

## Extreme Climate

The widespread effects of climate-related events are increasing in intensity and frequency. This Future analyzes the potential effects that an extreme continuation of this trend would have on the Fresno region—such as housing, economy, environment, and health.

### Demographics

- Depressed population growth
  - Reduced headship rates, smaller household sizes
- Potential out-migration from the region
  - Affluent households more likely to migrate out
  - Jobs/housing imbalance
  - Shortage of seasonal workers
  - Decline in foothill and rural communities (wildfires, water availability, insurance costs, etc.)
- Higher proportion of vulnerable and low-income populations

### Economy

- Increased costs in various sectors
  - More expensive consumer goods, construction, and insurance
  - High cost of living, high inflation anticipated
  - Decreased investment in business and construction due to higher costs
  - Higher unemployment, poverty
- Loss in agriculture jobs due to decreased water availability
  - Fallow lands
  - Potential food scarcity
- Strain on government agencies
  - Water, infrastructure, construction
  - Decreased tax revenue to governments
  - Increased demand/cost for services
- Loss of tourism attraction and activities

### Equity

- Pollution-burdened and transit-dependent populations disproportionately affected
- Learning capacity of students decreased with extreme temperature conditions and less opportunities for physical activity
- Possible blight in disadvantaged areas as affluent households move to more temperate climates

### Health & Air Quality

- Increased rate of adverse health effects
  - Increased barriers to mobility and active transportation, leading to increased medical conditions linked with sedentary lifestyles
  - Extreme temperatures and bad air quality leads to increased medical conditions (asthma, etc.)
  - Decrease in water quality could lead to adverse health effects
- Increased burden on healthcare industry
  - Higher demand for medical services
  - Scarcity of emergency response

### Land Use

- Higher share of urban growth
  - Water, infrastructure strained in rural areas
  - Potential loss of housing due to wildfires and flooding in foothills
- Decrease in housing development and availability
- Possible decrease in home ownership as housing burdens rise
  - Cost of living, energy, etc.
  - Increases in construction and development costs make homes even less affordable

#### Natural Resources, Energy & Environment

- Increased strain on power grid due to extreme temperatures
- Increased energy and water prices, leading to greater housing burdens
- Water infrastructure changes necessary
  - Less availability of hydropower, leading to decreased power generation
  - Degradation of water quality (intoxication/contamination), decreased water availability
  - Less snowpack leads to need for more and different water storage methods
- Loss forests and resource areas due to increased wildfires and/or flooding

#### Transportation

- Increased burden on transportation infrastructure
  - Increased pavement deterioration rates due to extreme temperatures
  - Increased need for maintenance and higher costs of pavement materials
  - More maintenance needs due to wildfires and flooding
  - Decreased tax base leads to less transportation funding
- Less active transportation, increased dependence on vehicles, more congestion
- Less EV penetration due to energy shortages
- Greater discomfort to transit users

## High Tech Innovation

We find ourselves in a world of emerging technologies that have the potential to drastically alter everyday life. This Future assumes a rapid adoption of innovations in various industries, especially transportation, and their effects on the Fresno County region.

### Demographics

- Increased population growth
  - Potential in-migration of affluent workers from metro areas (Bay Area, Southern CA) attracted by lower housing costs but still working remotely for old firms
  - Population growth disproportionate to jobs
- Higher life expectancy may lead to a top-heavy age distribution, more retirees

### Economy

- Widespread innovation and economic expansion across multiple sectors, especially office jobs
- Depressed economic growth in some sectors
  - Increased automation leading to decrease in manual jobs, especially agriculture
  - More online shopping could lead to a decrease in local retail jobs
  - Possible decline in commercial real estate
- Higher tax base
- Increased demand for housing

### Equity

- Lack of education/skilled workforce to keep up with changing jobs climate
- Income gap widens as tech economy booms, manual workforce gets left behind
- Potentially inequitable access to high-speed Internet in low-income communities

### Health & Air Quality

- Possible improvement in air quality due to decreased emissions
  - Innovations in various industries may lead to less emissions from transportation, manufacturing, etc.
  - More telecommuting may lead to less VMT
  - Increased electrification of private and freight vehicles
- Innovations in healthcare could lead to higher life expectancy
  - An aging population brings its own healthcare challenges
- Potential increase in medical conditions due to increase in sedentary lifestyles

### Land Use

- Decrease in commercial development as online shopping and telecommuting becomes more commonplace
  - Potential urban blight as retail/office space becomes vacant, leading to an increase in crime
- High rate of residential development
  - Region may become more of a bedroom community as residents take more remote jobs from outside the region
- More sprawl as telecommuting increases and transportation becomes cheaper and more accessible
- Possible reduced need for parking space

### Natural Resources, Energy & Environment

- Increased strain on energy grid
  - More EV penetration
  - More peak-low energy usage as more people work from home

- More bandwidth demand with the increase in smart technology
- Higher overall demand for natural resources
  - Increased sprawl leading to consumption of resource land

#### Transportation

- Innovation in autonomous transportation may make SOV more attractive
  - Possible increase in VMT?
  - Short-term increase in congestion, possible long-term decrease?
- Higher EV penetration, need for more charging stations
- Innovation could lead to opportunities for transit service integration/cooperation with TNCs (first/last mile etc.)
  - Autonomous shuttles? May lead to better connectivity between urban/rural areas
- Possible impacts in goods movement
  - Delivery services (e.g. GrubHub, InstaCart, etc.)
  - Delivery drones may decrease demand for ground freight

## Regulatory Challenges

In response to challenges with water availability, air quality, and other concerns, Fresno County is impacted by various government policies and regulations (e.g. SAFE rule, SB 743, SGMA) to address these issues. This Future seeks to explore changing regulatory climates and the impacts such policies may have on our region, specifically with regards to land use and transportation.

## Demographics

- More homeless/group quarters populations
- Less population growth expected
  - Migration out of region for those who can afford to move

## Economy

- Housing price and cost of living increase
- Loss of jobs, especially in non-government sectors
  - Out-migration of jobs as businesses seek more lenient regulatory climates
  - Fallow ag lands, loss in farm employment
- Decreased tax base

## Equity

- Stagnation of small rural cities/communities
  - Disproportionate impact of SGMA on cities that rely on groundwater
- Increased poverty, especially in rural areas

## Health & Air Quality

- Mode shift away from SOV could lead to better air quality
- Higher demand for mental health services, especially for farm/ag workers
- Fallow land could have adverse effect on air quality (dust, particulates)

## Land Use

- More regulations regarding affordable housing
  - Inclusionary zoning
  - Mandated 10-20% new development at below-market rates
  - Affordable housing development incentivized under SB 743
- Higher proportion of growth, more density in urban area
  - Higher densities, less sprawl development (SB 743)
  - RHNA density requirements
  - Limited growth in rural communities, development incentivized in urban centers due to infrastructure, water availability, and land use development regulations (e.g. SB 743)
- Economic pressure on housing supply
  - Increased demand/costs, VMT mitigation measures required (e.g. SB 743)
  - Increased mandate for solar on new housing
- Higher burdens on other sectors to decrease pollution, less investment in business/development
- Could see more farmland repurposing (e.g. solar farms)

## Natural Resources, Energy & Environment

- Increased water cost
  - Extreme water shortages, heavy regulations on water use
- Loss of prime farmland as land goes fallow

- Potential strain on energy grid
  - More demand for cooling
  - More electrification, EV penetration

#### Transportation

- SAFE rule increases auto operation cost, changes in travel behaviors, shifts away from SOV
  - Gas tax increase with SAFE rule (could be less effective with more EV penetration)
  - Harder to pass conformity, potential less transportation funding for region
  - Possible diversion of tax revenue from transportation projects to fund other state/national priorities
- Various impacts under SB 743
  - Less funding for capacity increasing projects
  - More funding for active transportation projects
  - No distinction in SB 743 for ZEV, may act as a barrier to EV penetration
  - Density in urban area could make transit projects mor feasible, impactful
- Requirement for more EV infrastructure