

# Local Planning to Reduce GHG Emissions

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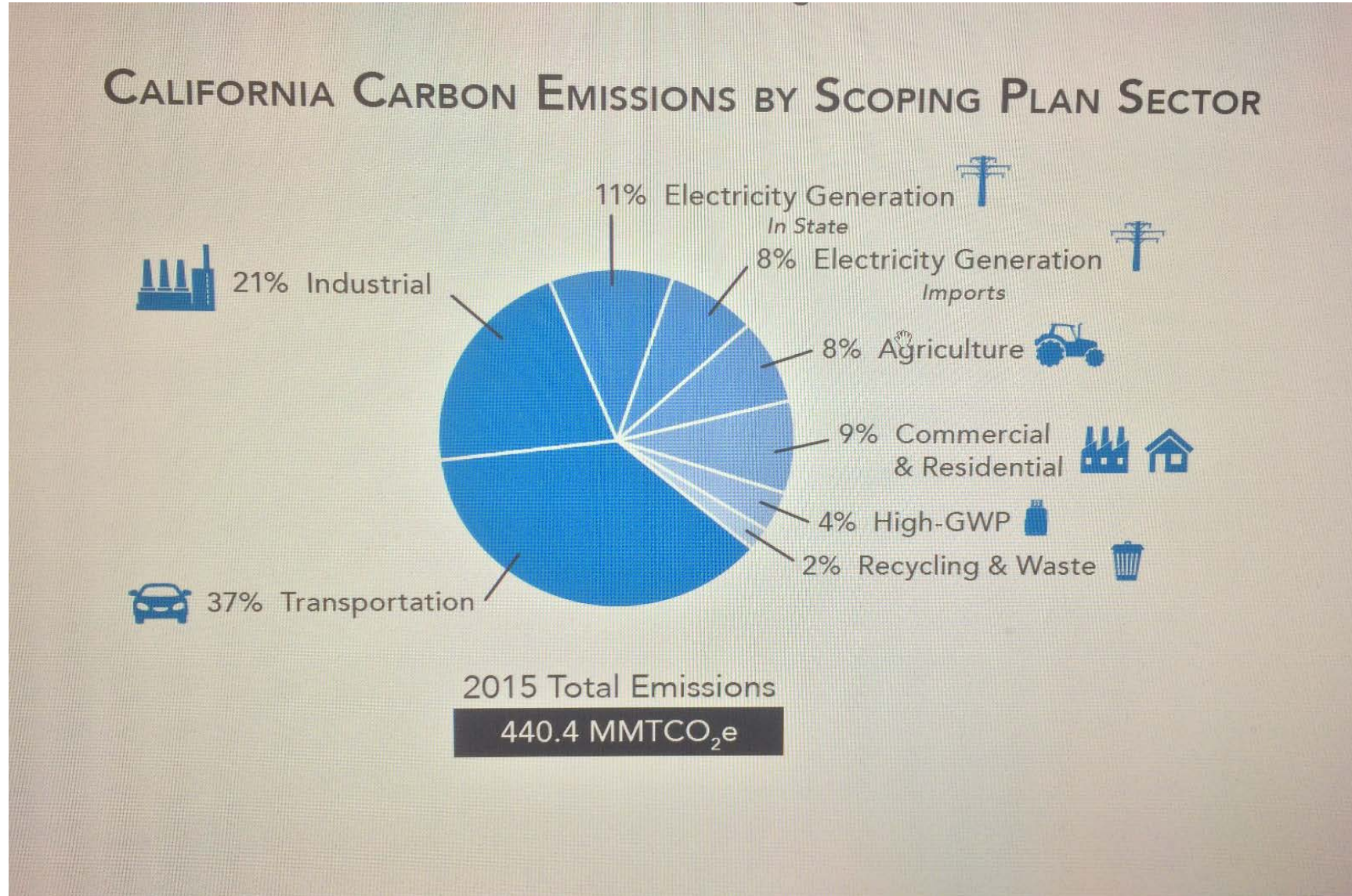


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# Greenhouse Gases and Climate Change

- Climate change is the existential problem of this generation
  - Since the industrial revolution, GHG emissions have risen exponentially
- Climate change happens naturally
  - The Pleistocene Era ended as climate warmed
  - Europe's 15<sup>th</sup> Century "little Ice Age" is a more recent, short-term example
- The difference NOW is that we've accelerated the cycle
  - Our civilization is based on burning things
  - Burning releases GHGs
  - Increased concentrations of GHGs in the atmosphere trap solar radiation
- The "greenhouse effect" raises global temperatures
  - Weather changes – wetter/drier, colder/warmer
  - Things melt – sea levels rise, deep ocean currents change

# Sources of GHG Emissions in California

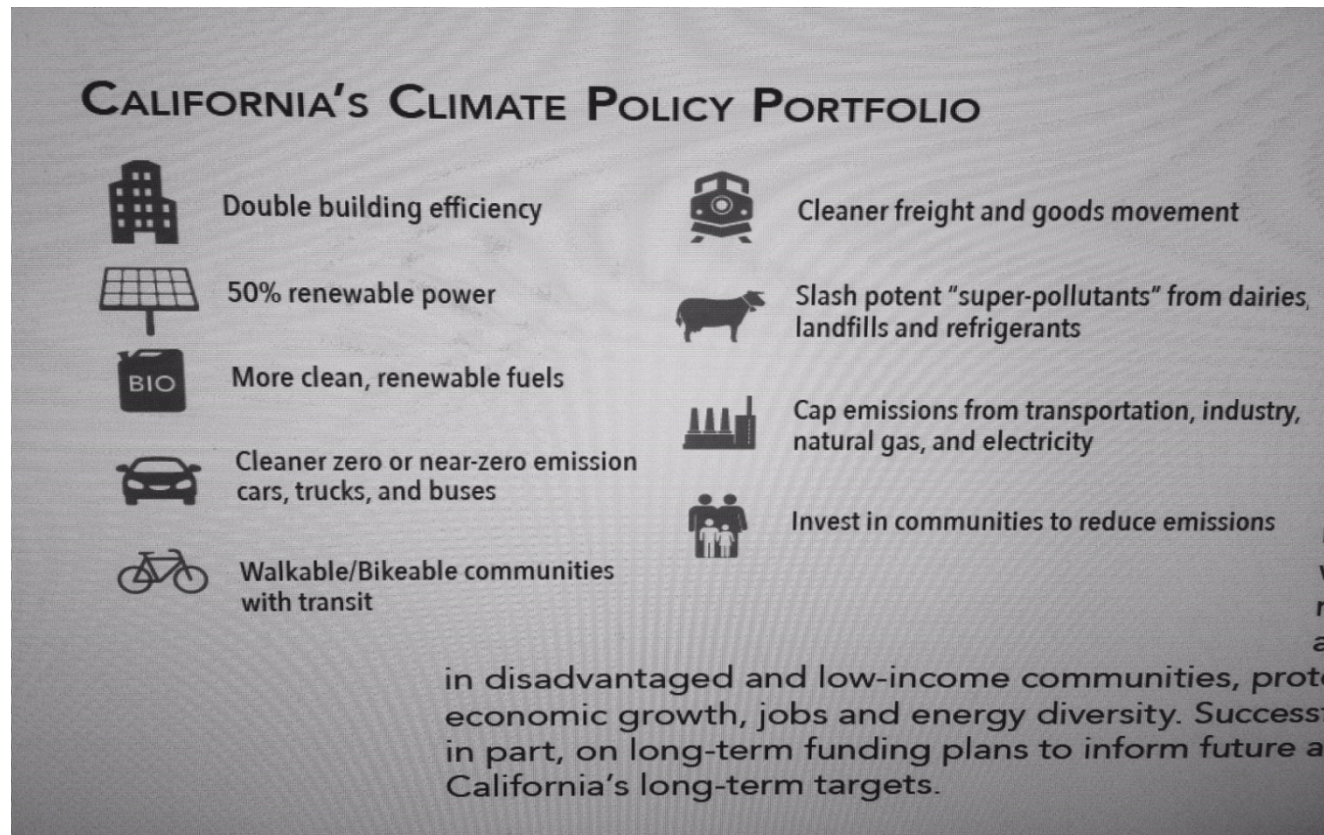


# What Can We Do?

- California has taken the initiative to reduce statewide emissions substantially over the next 30 years
  - Probably can't stop climate change, but may limit its effects
  - Global Target: 80% reduction below 1990 levels by 2050
- State initiatives (a few examples):
  - Energy-efficient building codes
  - Fuel-efficient automobile standards
  - Renewable Portfolio for energy producers
  - AB 32/SB 32 "Scoping Plan" and the 2030 reduction target (40% of 1990 emissions)

# Scoping Plan Comprehensive

- Although it focuses on state programs, the 2017 Scoping Plan takes a comprehensive view of GHG reduction



# Local Role

- California Environmental Quality Act (CEQA):
  - Lead agency must examine and mitigate project's GHG emissions, if significant
  - Agencies can adopt a “plan for the reduction of GHG emissions” to streamline their CEQA process
- Climate Action Plans (CAPs):
  - Some agencies have adopted CAPs to reduce agency emissions
  - Some CAPs are also a “plan for the reduction of GHG emissions”
- Land Use Planning:
  - Some agencies have adopted transportation and land use approaches to encourage alternative transportation modes



# CEQA

- GHG emissions can be a significant impact under CEQA
  - Would the project GHG emissions have a significant impact?
  - Would the project conflict with a plan or policy adopted for the purpose of reducing GHG emissions?
- CEQA analysis must address the project's GHG emissions
  - GHG emissions are a cumulative effect on the environment
  - Even a small incremental change can be significant
- Typical analysis quantifies project emissions and considers them in the context of statewide reduction targets
  - SB 32: 40% below 1990 levels by 2030
- A Mitigated Negative Declaration or EIR must include enforceable mitigation measures to reduce GHGs
  - On-site or off-site mitigation
  - Offsets are one form of mitigation

# CEQA: GHG Emissions Reduction Plan

- An optional jurisdiction-wide approach to CEQA analysis
- A “plan for the reduction of GHG emissions” can provide a threshold and standard mitigations for CEQA analyses
  - Quantify GHG emissions
  - Establish a level below which contributions to GHG emissions from the plan would not be cumulatively considerable
  - Identify and analyze GHG emissions resulting from specific actions
  - Specify measures and performance standards that, if implemented on a project-by-project basis, would collectively achieve specific emission levels
  - Establish a monitoring mechanism
  - Adopt through a public process, with environmental review
- Projects consistent with the plan are assumed to have less-than-significant GHG emissions



# CEQA: Common Mitigation Measures

- Energy conservation in building design (exceeding CBC)
- Water conservation in building design
- Water conserving landscape
- Rooftop solar
- Electric car charging station
- Bicycle and pedestrian facilities and connections
- Electric vehicles (e.g., port facilities, distribution centers)

# Climate Action Plans

- Local plan for reducing GHG emissions within the jurisdiction
  - Some focus on agency emissions
  - Some focus on private project emissions
  - Some do both
- Identifies specific actions that will be required for agency and private project activities
  - Energy efficient construction
  - Water efficiency
  - Electrification of vehicle fleet
  - Installation of solar panels
  - Bike parking at commercial establishments
  - Electricity-only new construction (no natural gas)
  - Etc.

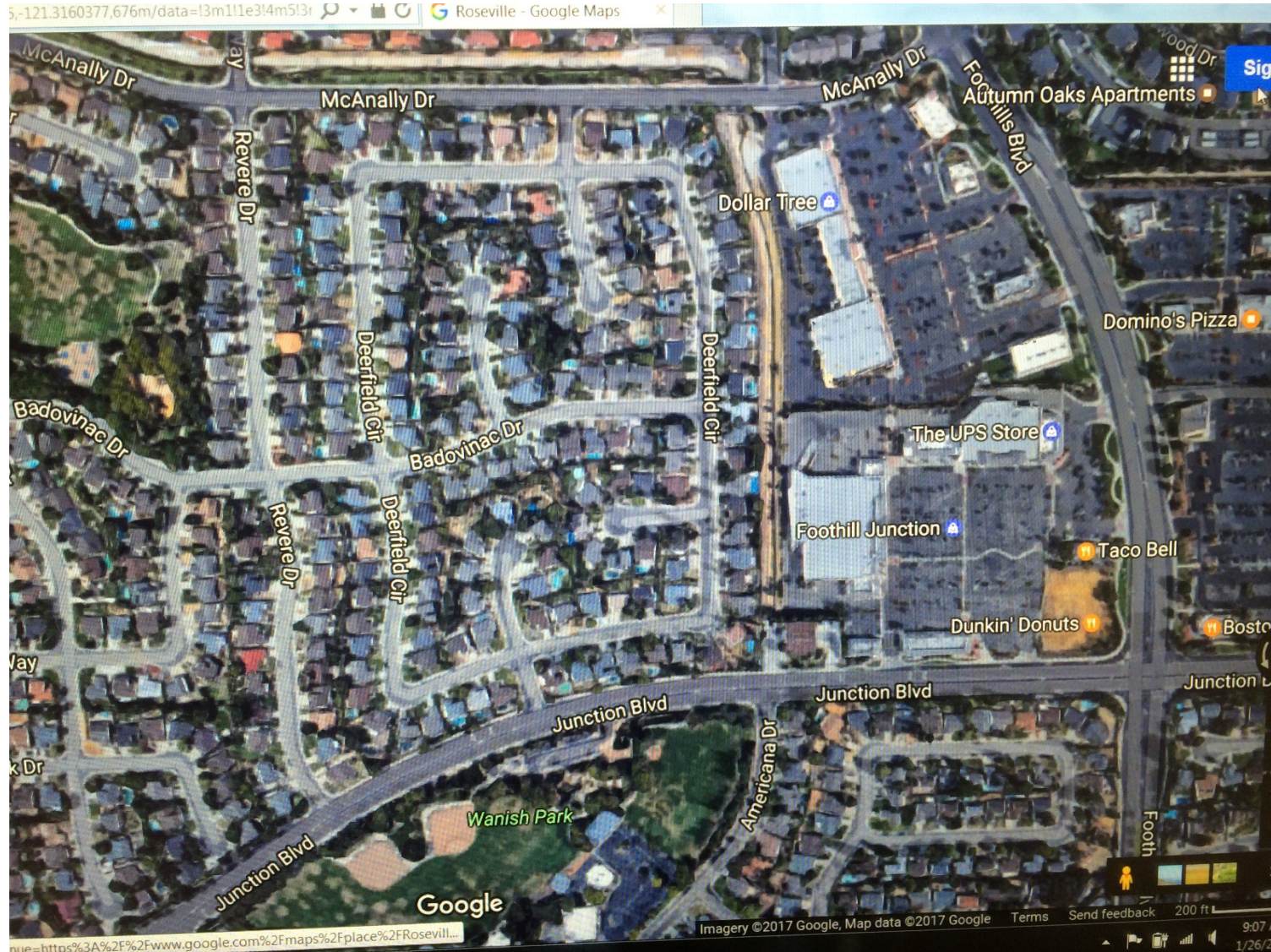
# Typical CAPs

- Quantify GHG emissions within the jurisdiction to some target date
  - 2030 is the norm now
- Set jurisdiction's GHG reduction targets by sector
  - Residential, commercial, public, etc.
- Identify jurisdiction's reduction policies, with expected reductions quantified
- Identify measures for individual projects
- Ideally, they also function as a CEQA "plan for the reduction of GHG emissions"

# Land Use Planning

- Reducing automobile use (VMTs)
  - Land use patterns that accommodate non-automobile trips – bike, walk, transit
  - Mixed use downtowns that accommodate housing and reduce trip distances
- Policies and design standards for development projects that reduce energy and water use. Examples:
  - Lot orientation for solar
  - Right-sized streets
  - Tree planting
  - Native/water-efficient landscaping
  - Efficient connections and mixed uses
- Road standards that make bicycling and walking safe and attractive
- Subdivision standards/review to implement policies

# “Old School” Land Use Pattern to Avoid



# Transportation: One Culprit in GHG Emissions

- 37% of CA's total GHG emissions come from the transportation sector
- Vehicle Miles Travelled (VMT) is the key indicator of emissions
- California's VMT increased 8% between 2006 – 2017 and is projected to increase in the future (Calif Transportation Commission)
- Reducing the GHG share from the transportation sector requires reducing statewide VMT



# Focusing on Vehicle GHG Emissions

- Less driving = less fuel use and fewer GHG emissions
  - This takes commitment to alternative transportation modes
  - And a change in expectations for trip convenience
- Countervailing forces:
  - Urban sprawl increases VMT (longer commute trips offset fuel efficiency)
  - Electric power plants emit GHGs, so increased use of ZEVs doesn't eliminate GHG emissions from transportation
  - Shared vehicles (Transportation Network Cos: Uber, Lyft, etc) are increasing VMT
    - 47% of VMT increase (2010 – 2016) in San Francisco is from TNCs
  - Autonomous vehicles may increase total vehicles on the roads
    - One estimate: 35% increase for personal AVs; 90% increase for single-passenger AV taxis
    - *Autonomous Vehicles: Hype and Potential* <https://urbanland.uli.org/industry-sectors/infrastructure-transit/autonomous-vehicles-hype-potential/>

# Local VMT Reduction Efforts

- CEQA: VMT is now the metric for transportation impacts
  - High VMT must be mitigated when feasible
- CAP components:
  - Enforceable requirements to reduce GHGs from new projects
- Planning: Improved connectivity in land use patterns
  - Making it easier to walk or bike to close destinations
  - More and safer bike lanes; protected pedestrian crossings
  - Transit accommodations



# VMT Mitigation Under CEQA

- Mitigation measures must be feasible and enforceable
  - Conditions of approval
  - Plan policies
- Common mitigation measures
  - Incorporate bike and pedestrian friendly design
  - Provide convenient bike parking
  - Limit parking supply
  - Subsidize resident car-sharing or bike-sharing programs
  - Improve access to transit

# The Wrong Way to do the Right Thing



Pretty, but hard to use. Where does the lock go?



Escaped scooters blocking the sidewalk.

# Additional VMT Reduction Efforts

- Increased public transportation funding
  - More buses, bus rapid transit, and transit apps make it easier to ride
  - Single-fare across public system providers improves convenience
- Commuter rail (SMART, CalTrain, etc.)
  - Alternatives for the long-distance commuter
  - Challenges remain in “last mile” connections
- Bike sharing networks
  - Increasing bike/scooter use for short distance trips



## Wrap Up