

2017 Sustainability Speaker Series

Sponsored by

City of Sunnyvale and Sunnyvale Sustainability Commission

Climate Change: The Sixth Mass Extinction?

Sustainable Sunnyvale

August 2, 2017

Hon. Rod Diridon Sr.

Chair, US High Speed Rail Association

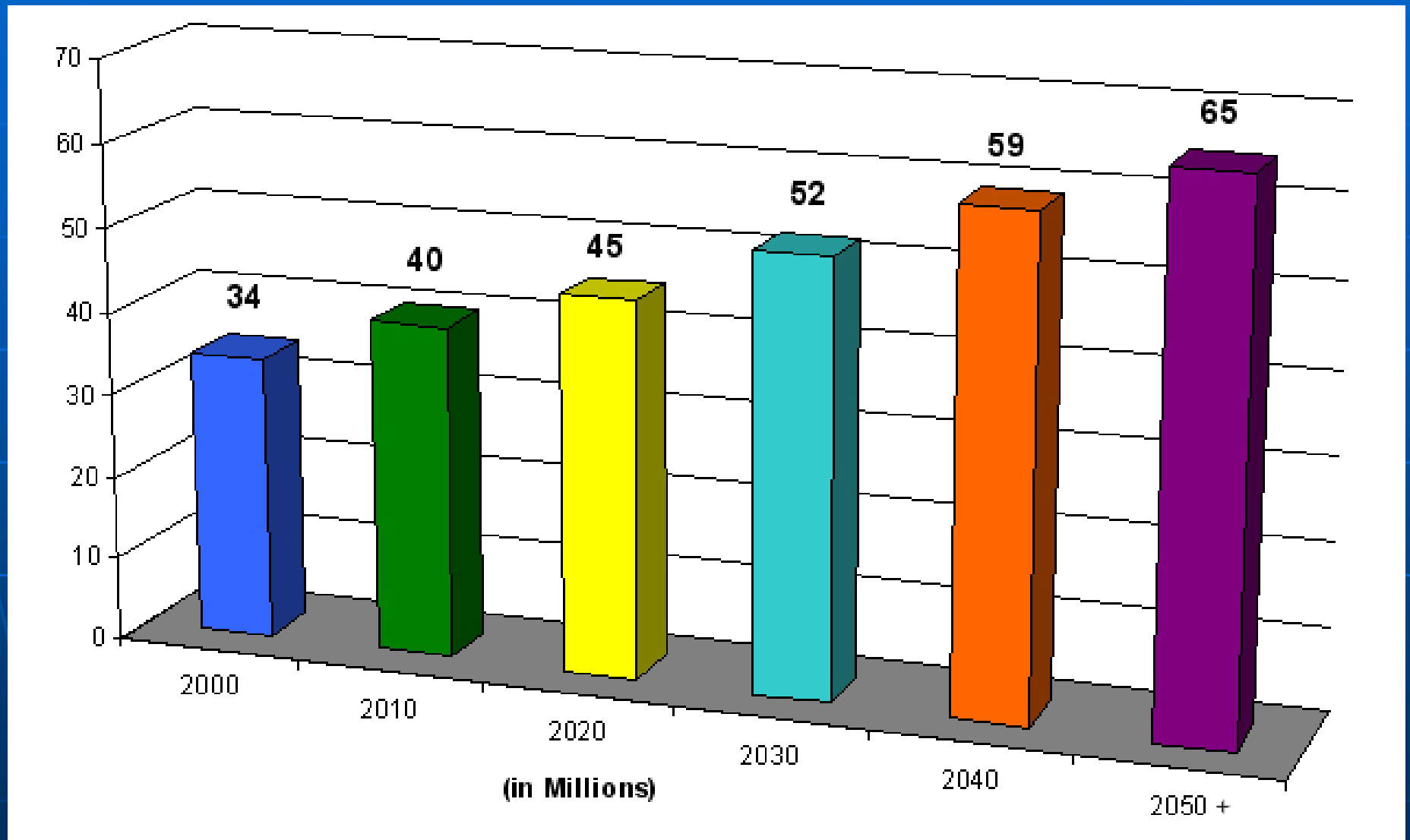
***Past Chair Intercity High Speed Rail Committee
American Public Transit Association***

***Chair Emeritus
California High Speed Rail Authority Board***

***Emeritus Executive Director
Mineta National Transit Research Consortium
Mineta Transportation Institute***



California's Projected Population



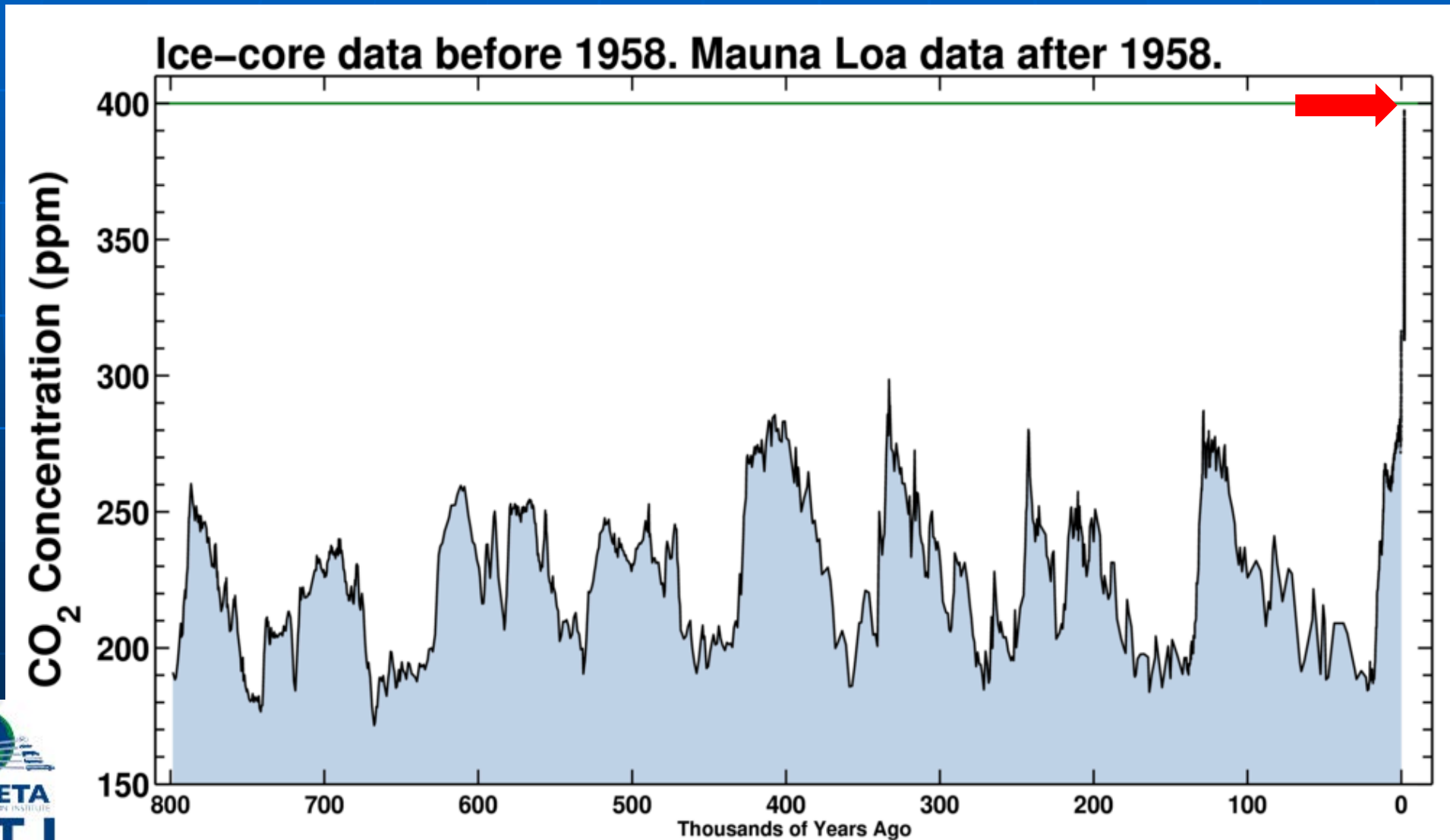
Sources: U.S. Census Bureau; Projections - CA Dept. of Finance

Created by Mineta Transportation Institute

The New York Times

Heat-Trapping Gas Passes Milestone, Raising Fears

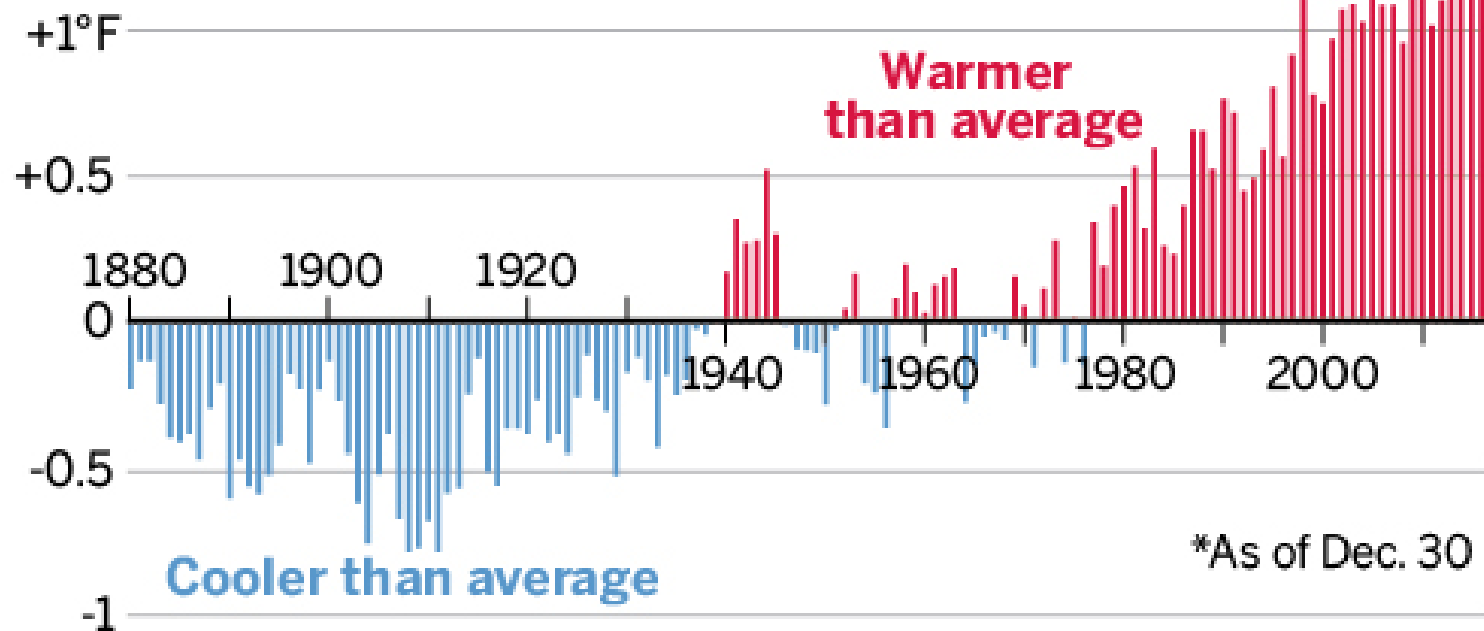
May 11, 2013



Internationally Accepted Research

HOTTEST ON RECORD

The planet's average surface temperature has been rising for decades, with 2016 poised to become the hottest year on record. Difference of global average temperature from the 20th century average:



Source: NOAA

BAY AREA NEWS GROUP

San Jose Mercury News

Front Page, August 8, 2013

State report says global warming's wrath has already arrived

By Paul Rogers

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Rising ocean waters. Bigger and more frequent forest fires. More brutally hot summer days.

These aren't the usual predictions about global warming based on computer forecasts. They're changes already happening in California, according to a detailed new report issued Thursday by the California Environmental Protection Agency.

Climate change is "an immediate and growing threat" affecting the state's water supplies, farm industry, forests, wildlife and public health, the report says. The 258-page document was written by 51 scientists from the Univer-

sity of California, Scripps Institution of Oceanography, Lawrence Berkeley National Laboratory, U.S. Geological Survey and the National Oceanic and Atmospheric Administration, among other agencies and institutions.

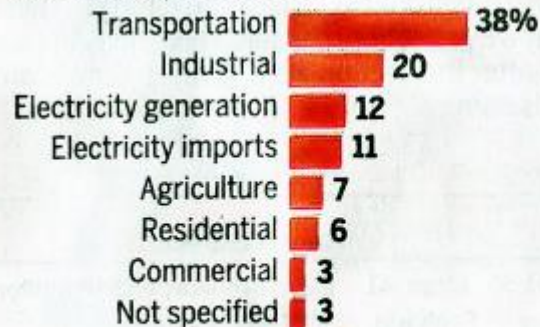
"Climate change is not just some abstract scientific debate," said California EPA Secretary Matt Rodriquez. "It's real, and it's already here."

Most Californians seem to agree. In a poll last month by the nonpartisan Public Policy Institute of California, 63 percent of the state's residents said the effects of global warming are already being felt, while 22 percent

See **WARMING**, Page 8

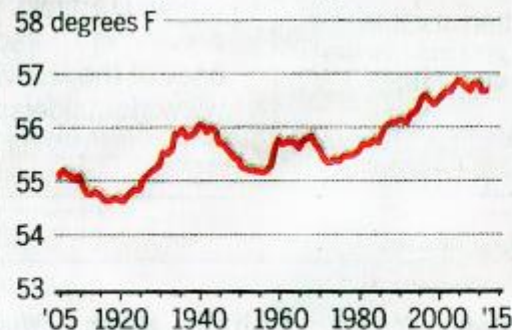
Sources of emissions

Transportation, industry and electrical generation account for 81 percent of all greenhouse gas emissions in California.



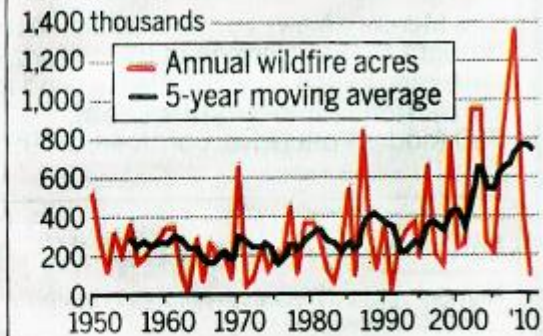
Rising temperatures

Since 1895, annual average temperatures in California have increased by about 1.5 degrees.



More severe fires

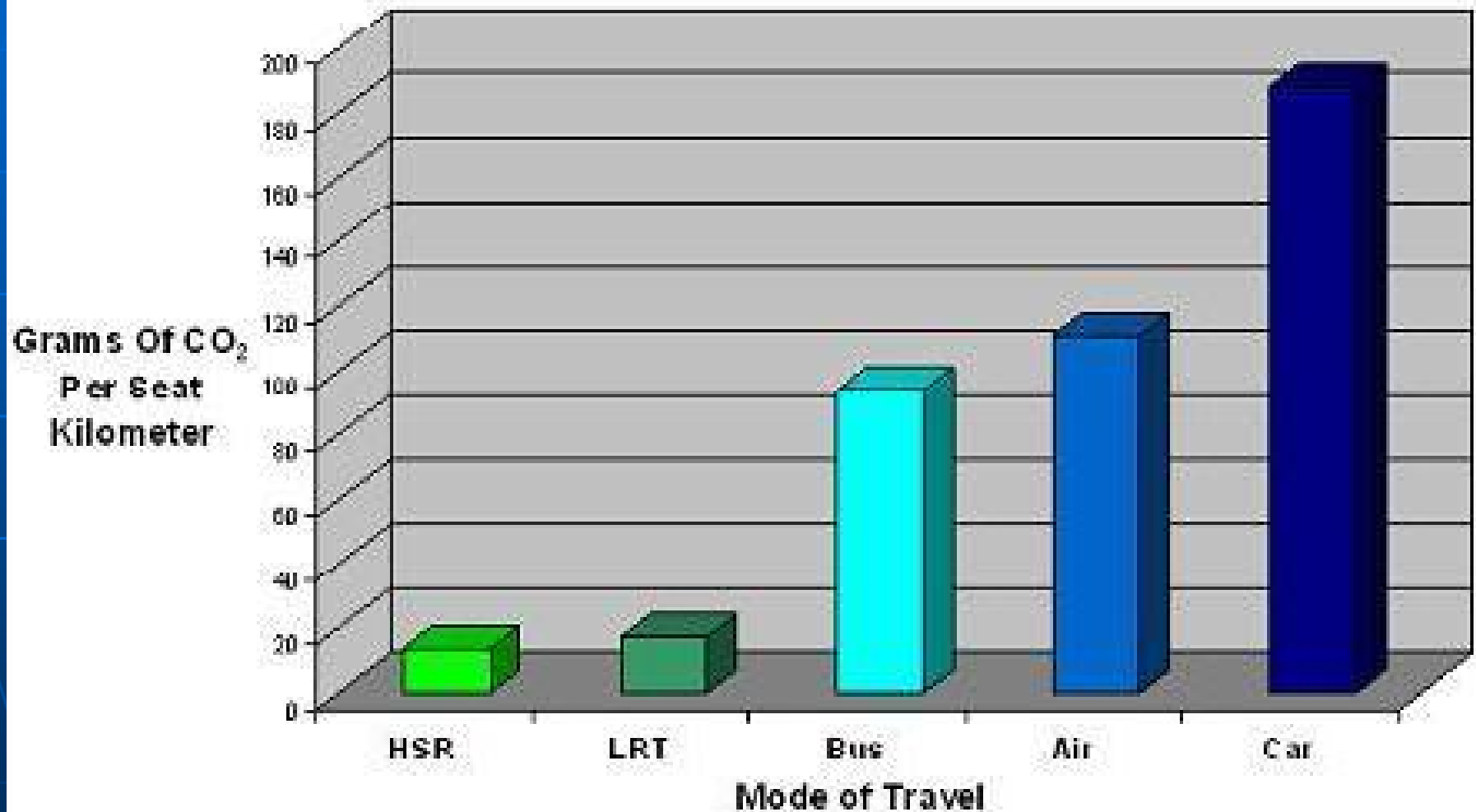
The average annual acreage burned in wildfires in the state since 2000 is almost twice as high as the 1950-2000 average.



Source: Indicators of Climate Change in California, Office of Environmental Health Hazard Assessment

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Carbon Footprint Mode Comparison



Data provided by Dr. Anthony Perl

Created by Mineta Transportation Institute

A Sampling: High-Speed Rail Around the World



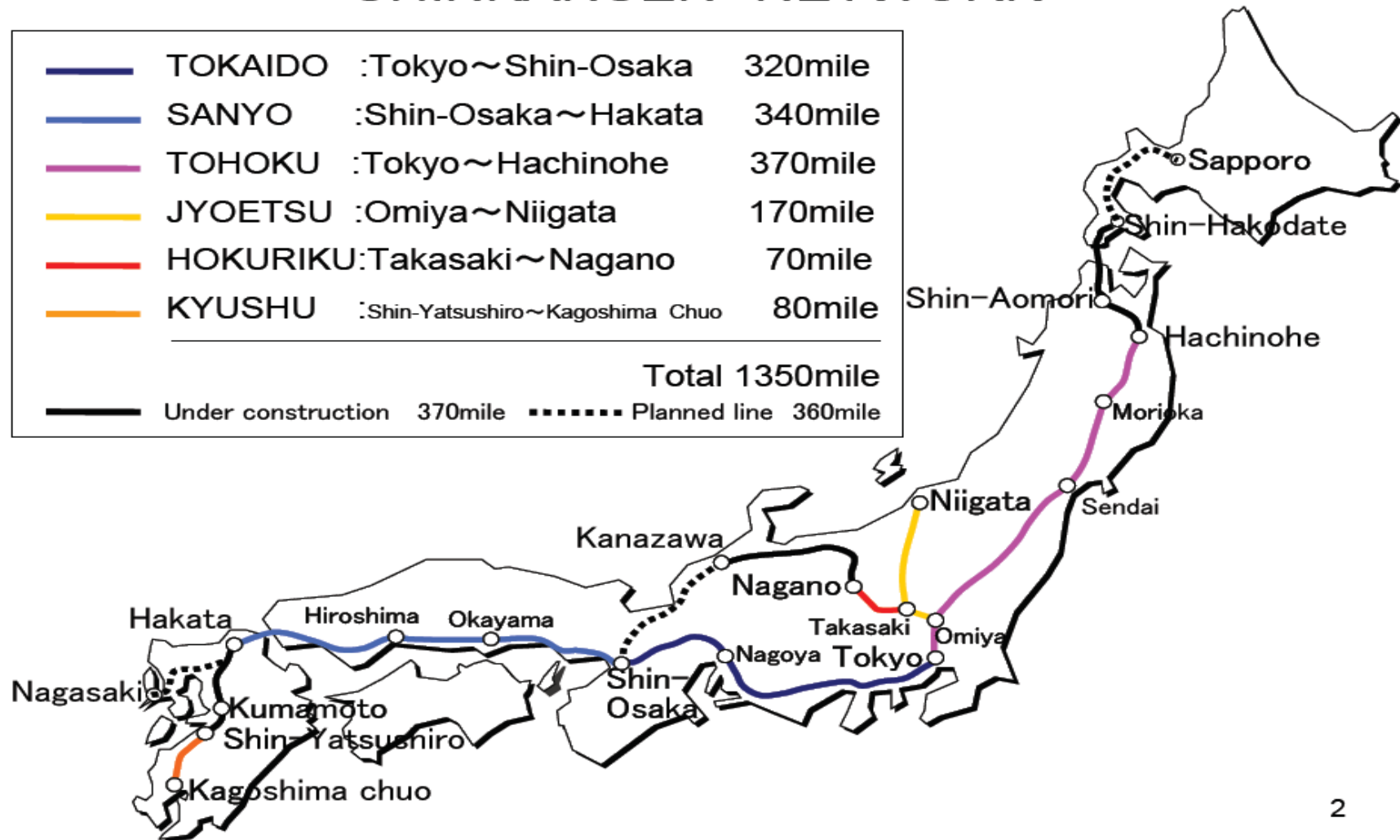
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High Speed Rail in Japan

Route Map

SHINKANSEN NETWORK

	TOKAIDO	:Tokyo~Shin-Osaka	320mile
	SANYO	:Shin-Osaka~Hakata	340mile
	TOHOKU	:Tokyo~Hachinohe	370mile
	JYOETSU	:Omiya~Niigata	170mile
	HOKURIKU	:Takasaki~Nagano	70mile
	KYUSHU	:Shin-Yatsushiro~Kagoshima Chuo	80mile
Total 1350mile			
	Under construction	370mile	
	Planned line	360mile	



Japan: N700



High Speed Rail in Korea Route Map



Created by Mineta Transportation Institute

Korea: KTX



Created by Mineta Transportation Institute

High Speed Rail in Taiwan Route Map



Created by Mineta Transportation Institute

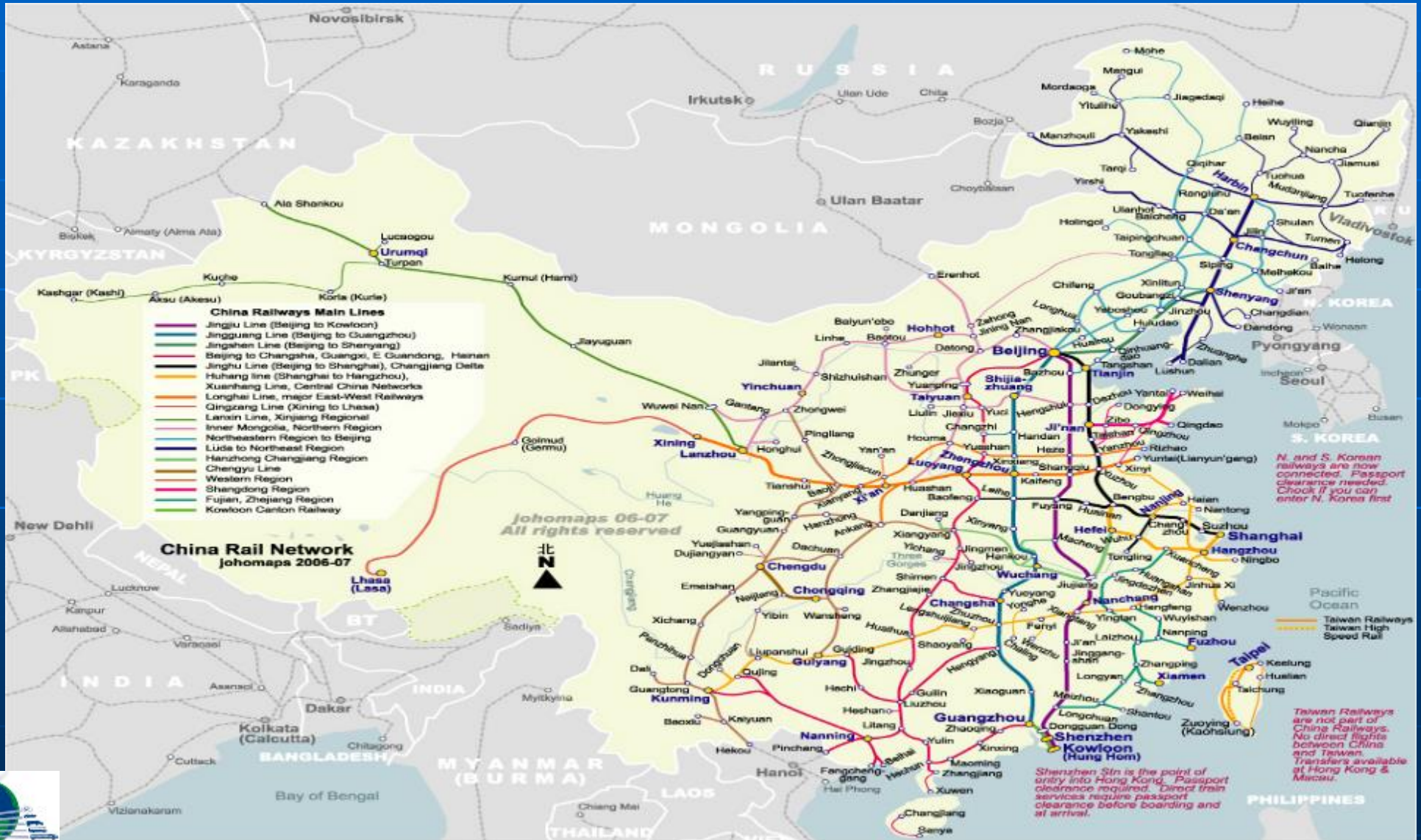
Taiwan: 700T



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High Speed Rail in China

Route Map



China: CRH 2C and 3C



Created by Mineta Transportation Institute



Created by Mineta Transportation Institute

France: AGV



Created by Mineta Transportation Institute

Germany: ICE



ICE-2

ICE-3



Created by Mineta Transportation Institute

Italy: ETR 1000



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Spain: AVE

AVE S 100



AVE S 102



AVE S 103
(ICE-3)



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Turkey: Tulomsas



Moscow to Kazan, 230mph

Russia



Federally Designated HSR Corridors

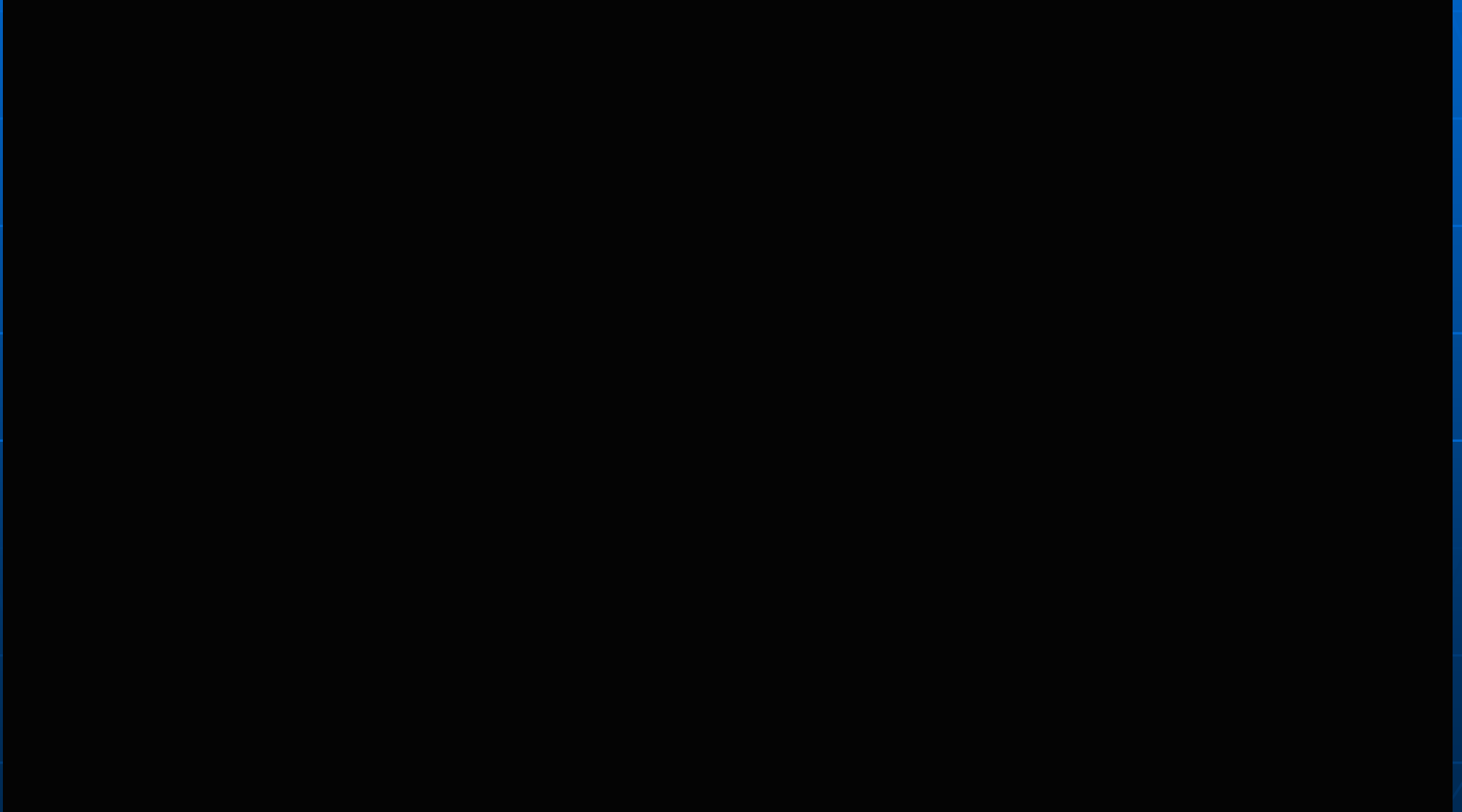


California HSR with Stations and Feeders



790 Miles
26 Stations

California HSR Corridor

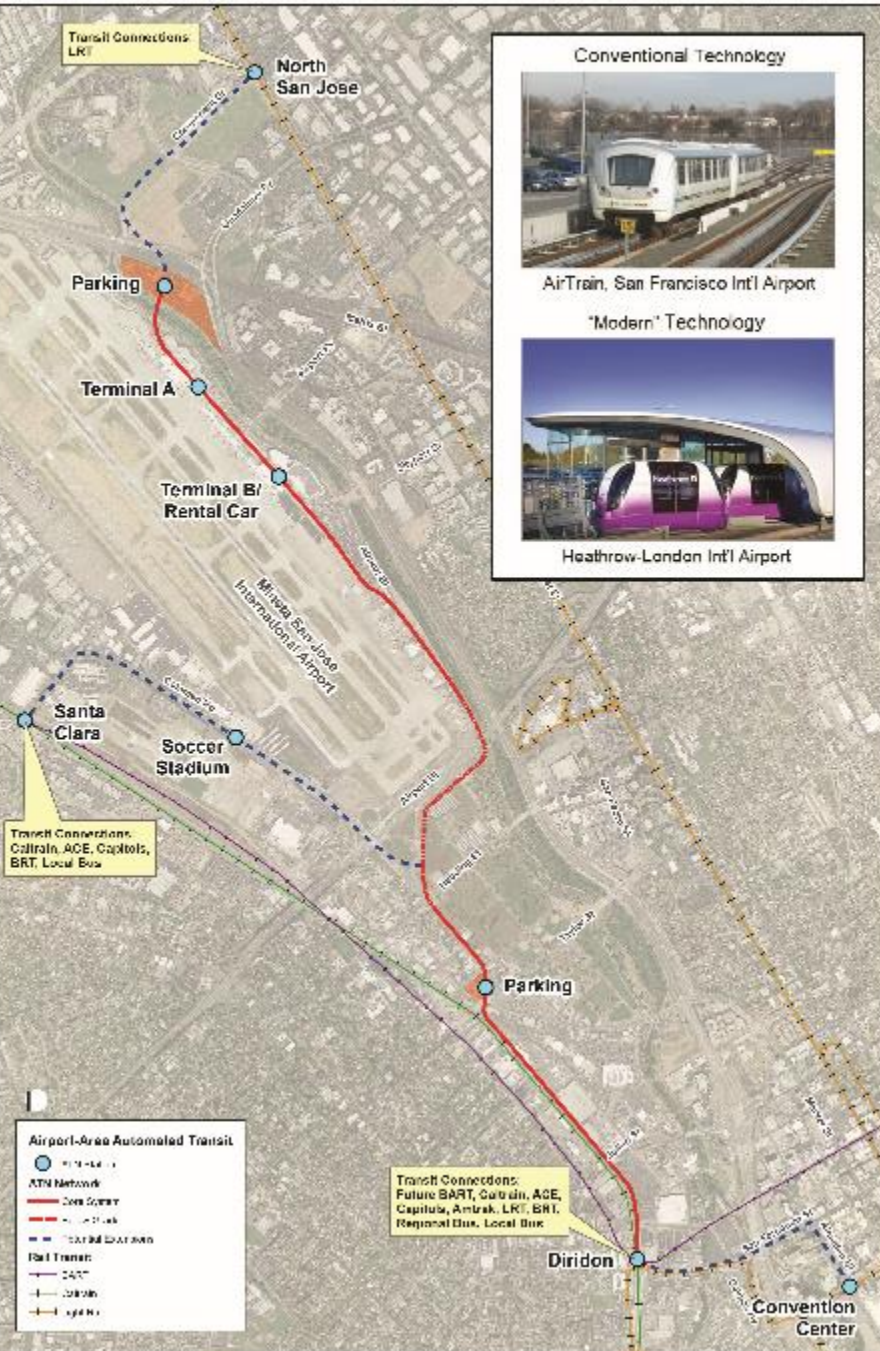


San Francisco Bay Area Transit Integration

- n **Commuter Rail**
 - Caltrain, ACE, Amtrak
- n **BART Rapid Transit**
 - Existing
 - Silicon Valley Extension
- n **Light Rail Transit**
 - Existing
 - Vasona/Capitol Extensions
 - Potential Future Corridors
- n **Bus, Local & Express Service**
- n **Proposed High Speed Rail**
- n **Multimodal Station Hubs**
 - Downtown Diridon Station
 - SJ Mineta International Airport

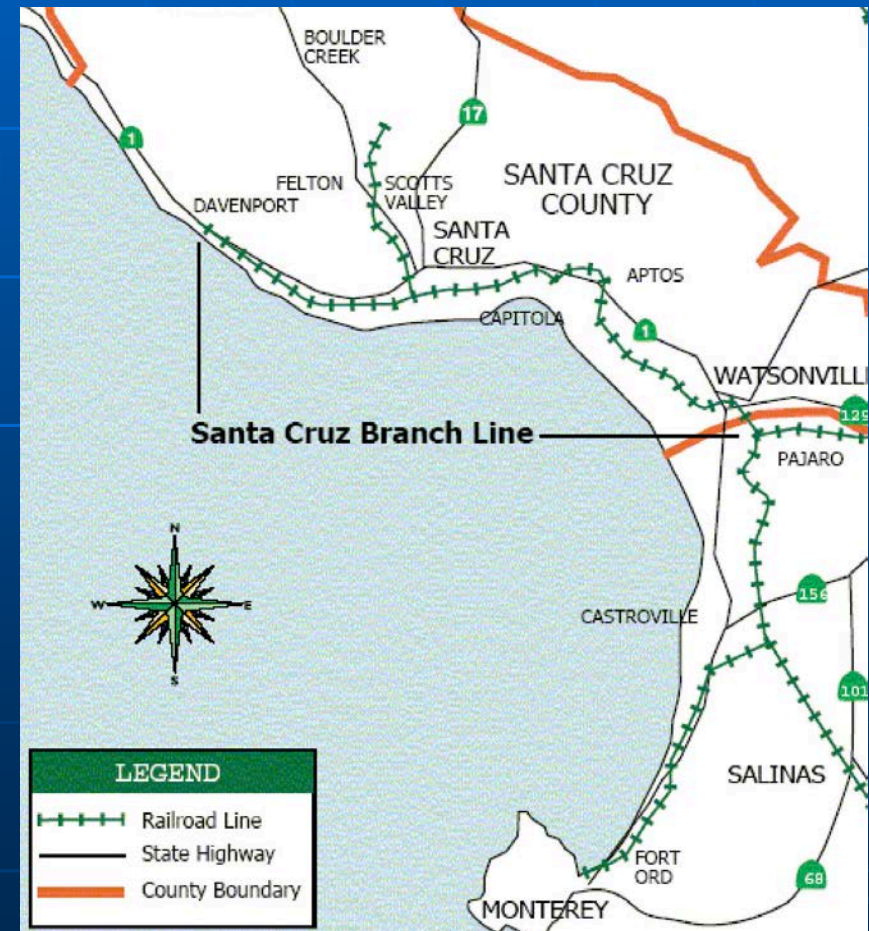


(Automated Guideway Transit)

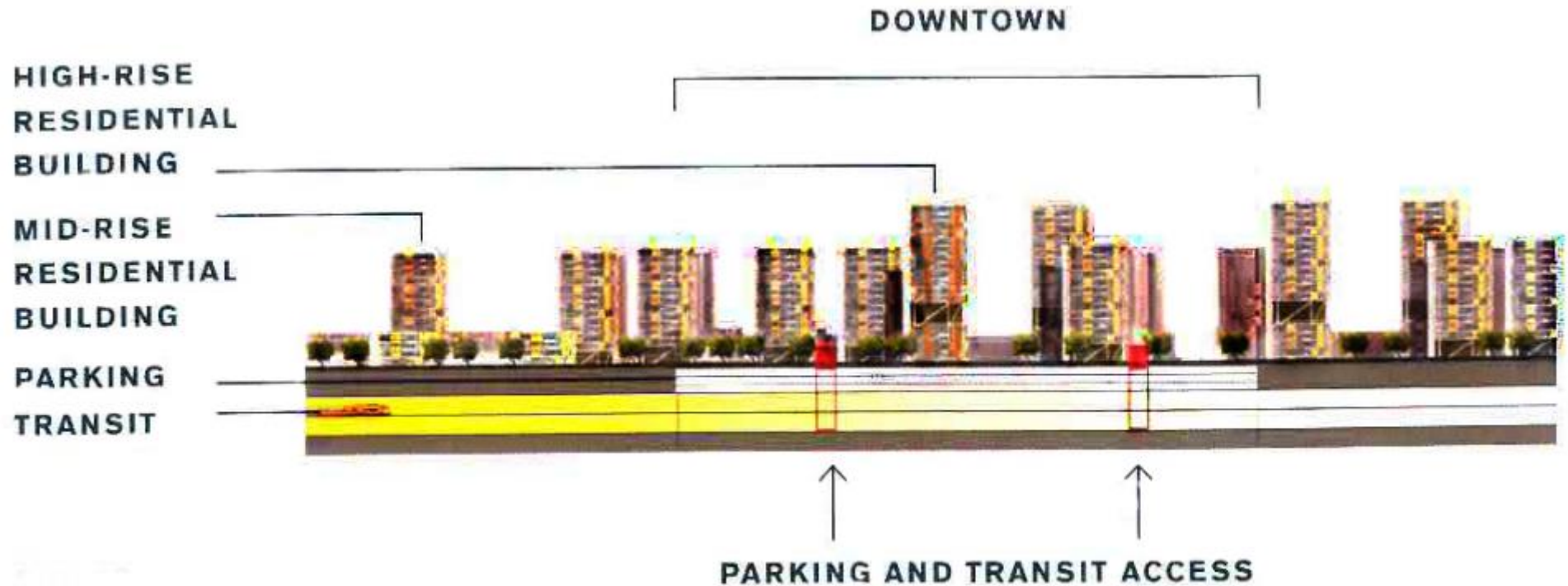


City of New York May 22, 2014

Santa Cruz and Monterey Counties Potential Regional Rail Connections



Transit Villages



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