


THE CHICO DRAFT CLIMATE MOBILIZATION PLAN

A PATHWAY TOWARD A JUST CLIMATE TRANSITION


ABOUT ME: JOHN MITCHELL

- Navy submarine nuclear power plant operator
- B.Sc Nuclear Engineering, minor in Peace and Conflict Resolution Studies (PACS)
– University of California (Berkeley)
- Volunteer engineer for The Climate Mobilization to develop city and county level mitigation and climate resiliency policies
- Energy program evaluator for the State of California – 20 years
 - Emerging Technologies
 - Energy Efficiency
 - Water Conservation
 - Low-income Energy Assistance
- Professional reviewer of the U.N. IPCC Pathways to 1.5°C Special Report

PRINCIPLES, GOALS & THEMES

- Zero emissions at emergency speed in all sectors
 - Safe climate goals (late-Holocene pre-industrial climate)
 - Transportation, Energy & Food Democracy
 - Environmental & Economic Justice
 - Full employment
 - Equity
 - Re-localization
 - Phasing out extractive economy
 - Phasing in regenerative economy
- 

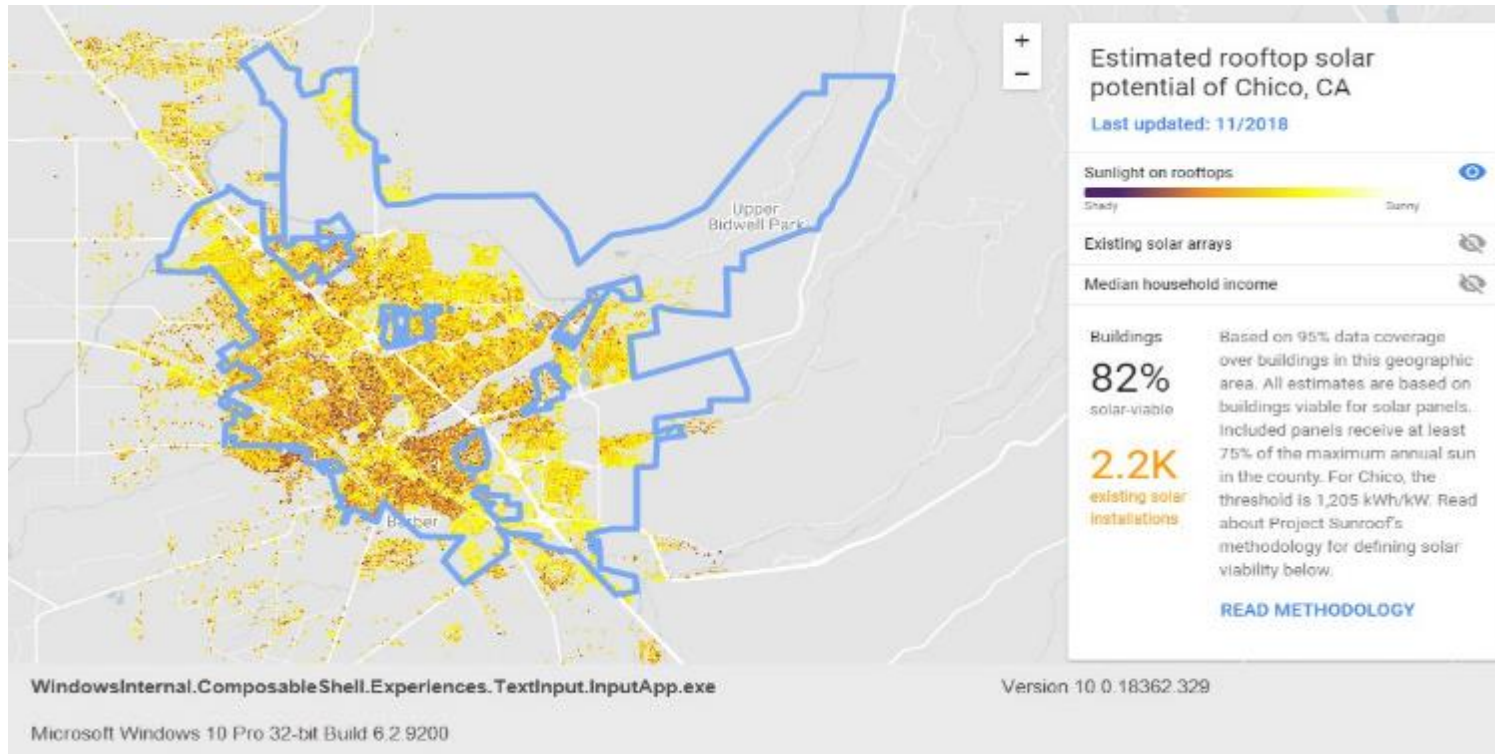
METHODOLOGY

- Determine regional location and generation potential for least-cost carbon free energy sources
 - Project total units of measures needed for complete electrification of Chico. (EVs, electric ranges, heat pump water heaters, etc.)
 - Determine total increase in demand from shifts to electrification for all fossil fuel uses
 - Determine Potential for comprehensive deep energy efficiency operations
 - Analyze production and demand curves to determine energy storage requirements to meet 24-hour demand with 10% buffer in both storage and generation
 - Include water conservation and food production activities to provide additional carbon reduction strategies on municipal and civic level
- 

MOBILIZING TO 100% RENEWABLE ELECTRICITY & ENERGY DEMOCRACY



298 MW OF NEW ROOFTOP SOLAR CAPACITY



Source: Project Sunroof data explorer (October 2019).

POLICIES FOR INCREASING SOLAR ADOPTION

- Development of standardized rooftop solar system configuration
 - Development of Time-of-Use/Time-of-Supply Residential and Small Commercial Feed in Tariff
 - On-Bill Financing
 - Bulk Purchase of Solar Equipment
 - Storage, Staging and Delivery of Solar Equipment for Installation
 - Comprehensive Jobs Training and Placement Program
 - Competitive Bidding for Program Delivery Vendors
 - Pre-Approved, Pre-Stamped Rooftop Solar Plans for Most Building Stock
 - Changes in City Building Codes for Solar Installations
 - City-owned Manufacturing Facilities for Solar Equipment
- 

256 MW OF NEW GRID-SCALE SOLAR FARMS

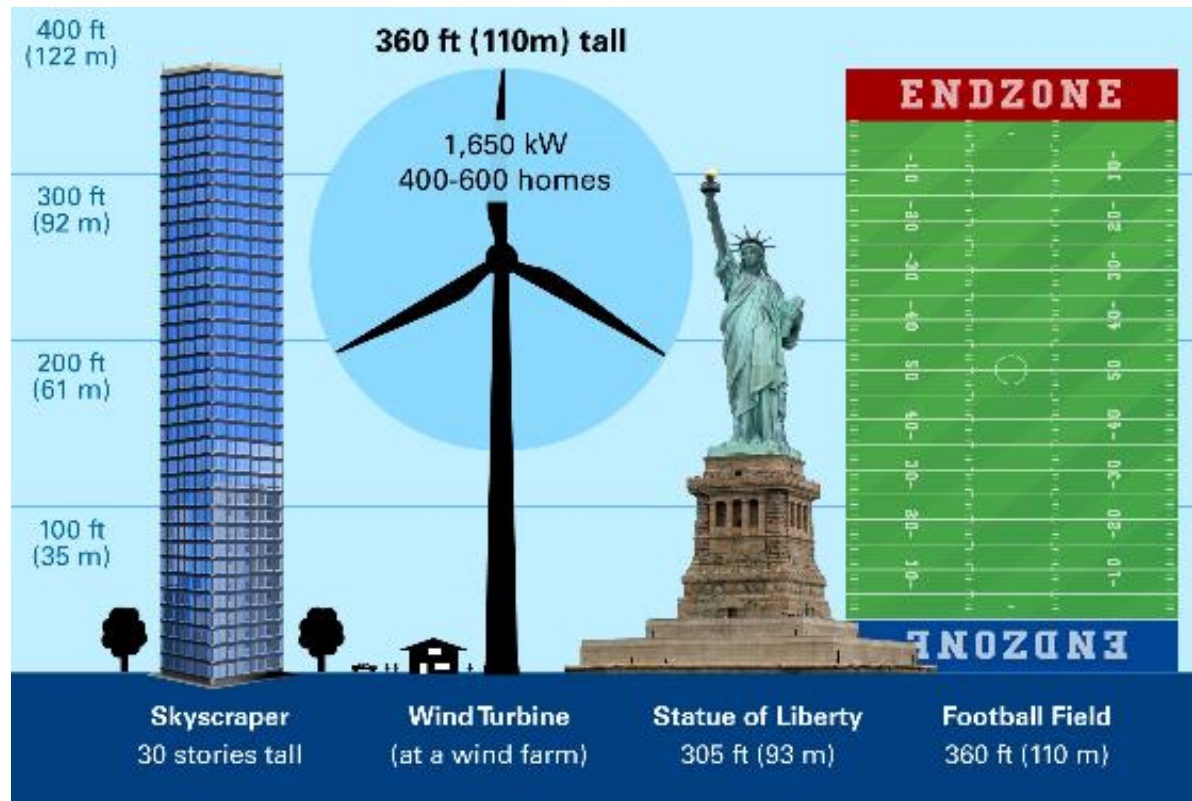


Pictured: California Flats Solar Project, Monterey County, California

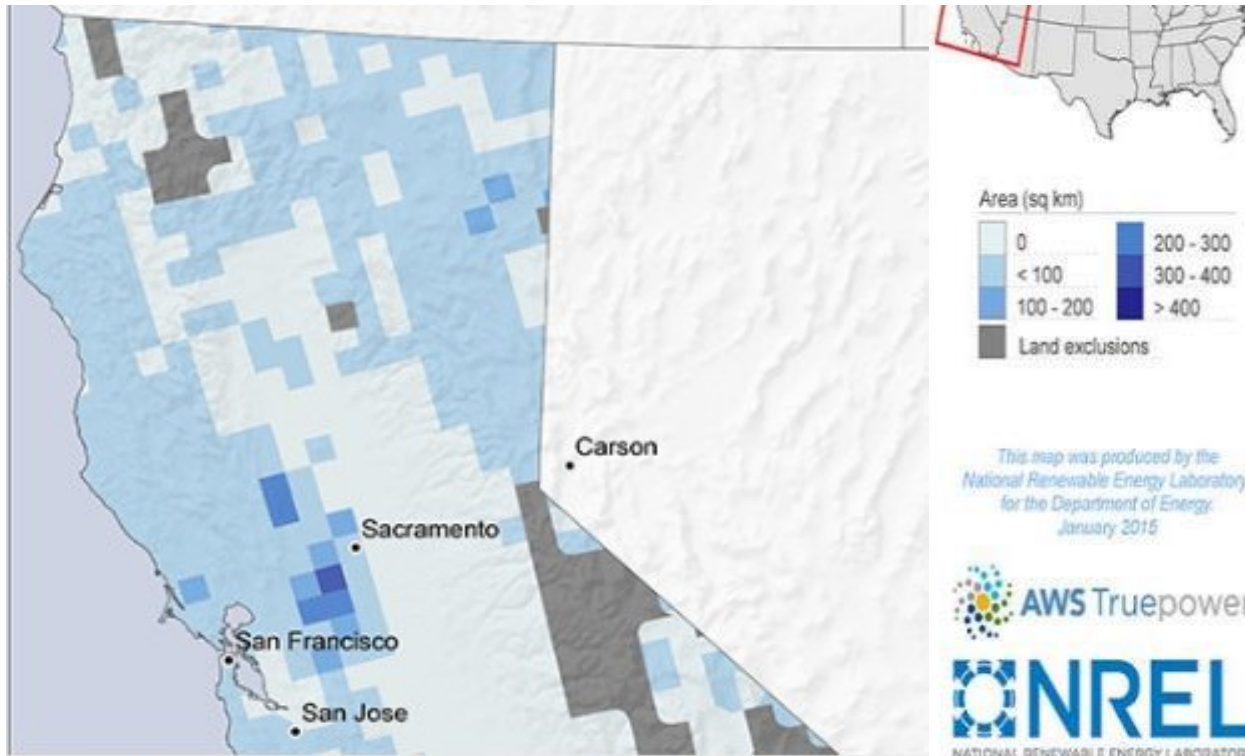
97 MW OF NEW WIND GENERATION



360-FOOT (110-METER) WIND TURBINES



BEST WIND RESOURCES IN DELTA AND NORTHERN SIERRAS



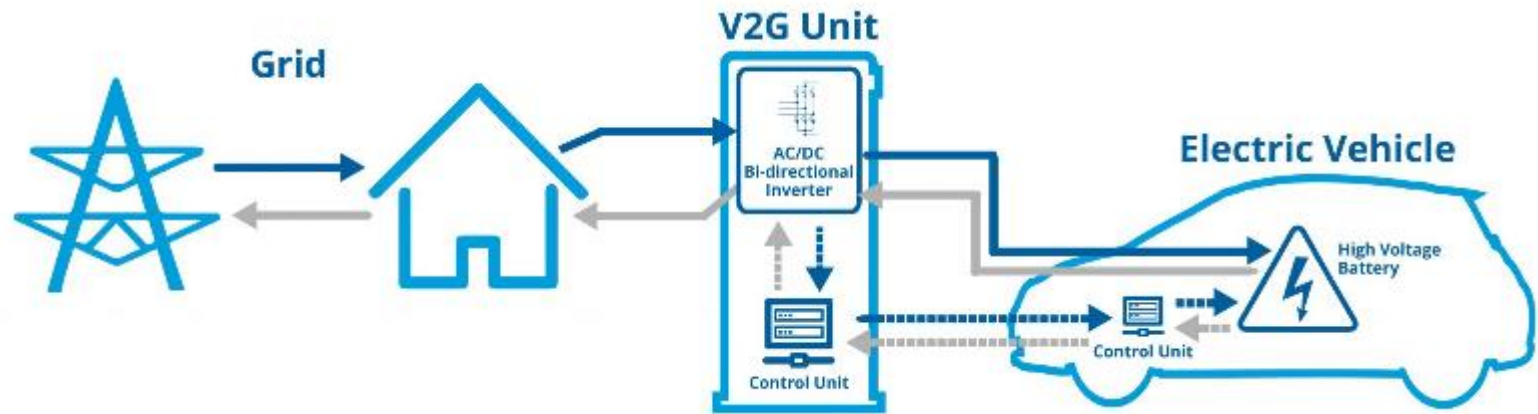
558 MWH OF LITHIUM ION BATTERY STORAGE




1.3 GWH DISTRIBUTED COMPRESSED AIR ENERGY STORAGE




120 MWH VEHICLE TO GRID DAILY STORAGE



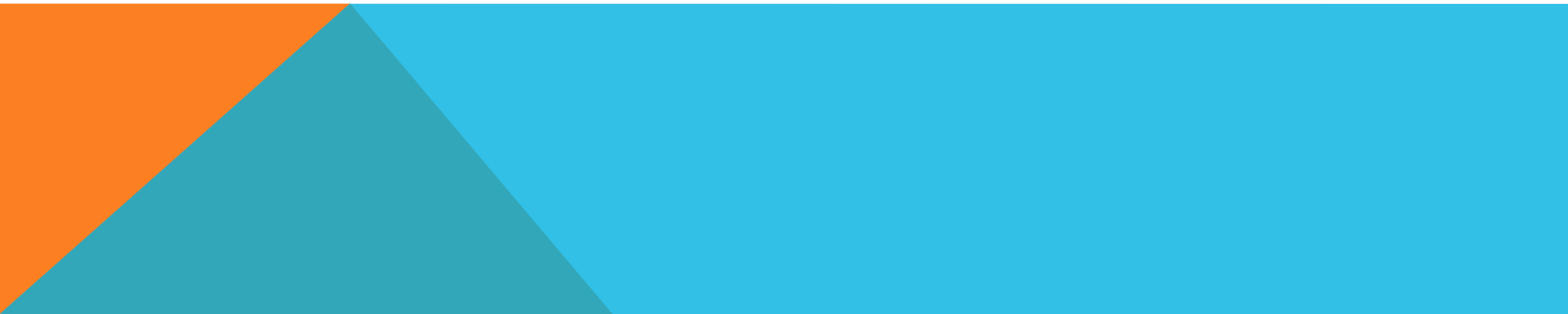
COMPREHENSIVE ENERGY EFFICIENCY RETROFIT PROGRAM

- Ceiling Insulation
 - Household Air and Duct Leakage Testing
 - Solar Powered Attic Ventilation Fans
 - Lighting
 - Heat Pump Water Heaters
 - High Efficiency Heat Pump Air Conditioner/Heating Systems
 - Efficient Refrigerator and Clothes Washer Replacement Program
- 

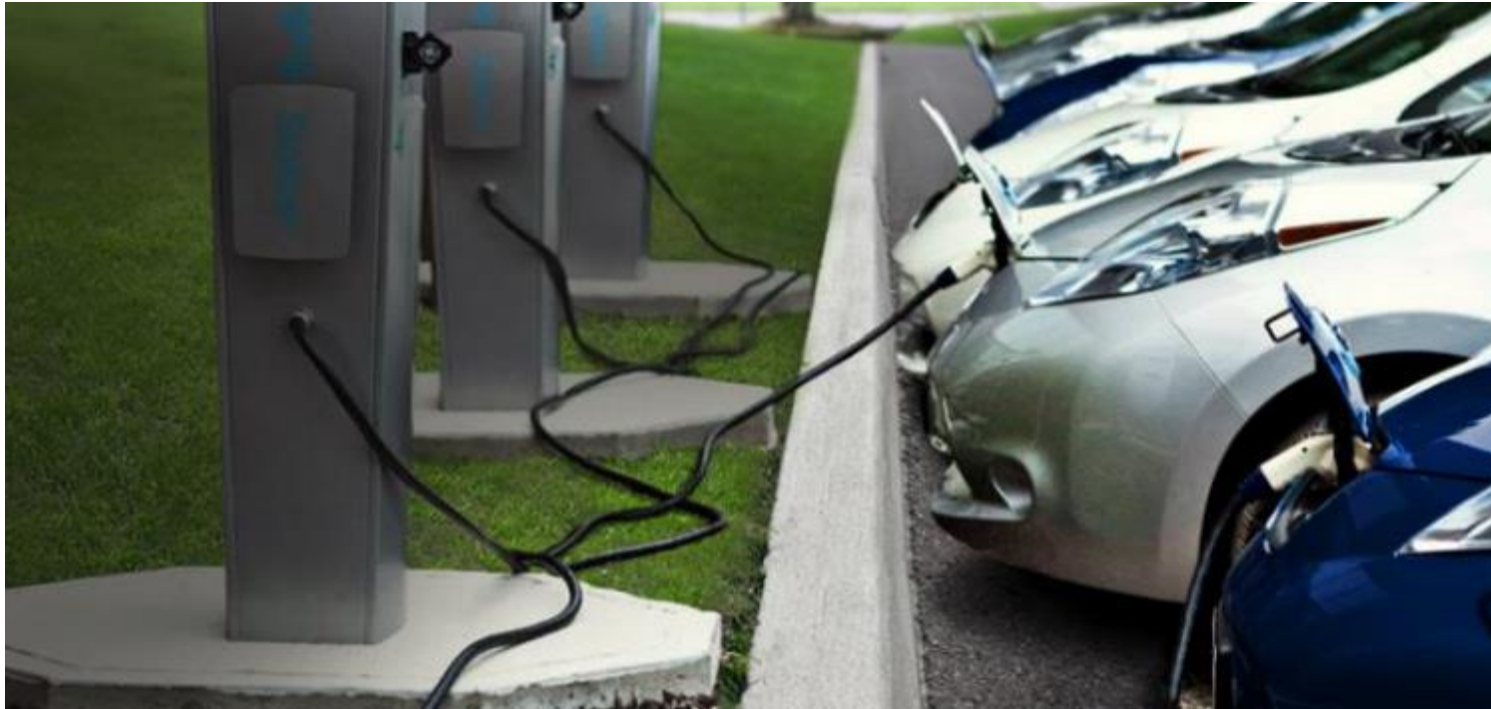
POLICIES FOR RETROFIT PROGRAM

- On-Bill Financing
 - Bulk Purchase of Retrofit Equipment
 - Comprehensive Jobs Training and Placement Program
 - Competitive Bidding for Program Delivery Vendors
 - Paper Recycling Feedstocks/Manufacturing of Attic/Wall Insulation
 - City-owned Manufacturing Facilities for Efficiency Program Measures
- 


ELECTRIFYING & DEMOCRATIZING TRANSPORTATION



28,000 NEW PLUG-IN ELECTRIC VEHICLES



POLICIES TO MAXIMIZE PERSONAL ELECTRIC VEHICLE OWNERSHIP IN CHICO

- **Negotiated Bulk Purchase Agreement with EV Suppliers**
 - **Municipal Utility Incentive for Purchase of Electric Vehicles with Free Charging System Provided through Efficiency Retrofit Program**
 - **Rooftop Solar Greatly Increases Rates of EV Adoption**
 - **Development of Concierge Operated Municipal Daytime Charging (Solar Canopy) Parking Lots**
 - **Development of Vibrant V2G System for EV Owners to Make Additional Income Through Vehicle Ownership**
 - **Guarantees of Used Vehicle Battery Purchase by City to Integrate into Residential Battery Storage Platform**
 - **City-owned Manufacturing Facilities for Electric Vehicles**
- 

4,200 FULLY AUTONOMOUS (AV-5) RIDE-SHARING PUBLIC TAXI FLEET



270 FULLY AUTONOMOUS (AV-5) REGIONAL SHUTTLES



COPENHAGEN-STYLE BIKE NETWORK



CONVERSION OF STREETS TO GREEN SPACE AND PUBLIC USE



FOOD DEMOCRACY & JUSTICE




MUNICIPAL COMPOSTING OF ALL FOOD WASTE



GREEN GARDENS DISTRIBUTED AGRICULTURE PROGRAM




LOCAL WATER CONSERVATION & PRODUCTION

- Comprehensive water conservation delivery program
 - Increased ground water recharge activities (reclamation and storm water)
 - Regional distribution of Green Gardens provides wetter, cooler environments
 - Use of grey water capture for irrigation where feasible
 - Widespread solar-powered atmospheric water capture recycles garden irrigation water for use in homes and gardens
- 

FINANCING STRATEGIES




MUNICIPAL BANKING

- Provides Local Control of Financing Mechanisms
 - Can be Paired with Current Efforts to Provide Transaction Services for Cannabis Sales
 - Allows for Local Divestment (Mortgages, Financial Services, Business Loans etc.)
 - Distributed Banking Services Removes “Banking Deserts”
 - Shuts Down Predatory Lending Activity
- 


STATE FINANCING

- The California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) could provide financing for large capital projects
- Eventual state-wide on-bill financing for energy efficiency and emissions reduction retrofits for homes and small commercial sector


BEST PRACTICES AND OTHER OPPORTUNITIES IN THE PLAN

- Electrification of Industrial Sector
 - Zero Emissions Municipal Equipment
 - Inductive Charging for Taxi and Shuttle Services
 - Park & Charge Concierge Operated Parking Lots to Facilitate V2G Program
 - “Made Green in Chico” National Label for Locally Manufactured Mobilization Products
 - Development of community-based commercial kitchen facilities, CSA delivery systems and vibrant distributed farmers markets
- 

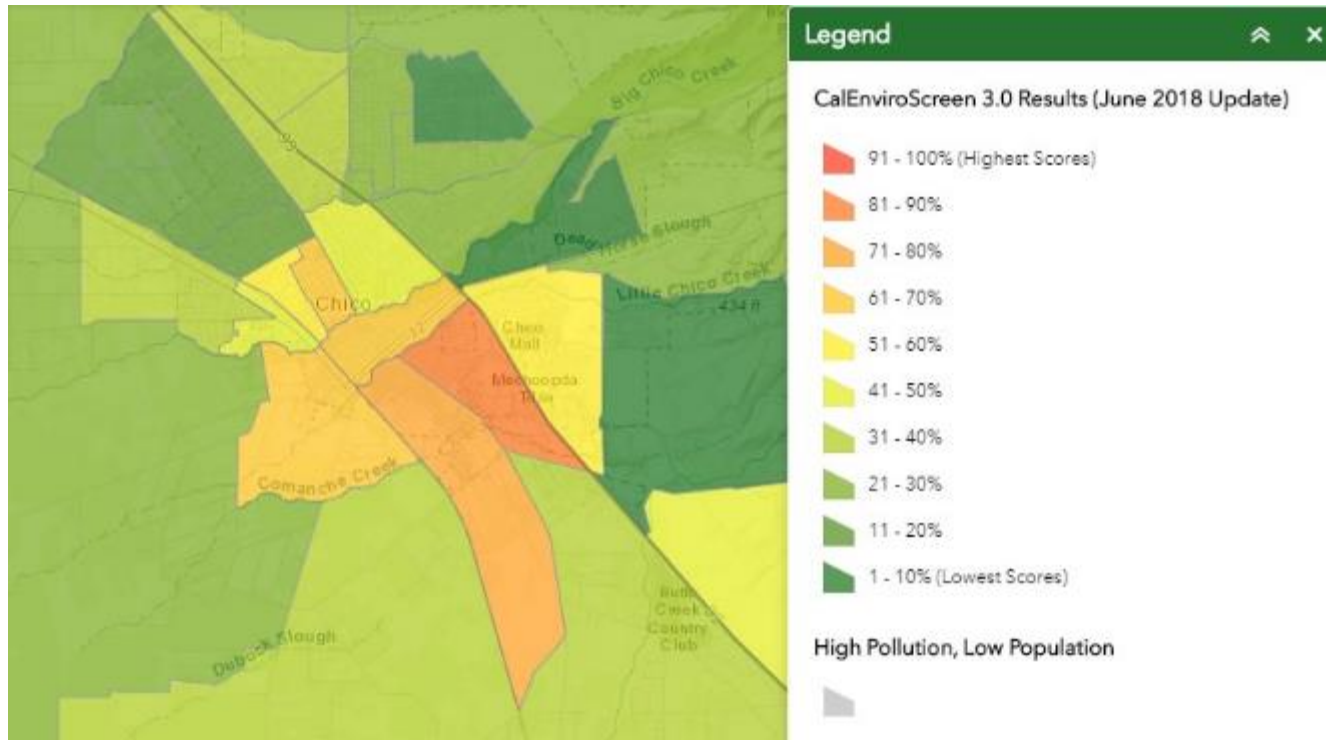
REGIONAL DISTRIBUTION OF PLAN BENEFITS

- Democratization of energy and transportation will produce a disproportionate effect on those communities that currently suffer under disparity
 - Economic gains from distributed agriculture program and availability of fresh produce will benefit those areas currently experiencing urban food deserts
 - New manufacturing could be sited at industrial and industrial mixed-use zoned areas when combined with a vibrant AEV shuttle system will allow ease of access to these new jobs
 - In-home and outdoor air quality and heat island reduction benefits will disproportionately benefit frontline communities who currently experience the worst of these impacts
 - Communities with greater needs for building stock retrofits will experience disproportionate increases in health, safety and comfort
 - Natural gas demand impacts will make regional oil and gas extraction unprofitable (carbon bubble)
- 

ECONOMIC JUSTICE BENEFITS

- Increased distributed employment opportunities within every community of Butte County
 - Development of community-based agriculture
 - Capture of economic outflows from communities in the form of fossil fuel and fossil fuel related expenses
 - Increased industrial (manufacturing) activity (trained workforce, transportation infrastructure and nationally recognized label attracts manufacturing in addition to mobilization facilities)
 - Access to low-cost and abundant transportation
- 

ENVIRONMENTAL JUSTICE OUTCOMES




IMPACTS ON THE EXTRACTION ECONOMY



NEXT PHASES OF IMPLEMENTATION PLAN

- Community adaptation and resiliency (i.e. cooling centers, low-cost resilient housing, extreme flooding events, sea level rise, wildfire prevention, extreme wind-events etc.)
- Drawdown of carbon dioxide – necessary to prevent catastrophic climate change impacts
- Expansion of city-scale activities to provide expertise and resource (manufacturing, labor) to regional and out-of-state communities who will follow LA's leadership

RECOMMENDED POLICIES OVER NEXT YEAR

- Engage with local community stakeholders to develop a fully-implementable mobilization plan
 - Develop guidelines for landlords and multi-family housing owners encouraging fixed-rate utility charges for tenants to facilitate sale of electricity generated from rooftop solar
 - Development of municipal green banking system
 - Development of time-of-use and time-of-supply electricity feed-in tariffs for residential and small commercial solar
 - Engage procurement and planning process for delivery of standardized rooftop solar and energy efficiency programs
 - Work with local universities and EV manufacturers to develop standardized equipment for a city-operated V2G pilot program
 - Identify feasibility timelines for development of autonomous EV dedicated lanes and street-level conversion of parking lanes to traffic lanes at critical traffic bottlenecks
- 

QUESTIONS?

