will be shaped by investments made and policies enacted today. The extent to which California supplies, invests in, and manages public and private mobility, both personal and shared, will determine how efficiently, effectively, and equitably future residents can travel. As important to California's transportation future is how well and how quickly the state and its many local governments will steer their land use policies and decisions toward a future that enables the state's land use/transportation system to be more resilient, equitable, sustainable, and inclusive.

This report summarizes our engagement with a group of thought leaders on California's land use and transportation future(s). We conducted a series of surveys and panel discussions with 18 experts representing a wide range of perspectives and professional experience relating to transportation and land use in the Golden State. We convened this panel to benefit from their collective foresight and judgment concerning four future potential scenarios that we developed to describe what California's transportation and land use might look like in the year 2050. This report describes the background and purpose of the research, what we heard from the panelists in our surveys and discussions, where the strongest consensus emerged, and conclusions, implications, and recommendations from the work. Other research products from this multifaceted effort connect these four scenarios to facts about, origins of, and trends in transportation and planning in California (Wasserman et al., 2022), and describe in more detail the "hybrid policy Delphi" methodology used for our panels and its possible further applications (Gahbauer et al., 2022).

Scenario Design

This study was originally funded by and conducted under the auspices of the California 100 Initiative, a donor-funded statewide program focused on inspiring an innovative, sustainable, and equitable vision and strategy for California's next century. California 100 asked university-based research teams in multiple fields to describe existing trends and imagine and forecast the future of various policy realms in the Golden State. Teams each developed and evaluated four possible scenarios for California's future in the field of their expertise, so that the scenarios might inform policy change and inspire action. Researchers at the UCLA Institute of Transportation Studies considered the state's transportation and urban planning futures (Wasserman et al., 2022).

The scenarios that we developed as a basis for discussion with our panel of experts revolved around transportation policies and land use policies. As **Figure 1** shows, two distinct land use futures intersect with two transportation futures, resulting in four unique, plausible future scenarios.

This scenario matrix matches policy options with scenario outcomes to illustrate two basic concepts involved in land use/transportation decision-making: mobility and accessibility. We define mobility as the ease with which people can move about. We define accessibility as the ease with which people can avail themselves of goods, services, activities, and opportunities. "Ease" in these definitions incorporates both the monetary and non-monetary costs of travel, including any "frictions" related to ability, security, safety, and information that inhibit mobility or access.

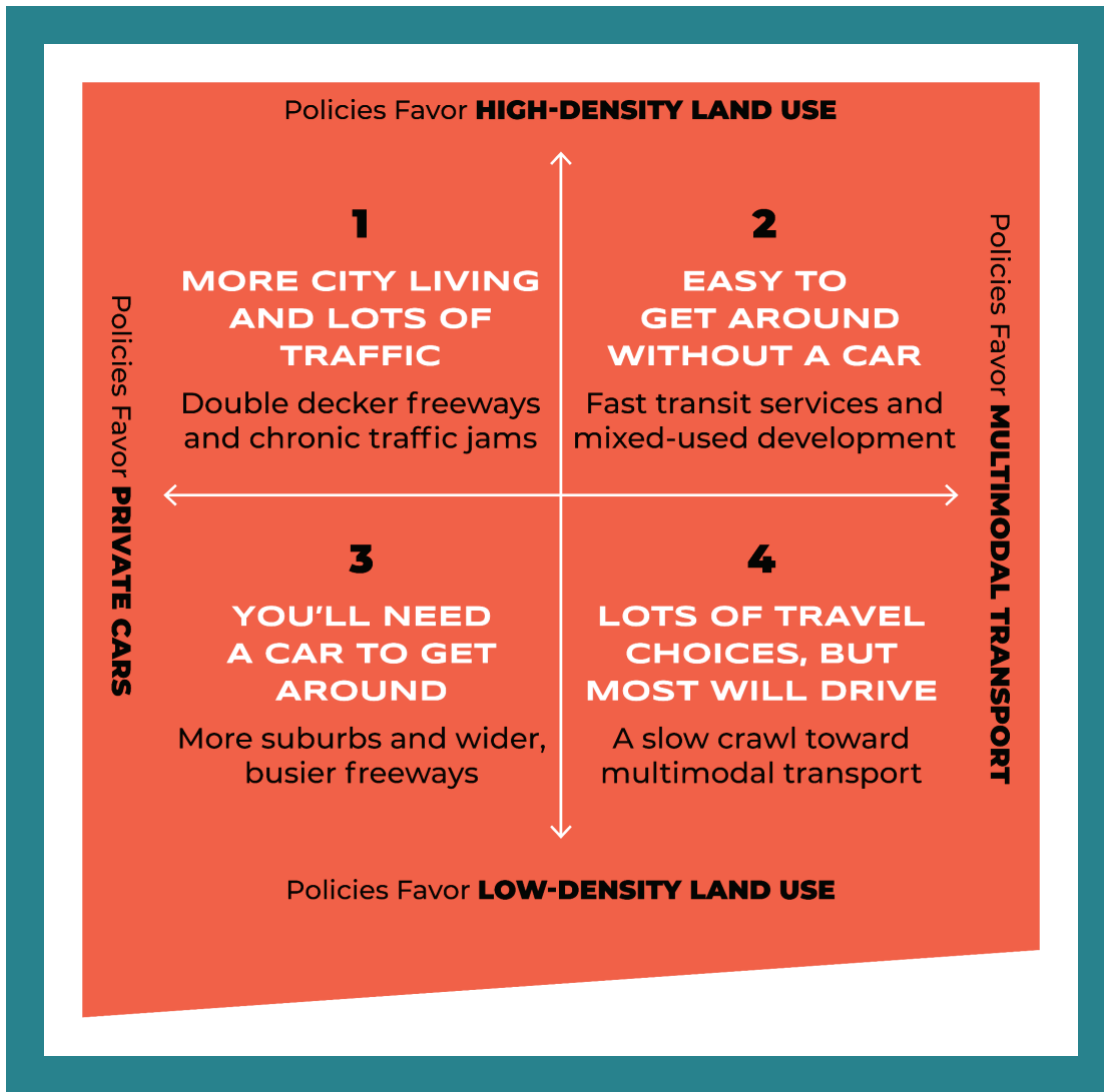


Figure 1. Scenario Matrix (from Wasserman et al., 2022, p. 37)

Though mobility and access are similar in the sense that both have to do with some degree of travel, in practice, the concepts differ. A city designed to prioritize mobility might, for example, be built around the car, which enables individuals to travel relatively fast and far. But building a transportation system that supports this type of mobility means allocating lots of land to roads and parking, which will tend to spread destinations out, making them more difficult to reach by foot or bike. Greater accessibility, in contrast, means that people need not spend a lot of time, money, and effort to reach desired destinations. Land uses that support greater accessibility tend to have higher densities, allowing many destinations to be relatively close to one another. Particularly in high-density, urban contexts, where traffic tends to be heavier and parking expensive, mobility by automobile may fall even as overall accessibility rises.

Four Future Scenarios

Scenario: “You’ll Need a Car to Get Around”

Car-centered/Low-density (*More Mobility, Less Accessibility*)



Figure 2. “You’ll Need a Car to Get Around” Scenario Quadrant (from Wasserman et al., 2022, p. 38)

This is the postwar norm in California that still describes most suburban areas (Scenario 3 in **Figures 1 and 2**). Building densities are low, land uses are separated, streets are wide, parking is abundant, and almost every trip is made by motor vehicle for those with cars. Single-family neighborhoods, for those who can afford them, are pleasant, but travel distances are often long and many arterials and most freeways are chronically congested. Most new transportation investments support increasingly electric and autonomous vehicles, ever-widened roads frequently re-congest, and new housing continues to be built primarily on the fringes of metropolitan areas.

Scenario: “Lots of Travel Choices, but Most Will Drive”

Multimodal/Low-density (*Less Mobility, Variable Accessibility*)



Figure 3. “Lots of Travel Choices, but Most Will Drive” Scenario Quadrant (from Wasserman et al., 2022, p. 39)

This is the new normal in much of metropolitan California, where transportation investments go increasingly toward walking, biking, scootering, and public transit infrastructure, though most trips are still made by car (Scenario 4 in **Figures 1 and 3**). Looking ahead, multimodal options continue to expand and policies to rein in unfettered driving—such as improved and expanded public transit service and pricing driving to reduce congestion and emissions and encourage much more multimodal travel—are gradually phased in. However,

outside of already built-up central cities, most development remains dispersed and poorly served by modes other than driving, while housing, particularly in-town affordable housing, is chronically undersupplied.

Scenario: “More City Living and Lots of Traffic” Car-centered/Higher-density (*Variable Mobility, Less Accessibility*)



Figure 4. “More City Living and Lots of Traffic” Scenario Quadrant (from Wasserman et al., 2022, p. 40)

Under this scenario, policymakers prioritize urban infill development and limit suburban expansion into fire-prone and agricultural areas (Scenario 1 in **Figures 1** and **4**). Development densities increase in central cities and inner-ring suburbs, raising the supply of in-town housing and affordable housing. But rather than investing in multimodal travel, public officials accede to popular calls to widen boulevards and freeways (even double-decking the most heavily-trafficked ones) and build parking decks to store the mass of cars in central areas. Walking increases, but chronic traffic slows cars and buses to a crawl, increases emissions, and prompts ever more calls for expanded road and parking capacity.

Scenario: “Easy to Get Around without a Car” Multimodal/Higher-density (*Less Mobility, More Accessibility*)



Figure 5. “Easy to Get Around without a Car” Scenario Quadrant (from Wasserman et al., 2022, p. 41)

This scenario entails the biggest break from current patterns, wherein the multimodal-focused transportation policies in the “Lots of Travel Choices, but Most Will Drive” scenario are combined with the land use policies of the “More City Living and Lots of Traffic” scenario (Scenario 2 in **Figures 1** and **5**). Road and parking access is managed to substantially reduce congestion (making driving both better and rarer) and emissions. Fast, frequent

transit service reduces waits and makes riding more attractive. Denser, mixed-use development puts more destinations in walking distance and more affordable housing where it is most demanded.

Panel Aims

Using this scenario framework to structure our surveys and discussions, our goal was to investigate panelists' views on land use developments, transportation trends, and governmental responsiveness to policy needs. We presented panelists with the four possible future scenarios (outlined above and described in detail in Appendix A) and, in both surveys and panel discussions, gauged how likely and desirable each group of panelists thought each scenario would be. We also captured panelists' concerns about each scenario, were it to materialize. We asked panelists to describe what policy changes would be needed to facilitate the scenario the panel had collectively identified as most desirable. Finally, we asked participants to "backcast" from that future scenario—to envision what social and policy changes would have had to happen to arrive at that positive future—and what changes should be avoided in order to prevent undesirable outcomes within that scenario.

Methods

To assemble our 18 panelists, we sought recommendations and nominations from members of the UCLA Institute of Transportation Studies Advisory Board, UCLA faculty and staff, and nominees themselves. From an initial list of 155 candidates, we chose 60 to poll for interest and availability. From this group, we enrolled 18 participants based on their interest and availability (See Appendix C), 14 of whom participated in all activities throughout our study.

We aimed to find what convergence, disagreements, and nuances of opinions would occur among this group with diverse professional backgrounds in transportation and land use in California. We initially modeled our approach on the well-established Delphi method of repeated expert surveying, first developed at the RAND Corporation (RAND Corporation, 2022). But due both to time constraints and the desire to incorporate the benefits of focus groups as well (such as the ability for unforeseen ideas to emerge), we modified the Delphi method for the study. Though still surveyed privately on multiple occasions, panelists also participated in virtual discussions with one another. Our hybrid policy Delphi method allowed us to collect useful data on a number of relevant topics and emergent themes; we discuss in detail this method and the advantages and limitations that we discovered in the companion report “Employing a Modified Delphi Approach to Explore Scenarios for California’s Transportation and Land Use Future” (Gahbauer et al., 2022).

Panelists participated in three surveys and two panel discussions, described in **Table 1**. We surveyed panelists before and after each meeting. Each of the panel discussions were held in two sessions to encourage active participation among all participants and to allow for scheduling flexibility. Between seven and nine participants attended each session; the sessions consisted of a different mix of participants each time.

Table 1. Panel Activity Overview

Activity	Approximate Time	Dates	Purpose
Survey 1	45 min.	August 11-17, 2021	Record panel’s initial thoughts on the importance of California trends and the desirability and likelihood of each of four future scenarios
Meeting 1	90 min.	August 18 and 19, 2021	Present Survey 1 results, discuss results, and hear panel’s specific rationales for Survey 1 answers
Survey 2	15 min.	August 24-27, 2021	Ask panel about the importance of specific policies for achieving a multimodal, higher-density scenario and to probe further for reasons for Survey 1 responses (based on Meeting 1 discussion)
Meeting 2	120 min.	August 31 and September 2, 2021	Present Survey 2 results; focus panel on most desirable scenario and discuss what would need to change for it to happen (“backcasting” exercise)
Survey 3	15 min.	September 7-10, 2021	Quantify panelists’ agreement or disagreement with the themes identified in Meeting 2 and with statements that synthesized comments made in Meeting 2

Findings

Who Transportation Systems Serve—and How Well

Our initial survey asked panelists to report agreement or disagreement with statements concerning California's transportation system and the equity and efficacy of its development and use. In their responses, panelists indicated more concern with the environmental, safety, and equity effects of increasing driving than with the congestion it engenders. When asked about the importance of various trends in shaping the future of travel and transportation in California, panelists identified the most important trends as residential displacement of lower income households from increasingly expensive neighborhoods, growing exurban sprawl, increasing commercial truck and delivery travel, and rising greenhouse gas emissions. They collectively rated worsening traffic congestion as less important than these other concerns, though we note that traffic congestion is an effect of some of these other factors.

The survey results showed some areas of strong consensus. Nearly all panelists (93%) disagreed or strongly disagreed with the statement that community participation in transportation and land-use decision-making is generally equitable. By the same margin, panelists disagreed or strongly disagreed with statements that said California's transportation system generally serves the needs of communities of color, disabled individuals, and children. Substantial majorities (78%) also disagreed or strongly agreed with statements that the needs of immigrant communities and older adults were met. Most panelists (71%) also disagreed with the statement that California's transportation system "generally has a diversity of mobility options," and this lack of options could explain why panelists did not agree that the transportation system serves these groups of Californians well.

Scenario Likelihood, Desirability, and Implications

In the initial survey, panelists strongly agreed (29%), agreed (41%), or somewhat agreed (18%) that the "Easy to Get Around without a Car" scenario was "the most desirable" of the four discussed; 12% were "not sure" and none disagreed. In our first panel meeting, the group discussion expanded on this topic. Panelists raised several concerns about safety in the car-centered scenarios (i.e., aggressive driving and safety threats to non-automobile travelers) but also in the multimodal scenarios (i.e., an increased exposure to police brutality and other violence, especially among travelers of color, without the "cocoon" of a car).

In the Survey 3 results, panelists again identified the "Easy to Get Around without a Car" scenario as the most desirable albeit least likely scenario. The scenario proved least probable despite the fact that panelists generally considered it likely that initiatives to increase developmental density near public transit stations and encourage mixed-use development would continue over the next 30 years.

All panelists responded that the "Easy to Get Around without a Car" scenario "emphasizes change in urban areas," but most also believed that the scenario is "generally...applicable to rural areas" as well. Most panelists also disagreed with the notion that a multimodal/higher-density scenario would necessarily involve neglect or disinvestment in outer suburban and exurban areas." All told, the panelists collectively saw the "Easy to Get Around without a Car" scenario, while urban-focused, as broadly applicable across the state. Panelists appeared to perceive that higher density and a greater diversity of travel options could emerge as models at a smaller scale in smaller cities, too.

What could set California on a different course? Perhaps on account of the perceived immutability of California’s land policies and politics, system shocks (such as those from a pandemic, a natural disaster, or climate change) resonated for several panelists as a most promising catalyst for shifting land use policy and planning to be more equitable.

Lack of Trust in Government: A Problem for Improving Transportation

Trust in Levels of Government

As panelists reflected on the four transportation and land use futures described above, a theme that we did not anticipate emerged: trust in government. Most panelists identified improving public trust in government as essential to implementing scenarios and policies that require a change from the status quo.

In the panel’s second discussion, one panelist noted that the “strength of institutions is a concern”—which may not be a policy matter per se but rather a “bigger issue” of needing public trust, legitimacy, competency, and flexibility. Other panelists agreed with this assessment. Another panelist said better understanding and engagement between agencies and communities was necessary. Our subsequent survey results confirmed that our panel of experts believe that trust in government is both important and lacking.

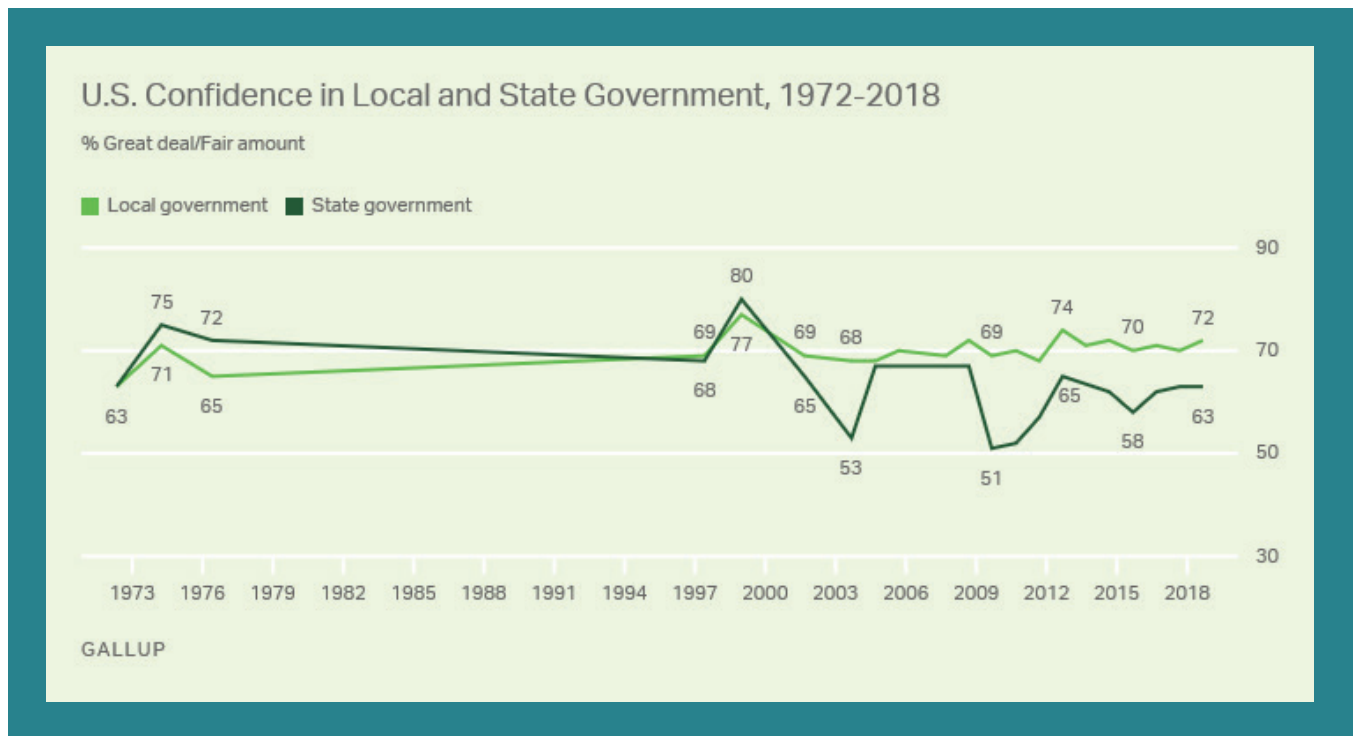


Figure 6. Polled Confidence in U.S. Local and State Government, 1972-2018 (from McCarthy, 2018)

These results mirror the recent findings of public policy pollsters and political science scholars: trust in government institutions is in decline, in the federal government especially. The share of Americans who report “a

great deal” or “fair amount of trust” in the federal government’s handling of domestic problems was 39 percent in 2021, down from an average over the years since 1997 of 53 percent. Confidence in local and state governments remains higher and is more stable: asked how much they trusted state and local governments to handle problems, 57 and 66 percent respectively, replied “a great deal” or “a fair amount”, compared to an average over the years since 1997 of 62 and 70 percent (Brenan, 2021). Over a longer timescale, Americans’ trust in local government has remained relatively stable since the 1970s in polls; with confidence in state government slightly less stable and less strong (McCarthy, 2018) (See **Figure 6**).

Research affirms that trust in one level of government does not necessarily reflect trust in others. In other words, voters are able to distinguish between governments and are able to assign credit or blame to specific governments—suggesting that even in populations with little trust in other levels of government, those in the public sector should work to increase trust in their level of government (Cooper, Knotts, and Brennan, 2008).

Research also confirms why public sector trust is a problem. In a study that looked at how trust in local government affected residents’ opinions on zoning, researchers found that “the probability of being strongly or somewhat in favor of zoning increases approximately 10 percent for every one-unit increase in trust,” as illustrated in **Figure 7** (Cooper, Knotts, and Brennan, 2008, p. 464).

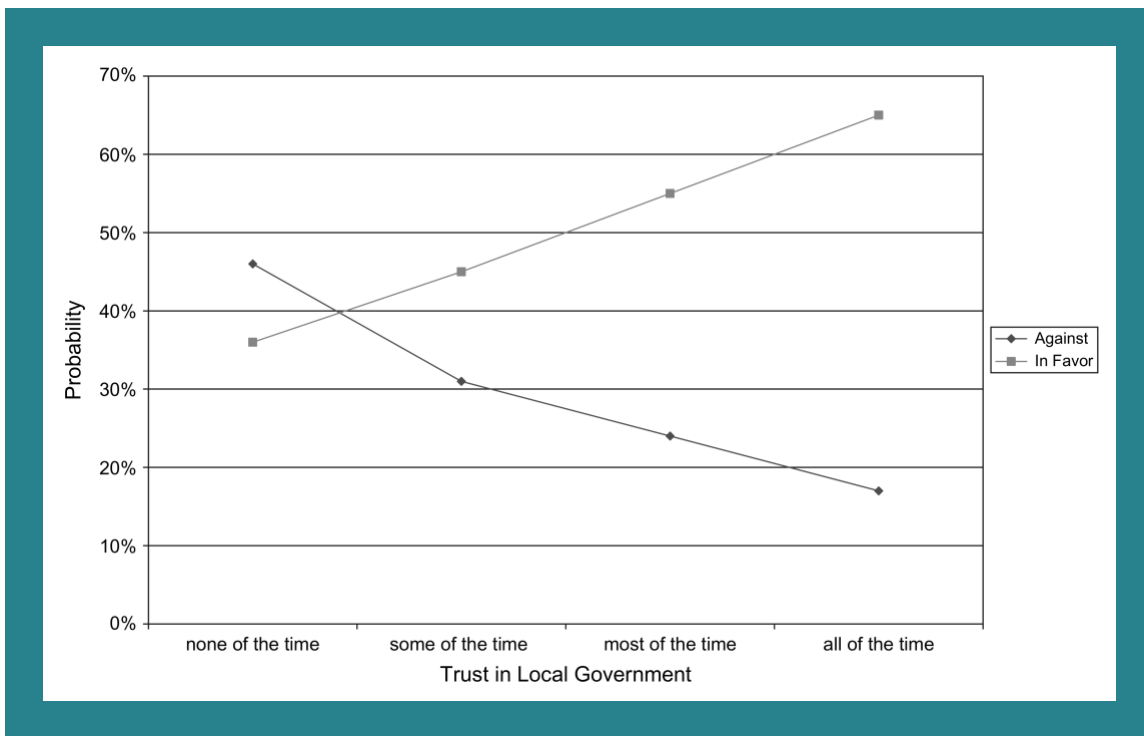


Figure 7. “Predicted Probabilities for Opinions on Zoning by Trust in Local Government” (from Cooper, Knotts, and Brennan, 2008, p. 464)

Our panelists perceived a specific lack of trust that change will occur—and that if it occurs, it will make conditions worse. Panelists mentioned aspects of trust that are perhaps beyond the reach of government administrators, but in other areas, panelists tied the problems of disconnection to specific policies, such as an inability to build sufficient housing for Californians.

Trust, Responsiveness, and Inequality

Many of our panelists expressed the view that public sector decision-makers' selective responsiveness to constituents is likely a source of mistrust. Responses in our final survey made clear that panelists perceive that decision-makers are more responsive to some constituents than others. Specifically, the statement in the relevant section of Survey 3 with the strongest agreement was that decision-makers are responsive to the needs of wealthy constituents. Conversely, panelists together strongly disagreed with the statement that decision-makers in California are responsive to the needs of low-income constituents. Panelists also mostly disagreed with the statement that "Californians trust the government to implement changes to transportation and land use."

Inequality is a fundamental, latent issue for trust. Although we did not ask explicitly about income inequality as a cause for this lack of trust in government, the survey results suggest that respondents both identified a lack of trust in government as a problem and believed that the problem stems in part from overrepresentation of wealthy interests and underrepresentation of low-income constituents. This aligns with research that connects inequality with trust. In her analysis of voter attitudes toward local governments, Fung (2006, p. 70) concludes: "If government is really run for the benefit of a few big interests, then that is one strong reason many citizens should not support it." Studies across countries have underscored the connection between inequality and trust. Researchers have found that the societal polarization engendered by income inequality harms social trust (Bjørnskov, 2007) and is potentially the only variable to do so to a significant degree (Uslaner and Brown, 2005).

Panelists strongly agreed with the statement that the "Easy to Get Around without a Car" scenario (multimodal/higher-density) would require "significant social change": 41 percent strongly agreed, 25 percent agreed, and 12 percent agreed somewhat. Perhaps the conditions for change in economic inequality and trust in government institutions are outside public sector workers' immediate influence, but our panelists nonetheless stressed the importance of addressing the issue of trust in order to effect positive social change.

This lack of social trust in government undermines the prospects for a multimodal/higher-density transportation and land use future. Not only did our panelists think that this most desirable scenario is the least likely to come about, they also expressed that the problem of inequality—and specifically "decision-makers overemphasizing the needs of wealthy constituents"—will lead to *failure* in achieving the "Easy to Get Around without a Car" scenario and instead end up with car-centered, higher-density development. All panelists either strongly agreed (13%), agreed (69%), or somewhat agreed (19%) with this statement. Thus, California might "sleepwalk" into the "More City Living and Lots of Traffic" scenario, as one panelist put it. Similarly, panelists seemed to believe inequitable representation would warp outcomes, such that the scenario they otherwise considered most desirable would risk gentrification and the displacement of low-income residents (a statement with which most agreed). Nearly as many panelists also agreed that in the context of inequitable representation, the opportunities to improve mobility in the "Easy to Get Around without a Car" scenario would be wasted, and instead low-income residents would face high transportation costs and reduced mobility and accessibility. All told, some panelists had difficulty envisioning an "Easy to Get Around without a Car" that equitably applied to all Californians, at least given current constraints, even in a panel exercise implicitly encouraging an optimistic envisioning of the scenario.

Californians Lack a Shared Vision

In discussion, panelists commented several times on the lack of a shared vision for California's future. Final survey results (excerpts of which appear in Appendix B) confirmed this to be a topic of consensus. Most

somewhat disagreed (18%), disagreed (59%), or strongly disagreed (12%) that “governments and people in California have a shared vision for the state’s transportation and land use future.”

Here again, income inequality lurks as a possible cause. In their statistical study on the effects of inequality and trust on participation using state-level data over three decades, Uslaner and Brown (2005, p. 869) noted that “when resources are distributed inequitably, people at the top and the bottom will not see each other as facing a shared fate.” Moreover, circumstances of inequality may even prevent them from having the opportunity to share goals (Lancee and Van de Werfhorst, 2012).

In addition, as trust rests on optimism and ability to influence one’s environment, inequality can affect people’s participation in civic engagement (Uslaner and Brown, 2005). In turn, inequality can stifle opportunities for improvement, since planners’ efforts in building trust cannot succeed if people do not show up for them. Political scientists have described this conundrum as the “social trap”: social inequality prevents social trust from increasing, but the public policies that could improve things flounder precisely because of the lack of trust (Rothstein and Uslaner, 2005).

Government Effectiveness

Restorative Justice

To achieve the panel-preferred multimodal/higher-density scenario, the consensus among panelists was that “more effective government” is needed (47% agreed; 35% strongly agreed; none disagreed). This response perhaps reflects the panelists’ own lack of trust in government or its efficacy or the panelists’ perception that achieving this scenario is difficult and possibly too demanding for the government currently. In our meetings, panelists discussed that government leaders may not realize the influence and power that they wield: one panelist mentioned that in his experience working in the private sector, company executives were surprised at the latitude and largesse that governments gave them.

The government would also need to “understand and [repair] injustices from past governmental decisions” and pursue “reparative justice,” per most panelists: 29% strongly agreed, 18% agreed, and 35% somewhat agreed. As this was a separate question in the survey, we cannot be sure to what extent it is connected to the question of government trust or efficacy, but it may be that the panel considers government not to be effective because it has failed to pursue restorative justice to address past mistakes.

Influencing Transit Ridership

The panelists’ most desirable scenario incorporates multimodal travel options. But, perhaps mirroring their views on government needing to be more trustworthy and effective (but likely failing to be), panelists mostly agreed that “many transportation agencies and public transit operators have relatively little power over factors that influence ridership (such as land use)”: 29 percent strongly agreed, 41 percent agreed, 12 percent somewhat agreed, and 18 percent somewhat disagreed.

That transit ridership, presumably an important part of a multimodal future, is mostly a function of land use and other broader social inputs rather than of agency action is perhaps a reason why panelists were pessimistic about their most desirable scenario being realized. The sails may be raised but must wait for the wind.

Implications

Over the course of three surveys and two panel discussions, our experts made clear that the “Easy to Get Around without a Car” future, the scenario they considered the most desirable, which is most aligned with California’s climate goals, is in their view the least likely to materialize.

Although California has set ambitious climate goals and targets at the state level, on-the-ground implementation of land use and transportation planning is compromised by deficiencies in laws such as the California Environmental Quality Act (CEQA) as it exists today and Proposition 13, which motivates cities to zone for commercial over residential land uses. These laws’ shortcomings stall the pace of changes to California’s development needed for achieving the state’s climate goals. The state’s recent establishment of top-down climate and housing targets reflect legislators’ sense of urgency to act. But more focus is needed on the bottom-up implementation of plans that are consistent with and work toward the state’s climate goals.

Without correction, our panelists expressed the collective view that California of 2050 is likely to resemble the “Lots of Travel Choices, but Most Will Drive” scenario (multimodal/low-density) or the “More City Living and Lots of Traffic” scenario (car-centered/higher-density). The consensus among panelists was that one of these outcomes would be most likely if land-use policies and concerns continued to focus primarily on the needs of and demand from wealthy, white Californians. Either of these scenarios—a multimodal, low-density or a car-centered, higher-density environment—may offer some improvements from the status quo, but our panelists expressed the view that each will result in less of a reduction in greenhouse gas emissions, poorer equity outcomes, and worse quality-of-life outcomes than could be attained with a full change in course: an invigoration of actions that encourage a shared vision of local development that improves a standard of living and mobility for all, in an environmentally beneficial manner.

The environmental and equity stakes are large. A multimodal, low-density future (the “Lots of Travel Choices, but Most Will Drive” scenario) would likely drive up living expenses (and public subsidies) where housing is expensive to provide and would result in heavily subsidized public mobility in low-density areas where mobility is expensive to provide. Panelists also questioned how water-constrained California could support a continued expansion of low-density development. Similarly, a car-centered, high-density future (the “More City Living and Lots of Traffic” scenario) would inequitably hide the substantial costs of required multi-level parking within the rents and costs of housing, commercial centers and the goods they sell, and other developments. While people with low mobility needs would be well-served by the proximity of services in higher-density settings, others would face worsening congestion brought about by the lack of transportation alternatives in a dense environment (especially above 10,000 people per square mile, the identified threshold at which car travel time increases with density and transit time decreases (Levinson and Kumar, 1997)).

To whatever degree they might be achieved, panelists viewed trust as being important for accomplishing higher-density development and multimodal transportation. That trust, though, is lacking. In our experts’ view, California is off track because, atop any policy choices or administrative failures, many of its residents have lost faith that their interests are heard. Many Californians are skeptical of changes that they perceive as benefiting only the wealthy and connected. Even if high-rises or infill developments could bring needed housing to their neighborhoods and allow more people to live near transit, many fear effects of displacement and frequently oppose even projects that promise below-market rate rents. Community mistrust in the process can result in projects being delayed or canceled, and any benefits—to residents or to the state—forgone.

This mistrust is not without merit. Communities of color in the state have been visibly and enduringly harmed by freeway and “urban renewal” projects over the past 70 years. Moreover, even our own panelists repeatedly raised the concern that many possible models for the multimodal/higher-density scenario could result in gentrification and displacement of lower-income residents in central areas and neglect or disinvestment outside of the urban cores.

Without higher-density development in the right areas, investments in public transit services cannot meet their full environmental, equity, and mobility potential. Past research has shown that public transit is most productive in areas of greater density, in central city areas, along suburb-to-city alignments, and where automobile ownership levels are relatively low (Taylor et al., 2002). Both high density and large urban-area size are important factors to transit ridership as **Figure 8** shows (Polzin, Chu, and Rey, 2000). Indeed, public transit serves its riders best when the places people are going to and from are near stations or stops and when there are more living and working spaces near those stations and stops. Research indicates that a greater density of jobs in particular (Chen, Gong, and Paaswell, 2008) and especially jobs within one-quarter mile of transit stops and housing within one-half mile greatly increases transit ridership (Cervero and Guerra, 2011). Where transit can serve more riders, it can also work more efficiently at reducing car travel, at least in some contexts.

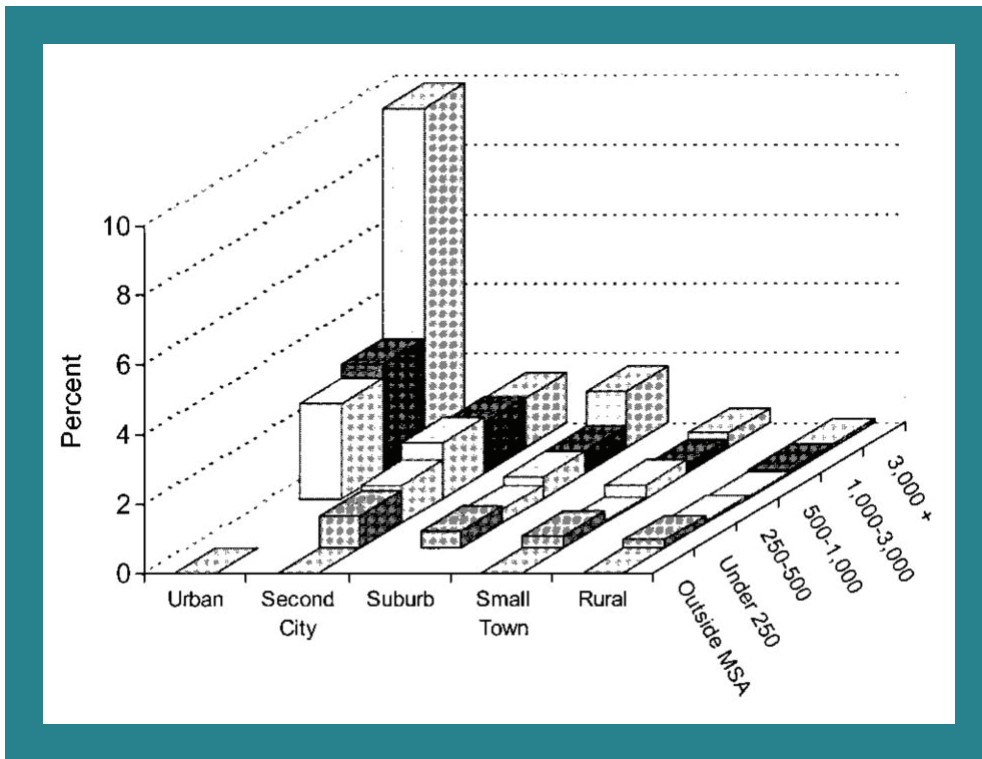


Figure 8. “Relationship of [Transit] Mode Choice to Urban Density and Size” (from Polzin, Chu, and Rey, 2000, p. 13)

Of course, not all geographic areas may be well-suited to the higher-density, multimodal future. Panelists' sentiments echoed some urban studies scholars' concerns that an emphasis on high densities to the exclusion of other considerations of social welfare misses important tradeoffs, with potential equity impacts. In other words, one size does not fit all, and different environments better suit different groups in different locations (Bramley et

al., 2009). Some planning critics argue that a circumscribed approach of focusing density only in small urban areas cannot be expected to achieve meaningful regional outcomes and is all but futile (Bertaud and Richardson, 2004). Seen differently, though, it makes sense for California to focus its investments in areas where the most climate, transportation, and housing benefits can accrue, as long as equitable outcomes can be assured. While many California cities will never resemble San Francisco, the principles of walkable urban design can still be implemented to reduce the need to drive for every trip between destinations, with positive results for increased accessibility and improved quality of life.

Given the stakes and based on the views expressed by our expert panelists, California policymakers need to consider remedial actions to improve the likelihood that higher-density multimodality takes shape where conditions are right and to support the goals of reduced emissions and reduced vehicle travel. As our panel discussions raised, communicating a vision and addressing the lack of public trust in those communicating that vision is foundational to putting into effect many of California's existing and proposed policies. Without public and community support, development will not go where it is most needed and construction is apt to be driven more by concerns of expedience rather than environment, with the result that greenfield sprawl will continue to worsen commute times, resource use, fire risk, and quality of life.

Recommendations

Given the findings of this hybrid policy Delphi engagement with land use and transportation experts in California, local, regional, and state officials will need to pursue policies that support more multimodal transportation in higher-density land use contexts, to attain the state's pressing economic, social, and climate goals and to better serve all of its future residents. Our recommendations toward this end are drawn from the scenario exercise with our expert panelists, as well as additional research on several of the main points raised; while panel discussions and responses shaped them, these are our recommendations and not those of either the panel as a whole or any one member. They appear in two categories:

1. *Processes*: improving trust, outreach, and political-administrative communication
2. *Conditions*: improving contexts for project success

We offer these recommendations to increase trust in government and in a shared vision for California's future. This trust is essential if projects with shared costs and collective but dispersed benefits are to succeed.

1. Improving Processes

1.1. State Agencies and Local Governments Must Work to Build Trust

Improving the quality of engagement with affected communities on transportation and land use issues, especially disadvantaged communities, is an urgent and necessary first step.

Research shows that government agencies can increase trust by committing to actions including (among others): demonstrating fairness (humanity), sharing decisions explicitly, including the motives and data behind them (transparency), creating well-designed programs (capability), and delivering on them consistently and dependably (reliability) (Eggers et al., 2021).

In addition, government goals and the purpose of government processes must be clear and communicated. Since planning is an "inherently value-laden activity" that mediates between divergent interests, there needs to be "some agreement (however temporary) upon its inherent value to society...for citizens to act legitimately" (Swain and Tait, 2007, p. 244). Absent a direct discussion about and agreement on what the value of the planning process is, tensions in addressing the multiple interests within "the public interest" will erode public confidence (Swain and Tait, 2007). A discussion about what planning does and why is a good first step in the public process.

Effective framing is also important for building trust. There is not much state and local planners can do about corrosive rhetoric that for decades has undermined trust in government and the broader tone of suspicion; however, it will help for planners and policymakers to be concrete and as specific as possible when discussing government spending. Research shows that government spending specifically framed is more favorably received than when it is abstract (Jacoby, 2000 and Macdonald, 2020).

In their survey-based study of the connection between voter opinions on zoning and trust in government, Cooper, Knotts, and Brennan (2008) found that voters are competent at discerning between levels of government and able to assign credit and blame to one without affecting perceptions of another; specifically, they found that levels of trust in state and national governments have no effect on opinions having to do with local zoning. They conclude

that even in populations with little trust in other levels of government, local government officials can hope to earn the public trust and they should endeavor to win it. The mere willingness to earn this trust is a type of “stewardship” that demonstrates a trust-building ethic of justice and beneficence (Kim, 2005 and Kass, 1988).

A public service orientation among individuals working in government is necessary but not sufficient given the power asymmetry between the government and the public; “institutional arrangements” that involve members of the public more directly is another model for enabling the accountability and trust that facilitates the flexibility that modern governmental agencies require to work effectively (Kim, 2005).

Although public participation is sometimes criticized for being potentially co-optive and sometimes ineffective, case studies of planning processes in the Great Lakes region found that, when done well, public participation can resolve conflict and increase trust even in contexts of poor preexisting relationships (Beierle and Konisky, 2000). The researchers conducting the study found that the process was more important than the context and that successful public participation was driven by aspects under the direct influence of lead agencies, namely: deliberative and consensus-focused processes, two-way dialogue, and an “obvious” government commitment to the process. Agencies’ support and responsiveness was particularly important for affecting the quality of communication and overall process (Beierle and Konisky, 2000).

1.2. Improve Training for Engagement and in the Planning Process

Critically, building trust in government must extend to the state’s budget. Toward that end, we recommend in the California 100 report (Wasserman et al., 2022) that the state should create and, critically, fund a “Your California” program aimed at training staff at all levels of government to conduct more engaged, respectful, meaningful, and ongoing engagement with stakeholders and communities, with an emphasis on including traditionally excluded voices, interests, and communities, to infuse the work that they do with a focus on building trust. Such a program would incorporate best practices in engagement from around the world and, in addition to building trust in government, should also work to build planners’ and practitioners’ trust in citizens—important for engaging in true dialogue that goes beyond (trust-eroding) symbolic participation, to build expectations of good faith even amidst conflict. Studies show that further improvements to public managers’ trust in citizens arises when there is less “distance” between government administrators and elected officials, so that tensions between them are resolved constructively (Åström, 2020). In other words, public managers are more likely to trust citizens and therefore be more effective in outreach if they are more or less on the same page as elected officials with regard to larger policy and program objectives. Facilitating more interaction between elected state legislators and department staff could therefore be doubly productive: first, for improving the quality and consistency of policy communication and second, for improving the quality of interactions with the public.

The Your California program could also provide flexible and easy-to-receive grant funding for public entities throughout the state to improve the transparency of their budgeting (through, for example, better websites, reports, media engagement, etc.) and community engagement with their planning (through, for example, outreach at community events, participatory budget exercises, etc.). Although research suggests that transparency does not automatically instill more trust in a government agency, it can improve both knowledge and trust if transparency is thorough, ongoing, and contextualized (Grimmelikhuijsen, 2009).

1.3. Facilitate Collaborative Planning Processes

To facilitate a shared vision for California, the state should also address laws that make planning processes unnecessarily adversarial. For example, the California Environmental Quality Act compels government agencies to address most public concerns through formal comments only; the legal risk is such that agencies tend to

minimize engagement in public meetings (e.g., responding to comments only months later and in legal reports) and actively avoid the responsive and collaborative dialogue with stakeholders that is necessary for effective visioning and trust building. The state legislature should therefore consider amendments to CEQA that give public agencies that meet certain standards for public engagement an opportunity to make records of good-faith collaborative engagement efforts in certain project-related public meetings either inadmissible in a CEQA lawsuit without substantial evidence of agencies' bad faith from the plaintiff or simply inadmissible.

2. Improving Conditions

2.1. Repair Injustices of Past Governmental Action, Particularly in Transportation and Land Use

Many communities in California remain scarred by urban renewal and freeway projects of the past century. These efforts, often conducted in concert, did lasting damage to many Black, Latino/a, and poor communities and much to erode trust in government. Accordingly, the state should develop and fund a specific, targeted program to rebuild these harmed communities through public investment and transportation projects aimed at improving access and mobility, as shaped by engagement with members of and organizations in those communities. Though the panel was divided on the equity implications of roadway congestion pricing, any means of collecting revenues for transportation—sales taxes, fuel taxes, road user charges, or congestion charges—should be designed specifically to address questions of equity in both the collection and distribution of funds, which is generally not done with our current system of transportation finance. Roadway pricing policies can be designed with equitable redistribution programs that face fewer constraints and can be better funded than other utility redistribution programs due to the negligible (or non-existent) marginal cost of providing service on a priced roadway and its broader base of ratepayers and revenue (Manville, Pierce, and Graveline, 2022).

2.2. Support Improved Public Transit Operations and Integration

Public subsidies of transit tend to favor capital expenditures (for new vehicles, stations, etc.) over service delivery. For decades, spurred by federal funding incentives, many counties and localities have advanced initiatives to build new rail transit lines, but funding to operate and maintain these rail lines was harder to come by. Meanwhile, bus service (which constitutes most transit service on most California systems (FTA, 2022)) is often mired in traffic and overlooked. To address this, the state should begin to prioritize funding specifically for transit service improvements, including bus-only lanes, increased service frequencies, better real-time communications with passengers, and more demand-responsive transit services in outlying suburban areas to give more Californians better options for travel without a car and to facilitate less car-dependent land development that will help the state meet its climate goals.

The state should also develop an equitable mobility-as-a-service platform that fully integrates trip information, payment, multimodal, multi-provider mobility services, and the physical transportation network. Single-provider or non-integrated systems risk creating disparate and unequal mobility networks that limit the effectiveness of such solutions to be an accessible alternative to car ownership.

2.3. Prohibit Minimum Parking Requirements

Planning research has shown definitively that cities' ubiquitous minimum parking requirements lead to a glut of parking and have the pernicious consequences of encouraging and subsidizing driving, increasing pollution,

fostering poor urban design, and burying the costs of driving and parking in rents, goods, and services (Shoup, 1999, 2005). This zoning-mandated oversupply has little scientific basis and results in more parking than most developers would otherwise build—40 percent more, according to one study of Seattle development before and after the city’s 2012 elimination of parking requirements in many areas (Gabbe, Pierce, and Clowers, 2020). The state legislature should prohibit minimum parking requirements, which are mostly required by local governments, to stop mandating that land owners and renters effectively underwrite the cost of driving through paying for parking construction and maintenance costs. Doing so would allow land currently devoted to parking to be used for more productive purposes such as housing, commerce, or recreation and would significantly improve ease of access to goods, services, and other activities by means other than driving (as less parking availability results in less separation of land uses). Eliminating minimum parking requirements would not eliminate parking, but rather the idea that the users of land will not build “enough” expensive-to-provide free parking absent government mandates. Parking reform is foundational to facilitating the multimodality and higher density of the “Easy to Get Around without a Car” scenario.

2.4. Fundamentally Restructure Land Use Regulation in California

The state’s transportation problems are inextricably linked to its housing crisis. By abolishing zoning that limits development to a single residential unit per lot and taking other steps to enable and encourage multi-family and mixed-use developments, the state could make it easier and cheaper to build more housing in more areas, closer to jobs and other destinations. Single-family zoning (“R1 zoning”) has racist origins and continues to promote exclusion (Manville, Monkkonen, and Lens, 2020), and both it and environmental review laws are often used as a cudgel to inhibit even modest infill development or incremental increases in density (when high land values now call for much more aggressive increases in density and zoned capacity in order for affordable housing to be feasible (Phillips, 2022)). The abolition of single-family zoning and other complementary reforms(Phillips, 2022), would significantly improve housing opportunities and start to address inequities inherent in a system that, through Proposition 13 and other state and federal tax laws, strongly favors wealth accumulation through homeownership, which is financially out of reach for increasing numbers of residents in California’s areas of economic opportunity, and translates as higher rents and home prices for those who do not own their homes.

2.5. Meet Affordable Housing Needs

Our panelists indicated clearly that the overrepresentation of wealthier Californians’ interests in transportation and land use decision-making is a major impediment to the successful implementation of the “Easy to Get Around without a Car” scenario. As necessary, the state legislature should preempt the land use authority of municipalities that fail to plan appropriately for housing production, in order to increase the supply of housing in general, and the supply of shelter, transitional, and permanent supportive housing in particular. Increased market-rate, affordable, and publicly-developed housing must be planned for, funded, and built and current renters and low-income residents better protected in order for the “Easy to Get Around without a Car” scenario to attain its stated goals. Without sufficient affordable housing, particularly in already built-up areas with multimodal transportation options, the scenario becomes potentially more inequitable, as people displaced and/or unable to afford housing come to commute farther and incur larger transportation costs and as vehicle miles traveled on state roads rise.

Conclusion

The experts we convened reflected an ambivalence about California's future. On one hand, California has bold goals for reducing vehicle miles traveled and improving the transportation and land use context for its growing population. On the other hand, California is mired in serious housing and livability crises that are decades in the making but which now result in a cynicism about government action and a deficiency of the trust needed to build out the scenario that our panelists deemed as most desirable. Although our research investigated (ostensibly) a question of planning, its results revealed future outcomes to be a matter of civics. From our panelists' accounts, addressing the fundamental lack of trust in government appears to be an urgent and necessary first step.

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Appendices

Appendix A: Detailed Scenario Descriptions

Scenario: “You’ll Need a Car to Get Around”

Car-centered/Low-density (*More Mobility, Less Accessibility*)

This scenario describes the “sprawling” developmental patterns that have prevailed in California and elsewhere in the U.S. since World War II. Building densities are low, with most residential land zoned and used for single family homes, with some low-density, multi-family units. Land uses are separated, with housing deliberately segregated from jobs, retail, recreation, and entertainment. Most new housing is built on the fringes of metropolitan areas, where zoning permits. Housing in central areas is undersupplied. High housing prices relative to incomes are the primary contributor to homelessness, and many individuals and families are unsheltered or do not have access to regular housing.

Most trips are made by motor vehicles (for those who have them). Streets tend to be wide, highways capacious, and parking is abundant. These accommodations for the car mean that driving is convenient and quick for some trips at some times, but at other times, congestion makes trips long and unpredictable. Most vehicles are zero-emission, reducing their environmental and public health impacts. If vehicles are automated, this would reduce the opportunity cost of travel time for would-be drivers.

We heard panelists indicate they believe that this scenario works well only for people it was designed for: those with full physical abilities, with higher incomes, and who are of employment age (not children or retirees). Panelists noted that car-centered scenarios could lead to fewer interactions with police but lower levels of pedestrian and bicyclist safety from vehicles.

One panelist described this as their nightmare scenario. Another panelist said they believed this scenario would lead to higher levels of social isolation. Another noted that most emergency management plans today are designed around this scenario.

Scenario: “Lots of Travel Choices, but Most Will Drive”

Multimodal/Low-density (*Less Mobility, Variable Accessibility*)

This scenario describes areas of metropolitan California where transportation investments increasingly go to walking, biking, and transit. Most new housing in California is built as single-family homes and low-density townhomes on the fringes of metropolitan areas or in outer suburbs. Due to density restrictions in city centers and close-in suburbs, housing is undersupplied in these core areas.

With a reduced emphasis on driving, less surface area is devoted to parking, and streets are redesigned to accommodate the safe use of alternative modes, ecosystem services (trees and shrubs, cleaning of water runoff, etc.) and leisure (outdoor dining, parklets, etc.). Electric bikes, scooters, and a range of new multimodal mobility options (and supporting infrastructure) help fulfill the needs of dispersed travel without a car. Shared, automated vehicles provide “microtransit”-like shuttle services around these communities. However, few trips are made by walking.

A congestion-based toll may be used to reduce congestion on adjacent highways, motivating the use of long-distance shared mobility, such as commuter shuttles, buses, trains, and future transportation technologies. A greater proportion of the vehicles on the streets would be for goods movement, as opposed to personal mobility. Even with a focus on multimodal travel and transit, these modes may not adequately serve manufacturing, warehouse, and service workers commuting to swing and graveyard shifts in dispersed, single-story industrial parks.

Displacement and spatial mismatch of jobs and housing, particularly among people of color, is a serious concern. Low-income Californians who are dependent on vehicles for work fare worse in this scenario, with high housing costs preventing them from living in central cities and congestion-based tolls and long travel distances resulting in high transportation expenditures. Governments must either 1) provide subsidized housing in areas where housing is expensive to provide or 2) subsidize public mobility in low-density areas where mobility is expensive to provide, lest it fail to meet the mobility needs of low-income households.

Panelists noted that this scenario describes areas of California where ballot measures fund transit construction and a shift to multimodal travel but where those with political power prevent densification of central cities and inner-ring suburbs. Panelists viewed this scenario somewhat more positively than the prior one, but some also questioned how this scenario would be possible in a climate-impacted California, as water supply could constrain the low-density development pattern.

Scenario: “More City Living and Lots of Traffic” **Car-centered/Higher-density (*Variable Mobility, Less Accessibility*)**

This scenario includes high-density nodes that lack rapid transit access and supposed transit-oriented developments with large parking structures, where many still access the development and transit in a private vehicle. In general, infrastructure neglects modes other than public transit. Nearly all new development includes, perhaps as a result of governmental requirements, substantial amounts of structured and subterranean parking that hide the terminal cost of driving (parking) within the costs of new housing, commercial centers, and other developments.

Under this scenario, development densities increase in central cities and inner suburbs. This supplies more housing, including affordable housing, in areas where it is most demanded, reducing homelessness as well. As with the final scenario, an increase in densification via development of built-out areas would create gentrification and displacement pressures.

The density of cars yields traffic congestion that makes mobility highly variable, especially in core areas. Some chronically congested boulevards and freeways may have a second deck added or be channeled underneath cross-streets. Roads are widened for private vehicle access, and the public right-of-way is rarely dedicated to transit, bikes, pedestrians, outdoor dining, or green space. Because density means more destinations are nearby, walking increases, as might the use of self-powered devices like e-scooters on sidewalks if users do not feel safe in streets.

Panelists questioned whether the transportation system would be seen as successful. Panelists stated that those with minimal mobility needs could fare well in this scenario, including those who wish to age in place without much travel or certain higher-income workers who can afford to live near work or work remotely and have most goods and services delivered (possibly utilizing expensive urban aerial mobility options like drones).

Panelists were least able to think of contemporary examples comparable to this scenario. They noted the risk of ending up implementing this scenario while aiming for the next one. This could happen, for example, if the state government pre-empted some local authority on land use, but local governments retained most authority over road design and transportation investments.

Scenario: “Easy to Get Around without a Car” Multimodal/Higher-density (*Less Mobility, More Accessibility*)

In this scenario, most new development takes the form of redevelopment, concentrated in central cities and inner-ring suburbs. This too brings more housing to places it is most demanded.

A reduced emphasis on parking means less surface area devoted to vehicles and asphalt. Streets emphasize access over mobility and serve multiple modes and functions. Denser, mixed-use development puts more destinations in walking distance. More trips are made by walking but also by biking, scootering, transit, and other modes of transportation. Public and private shared mobility options are robust and plentiful and can serve most but not all trips. Indeed, far fewer trips are made by private vehicle, because of both an increase of alternatives and because driving in a vehicle is not as convenient or cheap as in car-centric scenarios. A congestion pricing fee would make driving fast but expensive. In the absence of such a fee, vehicle networks would be slow and congested.

As with the “Lots of Travel Choices, but Most Will Drive” scenario, a multimodal travel emphasis still may not adequately serve workers beyond the nine-to-five and beyond central business districts. Those who would certainly lose out are those wishing to access central cities but whose only option is a private vehicle. Meanwhile, more vehicles would be used for goods movement and deliveries.

This scenario represents the biggest break from California’s predominant development and transportation patterns in the post-World War II era. Because of California’s relative inexperience with the strategies of this scenario on a large scale, panelists saw a risk that it would introduce many unknowns and fear of disparate impacts that leave some people or places behind. Panelists noted a key question of whether California could build enough housing or affordable housing to meet demand in central areas; some had difficulty positing a realistic version of this scenario where housing and opportunity were available to people of all incomes and backgrounds. And similarly to the “Lots of Travel Choices, but Most Will Drive” scenario, ensuring a greater diversity of transportation system users feel safe and secure without the cocoon of a personal vehicle would require changes to the way community safety is fostered and enforced.

Appendix B: Excerpt from Panel Survey Results

Table B-1. Excerpt from Survey 3 Results

Statement	Strongly Disagree	Disagree	Somewhat Disagree	Not Sure	Somewhat Agree	Agree	Strongly Agree	Likert Scale Weighted Average (-3 to +3)
Governments and people in California have a shared vision for the state's transportation and land use future	12%	59%	18%	6%	0%	6%	0%	-1.59
Californians trust the government to implement changes to transportation and land use	0%	35%	47%	0%	18%	0%	0%	-1.00
Californians have a strong sense of place in their neighborhoods or local communities	0%	0%	12%	0%	35%	41%	12%	+1.41
California is resilient to future climate change impacts	35%	47%	12%	0%	6%	0%	0%	-2.06
Decision-makers in California are responsive to the needs of wealthy constituents	0%	6%	0%	0%	35%	24%	35%	+1.76
Decision-makers in California are responsive to the needs of low-income constituents	0%	35%	47%	0%	18%	0%	0%	-1.00
Government in California does not always realize or recognize its own power	0%	0%	24%	18%	24%	29%	6%	+0.76
Many transportation agencies and public transit operators have relatively little power over factors that influence ridership (such as land use)	0%	0%	18%	0%	12%	41%	29%	+1.65

Appendix C: Expert Panelists

Table C-1. Panelists

Name	Affiliation (as of the Panel Exercise)
Ratna Amin	Strategic transportation advisor
Avital Barnea	California State Transportation Agency
Allison Brooks	Bay Area Regional Collaborative
Tamika Butler	Tamika L. Butler Consulting, LLC
Stuart Cohen	Stuart Cohen Strategies
Karl Fielding	WSP Inc.
Sarah Jones	San Francisco Municipal Transportation Agency
Sam Morrissey	Urban Movement Labs
Chris Pangilinan	Uber
Timothy Papandreou	Emerging Transport Advisors
Dr. Regan Patterson	Congressional Black Caucus Foundation
Julie Quinn	QuinnWilliams
Seleta Reynolds	Los Angeles Department of Transportation
Sahar Shirazi	Nelson\Nygaard
Lilly Shoup	Shoup Strategies
Thomas Small	Culver City Forward
Dr. Destiny Thomas	Thrivance Project
Marla Westervelt	Commission on the Future of Mobility

