

Overview of Regional Growth Forecasting

For Connect SoCal 2024

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Demographics and Economic Growth Unit
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Presentation Outline



- Model Overview
- Region and County Demographic Projection Methods
- Region and County Economic Projection Methods
- Small Area Projection Methods

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Introductions



Gigi Moreno, Ph.D.

*Senior Economist
and Cal State Long Beach Department of Economics*



Kevin Kane, Ph.D.

*Program Manager, Demographics and
Housing Policy
and University of Southern California Sol Price School of
Public Policy*

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Envisioning 2050



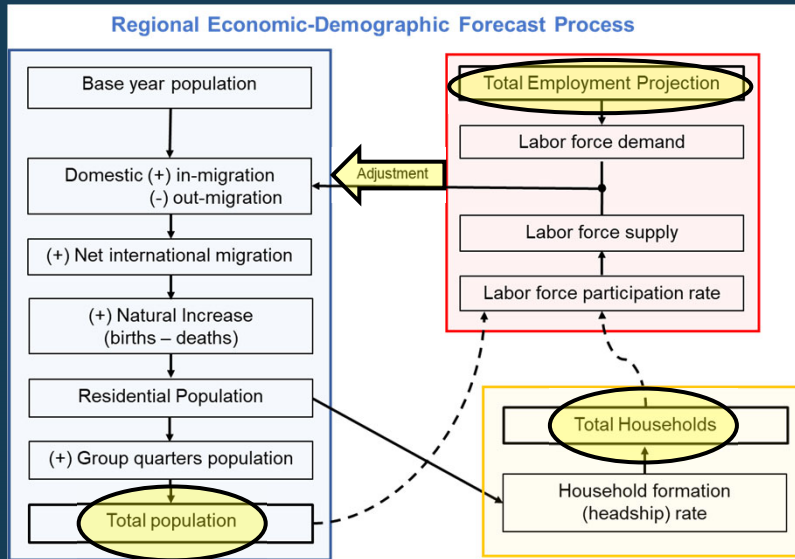
- **Births & Deaths**
- **Economic Base**
compared to other places
- **Technical Process**
- **Expert Informed**
- **Basis for Subsequent Policy
& Strategy Development**



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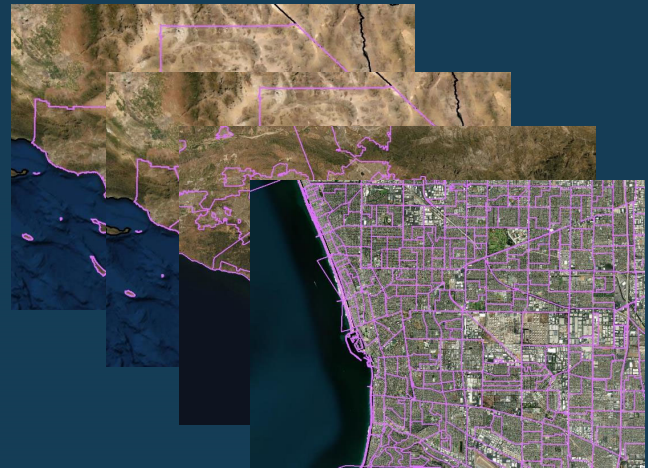
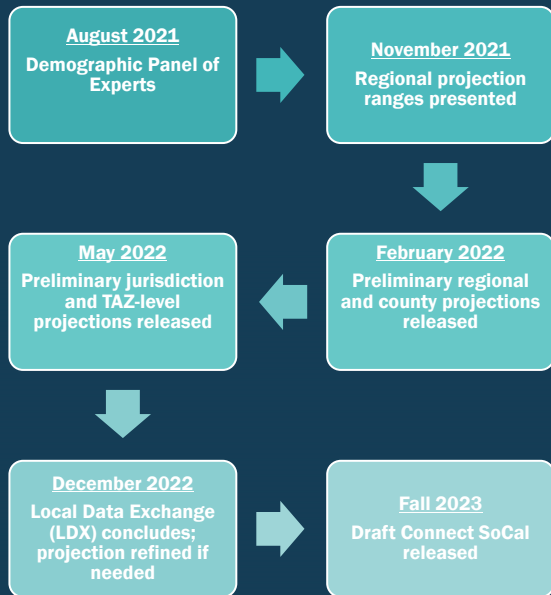
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SCAG's Regional Economic-Demographic Forecast Process



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Timeline



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- Experts in economics and demographics
- Pre-meeting survey
- Two 3-hour discussions in August 2021

Name	Affiliation
Billy Leung	Regional Economic Models, Inc.
Dan Hamilton	California Lutheran University
Deborah Diep	Cal State Fullerton, Center for Demographic Research
Dowell Myers	University of Southern California
Jerry Nickelsburg	UCLA Anderson Forecast
John Husing	Economics & Politics, Inc.
John Weeks	San Diego State University
Mark Schniepp	California Economic Forecast
Michael Bracken	Development Management Group, Inc.
Richelle Winkler	Michigan Technological University
Simon Choi	Chung-Ang University
Somjita Mitra	California Dept. of Finance, Economics Research Unit
Wallace Walrod	Orange County Business Council
Walter Schwarm	California Dept. of Finance, Demographic Research Unit

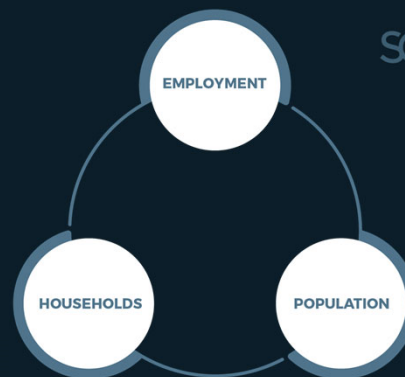
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Preliminary Growth Projection: “Slower Growth, Steady Improvement”



Seven Major Inputs

- 1 ▶ Employment Growth
- 2 ▶ Births
- 3 ▶ Deaths
- 4 ▶ Immigration
- 5 ▶ Domestic Migration
- 6 ▶ Labor Force Participation
- 7 ▶ Household Formation (*Headship*)



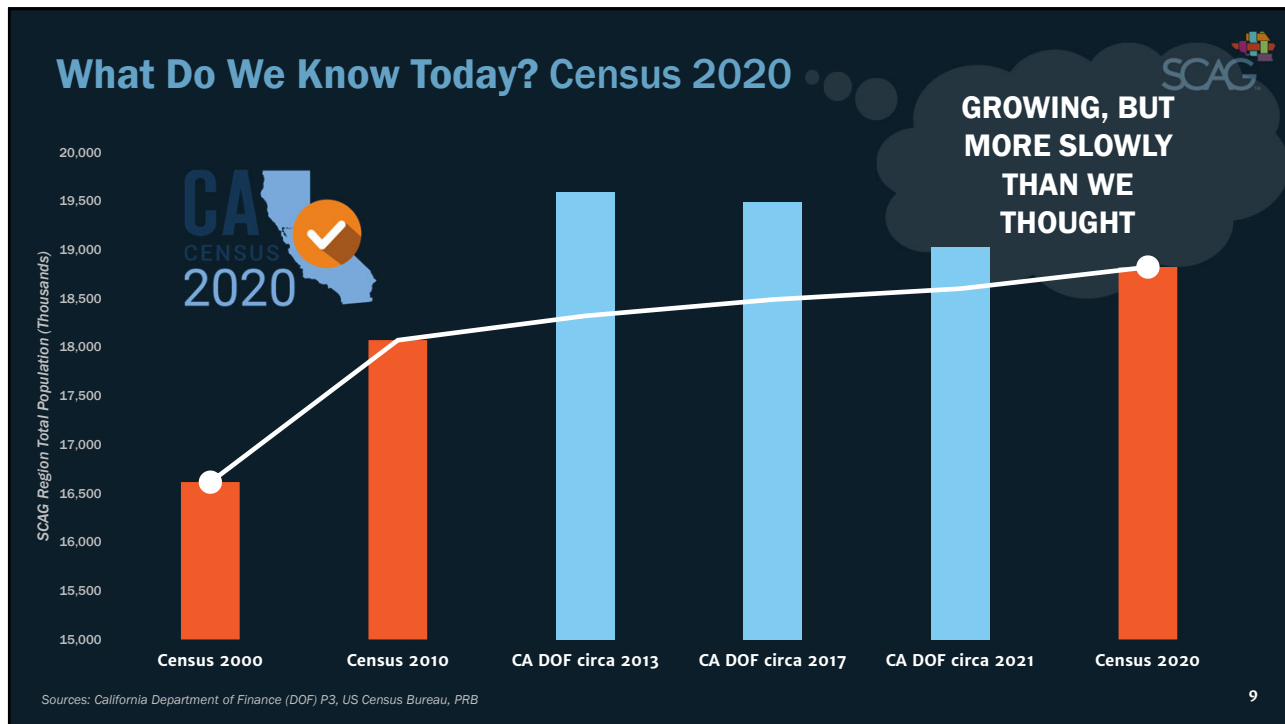
Regional Growth Ranges

Baseline: Slower Growth, Steady Improvement
 Low: “Secular Stagnation”
 High: Robust and Equitable Future Growth Supported by Policy and Technology



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Assumptions driving regional growth

I.e., levers we have to explore scenarios:

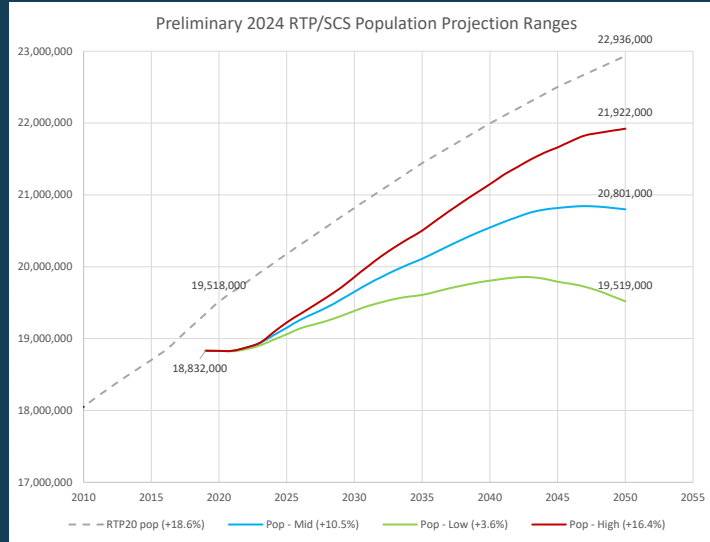
Factor	Mid/Baseline	Low	High
Births	1.5 births/woman	1.4 births/woman	1.6 births/woman
Deaths	Stable rates (2019)	Same	Rates decline through equity improvements
Net Migration	Net int'l is high, net out migration moderate	Net int'l is low, net out migration continues	Net int'l. Is high, net out is low
Labor Force	Slight increase from 2019	Same	Same
Household Formation	Most groups return to 2005-07 levels.	No improvement (2015-19 levels; historic low)	Most groups return to 2005-07 levels.
Economic Competitive-ness	Region remains competitive and innovative, climate change has no net effect on growth	Climate change & high relative cost of living are challenges	Region captures a larger share of U.S. jobs, climate resilience and easing cost of living encourage growth

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Population growth far slower than projected in 2017



- Census 2020: lower starting point
 - Several years of lower fertility
- COVID – a few “flat” years
- Moderate growth from natural increase and immigration
- Baby boomers hit their 80s and 90s...
- *Reflects regional, national, global trends*



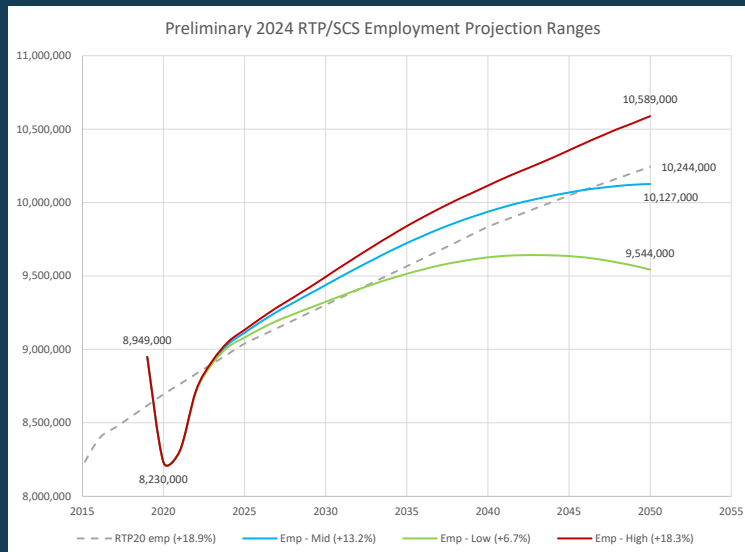
Source: SCAG Connect SoCal 2024 Preliminary Forecast Ranges, 11/4/2021

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Job Growth



- Expert panel insights: Cost of living balanced by:
 - Diverse industry mix
 - Ports / logistics
 - Natural amenities
 - Educational institutions
 - Culturally welcoming compared to other regions -> innovation
- Fairly unlikely SoCal’s share of national jobs will appreciably decrease



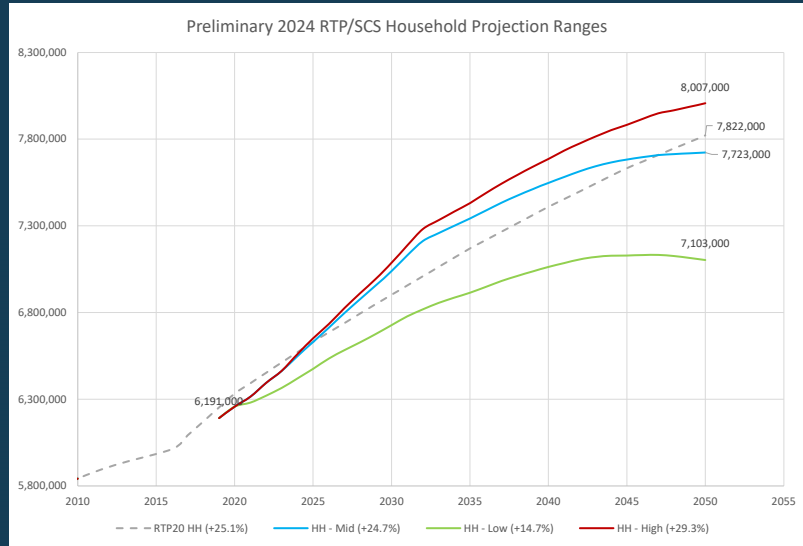
Source: SCAG Connect SoCal 2024 Preliminary Forecast Ranges, 11/4/2021

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Households: Closer to prior projection



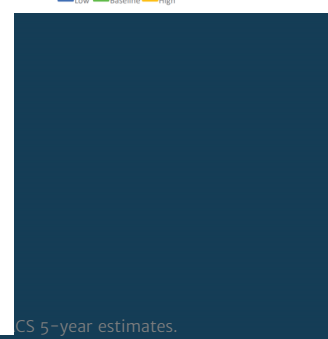
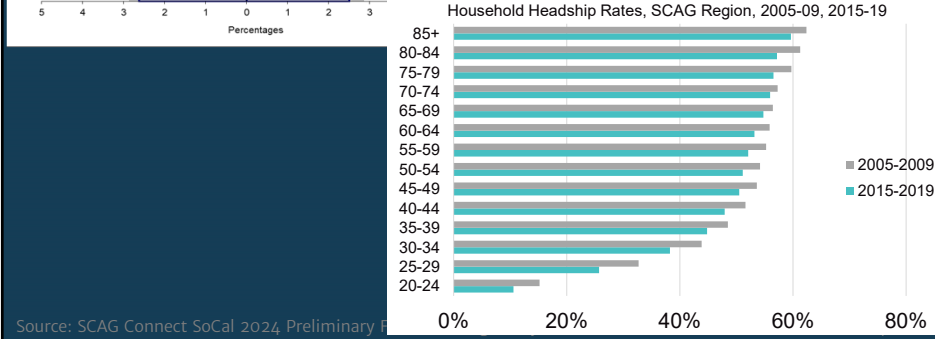
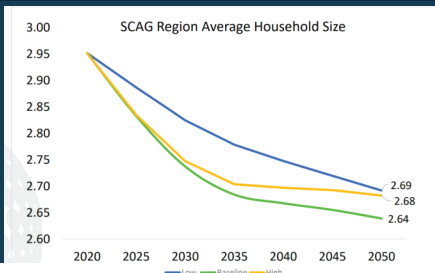
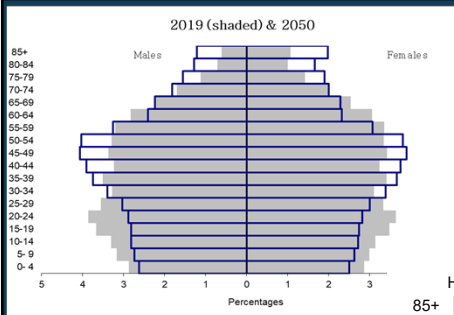
- Census 2020: similar starting point
 - "found" ~100,000 units
- 2017 ACS: Headship hits historic low but ticking up (2019, 20)
- 2021 housing unit growth strong
- Aggressive state policies



Source: SCAG Connect SoCal 2024 Preliminary Forecast Ranges, 11/4/2021

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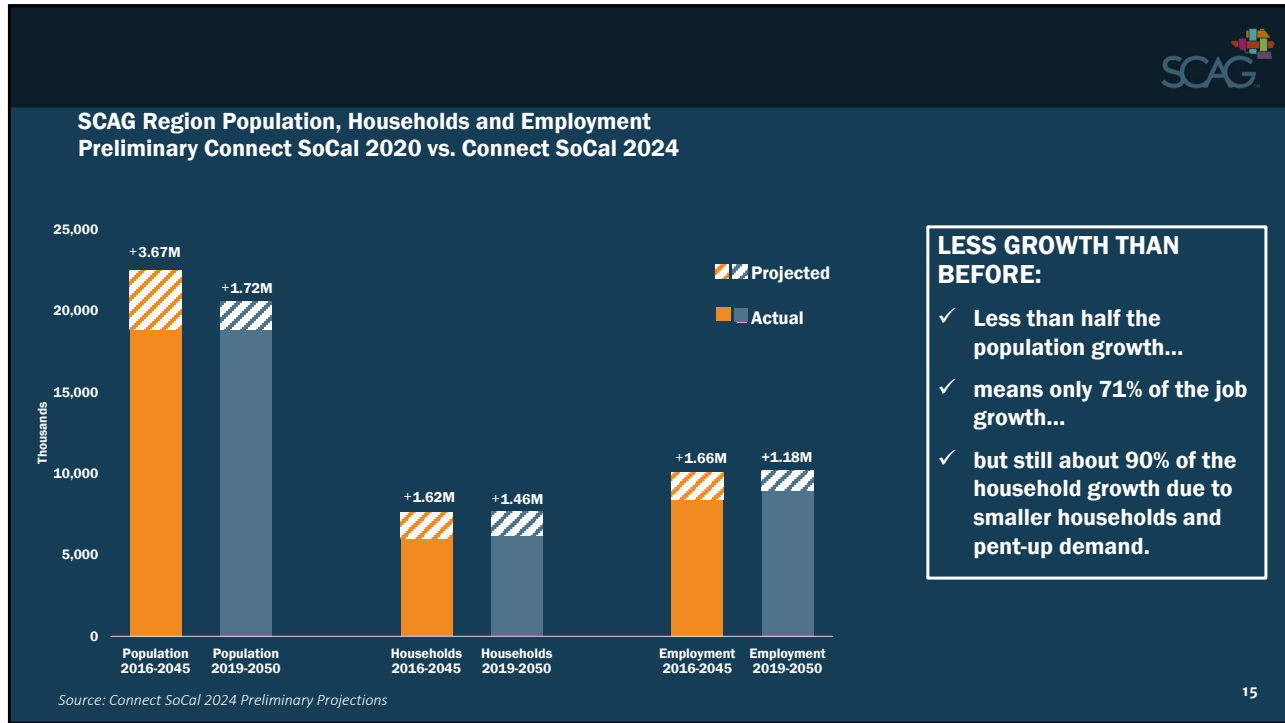
Aging population leads to smaller households



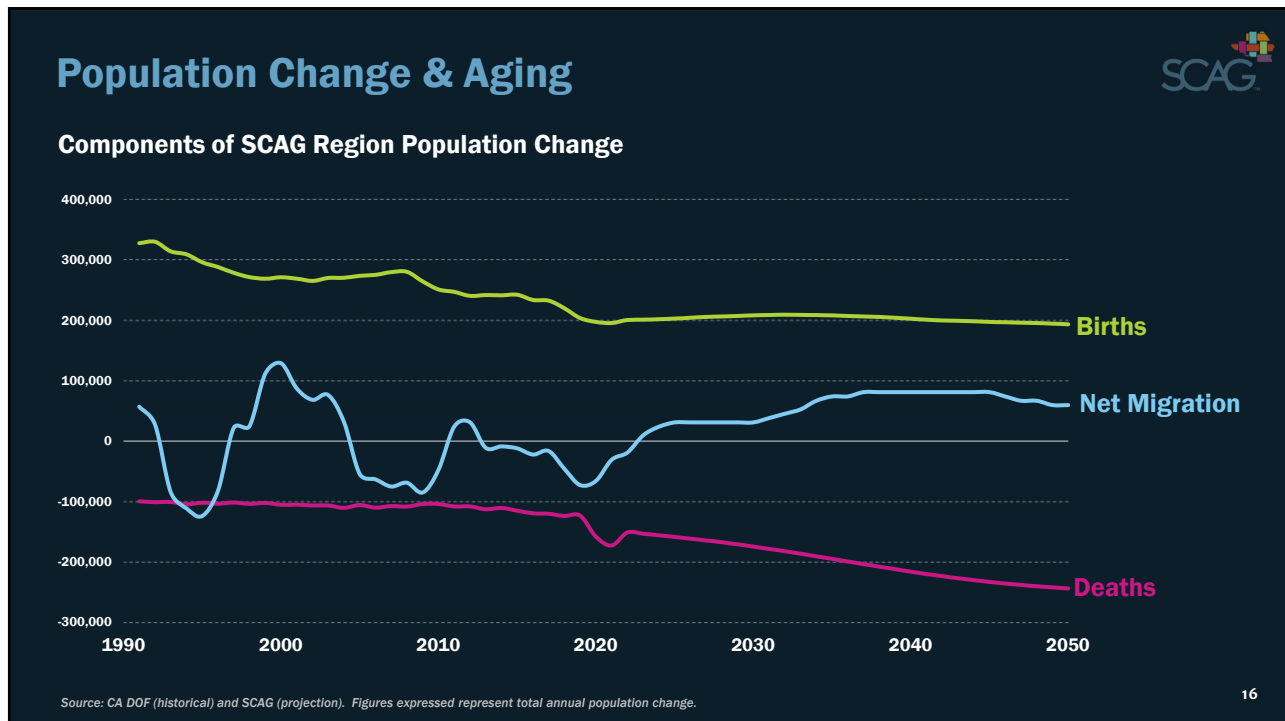
Source: SCAG Connect SoCal 2024 Preliminary Forecast Ranges, 11/4/2021

SCAG 5-year estimates.

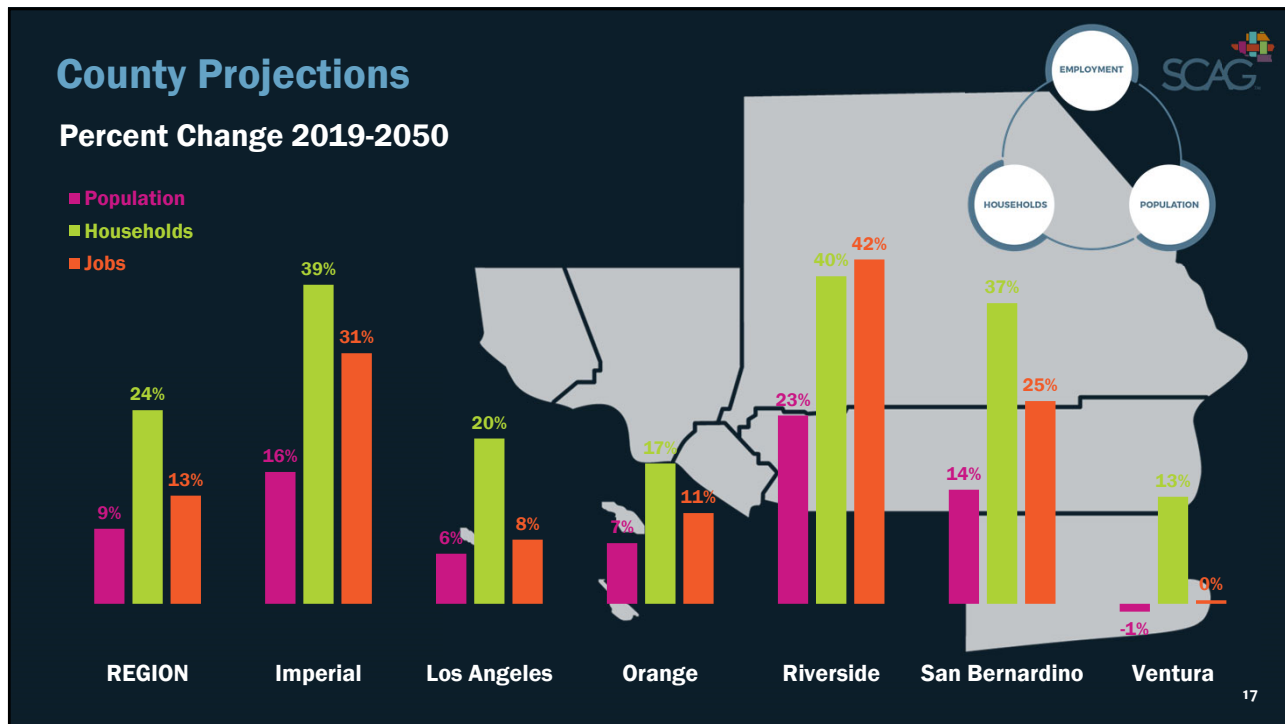
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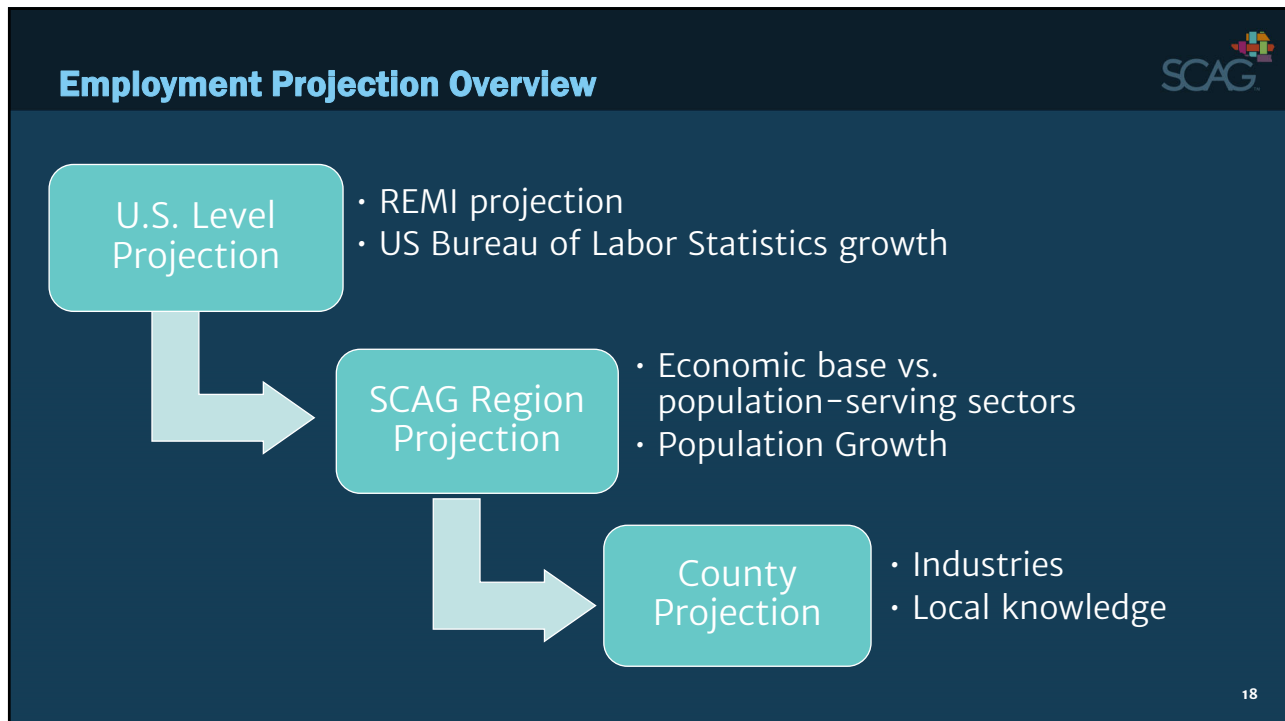
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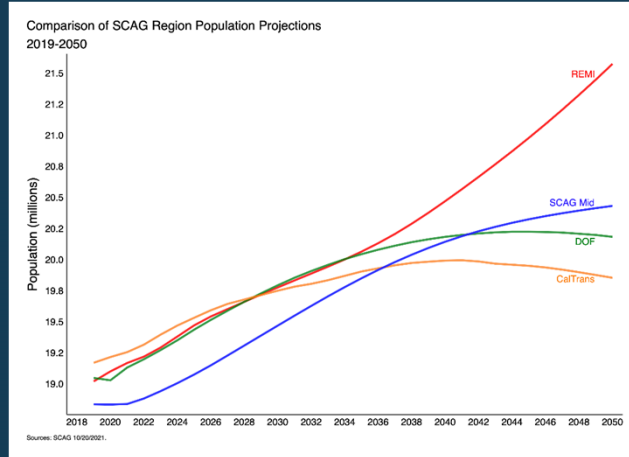


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Unique Features of SCAG's Employment Projection Model



- Rely on SCAG's unadjusted population projection



Unique Features of SCAG's Employment Projection Model



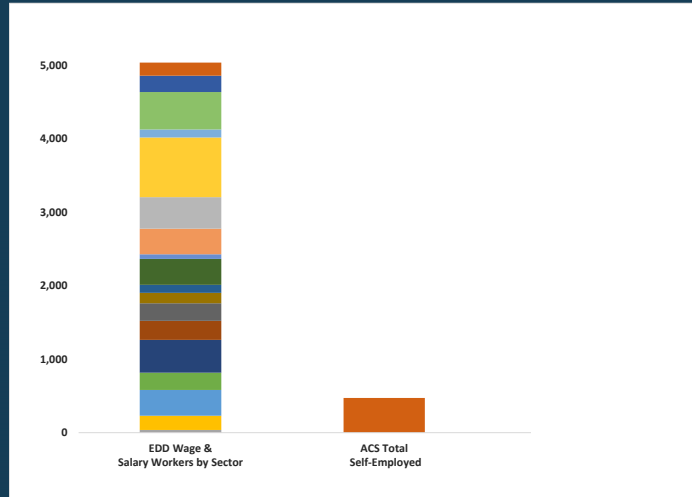
- Rely on SCAG's unadjusted population projection
- Aggregate to 20-sector model (two-digit NAICS)

SCAG Model NAICS Code	NAICS Codes Included	Sector Title
10		Total Jobs
11	11	Agriculture, forestry, fishing and hunting
21	21	Natural Resources
22	22	Utilities
23	23	Construction
31	31 - 33	Manufacturing
42	42	Wholesale trade
44	44 - 45	Retail trade
48	48 - 49	Transportation and warehousing
51	51	Information
52	52	Finance and insurance
53	53	Real estate and rental and leasing
54	541	Professional and technical services
55	55	Management of companies and enterprises
56	56	Administrative and waste services
61	61	Educational services
62	62	Health care and social assistance
71	71	Arts, entertainment, and recreation
72	72	Accommodation and food services
81	81	Other services, except public administration
92	92	Government
		Self-Employed

Unique Features of SCAG's Employment Projection Model



- Rely on SCAG's unadjusted population projection
- Aggregate to 20-sector model (two-digit NAICS)
- Self-employment counted in relevant industry



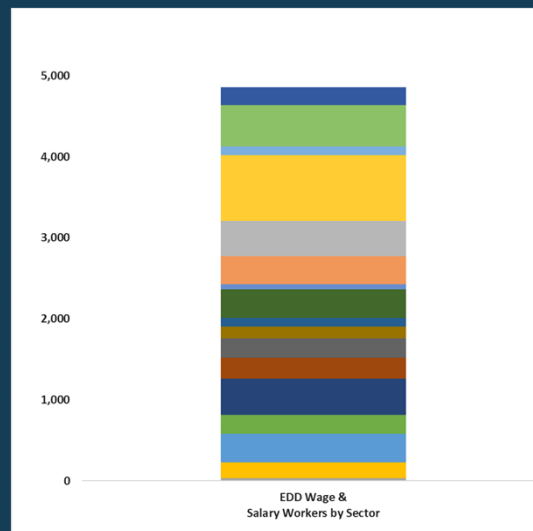
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Unique Features of SCAG's Employment Projection Model



- Rely on SCAG population projection
- Aggregate to 20-sector model (two-digit NAICS)
- Self-employment counted in relevant sector
- Public administration employment counted in relevant sector



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Forecast Method Depends on Sector



Change in share of growth

$$EMP_{t_{2014}}^{region_i} = EMP_{t_{2014}}^{region} * A(SHARE_{t_{1994}-t_{2005}}^{region_i})$$

$$SHARE_{t_{1994}-t_{2005}}^{region_i} = EMP_{t_{1994}-t_{2005}}^{region_i} / EMP_{t_{1994}-t_{2005}}^{region}$$

Constant share of growth delta

$$EMP_{t_{2014}}^{region_i} = EMP_{t_{2014}}^{nation_i} * SHARE_{t_{1994}-t_{2005}}^{region_i}$$

$$SHARE_{t_{1994}-t_{2005}}^{region_i} = EMP_{t_{1994}-t_{2005}}^{region_i} / EMP_{t_{1994}-t_{2005}}^{nation_i}$$

Constant share of regional employment in given year

$$EMP_{t_{2014}}^{region_i} = EMP_{t_{2014}}^{region} * SHARE_{t_{2005}}^{region_i}$$

$$SHARE_{t_{2005}}^{region_i} = EMP_{t_{2005}}^{region_i} / EMP_{t_{2005}}^{region}$$

Population growth

$$EMP_{t_{2014}}^{region_i} = EMP_{t_{2005}}^{region_i} + POP_{t_{2005}-t_{2014}}^{region} * (SHARE_{t_{1994}-t_{2005}}^{region_i})$$

$$SHARE_{t_{1994}-t_{2005}}^{region_i} = EMP_{t_{1994}-t_{2005}}^{region_i} / POP_{t_{1994}-t_{2005}}^{region}$$

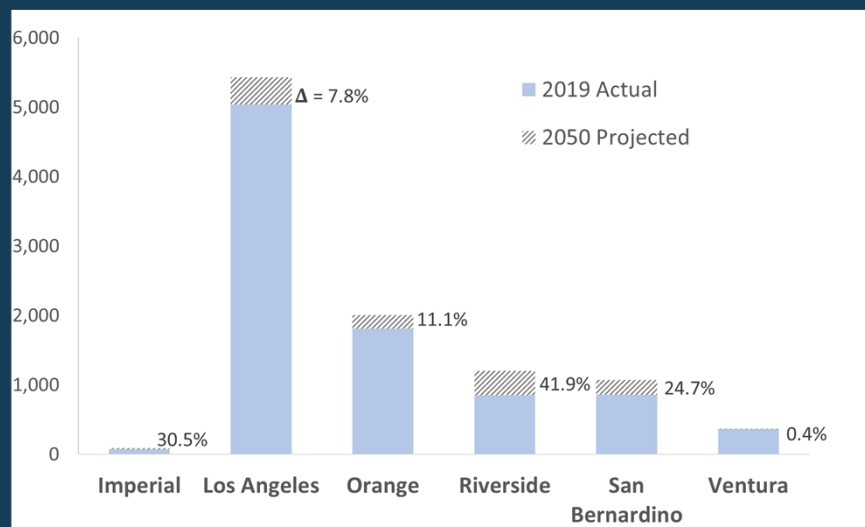
Average share over given base period

$$EMP_{t_1}^{region_i} = EMP_{t_0}^{region_i} + (EMP_{t_0-t_1}^{nation_i} * SHARE_{t_a-t_b}^{region_i})$$

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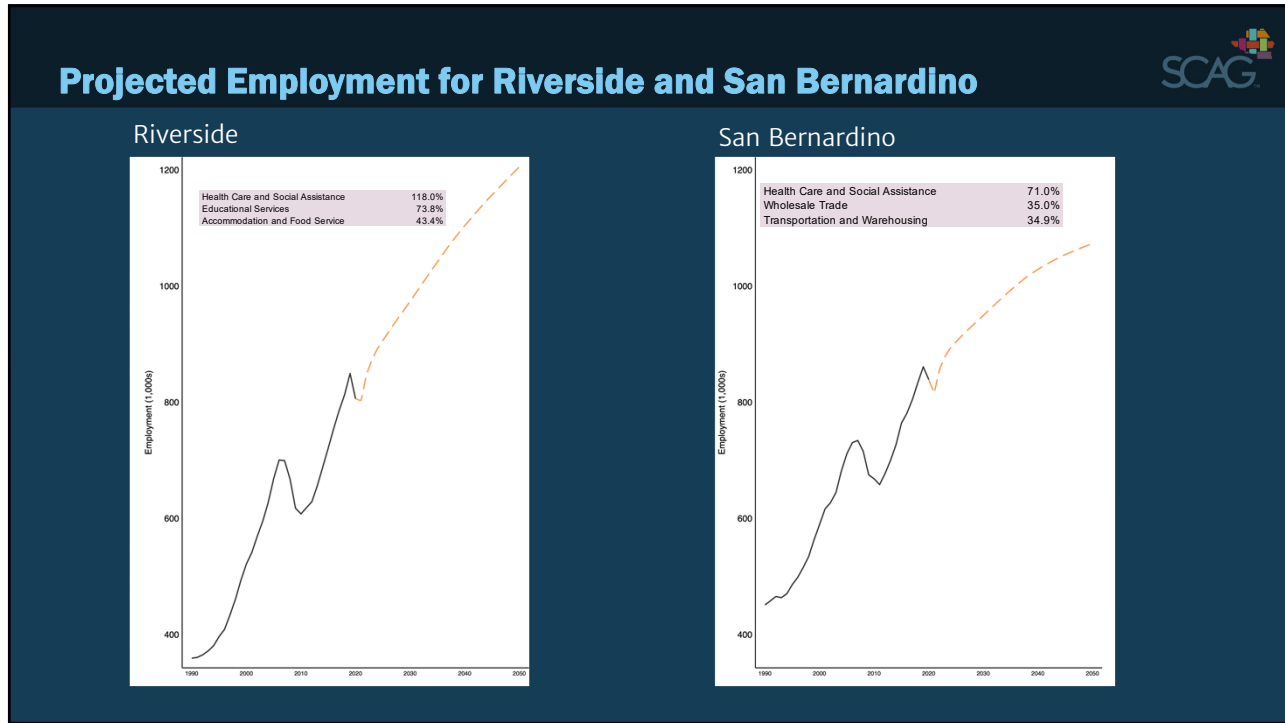
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2050 Projected Employment

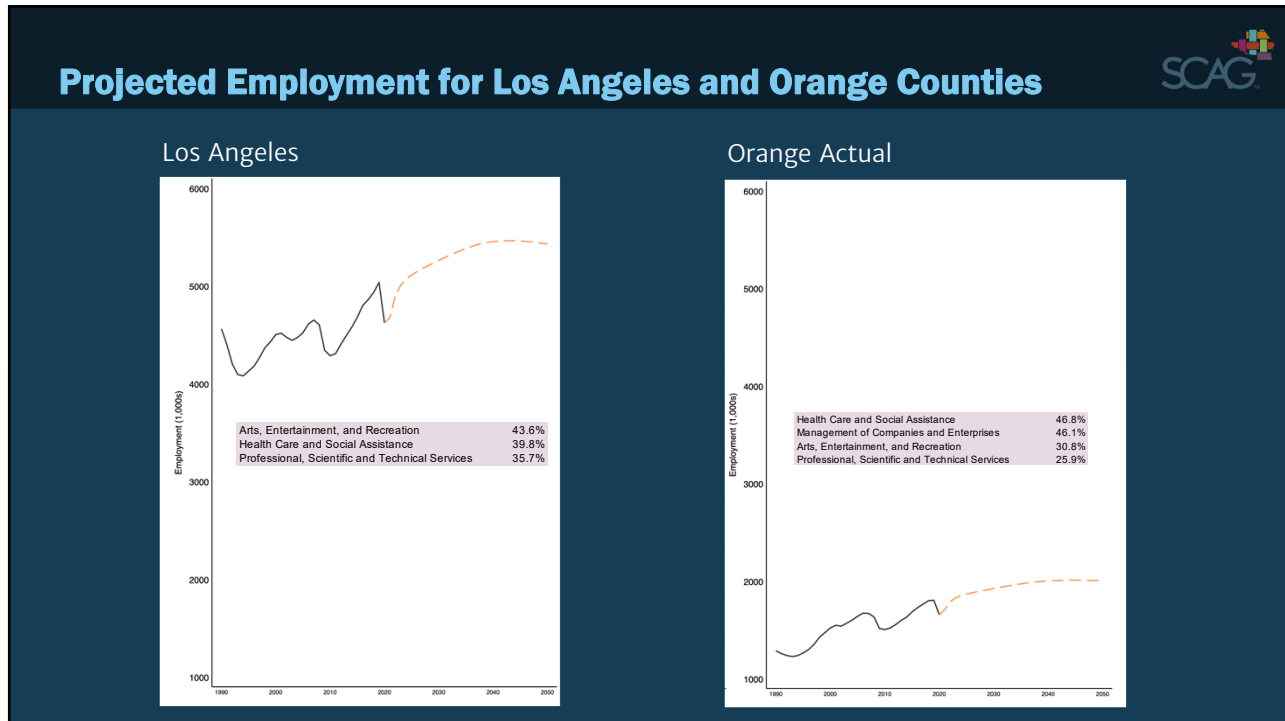


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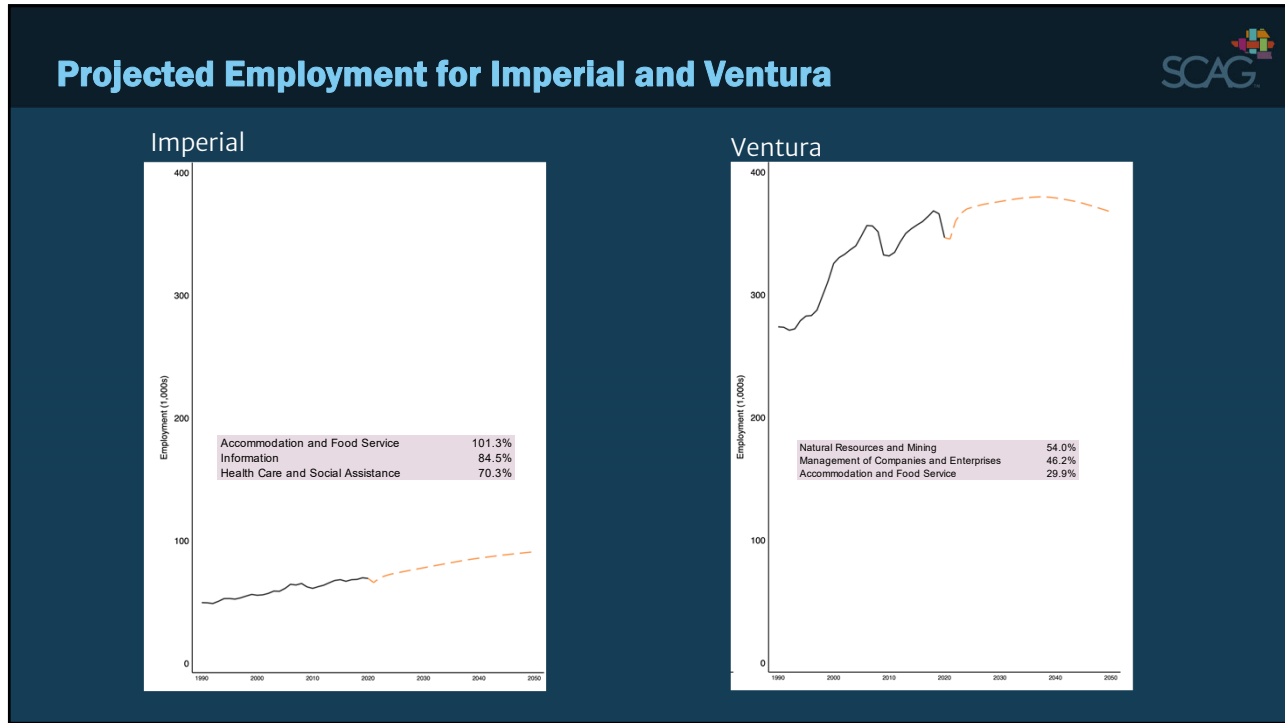
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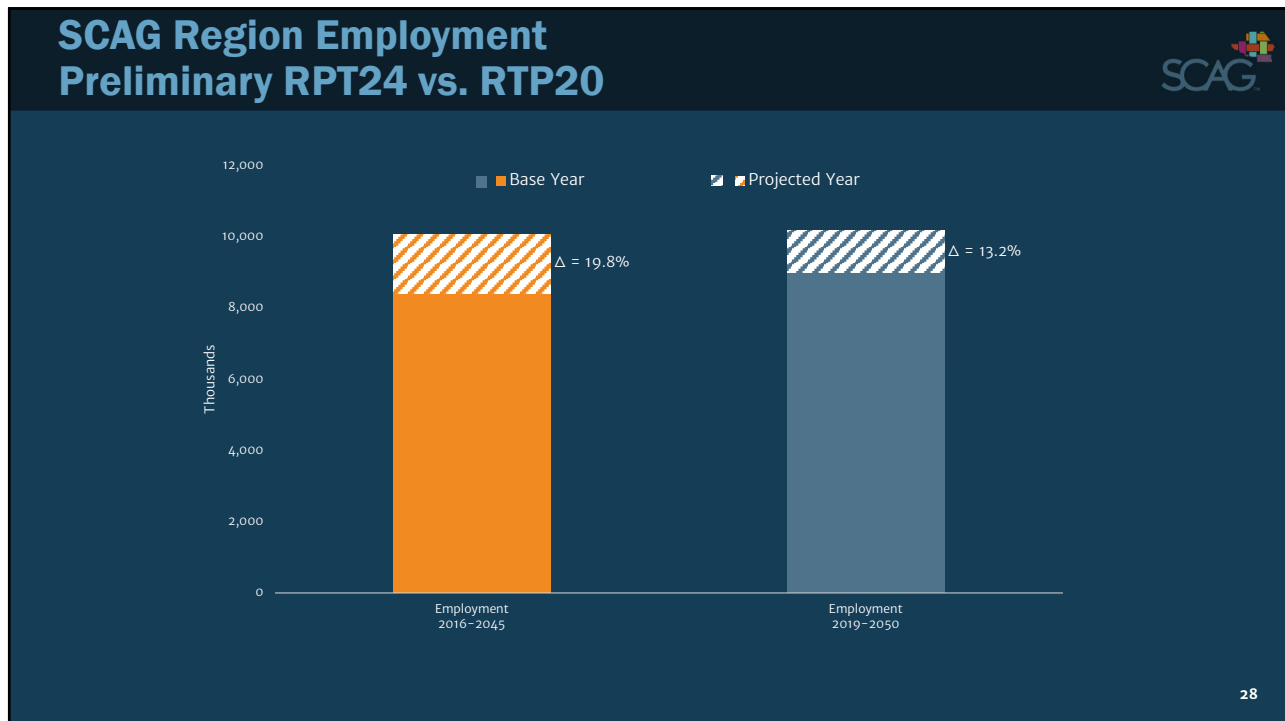
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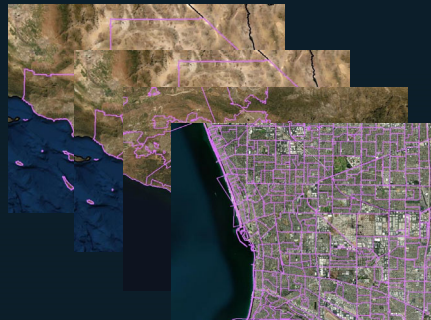


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Projection -> Regional Plan



“set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the greenhouse gas emission reduction targets approved by the state board, and (viii) allow the regional transportation plan to comply with Section 176 of the federal Clean Air Act (42 U.S.C. Sec. 7506).” California Government Code 65080(b)(vii)



SCAG Data/Map Book and RDP LDX Web Contents



CATEGORY	LAYER NAME	REVIEW TYPE	CATEGORY	LAYER NAME	REVIEW TYPE
Land Use	General Plan	Update/Corrections	Green Region Resource Areas (SB 375)	Resilience (Flood areas, coastal inundation, wildfire risk)	Reference Only
	Zoning	Update/Corrections		Open Space/Habitat (Open space and parks, endangered species and plants, sensitive habitat areas, natural community and habitat conservation plans)	Reference Only
	Existing Land Use	Update/Corrections		Administrative/Working Lands (Tribal nations, military installations, farmlands)	Reference Only
	Specific Plan Land Use	Update/Corrections		City Boundary and Sphere of Influence	Reference Only
	Key Entitlements	Update/Corrections		Census Tract	Reference Only
Priority Development	Neighborhood Mobility Areas	Optional	TAZ (Tier2)	Reference Only	
	Livable Corridors	Optional	Preliminary Growth (SED)	Jurisdiction-level projections of households and employment (2019, 2035, 2050)	Update/Corrections
	Job Centers	Optional		Tier 2 TAZ-level projections of households and employment (2019, 2035, 2050)	Update/Corrections
Transportation	Housing Trajectory	Update/Corrections and site inventory upload			
	High Quality Transit Areas	Reference Only			
	Transit Priority Areas	Reference Only			
	Regional Bikeways	Optional			
	Regional Truck Routes	Optional			

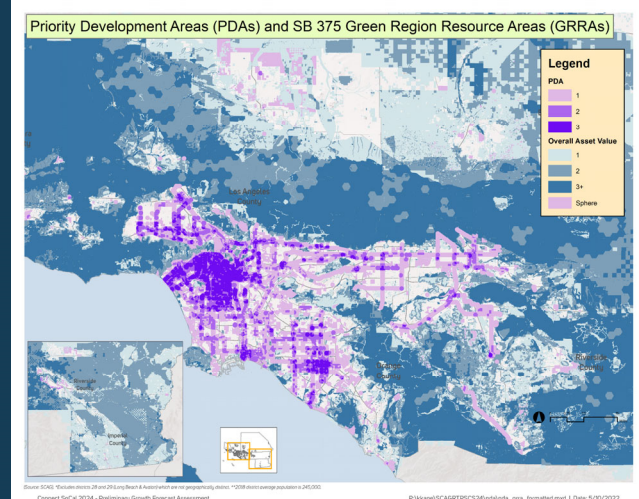
PDF versions are available through Data/Map Books and digital versions are available to local jurisdictions through their RDP LDX login.

Preliminary small area household forecast methodology



1. Estimate remaining general plan capacity and control to county/regional projection
2. Add RHNA/housing element rezone sites if needed
3. Growth prioritization steps
 - Increase in Priority Development Areas (PDAs)
 - Minimize in Green Region Resource Areas (GRRAs)

Number of Priority Development Areas	4	3	2	1	0	4	3	2	1	0	4	3	2	1	0	4	3	2	1	0
Number of Green Region Resource Areas	0	0	0	0	0	1	1	1	1	1	2	2	2	2	2	3+	3+	3+	3+	3+
Step #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20



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Preliminary small area employment forecast methodology



- Estimate the base year employment
 - Apply EDD and Infogroup data for jurisdictional and TAZ level estimates
 - Control to the county level estimates
- Allocate county level growth to jurisdictions
 - Calculate the past share of city growth to the county
 - Apply the above share to the county level growth projections
- Disaggregate jurisdictional level growth to TAZ
 - Calculate the past share of TAZ level growth to the city
 - Apply the above share to the city level growth projections

New data and county/regional totals, but same approach as Connect SoCal 2020.

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Resources

Connect SoCal 2020: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf

County & Regional Forecast: <https://scag.iqm2.com/Citizens/FileOpen.aspx?Type=14&ID=2286&Inline=True#page=51>

2024 Local Data Exchange: <https://scag.ca.gov/local-data-exchange>

Preliminary Allocation Methodology: <https://scag.ca.gov/sites/main/files/file-attachments/twg051922fullagn.pdf#page=6>

Regional Data Platform: <https://hub.scag.ca.gov>

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