

George Leddy, PhD, Adjunct Professor
L.A. Southwest College, Upward Bound Program
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Sustainable Cities: the Transit Connection

Sustainable Cities

- What are cities good for?
Economies of Scale
- Why are cities not sustainable?
- How can they ever be sustainable?
- How do we get from here to there?
- Los Angeles
- MTA Sustainability Goals

Concentration of Labor

- Cities represent economic opportunity given the large number of jobs available in many specialized areas
- \$1 billion invested in federally aided public transportation capital projects supports approximately 30,000 jobs
- The American Recovery and Reinvestment Act provided \$8.4 billion in investment in public transportation projects creating 252,000 jobs
- Cities are where the jobs are

Unsustainable Cities

- Why are cities not sustainable?

Urbanism and Economic Growth

Resources and Waste, Water and Power

Pollution and Crowding

Diseconomies of Scale: Sprawl

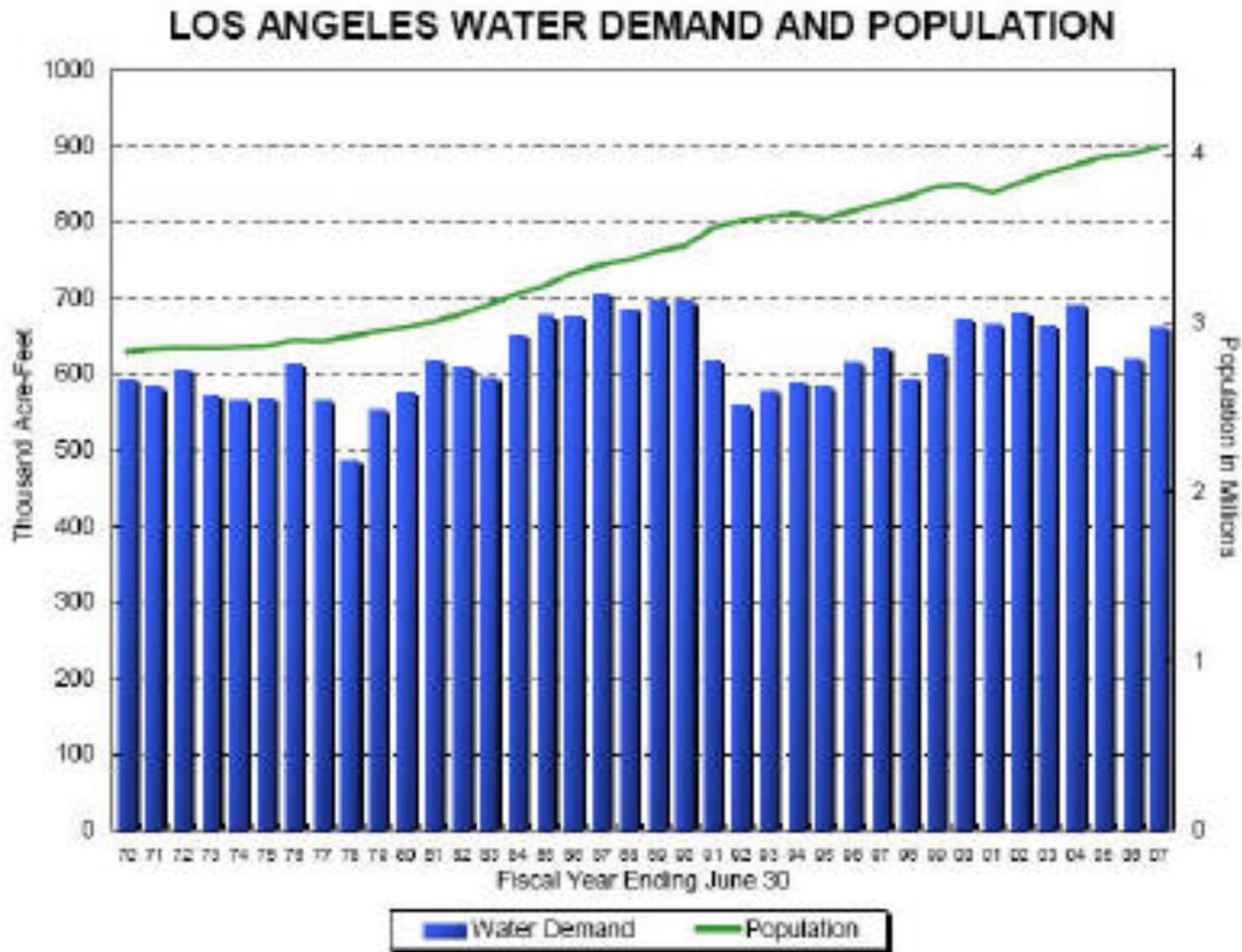
Why are cities not sustainable?



Water and Power

- Urbanism and Economic Growth
 - In 2010, 82 percent of Americans lived in cities; by 2050 it will be 90 percent.
 - Cities are responsible for around two thirds of the energy used,
 - 60 percent of all water consumed and
 - 70 percent of all greenhouse gases produced worldwide.

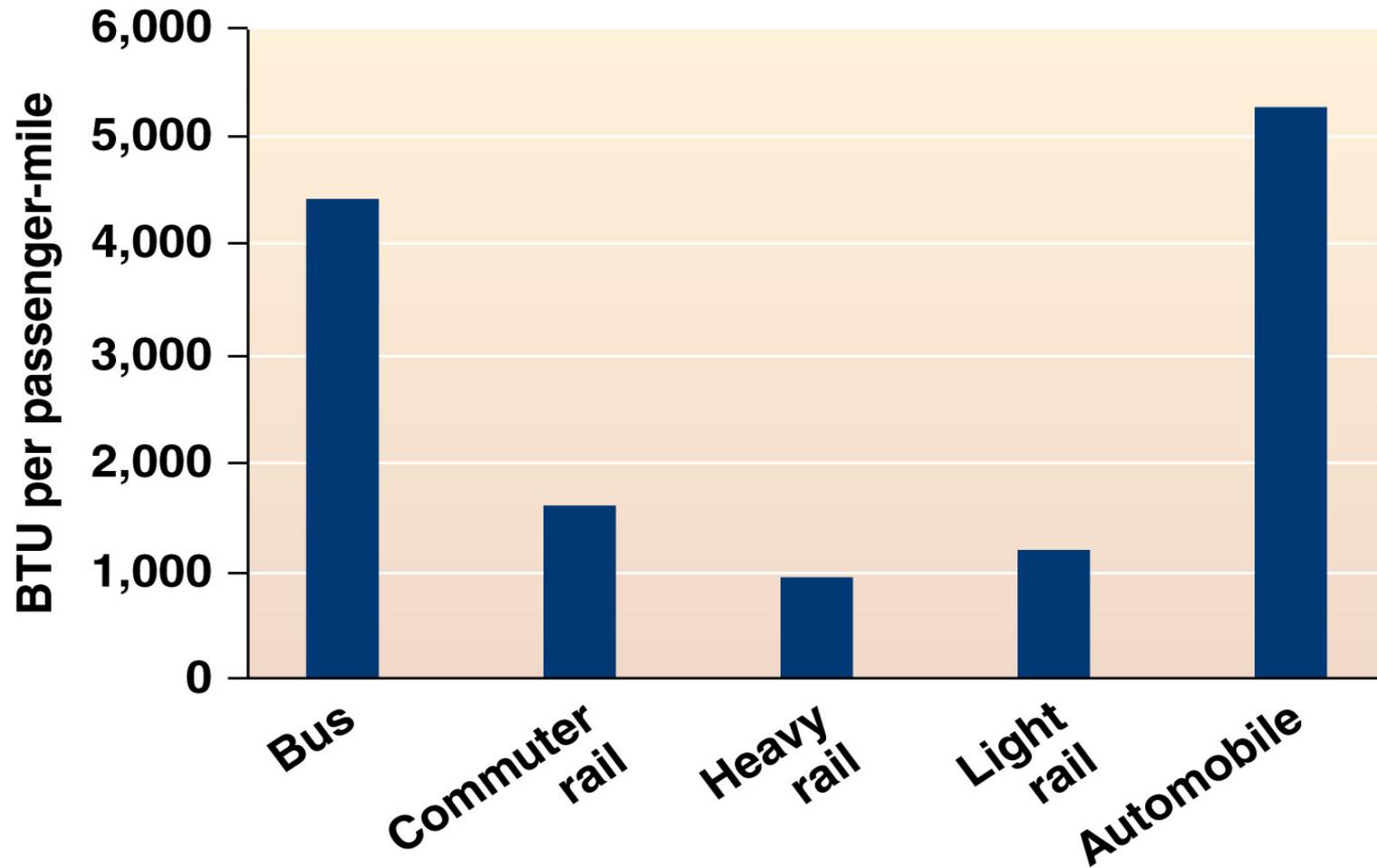
LA Water demand



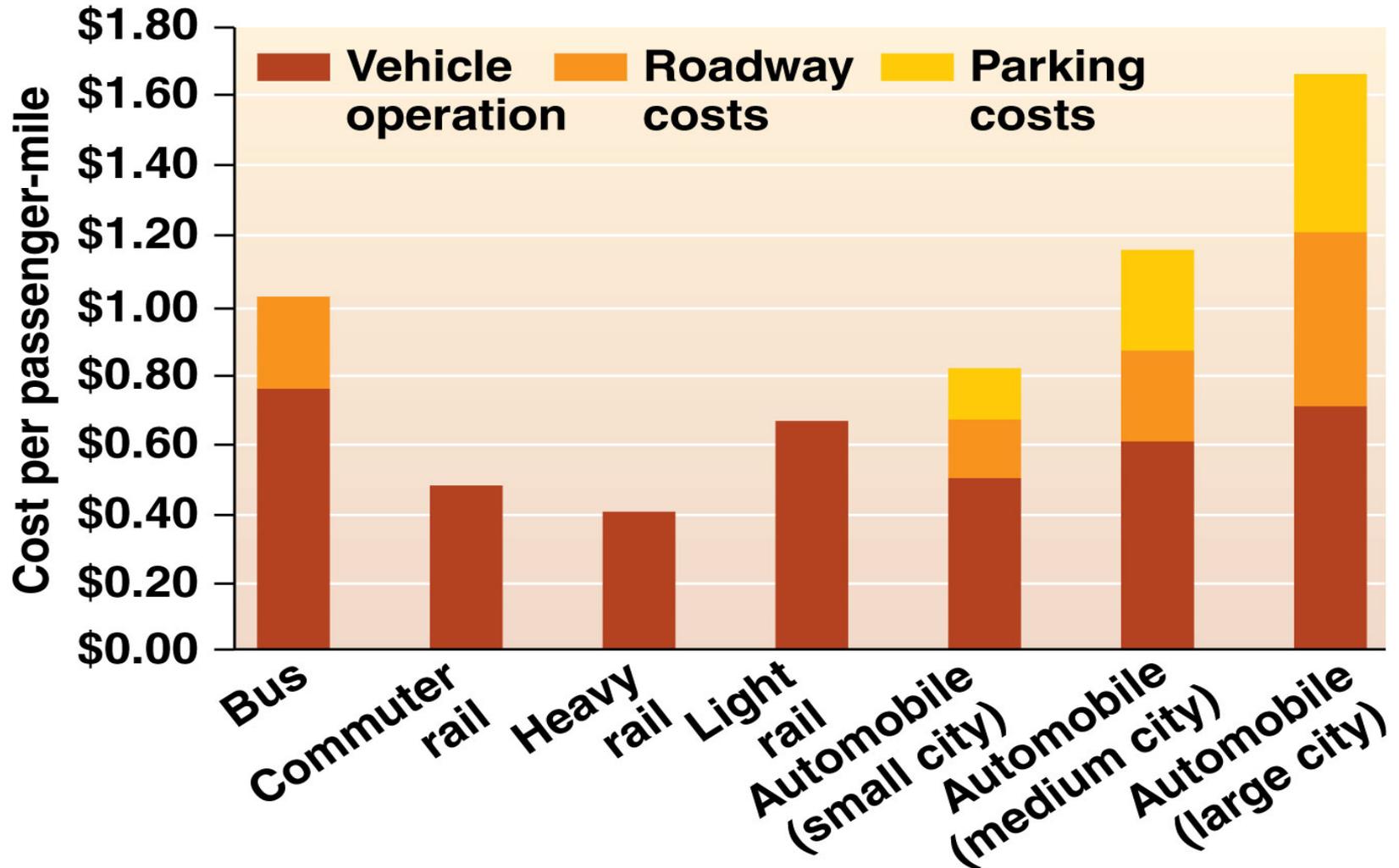
Energy, Climate and Transportation

- Transportation accounts for 1/3rd of total US Greenhouse Gas emissions
- The US has 5% of the world's population, yet consumes 25% of the world's oil

Energy consumption by transit



Operating costs



Pollution and Crowding

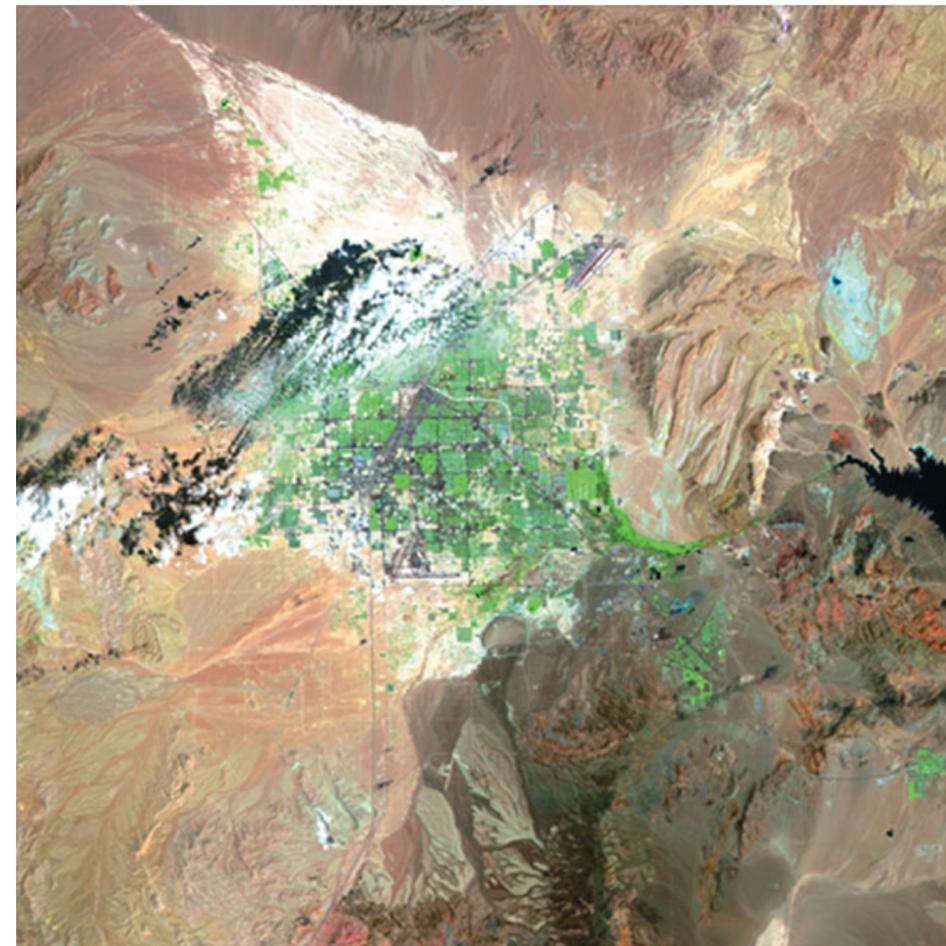
- Traffic jams cause air pollution, stress, and lost time
 - Cost the U.S. \$74 billion/year
- Key in improving quality of urban life: mass transportation
 - Buses, trains, subways
 - *Light rail*: smaller systems powered by electricity
- Cheaper, more energy-efficient, cleaner, less traffic

Diseconomies of Scale: Sprawl

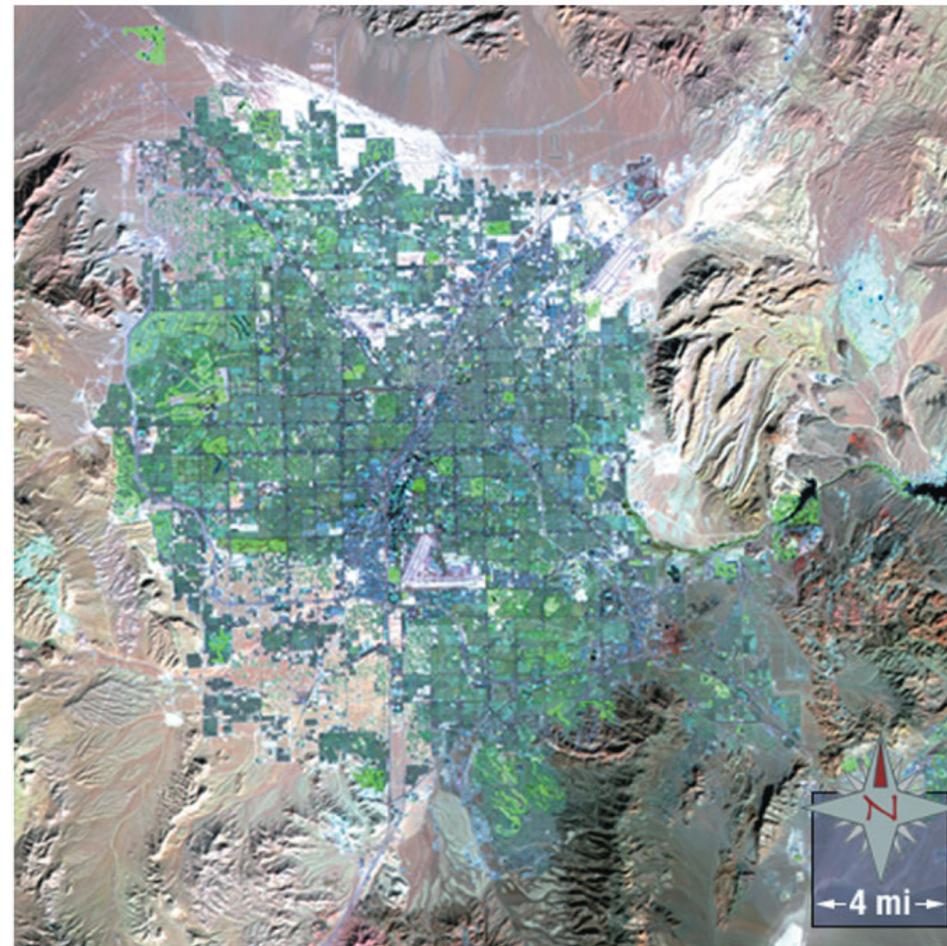
- **Sprawl:** the spread of low-density urban or suburban development outward from an urban center
 - Each person takes up more space than in cities
 - The physical spread exceeds population growth

Between 1984 and 2009, Las Vegas' population and developed areas both tripled

Las Vegas



a) Las Vegas, Nevada, 1984



(b) Las Vegas, Nevada, 2009

Commercial Sprawl



Diseconomies of Scale: Sprawl

- **Transportation:** people are forced to drive cars
 - Pressure to own cars and drive greater distances
 - Increases dependence on nonrenewable petroleum
- **Pollution:** carbon dioxide, air pollutants, smog, acid precipitation
 - Motor oil and road salt from roads and parking lots
- **Health:** sprawl promotes physical inactivity because driving cars replaces walking
 - Increases obesity and high blood pressure

Suburban Sprawl



Difficult to service with transit



Inefficient transit planning



How do we make cities more sustainable?

- **Smart growth:** rejuvenates existing developed areas
Building “up, not out”
Favoring multistory shop-houses and high-rises
A strong sense of place and collaboration
- **New urbanism:** designs walkable neighborhoods
Homes, businesses, and schools are close together
Functional neighborhoods in which most of a family’s needs can be met without using a car
New developments have green spaces, mixed architecture, creative street layouts

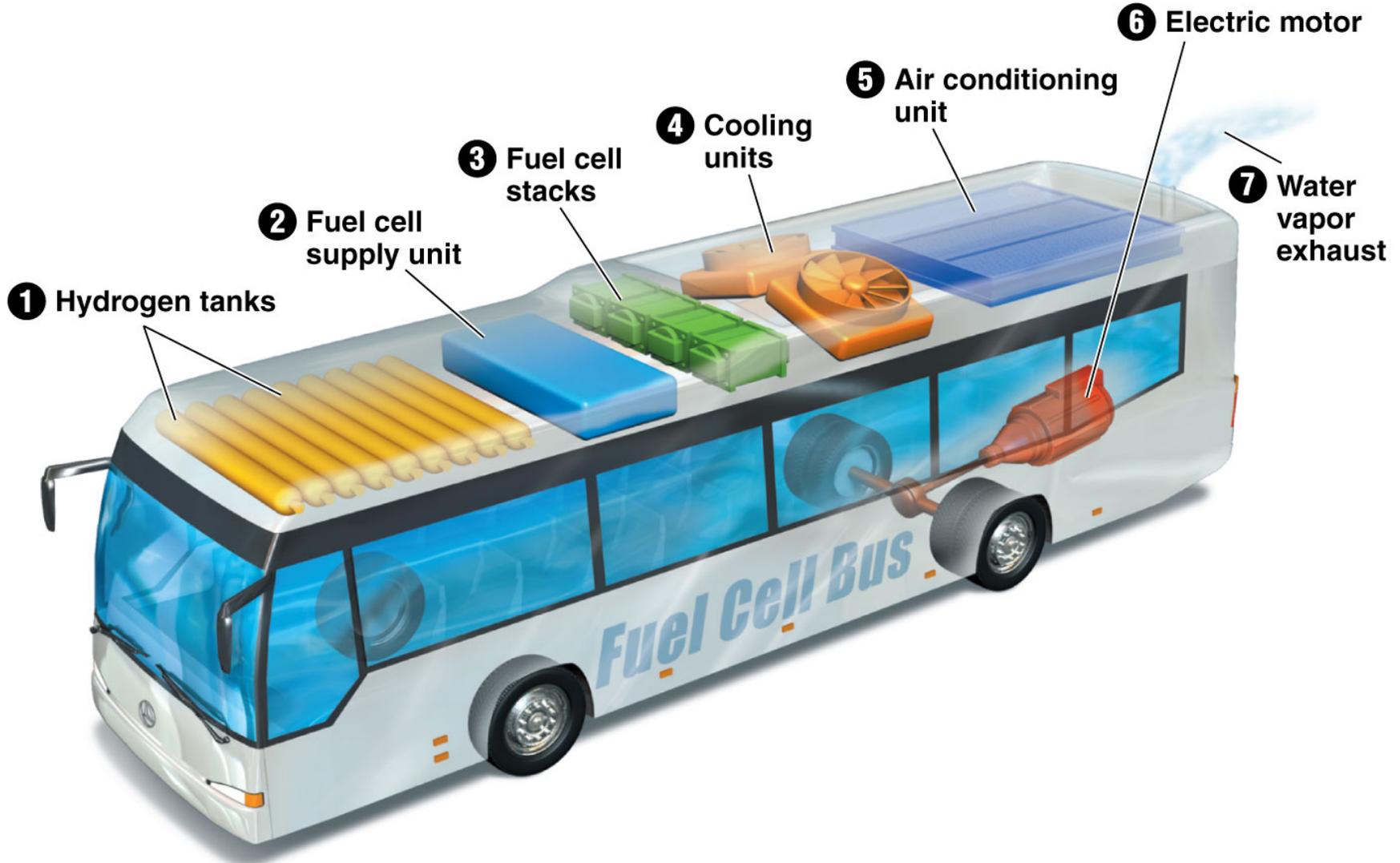
How do we get from here to there?

- Governments can encourage mass transit by:
 - Raising fuel taxes
 - Taxing inefficient modes of transport
 - Rewarding carpoolers
 - Encouraging bicycle use and bus ridership
 - Charging trucks for road damage

Technology Fixes?

- Better efficient cars
- Faster dependable transit
- New engine technology
- Innovations

Fuel cell buses?



How do we get from here to there?

- Promote Transit and Livable Communities
- **Re-Frame the Transit Conversation to One of Choice, Opportunity and Abundance**
- Inoculate Communities from Anti-Transit Message
- Build Community Support for Increased \$ for Transit Investments
- Smart growth is more than rearranging land uses. It is also community-rebuilding.

How do we get from here to there?



Supported by National Research

Economy
Environment
Energy
Quality of life

How do we get from here to there?

For every \$1 invested in public transportation, \$6 is generated in economic returns.

\$10 million in capital investment in public transportation returns up to \$30 million in business sales alone.

Each year, an individual can save more than \$8,000 by taking public transportation instead of driving and by living with one less car.

How do we get from here to there?

- **Public transportation helps protect our environment**
 - Taking public transportation far exceeds the combined benefits of using energy-efficient light bulbs, adjusting thermostats, weatherizing one's home, and replacing a refrigerator.

How do we get from here to there?

- **Public transportation helps protect our environment**
 - Public Transportation improves air quality. Compared with private vehicles, public transportation produces, on average, per passenger mile, 95 percent less carbon monoxide, 92 percent fewer volatile organic compounds, and 48 percent less nitrogen oxide

How do we get from here to there?

- **Public transportation reduces our dependence on foreign oil**
 - Increased investment in public transportation is an investment in American energy independence and economic security
 - Public transportation saves the U.S. the equivalent of 4.2 billion gallons of gasoline annually – more than three times the amount of gasoline refined from the oil we import from Kuwait
 - Public transportation use saves the equivalent of 900,000 automobile fill-ups every day.

Los Angeles



Transit Mayor



- Political Support for Transit Spending
- The 30/10 idea gone national
- Confront the myth that a city like LA cannot have effective public transit.

The Transit Connection

- The Regional Transit System
- Multimodal Urban Transportation
- The Metropolitan Transit Authority
- The integrated system
- The clean bus fleet
- The NABI model buses
- The riders now and in the future
- LA as a sustainable city

Regional Transit



- Nation's largest Metropolitan Planning Organization (MPO) and Council of Governments (COG)
- 6 counties, 191 cities and over 18 million residents
- Governed by a Regional Council of 84 local elected officials
- 17th largest economy in the world
- 9,000 lane miles of freeway
- 4 major airports
- Nation's global gateway for trade

California Goals:

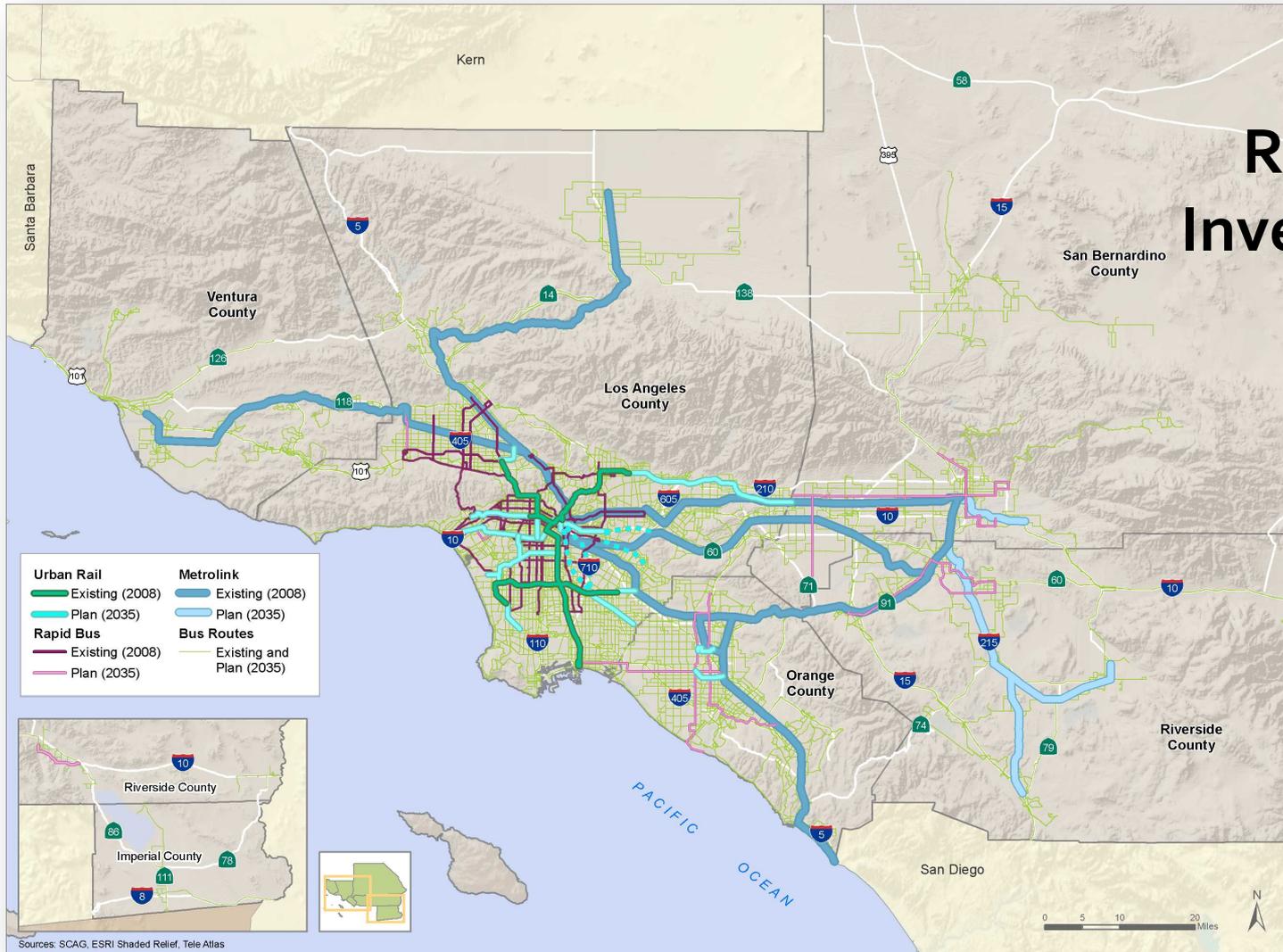
- Achieve specified GHG emission reduction targets in 2020 and 2035
 - from autos and light duty trucks
 - through land use and related policies
 - Implement AB 32 (a small portion)
- Integrate RTP with other regional plans and processes
 - Sustainable Communities Strategy (SCS)
 - Regional Housing Needs Assessment (RHNA)

Multi-modal Systems



Intermodal Systems

Rail Transit Investments, 2035



Metrolink, rail extensions



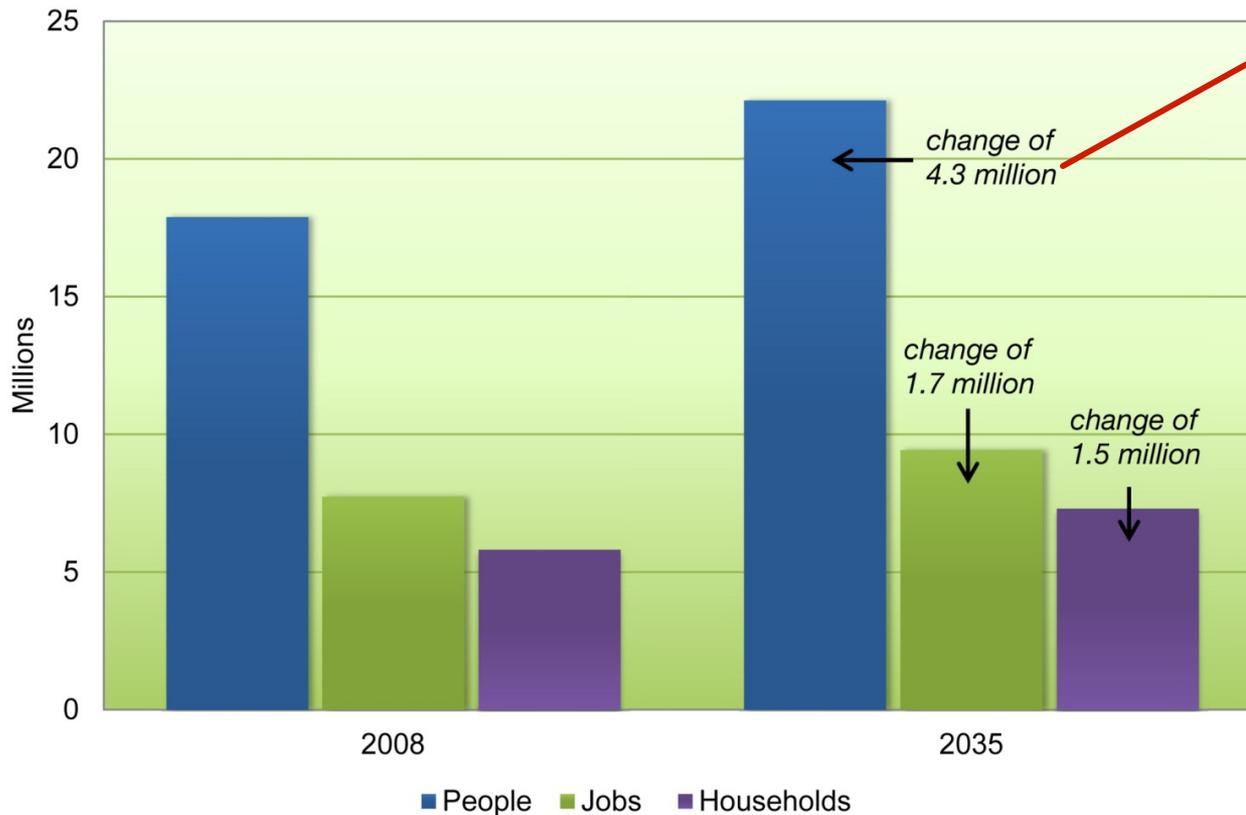
Light and Heavy Rail Extensions

Metrolink/ LOSSAN Speed Upgrades and California High-Speed Rail Phase 1

New and Enhanced BRT REGIONWIDE

Metrolink Service Expansion THROUGHOUT THE REGION

Projected Growth



Adding the population of approximately one and a half times Chicago to Southern California



The Bus Rider

- 83 percent of older Americans say that public transit provides easy access to the things they need in everyday life.
- Disabled and elderly are more likely to choose the transit.
- Young people with bicycles are more likely to choose transit.

The Bus Rider



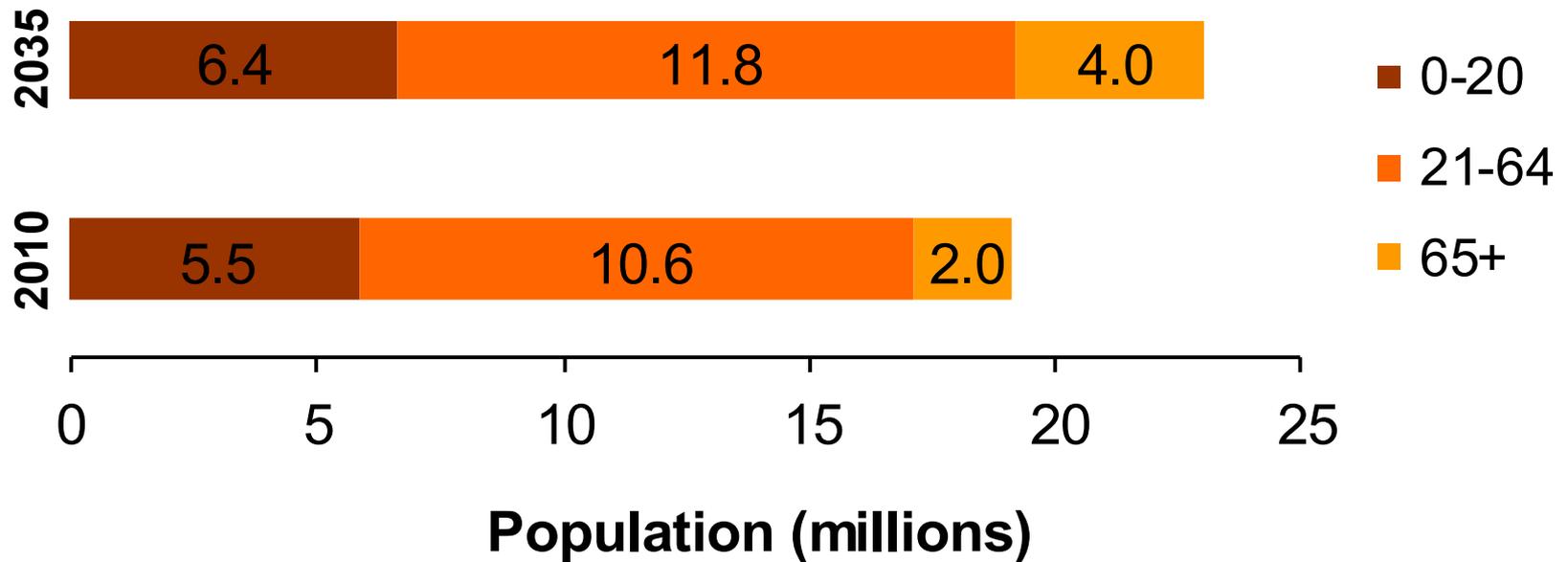
The Bus Rider



- Young people with no cars
- Veterans back from Iraq and Afghanistan
- Elderly with mobility needs
- Shoppers with bags
- Bicycle Commuters

Projected Growth in SCAG region

Population By Age Group



Note: Percentages do not add to 100% due to rounding

Source: US Census Bureau, SCAG

SCAG and sustainability



Mobility



Economy



Location Efficiency



Cost Effectiveness

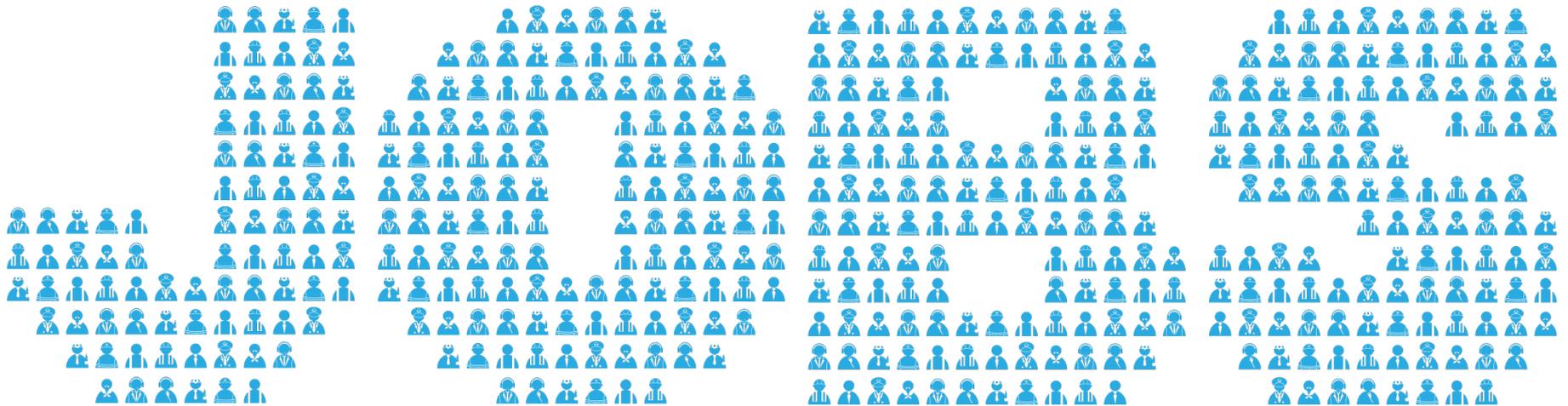
SCAG Mobility: reduce 1 hr trip to:

40
minutes



SCAG Economy: Jobs

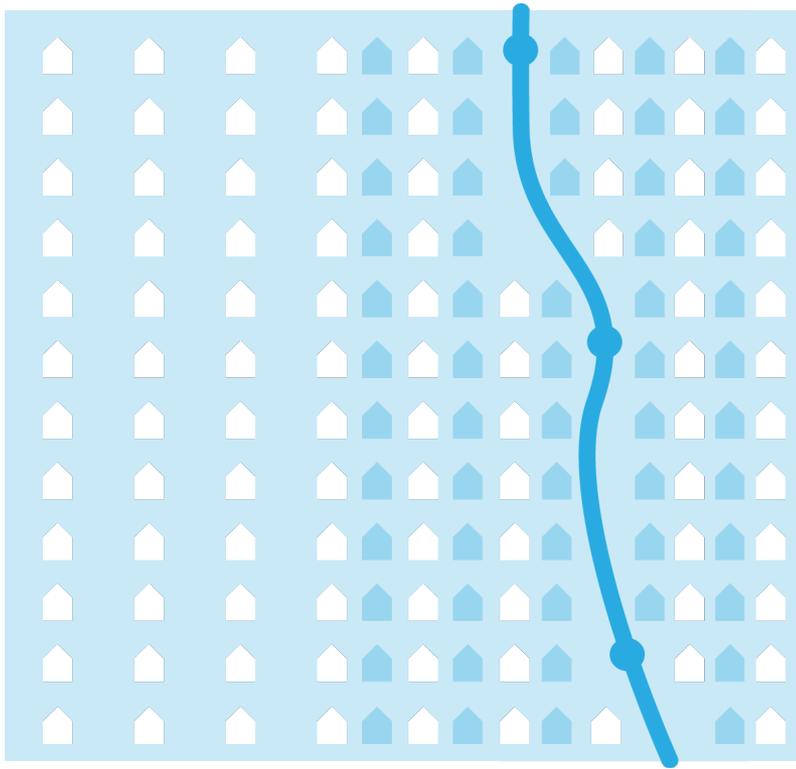
+500,000



generated each year on average with the Plan

“Not just construction workers, but jobs in all sectors of the economy”

SCAG Economy: Location Efficiency

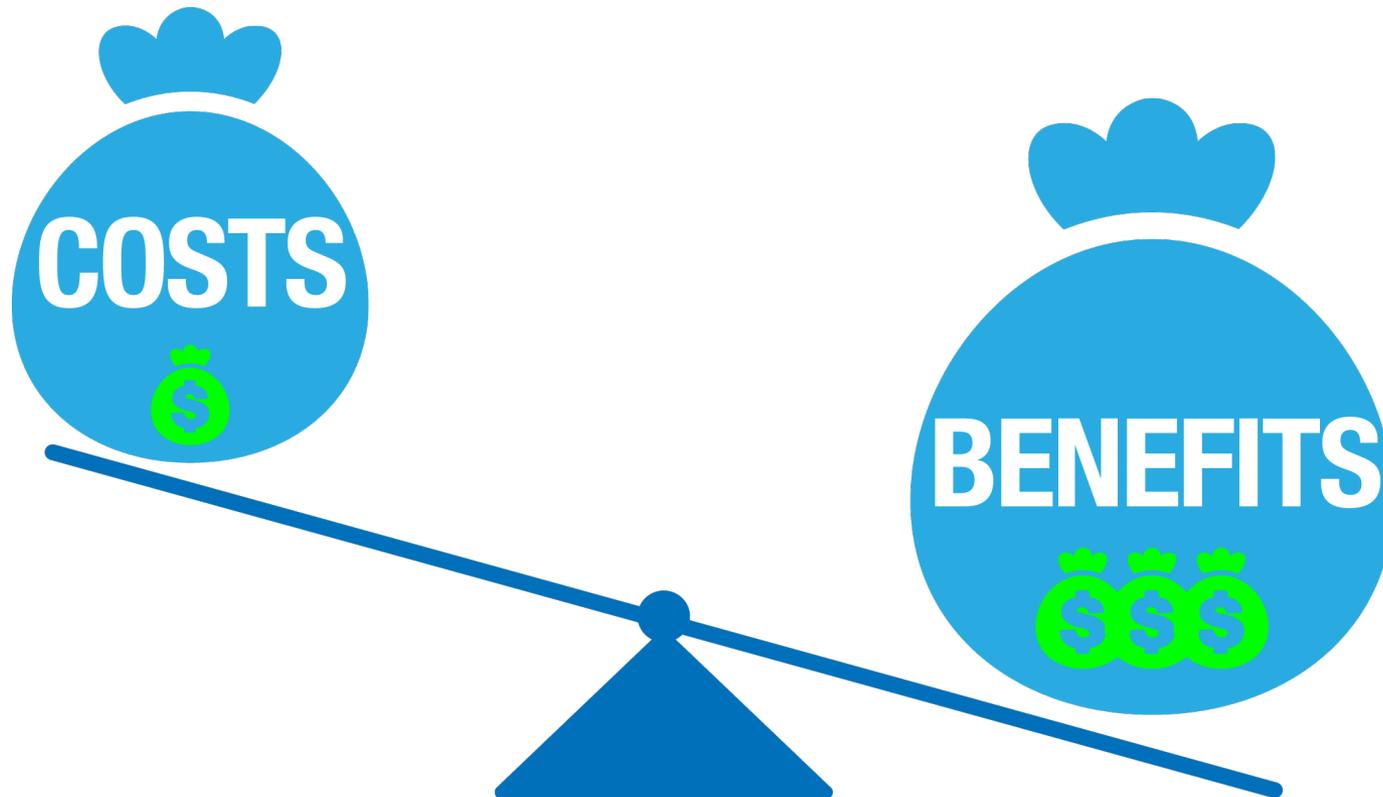


Over **TWICE** as many households will live in high quality transit opportunity areas **WITH** Plan

2012
2035 RTP

SCAG Costs and Benefits

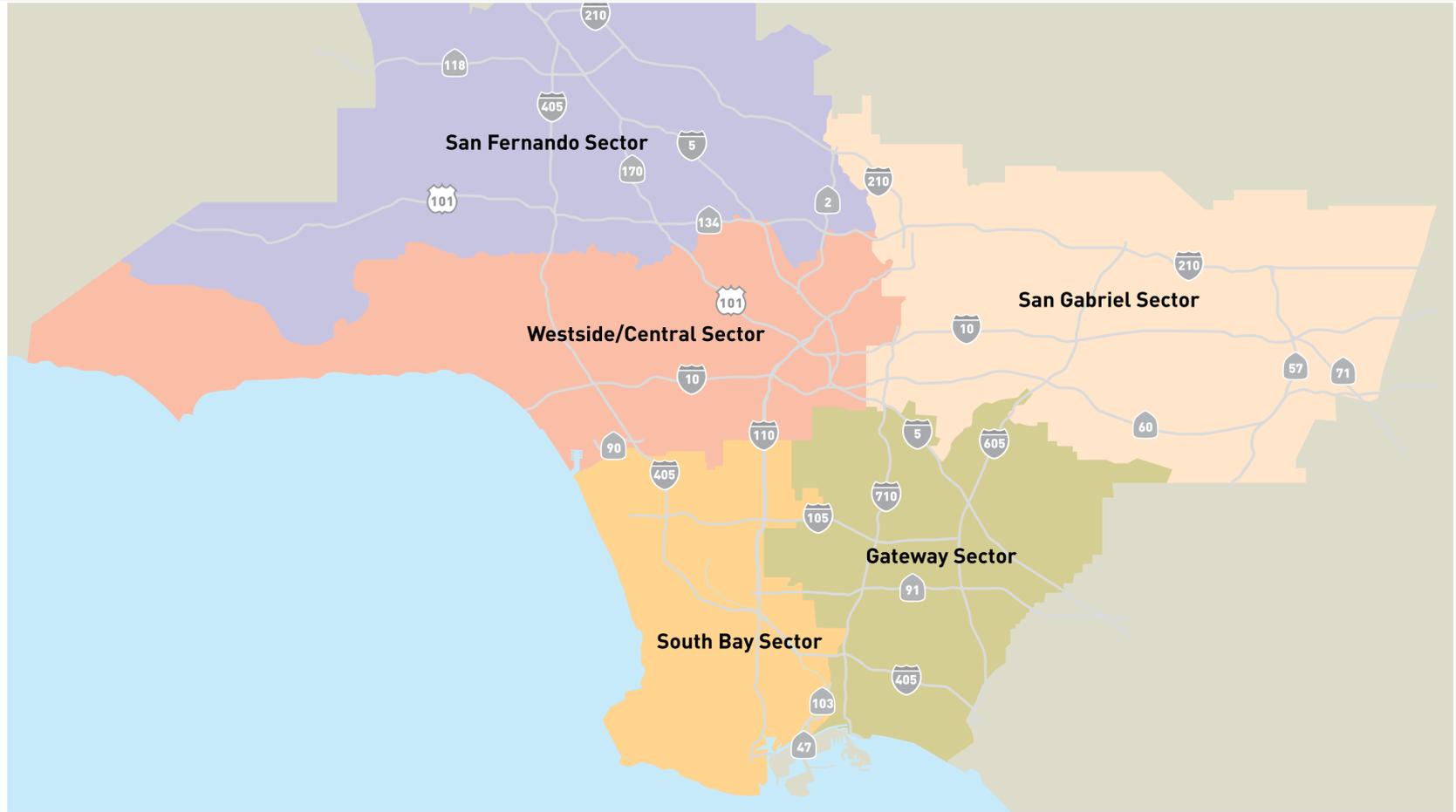
\$2.90 Return for Every \$1.00 Spent



Metropolitan Transit Authority



L.A. Regional Transit



Metro Green Goals

POLICIES

- Metro Environmental Policy
- Metro Energy and Sustainability Policy
- Metro Construction and Demolition Debris Recycling and Reuse Policy
- Metro Environmental Liabilities Reduction and Reporting Policy
- Metro Water Conservation Policy (Under Development)

BOARD DIRECTED INITIATIVES

- Metro Sustainability Ad Hoc Committee
- Metro Clean Air Task Force
- Metro Congestion Reduction Task Force
- Measure R Coordinating Committee



Environmental Choices

Metro's 3P's of Sustainability

People

Engage in fair and beneficial business practices toward labor, communities and the Greater Los Angeles region.

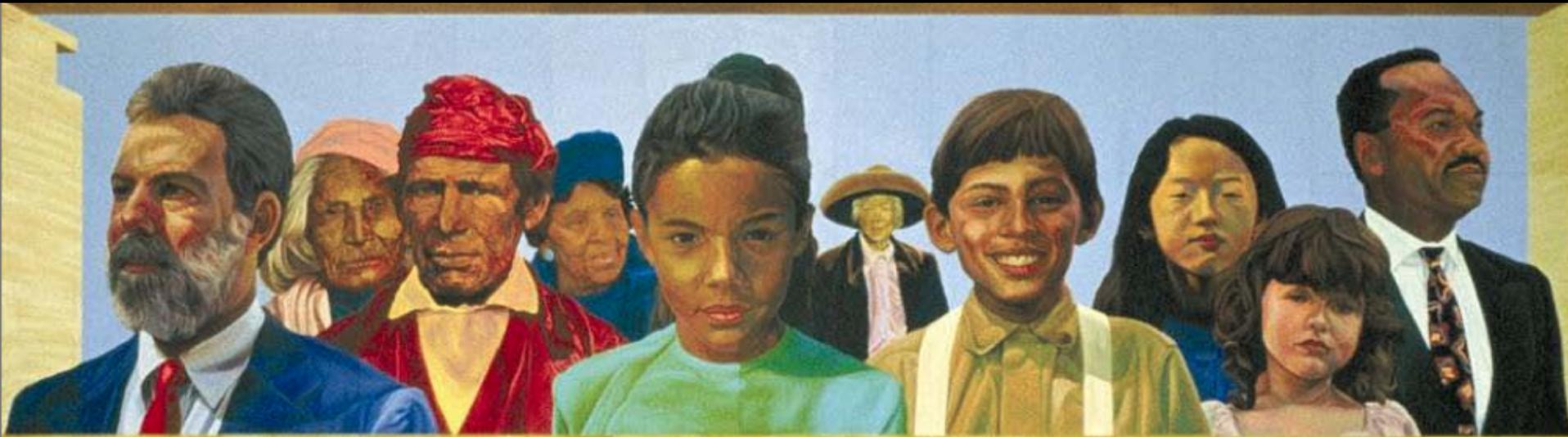
Planet

Identify, incorporate and encourage sustainable environmental practices.

Profit

Benefit the region through responsible steward-ship of public transportation planning and implementation.

Measure R, 5 years



- **Return \$3 billion into the local economy**
- **Create over 50,000 new jobs in Los Angeles County**
- **Move minimum of 40,000 more people per day onto public transportation**
- **Convert 30,000 more people per day into shared-rides (carpool/vanpool)**
- **Eliminate 500,000 metric tons of carbon-dioxide equivalents from our air**
- **Expand transit-oriented development along new rail and busway lines**

MTA Green Goals

- Transportation management includes a mix of fleet vehicles, public transportation and employee automotive management for parking, emissions control, etc.
- The Los Angeles County Metropolitan Transportation Authority (MTA) administers, constructs and operates the Metro system, the integrated transportation system for Los Angeles county. The Metro is comprised of:
 - Metro Rail - 400 miles of light rail, heavy rail and commuter rail lines in L.A. County by 2020.
 - Metro Bus - The MTA (formerly RTD) bus system, plus over one dozen municipal bus companies.
 - HOV Lanes - Carpools, vanpools and express buses.

Large Capital Projects



- Metro Gold Line Eastside Extension and Exposition Line
 - Integrated Multi-Modal Rail System
- Metro Orange Line Extension
 - Integrated Multi-Modal Busway System
 - Implementation of “LEED-like” sustainability principles
 - Explore the feasibility of renewable energy along the alignment
- Update Call for Project application to include sustainability criteria
 - Encourage use of “Green” principles and strategies

Metro



ANDREW NOVAK PHOTO

A sustainable LA?

- The diesel era in LA mass transit is over. In January 2011, Metro retired the last diesel bus from its fleet.
- Today, Metro boasts a fleet of 2,221 Compressed Natural Gas buses, plus
- six gasoline-electric hybrid buses and one electric bus.
- Compared with diesel buses, Metro's new CNG fleet reduces cancer-causing particulate matter by more than 80 percent.
- And because of the switch from diesel to CNG, Metro avoids emitting nearly 300,000 pounds of greenhouse gas emissions per day.

L.A. Regional Transit

Los Angeles Planning Dept Expo Line Station Visions

- The Expo Line presents opportunities for increased connectivity and economic development
- Compact, walkable transit-oriented development
 - 800 acres
 - Urban infill strategy
 - Opportunity sites and prototypes
 - Video fly-through visualizations
 - Detailed land-use scenarios
 - Regulatory changes



NABI Workhorse, 40'



ANDREW NOVAK PHOTO

NABI new model 45'



NABI 31' small bus



NABI 61' articulated



ANDREW NOVAK PHOTO

NABI new models



Andrew Novak Photo

Transit is Cool

