Harnessing High-Speed Rail
How California and its cities can use rail to reshape their growth
Acknowledgments

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In the 20th century, California invested in significant forward-looking projects like the California State Water Project, the state highway system and the California Master Plan for Higher Education, which linked the University of California, California State University and California Community College systems. These investments were critical in propelling the state’s economic success in the late 20th century. High-speed rail is California’s first investment of this magnitude in the 21st century, and it has the potential to be equally significant. The first segment of the project, which will connect Bakersfield to San Jose, broke ground in 2015. Service from the San Joaquin Valley to the San Francisco Bay Area is expected to open in 2025 and connect into Los Angeles in 2029.

The alignment, or route, that California voters have selected for high-speed rail runs through the center of cities such as Fresno and Bakersfield that were bypassed when Interstate 5 was built along the west side of the San Joaquin Valley. High-speed rail can now connect these cities more seamlessly with each other and reconnect them to the coast, which has the potential to improve their economies. For example, instead of shifting operations to less costly states like Texas and Colorado, coastal California companies can locate branch offices in the San Joaquin Valley.

High-speed rail can also change California’s growth pattern. Instead of the business-as-usual pattern of converting farmland to housing and urban development, high-speed rail can revitalize downtowns and shift some of the growth back toward urban centers. In so doing, high-speed rail can help preserve important farmland and natural landscapes. High-speed rail service will also be much faster, more reliable and more environmentally sustainable than driving or flying.

To fully realize these and other benefits, the improved accessibility that a fast train brings must be combined with targeted policies and investments to transform the economies of the cities with high-speed rail stations. Some evidence suggests that when a new high-speed rail system is built, intermediate cities along the route can lose out to the larger, more established cities if they do not plan for how to make the best use of the opportunity.

It will be necessary to grapple with other realities as well in order for station cities to get the most out of high-speed rail. Local governments cannot be expected to rely solely on the real estate market to deliver new development around their stations and in their often-struggling downtowns. Nor can they rely on their limited existing funds to pay for civic investments like new public plazas and parks, upgraded sidewalks or expanded transit and bike lanes. State and local governments must partner on developing new financial tools and investments to pay for this infrastructure, as well as to initially subsidize new commercial and residential development, as current market rents in these cities would not cover the cost of construction.

Funded in part by a $9.95 billion state bond, high-speed rail is California’s largest investment in decades and has a legal requirement to operate trains without an annual subsidy. The implementation of high-speed rail will succeed when local governments and the state work together to bring economic opportunity to each high-speed rail station city.

This report makes a case for high-speed rail as a tool for reshaping economic growth and development in intermediate station cities. It identifies the barriers to this vision, including the limitations of rail to reshape economies and land use patterns on its own. And it proposes a series of state, regional and local policy and planning recommendations to realize economic growth, revitalize downtowns and limit sprawl in intermediate station cities.

To understand the impact of high-speed rail, this report looks at potential effects across three geographies:

- **Immediate station area** — The immediate surroundings up to half a mile from the train platform, where traveler services, transportation connections and dense, walkable, development are needed to draw ridership and help high-speed rail succeed.

- **Downtown station district** — The adjacent city center up to 1 or 2 miles from the station, where high-speed rail combined with good planning can lead to new amenities and infrastructure that attract more people and revitalize the area.

- **Metropolitan area** — The larger city or metropolis up to its urban edge, sometimes 10 miles or more from the station, where the immediate impact of rail is less noticeable but where compact growth is necessary in order to preserve farmland and open space.

Implementing these recommendations will require local, regional and state governments to work together more closely in shaping land use controls. These entities will also need to pursue additional financial support in order to capture economic development around high-speed rail.

None of these things will be easy, but they are imperative if high-speed rail is to succeed. And a successful high-speed rail system is critical for the future of California.

Key recommendations include:
- Establish a time-limited development corporation for each high-speed rail station with responsibility over development and land use in the immediate station area.
- Adopt a station district plan for each station based on statewide planning and development guidelines, or develop an overlay zoning district on top of an existing downtown plan.
- Create a new financing and downtown revitalization tool for high-speed rail station districts to help fund new development and infrastructure needs.
- Align state and regional funding programs to focus investment in high-speed rail station districts.
- As a precondition for receiving the new financing tool, require cities and counties to establish regional land use controls that achieve compact development and more efficient regional growth.

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INTRODUCTION

Reshaping the Economic Map of California

California’s growth in the 19th and early 20th centuries took place around railroads. Coastal cities like Los Angeles and Oakland, as well as valley communities like Fresno and Sacramento, grew from small walkable rail villages to larger cities with rail stations downtown. In the Central Valley in particular, the Southern Pacific railroad connected each city, eventually reaching Bakersfield in the southern part of the San Joaquin Valley in 1874. The railroad continued to link these communities until the rise of the automobile and the construction of highways. In particular, when Interstate 5 was built in the decades after World War II, it bypassed the San Joaquin Valley population centers of Fresno and Bakersfield in favor of an alignment on the west side of the valley. The interstate prioritized a direct and speedy trip between north and south, not the connections among the valley cities. That decision changed the way residents saw and thought about their state: Key valley cities became more physically and economically disconnected and distinct from the rest of California.1

High-speed rail has the potential to reshape the economic map of California by relinking key cities to each other on a fast, clean electric transportation system. Its impact on the state’s future could be as significant as the railroads were in the 19th century. But the scale of that impact is contingent on the decisions that are made during construction and on the planning policies put in place for the development of the stations and the communities around them.

A Brief History of High-Speed Rail

In the 1970s, California leaders envisioned a high-speed rail system to connect the northern and southern parts of the state. The vision was inspired by rail systems in Japan, France, Spain, Germany and the United Kingdom. Despite the early identification of the need for statewide high-speed rail, it was not until California voters approved Proposition 1A in 2008 that the project began to move from idea toward realization. The measure authorized the sale of $9.95 billion in bonds to finance high-speed rail in California and make related regional rail investments. Prop. 1A proposed to “initiate the construction of a high-speed rail system that connects the San Francisco Transbay Terminal to Los Angeles Union Station and Anaheim, and links the state’s major population centers.”3

With the support of those bonds, plus $3.5 billion in federal investment and additional state resources from California’s Greenhouse Gas Cap-and-Trade Program, the state began construction in 2015.4 High-speed rail is currently under construction in the San Joaquin Valley between Merced and Bakersfield. From 2015 to 2017, the California High-Speed Rail Authority has had more than 119 miles under contract for construction at nine construction sites in the San Joaquin Valley. The Authority is also investing in several concurrent projects throughout the system to prepare regional rail services for integration with future high-speed service.


This report focuses specifically on the land-use planning and economic development tools that the intermediate station system to prepare regional rail services for integration with future high-speed service.

See: California’s High-Speed Rail System

High-speed rail will connect cities across California in two phases. Phase I, projected to open in 2029, will connect Anaheim with San Francisco through the San Joaquin Valley. Phase II will extend south from Los Angeles to San Diego and north from Merced to Sacramento. This report focuses on the Phase I station cities from Gilroy to Bakersfield. Source: California High-Speed Rail Authority.

PHASE I PROPOSED HIGH-SPEED RAIL ALIGNMENTS

PROPOSED STATIONS

NOTE: Multiple lines in some segments of the route indicate that alignment is to be determined.

PHASE II PROPOSED HIGH-SPEED RAIL ALIGNMENTS
The Authority plans to start service in 2035, connecting Kern County in the south with San Jose’s Diridon Station in the north. By 2029, the complete Phase I project will extend from Anaheim to San Francisco and will include service to Merced along a spur line. Phase II will extend that spur north to Sacramento and continue the southern route from Los Angeles to San Diego. By 2030, high-speed rail is projected to provide service to a population of close to 30 million (the combined populations of the Bay Area, the San Joaquin Valley and Greater Los Angeles). According to the Authority, annual ridership in 2030 will range from about 18 million to 30 million passengers.

How High-Speed Rail Can Benefit Intermediate Station Cities

In recognition of the system’s potential impact on California’s growth and regional travel patterns, Prop. 1A noted two key goals:

1. “Stations shall be located in areas with good access to local mass transit and other modes of transportation,” and
2. “The high-speed train system shall be planned and constructed in a manner that minimizes urban sprawl and impacts on the natural environment.”

These goals signal an approach to planning high-speed rail that aims to integrate the train into existing places and communities and shape their growth in a positive way. As a reflection of that goal, Prop. 1A identified a route that passes directly through Gilroy, Merced, Fresno, Bakersfield and other communities that were bypassed by I-5. As an indication of the concern about potential urban sprawl in the San Joaquin Valley (such as around Los Banos), the measure specifically noted that there would be no station between Gilroy and Merced. In selecting an alignment through the center of these valley communities, Prop. 1A sought not only to connect San Francisco and San Jose with Los Angeles but to make the cities in between—most notably Gilroy, Merced, Fresno and Bakersfield—more closely connected to each other, as well as to the regional economies on the coast.

These cities are the intermediate stations along the first segment of the high-speed rail’s potential to transform their economies and help change their land use patterns, they are the focus of this report.

When cities were first linked by the state and interstate highway system, the major benefit to the communities along the route was getting access to the highway through an interchange, which often led to the demise of their main streets as economic activity shifted to the off-ramp. The highways also divided many communities, as they were often built through the middle of existing neighborhoods, many of which were working-class communities of color. Rail—and high-speed rail in particular—offers a chance to undo the mistakes of the highway era and provides a different vision for city development. Rail has a much smaller footprint than highways as it passes through communities. Because high-speed rail is space-efficient, this means it can bring many thousands more people into the core of a city without the need for more roads or significant parking facilities. Stations can and should be located in accessible areas where they can connect with existing and planned transit. Cities can then grow around their rail stations in a way that strengthens their identity and sense of place, rather than eviscerating it.

Achieving this type of development around stations is critical to ensure that California’s residents receive an economic return for their investment in high-speed rail. Voters decided to route the train through downtowns and tie together California’s city centers. Now there is an inherent responsibility to follow up with policies that maximize the value of the system for both the station and the station cities. This means stimulating station area development, downtown revitalization, general economic growth and the protection of critical farmland. Through deliberate policies, rail can again become a key shaper of California’s economic geography and its patterns of growth.

But there are challenges to overcome in order to get the most out of the state’s public investment in high-speed rail. Many of the intermediate station cities are struggling economically. Their downtowns have had little to no new development in decades. Low educational and skill levels among the workforce, high unemployment rates and a small share of jobs based transportation, and few residents have experience riding trains in California.

Intermediate Station Cities

According to the Authority, annual ridership in 2030 will range from 18 million to 30 million passengers. This report takes on these challenges and proposes specific steps to be taken by the station cities, numerous state departments and other public, private and civic actors. We explore how California can more fully integrate the cities from Bakersfield to Gilroy with the economy of the Bay Area—and eventually Southern California—and do so in a way that uses land more sustainably and concentrates economic growth in existing communities.

When we consider the potential impact of high-speed rail in California, we can imagine different outcomes. There are two outcomes in particular that the recommendations in this report seek to avoid. In the first, the train might have limited impact. Even with stations located in the downtowns of the intermediate cities, there could be little to no new development for a long time, and the regional economies in the San Joaquin Valley could remain disconnected from the coast. This would result in fewer riders getting on or off trains in the San Joaquin Valley and a future scenario in which it may not make sense for very many trains to stop in the San Joaquin Valley on their way between Los Angeles and the Bay Area.

A second negative outcome would be if high-speed train service caused the San Joaquin Valley to become a suburb for coastal workers. If a significant number of Californians chose to move to San Joaquin Valley station cities to access more affordable housing, growth could increasingly take place in car-dependent subdivisions on the edges of each city. This would result in greater sprawl and significant reductions of farmland and open space. Even if some of these commuters chose to locate in existing neighborhoods, their higher wages earned elsewhere might increase living costs and price out longstanding residents without offering much in the way of general economic growth. At the same time, the historic downtowns and station areas might not receive the public investment necessary for revitalization. They could become more like airports surrounded by massive parking lots catering to park-and-ride commuters, offering few amenities and little reason to walk anywhere.

The goal of this report is to avoid either of these outcomes.
A Vision for High-Speed Rail Cities

In the vision presented in this report, the state’s rail investment has a significant positive impact on the station cities, as well as on the state overall. Downtowns are revitalized, the pattern of new development shifts toward existing communities, and farmland and open space are protected. High-speed rail downtown facilitates investment in light rail and other local transit systems that provide alternatives to driving. The San Joaquin Valley gains more investment in light rail and other local transit systems.

To support the vision, this report:

- Makes the case that high-speed rail can be a tool for reshaping economic growth and development in intermediate station cities.
- Identifies the barriers to achieving this, including the limitations of rail to reshape the economy and land use patterns on its own.
- Proposes a series of state, regional and local policy and planning recommendations to achieve economic growth, revitalize downtowns and limit sprawl in intermediate station cities.

Immediate Station Area

**Geography:** The immediate surroundings up to half a mile from the train platform.

**Description:** This area includes the rail station building and amenities for travelers, such as connecting transportation services. In most cities, the station is in the center or at the edge of downtown. In these cases, it’s critical that this area be walkable and include denser development that can support rail ridership. In a few cities (Fort Collins and Kalamazoo), the station is proposed in an undeveloped “greenfield” location away from the community’s center. In these cases, it’s less clear what the role of the station should be in stimulating growth. For example, significant urban development around the Kalamazoo station could compete with revitalization efforts in downtown Kalamazoo.

**Measure of Success:** Significantly new and concentrated development is located around downtown stations. There is an increase in walkability and pedestrian activity in station areas. Seamless transfers connect high-speed rail and other space-efficient modes of transportation, including local transit.

Downtown Station District

**Geography:** The adjacent neighborhood up to 1 or 2 miles from the station.

**Description:** Throughout the world, rail systems link major employment districts with dense mixed-use areas. These districts extend beyond a station area to include the surrounding downtown with its mixture of office, retail, entertainment and residential uses. Businesses, property owners and employees in this area can all benefit from the improved accessibility that high-speed rail brings.

**Measure of Success:** An increased share of the city’s growth — particularly jobs, retail and entertainment — is located downtown and in other central parts of the city. More residents’ lives connect with the downtown. There’s a change in real estate market economics, and development in downtown areas becomes financially feasible without requiring subsidy.

Metropolitan Area

**Geography:** The larger city or metropolitan area up to 5 miles urban edge, sometimes 10 miles or more from the station.

**Description:** This area includes the complete urbanized footprint of the city and metropolitan area. Many trips on high-speed rail will begin or end in this larger geography, including trips to University of California, Merced; California State University, Fresno; or California State University, Bakersfield (each at least 6 miles from the nearest station). Creating seamless connections and easy transfers to these destinations is essential. While the direct economic impact of high-speed rail will be lower in this larger geography, it is nonetheless the area where a shift toward more compact land use patterns will have the greatest consequences.

**Measure of Success:** A large share of the city’s development takes place within the existing urban footprint instead of in greenfield areas. Much of it is multifamily housing designed to promote walkability, which reduces pressure to convert farmland and open space to urban development. This development also helps create a market for local transit and supports downtown revitalization. New transit investments are well-used and lead to a reduction in daily driving.

Measuring the Success of High-Speed Rail Cities

To understand the impact of high-speed rail, this report examines each city through three geographic areas. For each geography, this report looks at how to measure the success of the state’s investment in high-speed rail. The fourth geography shown here, farmland and open space, will be protected if the other three are planned well.
CHAPTER 1: The Opportunity of High-Speed Rail in California

There is nothing comparable to a high-speed rail system in California or the United States. This rail investment will transform how people travel north and south through the state by dramatically shortening travel times. As mentioned earlier, it provides an opportunity to revitalize downtowns and station areas, as well as a chance to better link the San Joaquin Valley to California’s coastal economies and bring new investment and economic activity to once-struggling communities.

The following are some of the key opportunities for intermediate cities.

High-speed rail radically shortens travel time between key population centers, effectively making the San Joaquin Valley cities closer to each other and to the coast.

With high-speed rail, Fresno will be a one-hour ride from San Jose, instead of a two-and-a-half-hour drive. Fresno will also be an hour and a half by train from both San Francisco and Los Angeles, instead of more than three hours by car. By collapsing distance, high-speed rail can make a business meeting that previously required an overnight stay into a day trip. It can also change commuting patterns, as it has done in Japan. For example, the Tokyo-Osaka high-speed rail line has made it possible to commute from intermediate cities like Shizuoka to Tokyo. Travelers cover 174 kilometers, or 108 miles, in as little as one hour. Within California, high-speed rail will reach speeds of 220 miles per hour.

High-speed rail will create a more unified statewide economy and link economically thriving areas with those that are struggling. A high-speed rail system has the potential to bring opportunity to metropolitan areas with weaker economies by increasing business travel and encouraging firms to relocate or expand in station cities. This means that accessibility improvements that come from high-speed rail can reduce the disparities between large, wealthy cities and medium-size intermediate cities along the rail line.

The travel time improvements from high-speed rail service can also increase productivity by expanding the labor market for businesses that are looking for talent, as well as increase opportunity for workers looking for jobs. In the United Kingdom, research has shown that faster rail service helped reduce uneven regional development and encouraged the growth of local knowledge industries. As a result, unemployment rates fell in economically struggling cities like Leeds and Cardiff.

On the other hand, a growing body of evidence indicates that without proper advance planning, some of the bigger economic gains from high-speed rail flow to the larger cities. Some research suggests that high-speed rail can support an increasing concentration of economic activities in cities that are already strong, which further distinguishes their economies from weaker metropolitan areas. In California, gains might flow to San Francisco, San Jose and Los Angeles, rather than to Fresno or Bakersfield.

FIGURE 2: High-Speed Rail Will Bring California Cities Closer Together

High-speed rail will effectively shrink California, in particular collapsing the relative distances from the San Joaquin Valley to the Bay Area and to Greater Los Angeles. Driving times in the table below are all during peak travel hours. The range in driving times shows the unpredictability of driving versus high-speed rail travel times, which do not fluctuate with traffic.

Source: Foster & Partners, California High-Speed Rail Authority

Note: The total time for driving is in the peak period. For example, Google Maps shows it as a range of 40 to 75 minutes from Gilroy to San Jose. The light blue section shows that difference.

Source: SPUR analysis of California High-Speed Rail Authority data and Google Maps traffic data.
High-speed rail can help concentrate economic activities both around a station and in the broader downtown, transforming these places into dynamic centers of activity for the region.

While the initial benefit of high-speed rail may be faster travel and increased accessibility, over time it can encourage industries to cluster together and companies to locate in closer proximity to one another in a city’s downtown.17 This kind of economic agglomeration can lower the costs of production, concentrate a pool of skilled workers and stimulate regional economic growth. High-speed rail has the potential to reinforce cities’ central business districts and support the growth of businesses and educational institutions.

High-speed rail can also play a significant role in restructuring regional economies.18 It can encourage the relocation of workers and companies and reallocate or shift employment to areas around a rail station. To the extent that the San Joaquin Valley increases its education levels and the percent of its economy that is in knowledge industries, this type of economic restructuring is a potential outcome of high-speed rail’s arrival.

The downtowns of Gilroy, Merced, Fresno and Bakersfield have all struggled in recent decades as retail, employment and residential growth left for other parts of the city or surrounding region. Fresno and Bakersfield in particular suffered as major regional investments in highways allowed these cities to sprawl ever outward. Given their relative size, along with significant and continued investment in highway building, traffic has yet to become the vexing problem in these cities that it is in the Bay Area or Southern California. This reinforces the auto-dominated living and working pattern that poses a competitive challenge to the downtowns.

By locating stations in or adjacent to the center of each city, high-speed rail can help bring life back to long-neglected downtowns. In the case of Fresno, the city has spent close to a decade revising planning guidelines and working to attract investment and development in its downtown. That process is starting to result in new investment and development but would benefit from additional big moves, such as a major company expansion or relocation, combined with the presence of high-speed rail. In the case of Merced, there has also been growing investment in upgrading the building stock, including the rehabilitation of an old hotel and theater.19 UC Merced is building a 70,000-square-foot administrative office building downtown, which can house nearly 400 employees and will bring additional foot traffic to support downtown businesses.20

Well-located and well-planned stations will also create opportunities for transit-oriented development immediately adjacent to the station.17 When stations are located downtown, high-speed rail can increase land values within the station area and encourage dense development.21 At a metropolitan scale, high-speed rail can help concentrate growth in those cities that have stations.
A Tale of Two States: The San Joaquin Valley and Silicon Valley

Phase I of high-speed rail service will connect the populations and economies of the San Joaquin Valley and Silicon Valley, specifically the three counties on the west side of San Francisco Bay. Silicon Valley is the world’s leading innovation district, with a growing share of knowledge industry jobs, high wages, low unemployment and high housing costs. The San Joaquin Valley is the world’s leading agricultural region, with a smaller share of knowledge economy jobs, lower wages, higher unemployment and lower housing costs. Six of the eight counties in the San Joaquin Valley will be served by high-speed rail in Phase I: Kern, Tulare, Kings, Fresno, Madera and Merced. The three Phase I counties in Silicon Valley are Santa Clara, San Mateo and San Francisco. Today the six San Joaquin Valley counties have almost 3 million people, while the population of the three Silicon Valley counties is 3.5 million. By 2040, the population of those six San Joaquin Valley counties is projected to grow to 4.2 million and surpass the Silicon Valley counties, whose population of those six San Joaquin Valley counties is projected to grow by around 2040.20

For most of the past few decades, the unemployment rate in the San Joaquin Valley counties was more than double that of the Silicon Valley counties. In the 1990s, the unemployment rate ranged from 10 percent to 18 percent, while in the counties of San Francisco, Santa Clara and San Mateo it ranged from 3 percent to 7 percent. The housing boom years from 2000 to 2007 saw San Joaquin Valley unemployment drop to between 7 and 12 percent and become closer to the levels in the Silicon Valley counties. Yet after the housing crash, and during the recent economic boom, the gap between the two areas widened again.21

Similarly, the median household income in the San Joaquin Valley counties is less than half that of the Silicon Valley counties: $43,000 versus $100,000 (in 2015 dollars).22 Lower household incomes in the San Joaquin Valley counties also mean lower housing costs. Monthly median rents in the San Joaquin Valley counties are three times as high as those in the San Joaquin Valley counties ($3,900 to $4,300 per month compared with approximately $1,200).23 Home values have likewise diverged: In 2017, the average home sale price for the Silicon Valley counties is more than $1 million, while the average home in the San Joaquin Valley counties is closer to $200,000.24 In the 21 years since 1996, San Joaquin Valley home prices have slightly more than doubled, while homes in the Silicon Valley counties have increased four- to five-fold. Since 2012, the gap between home prices in the two regions has grown considerably, from less than $500,000 to more than $900,000. Population in the San Joaquin Valley is growing faster than in Silicon Valley. As shown in the graphs at right, total population in the Silicon Valley counties is projected to grow by around 835,000 people from 2015 to 2040, compared with over 810,000 in the San Joaquin Valley counties. In terms of demographic changes, between 2015 and 2040, the Silicon Valley counties are projected to change less, with the white population declining from about 38 to 35 percent, while the population identifying as mixed race or “other” increases slightly. In comparison, the San Joaquin Valley counties are projected to see the share that is Latino increase from 56 to 60 percent and the share that is white decline from one-third to one-quarter of the population.25

In the San Joaquin Valley counties, only 17 percent of the population 25 years and older holds a bachelor’s degree or higher. The share of jobs in knowledge industries is below 7 percent in all six counties and has been declining slightly since 1990. In comparison, more than half of the population of the Silicon Valley counties holds a bachelor’s degree, and the percent of jobs in knowledge industries ranges between 25 and 32 percent.
A Note About Housing
Affordability and Displacement

The investment in high-speed rail station cities will lead to increasing wages and incomes. But there are other impacts on local residents as new people move into their communities. Housing costs are significantly lower in the San Joaquin Valley but may increase in some station cities if there is investment from other parts of California or if available housing starts to become scarce. Such price increases could negatively impact lower-income households and result in increased displacement pressures for those who already face significant challenges in maintaining adequate housing.

While some upward pressure on housing costs is inevitable, it will probably be offset by greater benefits that price increases in the San Joaquin Valley will be comparable to those in the Bay Area and Los Angeles. If such price increases did happen, they would be a reflection of strong demand, which would then allow for new market-rate development to become economically feasible. To the extent that valley communities remain more supportive of new housing production relative to the Bay Area, the increase in prices would likely be met with an increase in supply that would take some pressure off of continued upward prices.

Over time, as there is upward price pressure in the housing market, those with lower incomes will face greater housing challenges (although most low-income residents already face tremendous uncertainties and experience significant displacement pressures simply due to limited or unstable income, predatory lending or other factors). This suggests the need to develop a long-term vision regarding the impact of housing costs on existing and new residents. This vision should include strategies to bring down the cost of housing production, such as reducing required fees and speeding up permit processing and public and environmental review. It should also include expanded investment in affordable housing and greater protections for tenants and vulnerable communities over time.

High-speed rail helps other transit investments succeed as the station area becomes a gateway to the city and region.

The presence of a high-speed rail station can help make other transit investments more successful.24 With good planning, high-speed rail stations can become major transportation centers that generate a significant number of trips for bus rapid transit, light rail or regional rail systems. For some cities, the investment in high-speed rail provides the impetus to build a local or citywide light rail network. In Lyon, France, a city with high-speed rail, local leaders recognized the important role that streetcars were playing in improving urban mobility in other cities, like Nantes and Grenoble, and decided to plan their own extensive streetcar system, which opened in 2001, with their high-speed rail station at the center.

Lyon’s decision to invest in streetcars reflected a realization that the city needed more space-efficient and high-capacity travel modes to help high-speed rail passengers reach final destinations throughout the city. Bordeaux, France, built several light rail lines in anticipation of high-speed rail service. In both cases, the local transit investments were either inspired by or coordinated with high-speed rail.

In California, several station cities are planning new transit investments that link with high-speed rail. Fresno adopted a bus rapid transit master plan in 2008 and is constructing a line that will connect the high-speed rail station with destinations along Blackstone Avenue to the north.25 Merced is planning for a shuttle connecting to UC Merced. Bakersfield has a long-range transit vision for the entire metropolitan area, including building a light rail system.26

At the regional scale and beyond, each station is planning for major investments to connect to a larger geography, including bus service to national parks from Merced and Fresno and future service on a proposed cross-valley rail system from the Kings/Tulare station adjacent to the City of Hanford.27 There are also plans to extend the Capitol Corridor rail line from San Jose to Gilroy and south toward Salinas, including light rail connections to Monterey.28

Lessons From International High-Speed Rail Systems

High-speed rail has been successful in helping shape economic outcomes in numerous regions around the world, notably in Japan, South Korea, France, Spain and the United Kingdom. The following are some key lessons about what role the state should play, the impacts on intermediate cities and best practices for station area planning.

High-speed rail requires a different approach to planning than traditional transit-oriented development. Traditional transit-oriented development (TOD) refers to concentrating a mix of uses — including housing, offices and retail stores — in a walkable area within half a mile of a transit station.29 In practice, “mixed use” often means multifamily housing with retail stores on the ground floor. In contrast, development around high-speed rail should prioritize destinations of regional or statewide importance, including major offices, hotels, retail stores, entertainment complexes or educational campuses.30 Another difference with high-speed rail is that the area around the station that is typically built up in a high-speed rail station is much larger than half a mile. Additionally, a successful high-speed rail station is not just a major regional transportation hub but also a high-quality public space where people want to gather and spend time.

Station locations in or near downtown are most likely to spur development.

Stations that are located in or adjacent to downtowns are the ones that most frequently result in significant new development nearby. For example, Lille, France (a city north of Paris that is the transfer point between trains from London and Thalys in northern France) has a high-speed rail station at the center of the city.31 Merced is planning for a shuttle connecting to UC Merced. Bakersfield has a long-range transit vision for the entire metropolitan area, including building a light rail system.32

In central Tokyo, office towers, entertainment complexes or educational campuses.

Some research suggests that growth around a high-speed rail station is highest in cities where the public sector is most involved.33 Real estate around high-speed rail stations can be an important source of revenue to pay for operations and help subsidize the system.

Carpooling the increase in land value around a high-speed rail station can be an important strategy in generating development, and real estate development can provide significant revenue to support rail operations.34 In Japan, regulations allow private rail companies to develop revenue resources other than rail fares, which encourages these companies to invest in real estate development around rail stations. This allows them to capture revenue from property leases and use that revenue to help pay for the system’s financial needs.

Public-private partnerships are common in model in structuring the real estate developments in station areas. In central Tokyo, office towers and shopping malls were developed around the station, which is a demonstration of how public-private partnerships can benefit the community.

High-speed rail must be well-integrated with other regional and local transit systems.

Most research on international high-speed rail systems identifies good integration with local transit as a prerequisite for success, particularly in intermediate cities.35 Transit investments such as bus rapid transit lines or new light rail systems are space-efficient travel modes that can carry thousands of daily riders to a high-speed rail station without the need for major parking facilities.36
High-speed rail will form the backbone of a comprehensive state rail network.

California high-speed rail is being planned and designed as the backbone of an extensive statewide rail network. This means public investment in the rail system will serve not only riders with destinations along the high-speed rail route but those taking other modes of transit. The vision set forth in California’s 2018 State Rail Plan is to completely integrate all modes of transit across the state, including high-speed rail, intercity rail, intercity buses, regional rail, local transit and last-mile services such as transportation network companies (Lyft and Uber), bike sharing and other modes. This will mean planning common transfer points between services and implementing synchronized timetables so that connections are seamless and easy. For example, passengers arriving on a high-speed train should expect a standardized wait time (such as 10 minutes) to connect with adjoining transit services. Fare prices and ticketing systems will be integrated so that customers can make an entire journey across different modes and operators using a single ticket.

High-speed rail will alleviate overburdened highway and air travel corridors.

High-speed rail can free up capacity on existing highways and reduce wear and tear on roadways as travelers shift from automobiles to trains. It can also alleviate overburdened air travel and reduce the need for airport expansion. In some regions, high-speed rail systems have successfully shifted riders from air travel to trains. In France, the TGV high-speed rail service claims 91 percent of the air and rail travel market between Paris and Lyon. For the longer rail trip from Paris to Marseille on the country’s southern coast, rail claims 60 percent of the air and rail travel market. As a result of TGV’s success, Air France has stopped servicing certain routes, while a combination of high gas prices and high tolls has reduced the demand for car travel. On the East Coast of the United States, Amtrak’s Acela service, which achieves high speeds on part of its Northeast Corridor route, captures 74 percent of the market share for rail and air travel trips between New York and Washington, D.C.

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High-Speed Rail and California’s Policy Goals

California regularly sets policy goals designed to improve long-term outcomes for the state and its residents. These efforts include reducing climate change from greenhouse gasses, supporting compact development, improving air quality and public health, and upgrading the skills of the workforce. The state has a vested interest in making sure high-speed rail succeeds, as it will be a critical part in helping meet these and other policy priorities. The following are statewide goals whose success is particularly intertwined with that of high-speed rail:

Reducing greenhouse gas emissions from transportation
The state’s aggressive climate change goals call for reducing greenhouse gas emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.54 Since the transportation sector is the largest emitter of greenhouse gases in California, shifting long-distance travel from airplanes and automobiles to clean and electrified high-speed rail is a key part of reducing greenhouse gas emissions.

Achieving more compact land use patterns through coordinated regional planning
Senate Bill 375 (2008), part of the state’s climate change goals, calls for reducing per capita emissions from driving by coordinating where future growth will occur with the necessary transportation investments to serve that growth. Key to achieving reduced driving is implementing plans for more compact development. Since the passage of SB 375, several state reports have proposed related goals. The governor’s Strategy for California @ 50 Million report have proposed related goals. The governor’s Strategy for California @ 50 Million report calls for prioritizing growth within existing urban areas, and the Strategic Growth Council’s Vibrant Communities and Landscapes report calls for integration of land use planning and conservation efforts. High-speed rail will help achieve these goals by concentrating growth around stations and providing an organizing framework for future transit investments to get people to and from stations without driving.

Preserving natural and working landscapes
California made the preservation of natural and agricultural lands one of its three top planning priorities with the passage of Assembly Bill 857 (2003). The Governor’s Policy and Environmental Goals Report Update further calls for reducing the amount of land converted to development by 50 percent of today’s trend by 2050.55 while the Strategic Growth Council, California Natural Resources Agency (including Department of Conservation and the Department of Fish and Wildlife) and others have also called for the location of future development to consider and minimize impacts to important natural resources. High-speed rail station planning can direct growth toward urban centers and away from greenfield areas.

Modernizing state rail through an integrated statewide network
The 2018 California state rail plan focuses on modernizing the entire rail network and lays out a vision of an integrated system of passenger and freight rail throughout the state.56 The plan emphasizes connectivity, proposing timed transfers between different systems as a way to open up rail travel to many more passengers. The success of this vision is contingent on building out high-speed rail as the trunk line for other rail systems across the state, such as Amtrak and the Altamont Corridor Express, or ACE.

Promoting environmental justice and investing in disadvantaged communities
With the passage of Senate Bill 535 (2012), the state committed itself to investing a quarter of cap-and-trade revenues in projects that benefit communities most impacted by poverty and pollution,57 one program, Transformative Climate Communities, is targeting 50 percent of its initial resources toward investments in Fresno, particularly near the high-speed rail station.58 These targeted investments will have a bigger impact on these communities if they are planned in coordination with investments in high-speed rail.

Promoting workforce development and upward mobility
California has set goals to increase the number of residents who get an industry-recognized degree, focusing especially on unemployed, underemployed, low-skilled or low-income people, veterans, individuals with disabilities and other at-risk populations.59 The state aims to award a million of these “middle skill” credentials between 2017 and 2020 and to double the number of people enrolled in apprenticeship and other work-based learning programs. California also plans to direct funding to jobs that focus on science, technology, engineering and math. The state’s strategy is explicitly regionally focused: it aims to better align workforce training with employer needs in part by encouraging employers to work with partners at the regional scale. High-speed rail helps achieve this policy goal by connecting the major cities of the San Joaquin Valley, one of the regional districts identified in the state’s workforce strategy, and expanding opportunities for business growth in these cities.

High-speed rail can help achieve a more compact pattern of urban growth in the San Joaquin Valley and preserve prime farmland and open space at the urban edge.
There are significant growth pressures throughout California, particularly in the San Joaquin Valley. Under current market conditions, it is easier to convert farmland to urban development than to build in existing neighborhoods. The presence of high-speed rail is an opportunity for each station city and its surrounding metropolitan region to shift more growth toward infill development, building on vacant or underused parcels within existing urban areas. This will allow these communities to preserve more of their farmland and open spaces.

High-speed rail provides an opportunity to build on the success of the San Joaquin Valley Blueprint and the San Joaquin Valley Greenprint, two documents that focus, respectively, on where to grow and where to protect critical habitat and agricultural areas as a way to preserve the economic history and culture of the San Joaquin Valley.60

High-speed rail can support public health benefits, including a shift away from car use that will improve air quality.
The San Joaquin Valley faces some of the worst air quality in the United States, largely from pollution caused by cars, long-haul trucking and agricultural equipment. Its basinlike geography traps pollution in place – even particulate matter that is blown over from coastal cities. As such, the region stands to benefit directly from a shift away from driving and air travel toward cleaner high-speed rail. Much of the San Joaquin Valley, from Bakersfield north past Fresno, is in the top 10 percent of the state in exposure to fine particulate matter (PM 2.5). The entire valley is in the top 20 percent of the state in aggregate exposure to environmental toxins. Passenger vehicles are one of the largest sources of air pollution and largest contributors to greenhouse gas emissions in California and the United States. In contrast, high-speed rail has committed to operating on 100 percent renewable energy, a goal that will help improve air quality and reduce overall greenhouse gas emissions.61 Another public health benefit from the shift toward rail travel is the potential for fewer accidents on highways.62
High-Speed Rail’s Intermediate Station Cities

All of the intermediate high-speed rail station cities in Phase I are engaged in some form of station area planning, whether the stations are proposed downtown, on the edge of town or in an undeveloped greenfield area, such as on former agricultural or natural land. Each city or station also has distinct attributes that reflect its potential to capture development and riders on high-speed rail. This means each will have different concerns and may face different choices as planning for high-speed rail continues.

The decision of where to locate each station and how to plan for each station area requires balancing different trade-offs. For example, the station locations might make perfect sense as part of a statewide rail network, but some might be more likely to lead to greater urban sprawl, depending on where they are located.

Some of the most significant factors involved in station planning decisions include:

**Land use:** What type of development is likely to take place closest to the station as a result of its location? What type of development, if any, exists today?

**Environmental justice:** What populations live or work closest to the proposed station? What populations will have the best access to the benefits of the high-speed rail system and/or will experience its impacts?

**Transit network:** How will the station location connect with other existing or proposed rail or bus lines?

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**Gilroy**

Gilroy is the smallest of the station cities in this report, with just over 50,000 residents. Locally, key destinations for high-speed rail travelers include the Gilroy Gardens Family Theme Park (less than 5 miles from the station), the Gilroy Outlets shopping center and festivals like the Gilroy Garlic Festival. The station will serve as the gateway to the Monterey Bay area and may include a connection to Amtrak’s Capitol Corridor train line, as well as expanded bus service to the coast. As the southernmost station within the Bay Area, it will also be an important commute market for workers with jobs in Silicon Valley.

Gilroy has two potential station locations, one within downtown and the other abutting farmland adjacent to the highway. In November 2016, Gilroy voters adopted an urban growth boundary. The boundary passes just outside the potential East Gilroy station area along the highway, which will limit potential development around the station (unless the boundary is modified through a second ballot initiative). The city has an existing downtown plan that was drafted prior to the realization that Gilroy would have a high-speed rail station. As of early 2017, the city was not planning to update its downtown plan to accommodate additional growth that could result from the arrival of high-speed rail. The downtown plan emphasizes limited growth that is contextual with the historic downtown.

**Merced**

Merced will be the northern terminus of the San Joaquin Valley segment of high-speed rail during Phase I. The 84,000-person city is the home of a fast-growing University of California campus (7 miles away) and one of the key gateways to Yosemite National Park (80 miles and less than two hours away by car). UC Merced has 6,800 students and plans to grow to accommodate 10,000 total students in the next few years. Its 2020 vision includes an additional 1.2 million square feet of development, including 13 buildings that will house new science labs and 1,700 residential beds. The combination of a research university and high-speed rail is a unique opportunity for growing high-quality talent for knowledge-industry jobs in the San Joaquin Valley. UC Merced is also building a 70,000-square-foot office downtown for 400 workers, part of a series of investments that are transforming downtown Merced. A number of old theaters and other buildings are being bought and rehabilitated in anticipation of increased wealth coming to the community associated with the university and related economic spinoffs, such as at the former Castle Air Force Base, where Google has a small facility to test autonomous vehicles.

The downtown is small and has significant opportunity for new development. The city owns 80 acres of vacant land but is being patient about its investments and is planning to hold the land until the market is ready for higher and better uses.
**Fresno**

With a population of more than 520,000, Fresno is the largest city in the San Joaquin Valley and the fifth largest in the state (behind Los Angeles, San Diego, San Jose and San Francisco). The city’s high-speed rail station will be adjacent to its existing downtown, which has about 35,000 jobs. The surrounding area to the southwest, the city’s Chinatown, has a number of vacant parcels and major development opportunities. Fresno’s downtown plan includes a major focus on residential development and sets a five-story minimum height for new buildings on the downtown side of the station and a three-story minimum on the Chinatown side. The existing Amtrak station is a half-mile from the high-speed rail station, near city hall.

Fresno is the major urban center of the San Joaquin Valley, with the largest concentration of jobs of any city between San Jose and Los Angeles. Its key hospitals and medical centers and Fresno State University are all 6 to 9 miles away from the station site. With the arrival of high-speed rail, it seeks to enhance its role and also position itself as a gateway to national parks.

Since 2008, Fresno has sought to reorient its growing city back to its downtown. From 2014 to 2016, Fresno attracted more than $100 million in private investment. Fresno’s downtown strategy consisted of four components. First, it enhanced attractions downtown, improving the Grizzlies minor league baseball stadium, attracting several breweries and restaurants, and building more than 550 new housing units. Second, it wrote a station area plan and a downtown plan. Key design considerations included allowing no surface parking within a five-minute walk of the station, prioritizing pedestrian access in this quarter-mile area, ensuring that the station has entrances on both sides and sharing parking between high-speed rail and other uses. Third, Fresno made key transportation moves such as securing funding for two bus rapid transit lines heading to downtown as well as rebuilding Fulton Street mall to open it to automobiles. Some planners might ask why opening a pedestrian mall to cars is a key transportation move. In the case of Fresno, bringing more life to the Fulton corridor is critical to the success of retail and other activities in the area. In its fourth and final move, the city of Fresno is leveraging significant funding from the state’s Transformative Climate Communities Program, which directs some proceeds from cap-and-trade funding to economically disadvantaged areas. The planning process involves extensive analysis of international best practices, a market study of potential development, and a long-term vision of what a fully built-out downtown will look like over many years.

**Bakersfield**

With more than 580,000 residents, Bakersfield is California’s ninth largest city. Its population has increased by more than 140,000 people since 2000. The metropolitan area is largely suburban with an average population density of about 2,000 people per square mile. Bakersfield is the urban center of Kern County, which has a diverse economic base that includes significant employment in transportation, logistics and advanced manufacturing; energy and natural resources; agriculture; healthcare services; and aerospace and defense. Kern County itself has over 875,000 residents and is projected to grow to more than 1.6 million by 2050.

High-speed rail service will connect Bakersfield to Union Station in downtown Los Angeles in just over an hour, pulling the city more directly into the economic orbit of Southern California.

In preparation for high-speed rail, the city is writing a new downtown plan focused on making its central area a destination. The planning process involves extensive analysis of international best practices, a market study of potential development, and a long-term vision of what a fully built-out downtown will look like over many years.

There are two proposed station locations in Bakersfield, one at the downtown or the other at the southeastern edge of the existing downtown. The northern location is adjacent to a highway and is a longer distance from many destinations, but it has significant opportunity for new development. The southern location is adjacent to a key transportation hub and the city’s convention center. It is closer to existing amenities and could be a shorter trip on a future bus rapid transit line to key office districts outside of downtown. Whichever location is ultimately selected, there must be safe and comfortable access for travelers using all modes of transportation, especially those arriving on foot.
Madera

The City of Madera (located northwest of the proposed station area shown above) has a population of 60,000. (Madera County’s total population is a little more than 155,000.) The California High-Speed Rail Authority’s 2016 business plan identified a potential stop in Madera as a transfer point for travelers wanting to switch between the Gilroy–Fresno and Merced–Fresno tracks. This suggests that there will be little investment in a station or surrounding infrastructure. To the extent that land ownership remains in private hands and there is no explicit vision for development around the stop, future growth will be more subject to the whims of market forces. This could result in significant sprawl and farmland conversion. Madera County has tens of thousands of housing units that have been entitled but not yet built. For some residents in North Fresno, a high-speed rail stop in Madera will be more convenient than a downtown Fresno station, suggesting that it may become more of a commuter park-and-ride location than a future hub of activity. Unless additional land use restrictions are put in place, the Madera station could also become a suburban office park for institutions and companies that are interested in development adjacent to high-speed rail but do not want to deal with the hurdles of building in an urban center such as downtown Fresno. Without planning regulations in place, development around a Madera station could compete with — and ultimately hamper — downtown Fresno’s revitalization efforts.

Kings/Tulare (Hanford)

Due to its location in a greenfield area adjacent to a small city, the Kings/Tulare station will need a strong vision for its future growth and development. Without effective planning, it is likely that the station area will become mostly devoted to park-and-ride facilities as opposed to a new hub for development and transportation connections to the city and surrounding metropolitan area. It could also become a new economic hub for the community, pulling investment and activity away from the existing downtowns. At the opposite end of the spectrum, if the station does not generate high ridership, trains may not end up stopping there very frequently.
CHAPTER 2: BARRIERS TO ACHIEVING THE VISION FOR HIGH-SPEED RAIL

The challenges to realizing the opportunity of high-speed rail are best understood at this report’s three scales of analysis: the immediate station area, the downtown station district and the metropolitan area. Overcoming these challenges and realizing the full potential of high-speed rail will require strong partnerships between local, regional and state actors, as well as active involvement from all three levels in planning and policy.

Immediate Station Area

There are few tools to finance revitalization around stations and their adjacent downtowns, and the key existing tools access only a limited amount of potential funding.

In California, a key tool for revitalizing cities is tax increment financing. This approach projects the increase in local tax revenue that redevelopment will stimulate and then issues bonds backed by that future revenue growth. It was used extensively by California’s redevelopment agencies before they closed in 2012. Today the most promising form of tax increment financing is called an enhanced infrastructure financing district or EIFD, an entity formed by a city or county to finance or build infrastructure. EIFDs have the ability to capture tax increment from a variety of revenue sources within a defined district or area. Unlike the tax increment used by redevelopment agencies, today’s EIFDs are limited in the amount of tax increment they are able to capture, because all contributions beyond the local government’s are voluntary. In other words, an EIFD within a city is only guaranteed to capture the city portion of the increase in taxes (the “increment”) unless there is an agreement with the county or special districts to share their tax increment with the city. (School districts are excluded from sharing their portion of the increase in taxes (the “increment”) unless there is an agreement with EIFDs.)

There are no existing governance institutions with the experience or appropriate tools to manage large-scale station area development. California does not have development entities with the experience to do high-speed rail station area development, nor do we have a tradition of rail operators managing major development around stations.

Private land speculation around stations could stifle future development.

While some of the land near high-speed rail stations is held by public agencies, there has been speculation by private owners around future station areas such as downtown Fresno. In such cases, property owners may simply buy vacant or underutilized land at depressed prices and hold it until the market is strong enough to support new development. Given California’s property tax structure (where property taxes are set by the purchase price and only increase 2 percent annually thereafter), this eliminates the financial risk of major tax increases. Ironically, maintaining vacant or significantly underutilized parcels in the immediate areas around the stations could actually delay viable development, as it deters other investors who may not want to hold and are more willing to develop property when the future market conditions remain unclear. This problem is compounded by the absence of a governmental agency that is able to purchase and hold land. Even land held by the successor agencies to California’s former redevelopment agencies must be sold to the highest bidder, not necessarily to meet a specific land use or economic development vision.

Some of the stations are located in greenfield areas or at the edges of downtown cores, and it will be harder to attract focused growth around them. Greenfield high-speed rail stations, particularly in places like France, are often car-oriented and struggle to attract development. Some of them remain surrounded by a sea of parking lots for decades, with little to no new development after the rail service is running. Stations located at the far edges of downtown can also struggle: the existing urban fabric does not promote walkability, and as a result the station area has weak market conditions that do not sufficiently change with the arrival of high-speed rail service.

Planning guidelines for station development are not binding.

While the California High-Speed Rail Authority is committed to pursuing compact growth around station areas and to encouraging denser, transit-oriented development, it must work in conjunction with local planning agencies, which may not be supportive of the same policies. For example, the Authority might prioritize station locations in downtown areas, pursue a mix of high-density land uses around the stations, eliminate free parking in the station area and limit overall parking in new developments. But local communities are not obligated to follow these guidelines when they are approving new development. Meanwhile, the separate planning and entitlement processes in each city mean there is no system in place for individual station cities to learn from each other.

The California High-Speed Rail Authority’s ability to do joint development in the station areas is untested.

Under current laws, the Authority is able to enter into a joint-development agreement with a developer on Authority-owned land. If a landowner is unwilling to sell, the Authority is able to use eminent domain to force a sale, as long as it’s for a state purpose. Land purchases along the high-speed rail right-of-way are an example of a state purpose. Although untested in California, it would also be a state purpose to use eminent domain to acquire parcels that might be needed for station area joint development, such as offices, hotels or retail. The use of eminent domain for joint development would support the requirement that eminent domain have a public purpose, since such development produces revenue, provides riders and would help meet the Prop. 1A constraint that high-speed rail receive no operating subsidy. In addition, the Authority is not subject to local land use regulations. While also untested, current law (per the California Public Utilities Commission Code) demonstrates that the Authority must check the consistency of its proposed development with local land use laws but is not limited by it.

The infrastructure for a station itself is large and will have to be well-integrated into the fabric of existing communities.

While a high-speed rail station’s overall footprint is far smaller than that of other facilities that accommodate a similar number of people (most notably airports and highways), attention still must be paid to make sure the station and immediate area are designed in such a way that passengers can comfortably walk or bike to or around them. Designing the station to encourage travel on space-efficient and sustainable modes of transportation maximizes the amount of development capacity in the station area.
Gap Financing

Why Downtown Station Districts Need Gap Financing

New development in many San Joaquin Valley cities is not possible under current market conditions. For example, average annual net operating income for an office building in downtown Fresno today is $4 per square foot (based on a $24 per-square-foot annual rent, a 10 percent vacancy rate and $8 per square foot in annual operating expenses). Under these assumptions, a hypothetical steel-frame high-rise office building in downtown Fresno would only generate enough income to support a building that costs $170 per square foot to build — well below today’s $350 per-square-foot development cost. Securing gap financing for the remaining $180 per square foot is necessary for high-rise development to occur.

Downtown Station District

High-speed rail’s improved accessibility on its own is unlikely to change the economic trajectory for a station district or downtown.

High-speed rail improves accessibility and the connections between cities, which is a necessary but not sufficient ingredient for the economic transformation of a city’s downtown. The rail line can be a catalyst for economic growth only as part of a larger economic vision and strategy.

In most of the San Joaquin Valley cities, the current real estate market does not support new higher-density development downtown. All new development comes with significant costs — from planning and buying property to the design and entitlement process to construction. In most of the station area downtowns, market rents and sales prices for multi-story commercial and residential development are not high enough to cover these costs. The difference between the costs and the return on investment creates a gap that can only be filled through some form of subsidy, either public or private. Understanding the market means looking at the economics of the station as well as the broader market trends in the city or sub-regions. For example, there has been virtually no new unsubsidized market-rate office development (other than adaptive reuse and rehabilitation) in the downtowns of Gilroy, Merced, Fresno or Bakersfield in decades. Existing job centers are often outside of downtowns. For example, the major office district in Bakersfield is more than 3 miles from downtown and the proposed station location.

Existing state economic development programs are not geographically targeted to reinforce high-speed rail communities. California has numerous economic development programs such as income-tax credits to qualifying businesses or bonds to public agencies, non-profits and manufacturing companies. These programs often focus on a type of business (e.g., manufacturing) or worker (e.g., veterans) or income level (e.g., high poverty or high unemployment areas). But such programs are not focused on specific geographic areas, such as the San Joaquin Valley. This limits the potential to use California’s economic development programs as a tool to benefit high-speed rail station cities.

Sprawl and car-oriented development have been the primary form of growth in most of California since World War II. Sprawl happens because land costs are cheaper at the urban edge while urban infill development faces regulatory, market and political barriers. Yet in the long run, sprawl patterns are more costly to communities and the state overall. In addition to the cost of extending infrastructure (roads, water, sewer, electricity), sprawl also consumes valuable agricultural land.

Metropolitan Area

The valley’s sprawling land use pattern could be reinforced if additional high-speed rail stations are added near the urban edge to capture riders from spread-out areas.

Investing in high-speed rail building over the last few decades have allowed California communities to grow in a sprawling pattern away from their cores. Even after high-speed rail opens, some residents in these outlying areas may continue using a car for trips between cities if they view rail’s door-to-door travel savings as not substantial enough. This will be particularly true for trips whose origin and destination are far from a high-speed rail station. The solution is to reorient communities toward their downtowns. But it will also be important to resist the temptation to add new stations near outlying communities along the route as a way to capture riders. Such stations will invariably become car-dependent and will only further facilitate outward sprawl. This suggests that an integrated transportation network with feeder transit service and other forms of access are critical in order to connect people easily and seamlessly to high-speed rail stations. Over time, California’s highway infrastructure will likely get more congested, making high-speed rail a better alternative to driving, even for residents of outlying communities who must travel downtown to get the train.

Some benefits of high-speed rail may flow to larger station cities with strong existing business districts, not to the intermediate station cities. High-speed rail can benefit major cities more than smaller and intermediate cities, as the major city gains access to an expanded labor market to bring workers and travelers into its already-dynamic core. While there is some evidence that intermediate stations can benefit when travel times to a major city decrease to within two hours, those benefits can be outweighed by making it easier to leave the smaller city for the larger one. High-speed rail can therefore reinforce the primacy of the existing centers, sometimes at the expense of smaller ones. In Japan, some of the intermediate stations along the Shinkansen high-speed line between Tokyo and Osaka have seen office values decline.

Faster rail service can reduce the length of visits and reduce tourism spending. High-speed rail may cause contradictory impacts on travel patterns. This is especially visible in tourism. While new travel packages may attract new visitors, the number of overnight stays in intermediate cities with tourism attractions can decrease. The faster train trip allows some travelers to make their visit a day trip rather than an overnight stay, which means less money spent in the community.
This was the experience in Canterbury with the advent of faster rail service to London. More travelers would take day trips from London to see the Canterbury Cathedral and then head back the same day. Because fewer people spent the night, there was less investment in upgrading hotels. And because there were not as many good hotels, some travelers did not bother trying to spend the night.

California does not have a strong tradition of rail use.

While California communities were initially built around rail, most urban development in the 20th century took place without any relationship to rail. As a result, most Californians have limited experience riding trains. Places without a strong tradition of rail usage have a greater burden in doing good planning to make sure that high-speed rail is well-used and that there is economic activity and development around stations. By contrast, many countries that have built high-speed rail systems primarily introduced the services onto existing rail lines that were reaching capacity. In these communities, residents were accustomed to taking the train and welcomed the improved service. Similarly, investments made in Amtrak’s Northeast Corridor to introduce the Acela line appealed to a population with a large number of experienced Amtrak customers.

Land use decisions and policies in many cities do not support concentrated growth, and greenfield development remains cheaper and easier than infill development. There are few limits to urban development at the edge of cities. While many cities in the Bay Area, including Gilroy, have urban growth boundaries, none exist around the San Joaquin Valley cities. Even when there are county-level urban growth boundaries, cities often attempt to annex adjacent open space and farmland, cases that get decided by the county’s local agency formation commission. These pressures to expand city boundaries will likely continue, particularly in southern Santa Clara County and northern San Benito County, with the advent of high-speed rail. Further, there are thousands of housing units in approved tract maps on the edges of cities, including 40,000 in Kern County alone. This means edge development will happen when financing is available, thus reducing the competitiveness of infill development, which faces greater funding and regulatory hurdles. Some communities, like Kern County, have approved policies like higher fees for development on the edge of town and lower fees in the core. But these have not been sufficient to shift the overall market toward infill development.

The geography of metropolitan planning organizations (MPOs) does not match the commute and development patterns of the San Joaquin Valley. A metropolitan planning organization is a federally designated governmental agency whose role is to conduct regional transportation planning as a condition of receiving federal transportation funding. The Bay Area’s MPO is the Metropolitan Transportation Commission, which covers nine counties. In contrast, there are eight separate MPOs in the San Joaquin Valley, one for each county. In these counties, transportation planning usually stops at the county boundary, even though actual metropolitan regions and commute patterns cut across county boundaries. This means the San Joaquin Valley lacks a regional structure to properly analyze and allocate transportation resources and growth targets. While MPOs in California do not have land use authority, they do convene the various cities within their boundaries to engage in shared land use planning. The misalignment between the MPO boundaries and the actual regions limits the ability for regional action in the San Joaquin Valley. Even combining several valley counties into a single MPO that better reflects commute patterns would significantly improve the approach to regional planning.
CHAPTER 3: Recommendations

High-speed rail is unlike any infrastructure investment or transportation system ever implemented in California. It is large and complex and will take a long time to complete. But it is also potentially transformative—not only to how people travel but to how communities will grow and develop for generations. If implemented well, it can help leverage the billions in public investment that have already been committed to achieving important state goals like combating climate change and preserving farmland. But California’s current tools and approaches to transportation and land use integration are not sufficient for the opportunity at hand.

The high-speed rail station in Nagoya, Japan, demonstrates key attributes of successful station area development, particularly for an intermediate city. Over the past few decades, public-private revitalization efforts have resulted in rising land values within 3 miles of the station, while the station building itself includes a major office and hotel complex. The immediate station area extends about half a mile from the station. The station should be considered an important amenity for travelers connect seamlessly to other forms of transportation to get to their final destinations. It is an important place to build high-density development that will support ridership on the rail system and contribute operating revenue. In this area, there should be a single entity, such as a development corporation, that owns property, controls land use decisions and is able to leverage new revenue sources for development.

Immediate Station Area Recommendations

Goals: This area should become the gateway to the city, where travelers connect seamlessly to other forms of transportation to get to their final destinations. It is an important place to build high-density development that will support ridership on the rail system and contribute operating revenue. In this area, there should be a single entity, such as a development corporation, that owns property, controls land use decisions and is able to leverage new revenue sources for development.

Develop a station area plan and implementation program that balances the city’s vision for its future with statewide planning needs.

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Actors: Station cities, local transportation providers, California High-Speed Rail Authority, Strategic Growth Council.

The local communities and the state should jointly develop a plan for the station and surrounding area. This plan should combine the local city’s vision (such as a distinct economic and cultural identity and a mix of land uses) with the needs of the statewide rail system, including generating high ridership and revenue. The plan should be translated into zoning with clear rules, including urban design guidelines and minimum densities to ensure that any new private development is of a sufficient scale to match the station area’s long-term potential. The station area should emphasize destination land uses such as office, retail or educational facilities. Residential development should be limited around the station, and in no case should there be single-family zoning in a station area.

The high-speed rail station itself should be a dynamic and lively place with design features that reflect the community’s distinct identity. The station facility should also include major uses such as offices, retail or a hotel above or immediately adjacent to the station. The station should be considered an important amenity for its community, and efforts should be made to ensure that there are sufficient amenities and activities within the station, or adjacent to it, to draw visitors and residents.

Cities should resist the temptation to view a thriving station facility as a threat to their downtown’s revitalization. There is a symbiotic relationship between the two. Creating a station that is itself a destination will help attract new visitors to the city.

Further, the station facility must be well-planned to ensure that it is integrated into the urban fabric and in no way becomes a barrier or a deterrent to good pedestrian-oriented development in the surrounding area.

The station area should adhere to principles of good urban design with active public spaces, including new plazas and parks. New development should have active ground floors, with restrictions on blank walls or oversized entrances to parking garages. Auto-oriented developments, such as a traditional office buildings surrounded by surface parking lots, should not be allowed. The station facility should have entrances on all sides. The immediate station area should prioritize access by walking, and there should be clear and safe bicycle paths through the station area that connect to adjacent neighborhoods. The plan should focus special attention on the immediate two to three blocks around the station.

Over the past few decades, public-private revitalization efforts have resulted in rising land values within 3 miles of the station, while the station building itself includes a major office and hotel complex.

Immediate Station Area Recommendations

1. Develop a station area plan and implementation program that balances the city’s vision for its future with statewide planning needs.

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Over the past few decades, public-private revitalization efforts have resulted in rising land values within 3 miles of the station, while the station building itself includes a major office and hotel complex.
Recommendation 2) should have clear agreements in place to enable more permanent development to go forward when ready. In some cases, the interim use (e.g., coffee stands, food trucks) could become incorporated into the new development. This approach will also provide an opportunity to determine how public agencies should lease land to private developers, as opposed to selling the parcels.

Finally, given the long-term nature of the rail project and the varying levels of planning and development experience across station areas, the California High-Speed Rail Authority should institute ongoing peer-to-peer learning for city staff members in station cities. These exchanges could also include bringing international experts to share their experience and knowledge of best practices regarding high-speed rail station area development.

2 Establish a rail station area development corporation for each high-speed rail station with responsibility for development and land use in the immediate station area.

Actors: California High-Speed Rail Authority, Strategic Growth Council, station cities and counties, proposed station development corporation, state legislature, governor’s office

Under the current business-as-usual approach to rail station area development in the United States, each entity – such as the state, city and private sector – operates separately and often in competition. The specific powers and duties of each governmental entity (for example, eminent domain or land use approvals) remain discrete and are not combined in the service of an overall vision for station development. High-speed rail should have a more coherent vision for station area development. The main disadvantage is that the development corporation would have to hire its own in-house expertise.

The main disadvantage is that the development corporation would have less specific knowledge about each station city, though it could overcome this by hiring local experts as implementation staff.

The second approach would be to give each station city the option to establish an individual development corporation for its station area. By opting in to the creation of the development corporation, the local government would assert to empowering the development corporation to deliver the station area plan. In this case, the local government would be the body that created the development corporation’s board would include key high-level representatives from the city, region, state and the Authority. For example, the board could include the local mayor, the chair or CEO of the Authority, one or more appointees of the governor, and the executive director or board chair of the local metropolitan planning organization or council of governments. Although the board would include state and local leaders, it would be important for a slightly larger number of the board to represent the state and/or the Authority to ensure that the statewide vision for high-speed rail is fully realized at the local level. The main advantage to this approach is that each station city would have the ability to say “no” to specific developments.

The station cities and the Authority should work collaboratively to allow the development corporation to have particular powers and duties. Some of them include the following:

- Ability to carry out land purchase, banking and land assembly strategies around stations. The development corporation should be able to hold key parcels as future joint-development opportunities and should be encouraged to work with existing public landowners to ensure that they also hold onto key properties until the market is strong enough to support development.

- Power of eminent domain or a first right of refusal for all land sales within the station area.96 The ability to purchase and control land sales is particularly important given the large amount of land around high-speed rail stations that is owned by the successor agencies of former redevelopment agencies. Under current rules, successor agencies typically sell to the higher bidder, which precludes the public sector’s ability to control key parcels and shape a coherent vision for development across the station area.

- Assurance that the Authority, a subsidiary or the development corporation is able to sell and transfer the development rights on any parcel within the designated station area to a private developer for the purposes of private or joint development. Development could include business and hotel-operating conference facilities, offices, housing or commercial space above or adjacent to the station. This would also apply to an agreement

3 Streamline development approvals and entitlement processes for high-speed rail station areas.

Actors: California High-Speed Rail Authority, proposed development corporation, station cities

Once the station plan is complete and agreed upon by both the Authority and the local station city, new development and related transportation projects within the station area that adhere to the design criteria and support the overall vision for the station should be allowed to proceed “by right,” meaning they would not be subject to case-by-case local approvals. Given the high volume of development and transportation projects in the station areas, such as bike lanes and bus rapid transit lines, should also be exempt from the California Environmental Quality Act (CEQA) so long as the projects fit within the adopted station area plan. While this vision plan also includes making sure that development achieves certain performance standards (such as urban design criteria or parking maximums) as mandated by the Authority. California Senate Bill 743 is a recent attempt to streamline infill and low-vehicle-miles-traveled projects by ensuring the way transportation impacts are analyzed under CEQA.100 This recommendation goes a step further and exempts these projects from CEQA entirely if they match the station plan and vision.

Land use authority and approvals within the station area should be under the power of the California High-Speed Rail Authority and/or the proposed development corporation (or joint powers agency, as discussed above). This would apply to both land that the state has purchased and privately held land within a half-mile of the station platform. The precise geography of the land use powers would vary from station to station and would be determined in dialogue with local communities.

4 Plan for each station to be a transportation hub that supports sustainable modes of travel and has the flexibility to adapt to changes in travel modes and patterns over time.

Actors: California High-Speed Rail Authority, station cities, local transit providers, Caltrans

High-speed rail stations should provide well-designed connections to local modes of transit. In Erfurt, Germany, a city of about 200,000 people, the streetcar passes right below the intercity rail line. Timed transfers enable passengers to connect seamlessly between the different services. The Authority and local partners should plan for each station to be an intermodal transportation hub that connects high-speed rail users to many other transportation options. This requires a strong vision for transit planning, parking and management of the surrounding streets and roads, as well as signage and navigation within the station itself.

This vision should:

- Use National Association of City Transportation Officials guidelines for station area transportation planning.102 Ensure consistent signage and seamless connections between the various rail operators, both public and private. These standards should be consistent across all high-speed rail stations.
Downtown Station District Recommendations

Depending on the city, the downtown station district extends about 1-2 miles from the train platform and includes the greater downtown. In many cases, it is the economic and cultural center of the city and region, including the majority of government office buildings, cultural and entertainment facilities, and other major employers. It is an area that should be walkable, although many short trips from the station will take place on other modes of transportation.

Goals:
- The station district and the central part of the city should capture a large share of the city’s future growth, particularly new offices, major retail and entertainment. To make this happen, this larger downtown district, including the station area, should get access to new investment and financial incentives from the state. These incentives and tools should be provided to local communities in exchange for adopting plans and enlisting new projects that meet state and high-speed rail system performance criteria.

The district plan should be developed by the local city in partnership with the California High-Speed Rail Authority. The following are a few key steps and actions:

- Provide state funding and support for drafting a station district plan.
- If there is a recently adopted downtown plan that was drafted in preparation for high-speed rail, such as in Fresno, review the plan to ensure that it’s vision matches the needs of the statewide rail system. If not, establish an overlay zoning that identifies additional zoning changes for targeted buildings or areas.
- Ensure that the district plan allows for development that is flexible over time, such as buildings that can shift between office and residential use, or parking structures that can be reprogrammed or repurposed for offices, as parking storage needs may diminish with the advent of autonomous vehicles.
- As part of the station district planning work, include studies of the barriers to infill development. For example, in cities with limited resources, uncertainty about the existing sewer capacity is perceived as an impediment to development in infill areas.

- Set clear statewide criteria for both the station and the local station area plans. Make sure local plans adhere to state criteria. Statewide criteria should include:
  - Minimum residential or commercial densities
  - Urban design standards (such as active uses on the ground floor)
  - A mix of destination uses (i.e., jobs) and origin uses (i.e., housing) in different parts of the district
  - Provisions for interim uses
  - Zoning that allows for flexibility over time
  - Limits on parking
  - Streets and roads designed for all modes of transportation
  - Provisions for new open space

- Eliminate or reduce physical barriers between the station and the rest of the city (i.e., the need to cross a freeway).
- Establish a district parking strategy following the parking criteria outlined in Recommendation 4.
- Adopt an adaptive reuse ordinance at the local level to make it easier to modify existing buildings. For example, do not require any additional parking for conversion of or reinvestment in an existing vacant building. Downtown Los Angeles made part of its strategy to attract significant residential investment in older commercial properties.
- Plan for, but do not yet implement, a value capture system that increases the cost of development (such as setting impact fees, special assessments or establishing a community facilities district or Mello-Roos district). Any system of value capture that increases development costs should be able to move forward without gap financing. For the foreseeable future, it will be necessary to subsidize new ground-up development in the immediate station cities, not tax it further. In addition to tax or assessment districts, it would be appropriate to consider how best to capture community benefits from new development. For example, if a developer wishes to build at density levels beyond what the city permits, the city should have a mechanism to grant the developer permission in exchange for an increase in community benefits. Such a density bonus program should apply to both commercial and residential projects. Community benefits for a commercial project could include either financial support for housing or subsidized rents for specific types of tenant types, such as small businesses or nonprofit organizations.

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For example, do not build any additional parking in the immediate area unless parking spots in the surrounding half-mile area are used frequently, such as more than 85 percent of the time. Make use of all available surface parking options first before exploring structured parking.

- Postpone as long as possible any car-oriented investments in and around the station, including parking structures, off-ramps, wider roads, etc. As new technologies such as driverless cars and automated vehicles are introduced, the use of private automobiles may shift considerably by the time the station is operational.
- Plan for and invest in high-quality bike infrastructure (such as protected bike lanes and intersections) and bike parking facilities, as well as bike-share systems, to encourage travel to, from and around the station on bicycle.
- Develop networks of high-quality pedestrian routes between the station and destinations in the downtown station district.

Downtown Station District Recommendations

Adopt a station district plan based on statewide planning and development guidelines, or develop an overlay zoning district on top of an existing downtown plan.

Actors: California High-Speed Rail Authority, Strategic Growth Council, station cities, local transit providers

To fully capture the benefits of high-speed rail, each station city must think big about what is possible in the broader downtown district, up to roughly a mile from the station. These plans should include a long-term vision for the district and should account for statewide needs for major growth in the city’s center. This recommendation dovetails with this. Each station area should have an updated plan focused on the long-term vision, so should each station district.

The following recommendations suggest how to modify the EIFD and establish an improved system of tax increment financing for high-speed rail stations:

- As part of the station district planning work, include studies of the barriers to infill development. For example, in cities with limited resources, uncertainty about the existing sewer capacity is perceived as an impediment to development in infill areas.
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Create a new financing and downtown revitalization tool for high-speed rail station districts to help fund new development and infrastructure needs.

Actors: California High-Speed Rail Authority, state legislature, station cities, governor’s office, Strategic Growth Council

The 1-mile areas around high-speed rail stations deserve specific attention to ensure they receive new development and upgraded infrastructure. Given their statewide importance, each of these areas should receive a special state designation as a high-speed rail station district hub. Each of these hubs would get access to a new financing and revitalization tool, as well as targeted state and regional investment to support economic growth. These revenues are needed to finance development and fund the construction of infrastructure such as transit, streets, sidewalks, and water, sewer and power systems. The revitalization tool most appropriate for the intermediate high-speed rail station communities is tax increment financing. As explained in Chapter 2, tax increment financing dedicates increases in local tax revenues (typically the property tax) for use in revitalization projects in a specific area. Often, the local government creates a special revitalization agency to issue bonds that are backed by the anticipated future tax revenues. In this way, tax increment financing can bring funds into a district to help pay for revitalization even before it has experienced much new growth. Since the closing of redevelopment agencies in California, the two primary tools for tax increment financing are Enhanced Infrastructure Financing districts (EIFDs) and community revitalization and investment authorities (CRIAs).

Given its broader applicability, the EIFD is the most appropriate tool for intermediate station cities. Yet as noted in Chapter 2, the EIFD requires voluntary contributions from all taxing entities. EIFDs also do not allow revenue to be used to support private development. Without modification, the amount of tax increment from an EIFD is insufficient to finance needed revitalization efforts such as gap financing for new development, rehabilitation of existing buildings and other local infrastructure investments. The following recommendations suggest how to modify the EIFD and establish an improved system of tax increment financing for high-speed rail stations:

- Combine the city and county portions of tax increment to capture roughly 35 percent of the tax increment. Explore other opportunities to capture the increment from other taxing entities, such as special districts or even public education through an equitable tax swap. For example, the state could credit a portion of the Education Revenue Augmentation Fund, an education transfer from local governments to the state, and allow local governments to keep that revenue instead. The state would then fund as little as 8 percent of the revenue from schools.
CHAPTER 3: RECOMMENDATIONS

7. Align state and regional funding programs to focus investment in high-speed rail station districts.

**Actors:** State legislature, Strategic Growth Council, GoBiz (the state’s economic development office), metropolitan planning organizations (MPOs), station cities and counties, State Department of Conservation

The goal of this recommendation is to align existing state and regional resources toward investment in high-speed rail station cities and districts. This additional funding and investment should be contingent on local communities adopting and implementing land use plans that reflect the potential of high-speed rail. Targeting existing state and regional programmatic investments toward station districts maximizes the billions the public has already invested in high-speed rail and helps achieve larger economic development gains for the state.

One prerequisite for the targeted funding is to establish a clear statewide priority to strengthen the economy of the cities with high-speed rail stations and change their pattern of growth. In particular, this priority should include a vision for improving the economy and land use patterns along the San Joaquin Valley by supporting revitalized urban centers and more compact growth.

The model should be to encourage local plans (such as station district plans, agricultural conservation plans, or updates to general plans or specific plans) to meet exchange criteria for state funding to strengthen rail station cities and their downtowns.

The state should leverage existing investment programs and focus them in ways that reinforce each other. For example, the state’s Infrastructure Bank should target some of its investment toward high-speed rail station cities and their downtowns. Funds from the sale of pollution permits under the state’s cap-and-trade program are meant to help achieve greenhouse gas emissions goals. Using state funds to focus on needs in high-speed rail station cities — as has been done with the Transformative Climate Communities Program from the Strategic Growth Council — is critical.

One way to further achieve this alignment of funding is to create a partnership across state agencies focused on leveraging existing investments and policies to reinforce compact development. Economic growth and open space or agricultural preservation in cities with high-speed rail stations. This partnership would function like a mini Strategic Growth Council for each high-speed rail city.

The state should also create more alignment and prioritization of existing funding programs to achieve multiple benefits, such as groundwater sustainability, reduced greenhouse gas emissions, and vehicle miles traveled, improved air quality, economic diversity, farmland preservation, more compact development and sufficient housing production.

8. Prioritize state and regional transportation funds that reinforce compact development in existing communities and encourage travelers in high-speed rail station cities to move away from driving.

**Actors:** MPOs, local transit providers, California State Transportation Agency, Caltrans, station cities and counties

All metropolitan regions in California are required to adopt a Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) that projects a future growth pattern and a set of transportation investments designed to reduce per capita greenhouse gas emissions from driving. Since regional agencies do not have direct control over land use decisions (which reside with local governments), the main power that regions currently have to shape land use patterns is through investment in transportation projects that shift travel from cars to transit, walking and biking and that serve compact development.

To optimize the benefits of public investment in high-speed rail, the RTP/SCS in California, particularly in the San Joaquin Valley, should shift more funding away from new roadway expansions and toward maintenance and transit. The Bay Area’s RTP/SCS (called Plan Bay Area) proposes spending just 3 percent of its funding on highway and road expansion. Merced and Fresno counties, by comparison, project spending 31 and 24 percent of transportation funds on highway and road expansion, respectively. Over the prior decades, investments in highways, particularly around Fresno and Bakersfield, created the very sprawl of urban and suburban growth that brings development and residents away from the city center, helped to convert farmland to urban

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Metropolitan Area Recommendations

The larger city or metropolitan area can extend 10 miles or more from the station to the urban edge, where development ends and farmland and natural areas begin. The broader city includes many key destinations for high-speed rail users: such as universities, tourist attractions and other job centers. It also includes many existing neighborhoods that can benefit from growth.

The regional metropolitan planning organizations could direct resources to create a grant program modeled on the Bay Area’s One Bay Area Grant Program, which targets regional resources to a select number of places that meet certain performance criteria, such as housing production. This fund would be used for investment in high-speed rail station districts, such as sewer or water projects. It could also be a way to pre-fund projects that otherwise would be funded by the EIF.

In addition to public funding, the state, local and regional partners should work with pension funds, private sector funders and philanthropy to focus investment in high-speed rail station cities and districts. Private funding could be used to establish early-stage and angel funds to support start-up growth in cities with high-speed rail stations.

The state should also explore new tax incentives for companies that locate in defined hub areas. While tax incentives for economic development are notorious for being poorly targeted, there is some evidence that programs can be more successful by focusing on specific geographies. Finally, the State of California should adopt a historic tax credit, similar to what exists at the federal level and in more than 35 other states. The tax credit could provide a 20 to 25 percent credit to investors and developers based on the amount they spend to preserve, rehabilitate or renovate structures listed on either the California Register of Historical Resources or the National Register of Historic Places. One requirement should be that any project receiving the tax credit demonstrate that it will produce as much tax revenue once restored as it receives from the tax credit. Such a tool would support adaptive reuse of older properties in the downtown centers of high-speed rail station cities. In conjunction with the tax credit, state organizations should provide technical assistance to local investors and partners in how to use this tax credit.
Snelfietsrouttes, or “bicycle fast routes,” which are designed to help district and broader city. This could be modeled on the Dutch of protected bicycle infrastructure between the station area, station fixed-route bus network, intercity express bus service and supports the implementation of the Metropolitan Bakersfield Transit people to and from the high-speed rail station. For example, bus service to link key destinations in the city and better connect local trip fare into the ticket price for high-speed rail. This would fund local transit would be to incorporate a transit day pass or a transit to key destinations should be waiting for them. One way to trains are well-coordinated with other transit services. For example, market for transit across each city by making sure high-speed rail economic decline in the downtowns. High-speed rail travelers.

Most decisions that shape land use and growth rest at the local level, primarily with cities and counties. Given the preponderance of privately owned land and the lack of land use controls at the urban edge, it is likely that each city in the San Joaquin Valley will continue to grow outward unless new policies and incentives are adopted. To ensure that high-speed rail helps shape California growth in a more compact way, the state should require all cities and counties that want to use the revitalization tool to establish some form of planning incentives or land use controls that channel growth into existing urbanized areas and limit the incursion of growth into farmland and open space.

There are many potential tools to achieve this goal. The strongest and clearest is to establish an urban growth boundary around the city or county to define the allowable extent of urban development and to protect adjacent farmland and open space. Such growth boundaries are shifting from farmland to urban development and restrict water to areas that exceed an average household target. This is a way to hold communities accountable for urban development that is more water-intensive (i.e., homes on large lots with lawns and pools).

Charge higher impact fees for development at the edge of cities and lower or no impact fees for certain development in the urban center. This approach is used in Kern County, where houses on the periphery have a traffic impact fee of $12,000 while the fee for infill development is half that. Consider requiring new development to include affordable housing through inclusionary zoning requirements. This would offset some of the potential price increases that would result from ensuring urban boundaries and increase costs for development at the edge relative to the core.

Make it harder to subdivide large lots on the edge of the city (since the ease of subdividing them is one reason they get developed). For example, require new development on parcels less than 6 acres to be hooked up to the city sewer system rather than a septic system. This policy has been implemented in Kern County and has effectively prevented the creation of low-density large-lot exurban development.

Use the revitalization tool described in Recommendation 6 as an incentive to encourage cities to preserve farm-land and shift toward more compact development.

9

Use the revitalization tool described in Recommendation 6 as an incentive to encourage cities to preserve farm-land and shift toward more compact development.

Actors: Strategic Growth Council, State Department of Conservation, station cities and counties, Local Agency Formation Commissions (LAFCors), MOPOs, state legislature, governor’s office

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Charge higher impact fees for development at the edge of cities and lower or no impact fees for certain development in the urban center. This approach is used in Kern County, where houses on the periphery have a traffic impact fee of $12,000 while the fee for infill development is half that. Consider requiring new development to include affordable housing through inclusionary zoning requirements. This would offset some of the potential price increases that would result from ensuring urban boundaries and increase costs for development at the edge relative to the core.

Make it harder to subdivide large lots on the edge of the city (since the ease of subdividing them is one reason they get developed). For example, require new development on parcels less than 6 acres to be hooked up to the city sewer system rather than a septic system. This policy has been implemented in Kern County and has effectively prevented the creation of low-density large-lot exurban development.

Eliminate automatic state legislative extensions for tentative tract maps. In order to subdivide a parcel of land into five or more units (including condominiums), a developer has to form a subdivision and produce a tract map that shows the new parcels. During the housing boom of the early 2000s, tens of thousands of housing units were approved on tract maps throughout the San Joaquin Valley. Since the housing crash, the state legislature has been extending these approved tract maps for an additional two years, as the market has not been strong enough for many developers to move forward on the subdivisions. They include approximately 40,000 potential low-density greenfield housing units in Kern County alone. All developers should be required to reapply for their tract maps on any housing developments outside of existing urbanized areas.

Require cities, MOPOs and councils of government to develop greenprints to manage growth. In that process, they should identify high-quality farmland and ecologically rich areas that provide critical habitat or water resources (such as groundwater recharge). These areas should be designated as priority conservation areas. In the San Joaquin Valley, it will be important to analyze how these priority conservation areas overlap with the locations identified in the San Joaquin Valley Blueprint/Greenprint. The concept behind the greenprint is to plan the green areas first, then leave the rest of the areas for urban development. For the areas around Gilroy, analysis from Plan Bay Area and county plans can be used to determine priority conservation areas. Funding for these greenprints, or related documents such as regional conservation investment strategies, could come from the State Department of Fish and Wildlife.

Modify policies at the county’s local agency formation commission (LAFCor) to better address mitigation and overall growth management. For example, when farmland converts to urban development, LAFCors can require a developer to mitigate the loss of farmland by permanently protecting farmland elsewhere at a specific ratio (such as 1 acre protected for 1 acre developed). There should be an increase in the amount protected and adoption of a baseline mitigation policy of two-to-one or three-to-one for farmland mitigation. The modifications should include an option for graduated requirements. For example, if a community is rezoning for densities higher than the target in the general plan, it would be required to do less mitigation, and it is rezoning for lower densities than in the general plan, it would be required to do more mitigation.

LAFCors should require any in-lieu fees to match the market- rate prices for farmland. This could help developers to pay a fee instead of protecting land on their own. However, such fees are often too low relative to the market cost of buying farmland to protect.

Finally, LAFCors should require cities to produce inventories of both underutilized land and prime agricultural lands to protect within their jurisdictions. A specific suggestion is for LAFCors to prevent cities from expanding their boundaries until they have completed an assessment of existing vacant and

The University of California, Merced, campus is 7 miles from downtown and the future rail station. At 7,300 students and growing, it will be a key destination for high-speed rail travelers.

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Incentives to attract growth in urban centers should work hand in hand with policies that protect working lands and improve their economic viability. Addressing the underlying economics of edges of urban areas is very often the most economically viable option for the landowner. Expand on programs like the Sacramento region’s Rural-Urban Connections Strategy (managed by the Sacramento Area Council of Governments, the region’s metropolitan planning organization). Develop similar programs in rural regions along the high-speed rail route.116

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Improve the economic viability of farmland and open space.

Actors: California Department of Conservation, county farm bureaus, Strategic Growth Council

The following are some specific actions to take:

> Ensure the availability of water for agriculture in key areas where the lack of certainty regarding water use is an impediment to the ongoing viability of farming.
> Provide more funding to resource conservation districts to help support erosion, flood control, fish and wildlife, and water conservation projects.117 The districts currently receive limited annual taxpayer funding and rely on grants and fundraising. Funds can also be used to create easements that conserve and protect agricultural land.
> Expand funding for agricultural conservation easement buyouts, which provide funding for farms in exchange for maintaining the land in agricultural production. One source of funding is the Sustainable Agricultural Lands Conservation Program of the Strategic Growth Council, which should be expanded.118 This source of funding is also used in the development of agricultural land strategy plans, which help identify where farms should locate within a region and can be used to establish a clearer urban-rural edge.
> Expand the use of California’s Land Conservation Act (aka Williamson Act) funding as a tax policy incentive for maintaining farmland.119 The Williamson Act allows local governments to enter into contracts with landowners to lower property taxes if the owners agree to restrict development and continue farming on their land or maintain the land as open space.
> Expand on programs like the Sacramento region’s Rural-Urban Connections Strategy (managed by the Sacramento Area Council of Governments, the region’s metropolitan planning organization). Develop similar programs in rural regions along the high-speed rail route.116

E xpand the use of California’s Land Conservation Act (aka Williamson Act) funding as a tax policy incentive for maintaining farmland.119 The Williamson Act allows local governments to enter into contracts with landowners to lower property taxes if the owners agree to restrict development and continue farming on their land or maintain the land as open space.

Establish economic development partnerships across the public, private, education and philanthropic sectors to strengthen the economy of the San Joaquin Valley.

Actors: GoBiz, University of California, California State University, philanthropic organizations, economic development organizations, state legislature, governor’s office

Economic development in station cities will require strong partnerships between the various regions of the state as well as between the private sector, universities, philanthropy and economic development organizations. As discussed in Recommendation 7, the state (specifically GoBiz) should target some of its economic development programs to specific geographies around station cities. This public investment should be leveraged with private and philanthropic investment to result in a big push to transform the economies of San Joaquin Valley cities and in particular to establish an economic ecosystem that encourages the formation of startups with the potential for success. For example, there are existing efforts to secure local investment capital for San Joaquin Valley startups at the pre-seed, seed and series A rounds of financing. There should also be an overt strategy to increase connections between firms in San Joaquin Valley and Silicon Valley, particularly through encouraging coastal firms to expand operations into the San Joaquin Valley.120

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The following are some of the specific actions:

> Economic development organizations and firms in the Bay Area and Southern California should partner with groups in the San Joaquin Valley to identify and work with companies that are looking to expand outside of the coastal areas but that would consider remaining in California.
> Regional economic development corporations in the San Joaquin Valley should partner with local and Silicon Valley investors to identify high-growth-potential firms in the San Joaquin Valley as well as to move existing San Joaquin Valley industries further up the value chain in their respective industries (e.g., toward ag-tech or advanced manufacturing).
> GoBiz should lead a statewide economic development strategy process that includes an explicit goal to strengthen the economy of the San Joaquin Valley and better connect it to the coasts.
> State of California employee pension funds (such as CalPERS) could provide funding to support early-stage or seed investments in startups in the San Joaquin Valley.
> Philanthropic institutions should expand their investments toward the San Joaquin Valley generally, particularly through establishing partnerships with organizations in other regions as well as by investing in new local civic organizations. Philanthropy is in a position to help launch needed civic groups who are able to push a long-term transformative agenda that persists beyond individual elected officials.
> The universities should further strengthen their partnerships with each other and with other statewide institutions to capture potential spinoffs from their research. Key research institutions include Fresno State, UC Merced and CSU Bakersfield. UC Merced should consider reserving land for a future tech park, modeled after the success of the Stanford Research Park. All three universities should expand their engineering programs as well as programs associated with planning and economic development.

The loss of farmland and open space to development is in large part a result of economics: Subdividing and selling property on the edges of urban areas is very often the most economically-viable option for the landowner. Addressing the underlying economics of land conversion by strengthening the economics of rural lands is key to maintaining these areas in natural and working states.

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# Appendix A: Plan of Action

## Immediate Station Area

**Recommendation 1:** Develop a station area plan and implementation program that balances the city’s vision for its future with statewide planning needs.

**Recommendation 2:** Establish a rail station area development corporation for each high-speed rail station with responsibility for development and land use in the immediate station area.

**Recommendation 3:** Streamline development approvals and entitlement processes for high-speed rail station areas.

**Recommendation 4:** Plan for each station to be a transportation hub that supports sustainable modes of travel and has the flexibility to adapt to changes in travel modes and patterns over time.

## Downtown Station District

**Recommendation 5:** Adopt a station district plan based on statewide planning and development guidelines, or develop an overlay zoning district on top of an existing downtown plan.

**Recommendation 6:** Create a new financing and downtown revitalization tool for high-speed rail station districts to help fund new development and infrastructure needs.

**Recommendation 7:** Align state and regional funding programs to focus investment in high-speed rail station districts.

## Metropolitan Area

**Recommendation 8:** Prioritize state and regional transportation funds that reinforce compact development in existing communities and encourage travelers in high-speed rail station cities to move away from driving.

**Recommendation 9:** Use the revitalization tool described in Recommendation 6 as an incentive to encourage cities to preserve farmland and shift toward more compact development.

**Recommendation 10:** Improve the economic viability of farmland and open space.

**Recommendation 11:** Establish economic development partnerships across the public, private, education and philanthropic sectors to strengthen the economy of the San Joaquin Valley.
This report is a follow-up to a SPUR report from 2011 called Beyond the Tracks\textsuperscript{126}, which looked at how California cities can use smart land use planning around future high-speed rail stations to reshape growth.

Some of the key conclusions from the 2011 report include:

- High-speed rail should be an armature for the state’s population growth and economic development. Station areas should focus on jobs.
- Weak market conditions may not result in sufficient development near stations.
- Most destinations will be beyond station areas, so transportation connections to a 5-mile radius will be key.
- Few tools exist to limit sprawl at the edges of regions and urbanized areas.

Some key recommendations include:

- Draft statewide station area planning and development guidelines to inform the local plans.
- Provide local governments with financial support to develop plans that meet guidelines.
- Establish oversight and certification of local station area plans to ensure they meet planning and development criteria.
- Establish local development corporations to facilitate station area development.
- Carry out land banking strategies around high-speed rail stations to support future development and ease land assembly of suitable development sites.

Since Beyond the Tracks was published, some of these recommendations have been implemented. The California High-Speed Rail Authority is funding station area plans and working closely with cities that are updating their downtown plans and thinking through station area implementation. The Authority has also been working on station access policies.

There are also different challenges and opportunities today than there were in 2011. California dissolved its redevelopment agencies in 2012, so station area investment and value capture is much more difficult to achieve today. On the opportunity side, high-speed rail is now under construction, so residents are beginning to see the vision become manifest. Additionally, California’s cap-and-trade program has been implemented as a source of funding for high-speed rail and related projects.
Endnotes


2. The San Joaquin Valley is an eight-county region that extends from Bakersfield (Kern County) in the north to the stockton (San Joaquin County) in the north. This area is also part of the larger Central Valley, which includes both the San Joaquin and Sacramento valleys and extends north from Bakersfield to Redding in Shasta County. For the purposes of this report, we use the term “San Joaquin Valley” to refer to the six valley counties that will get high-speed rail service in Phase I of construction: Merced, Madera, Fresno, Kings, Tulare, and Kern.


5. This report is an update to the 2012 SPUR report Beyond the Tracks (see https://www.spur.org/sites/default/files/publications_pdfs/SPUR_Beyond_the_Tracks.pdf), which argued that smart land use planning is key to ensuring that California’s high-speed rail cannot succeed without the necessary investments in urban planning and transportation infrastructure.


12. Cities located at the edge of major metropolitan regions have also gained development due to high-speed rail.

13. The northern two counties of the eight-county San Joaquin Valley are San Joaquin County and Stanislaus County. Those two counties are projected to get high-speed rail services as part of Phase II of the high-speed rail project, with stations in Stockton and Modesto, respectively.


53. For more on EDIF, see: https://www.planetizen.com/node/88347/next-funding-tool-california-enhanced-infrastructure-finance-districts.


57. For more on EDIF, see: https://www.planetizen.com/node/88347/next-funding-tool-california-enhanced-infrastructure-finance-districts.
84. The analysis of traffic impacts under CEQA is changing since the passage of SB 743 by switching from the traffic-focused level of service to a matrix measuring total driving such as vehicles traveled. See: http://www.bpix.co.uk/ for more general background on the impacts of CEQA, see also: https://www.spur.org/sites/default/files/publications_pdf/CEQA%20%20/CEQA_101.pdf.


86. Source: Interview with Roger Vickerman, October 6, 2016.


California Department of Conservation, Sustainable Agricultural Lands Conservation Program, http://www.conservation.ca.gov/dfpc/SALCP


The Sacramento Area Council of Governments developed a Rural Urban Connections Strategy (see: http://www.sacog.org/rural-urban-connections-strategy) that brought a deep analysis of the economic development needs of rural areas into their regional planning process. For a region that is 85 percent rural, this constituted both analytic work around land uses, including specific crops, and development of a strategy report. The strategy included five areas: land use policies and plans that shape rural areas, infrastructure and ways to overcome challenges to the production process, economic opportunities and new ways to grow revenue, forest management and navigating federal and state environmental regulations. To review the report, go to: https://www.sacog.org/sites/main/files/file-attachments/uws_booklet_0.pdf


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