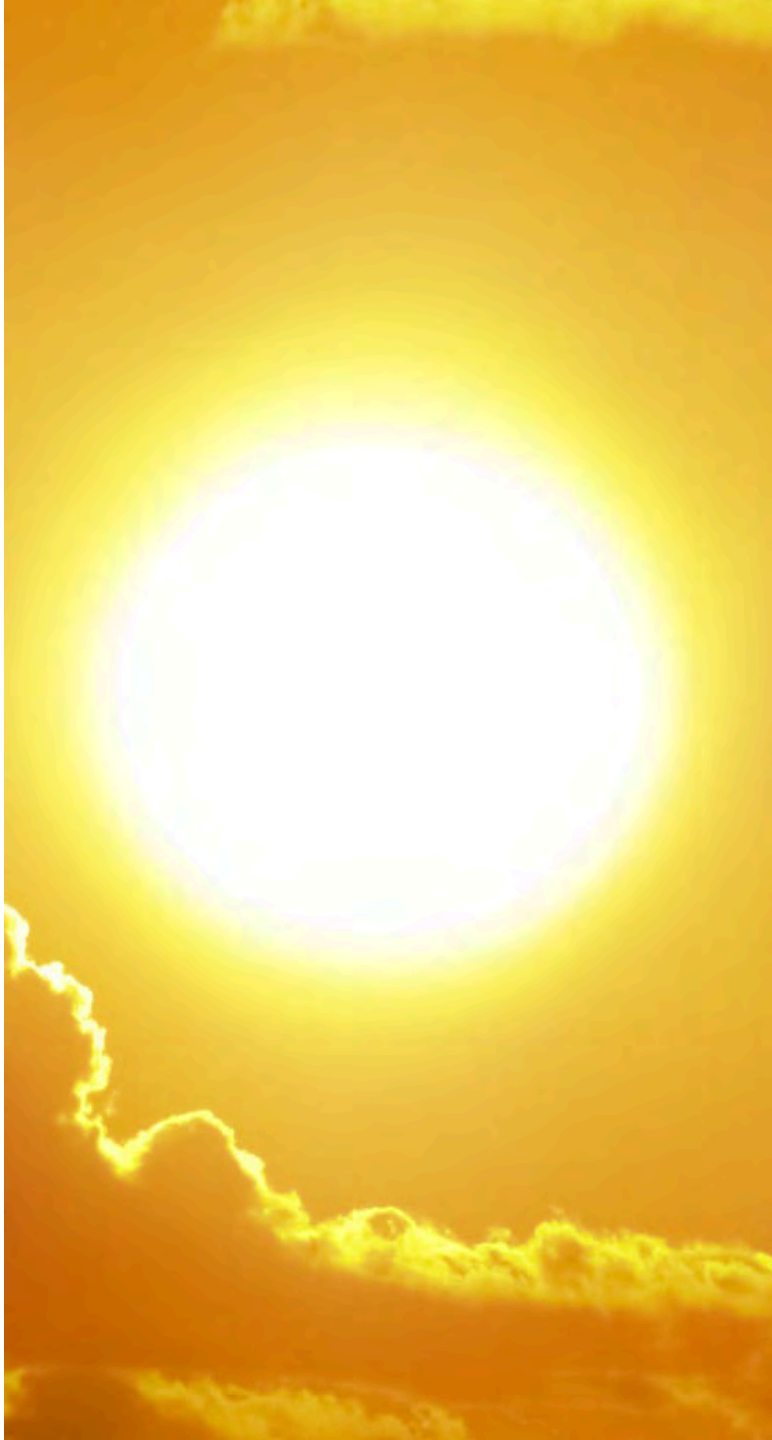
WELCOME TO THE COUNTY CLIMATE ACTION PLAN WORKSHOP

February 12, 2020

Agenda

6:00 pm	Welcome
6:05 pm	Presentation
6:30 pm	Breakout Group Discussions
7:10 pm	Breakout Group Report-outs
7:50 pm	Close

- 2019 was the second hottest year on record
- Last 5 years have been the warmest of the last 140 years
- Average global temperature now 2˚F (1.1˚C) above pre-industrial levels
- CO_2 now 415 ppm



In Marin County…

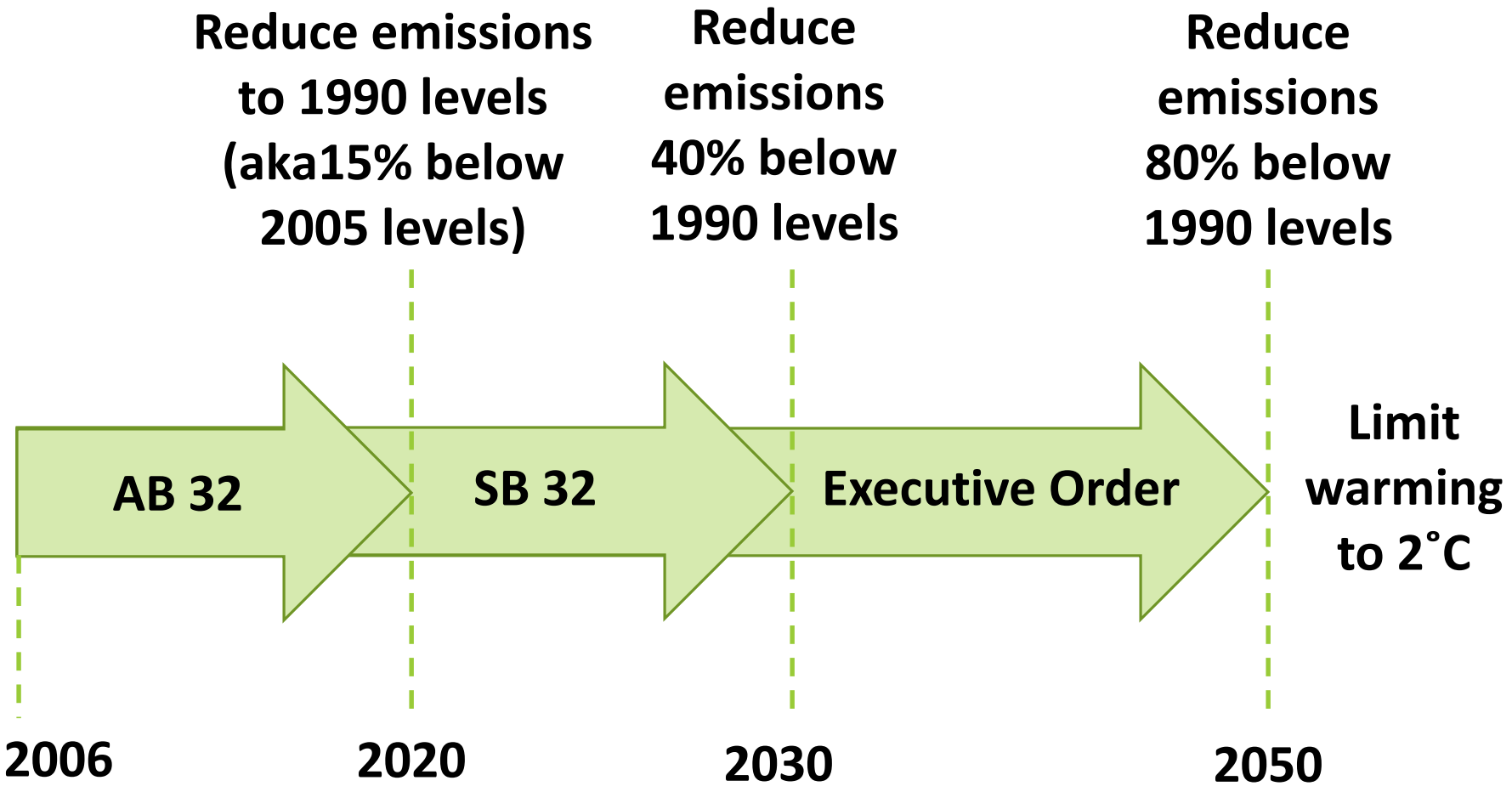
- Average maximum temperature will increase from 69˚F to 76˚F by 2100 under the high emissions scenario
- Extreme heat days projected to increase from 4 per year to 12

- Average acres burned increases 53% by 2100

- Average annual rainfall increases from 34 inches to 44 inches
- Extreme precipitation events will increase by 40% by 2100

- Sea level has already risen 8” and Marin experiences flooding during king tides
- Sea level is likely to rise 1.6 to 3.4 feet by 2100
- Could rise by more than 10 feet

Statewide GHG Reduction Goals



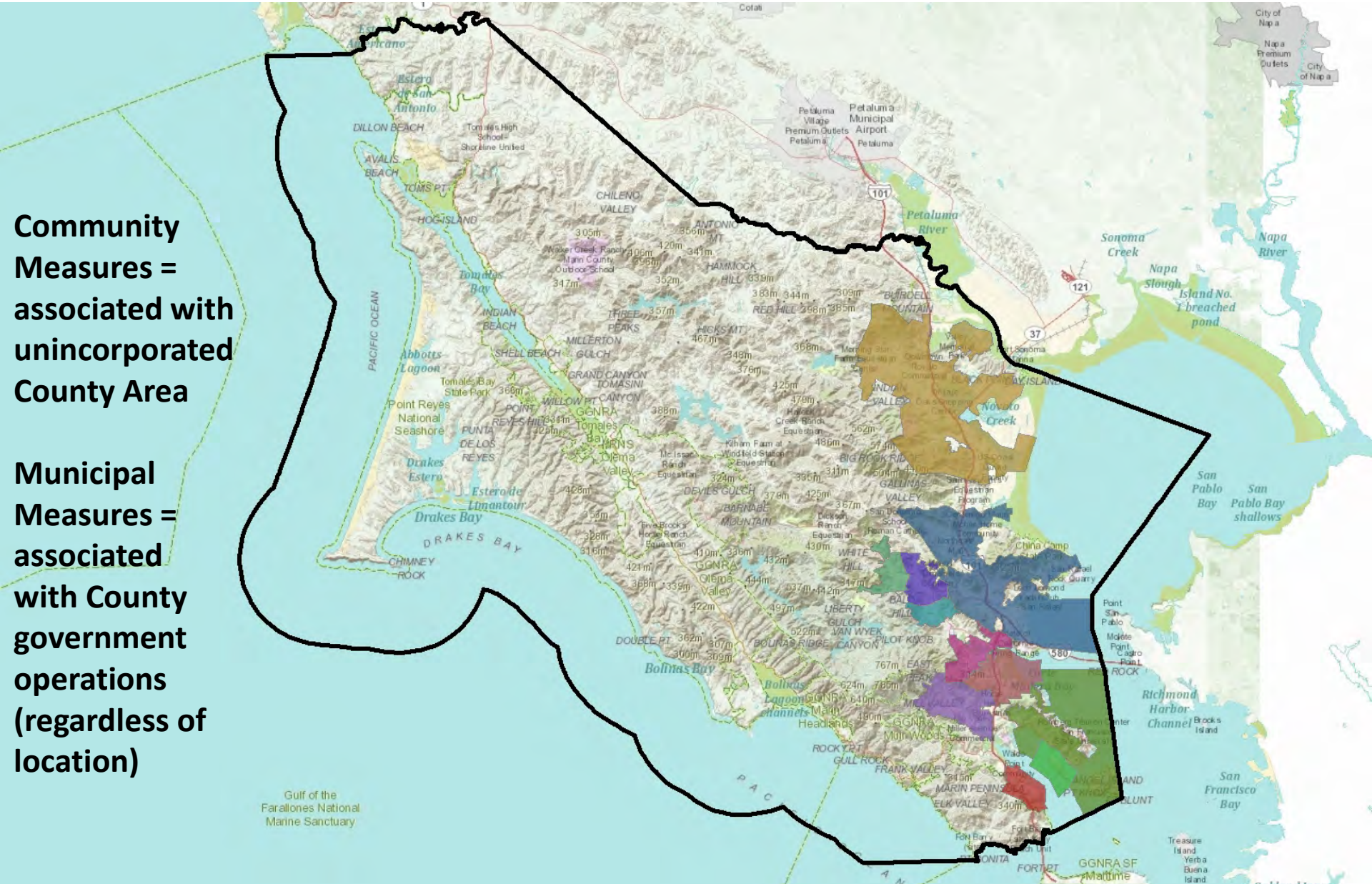
County's Early Efforts

- First to adopt a GHG Reduction Plan in 2006 (for unincorporated area)
- First to include sustainability and climate change in the General Plan in 2007
- Reduced emissions 15% below 1990 levels by 2012
- Updated plan in 2015 to address 2020 targets

County Climate Action Plan

Community Measures = associated with unincorporated County Area

Municipal Measures = associated with County government operations (regardless of location)



County Climate Action Plan

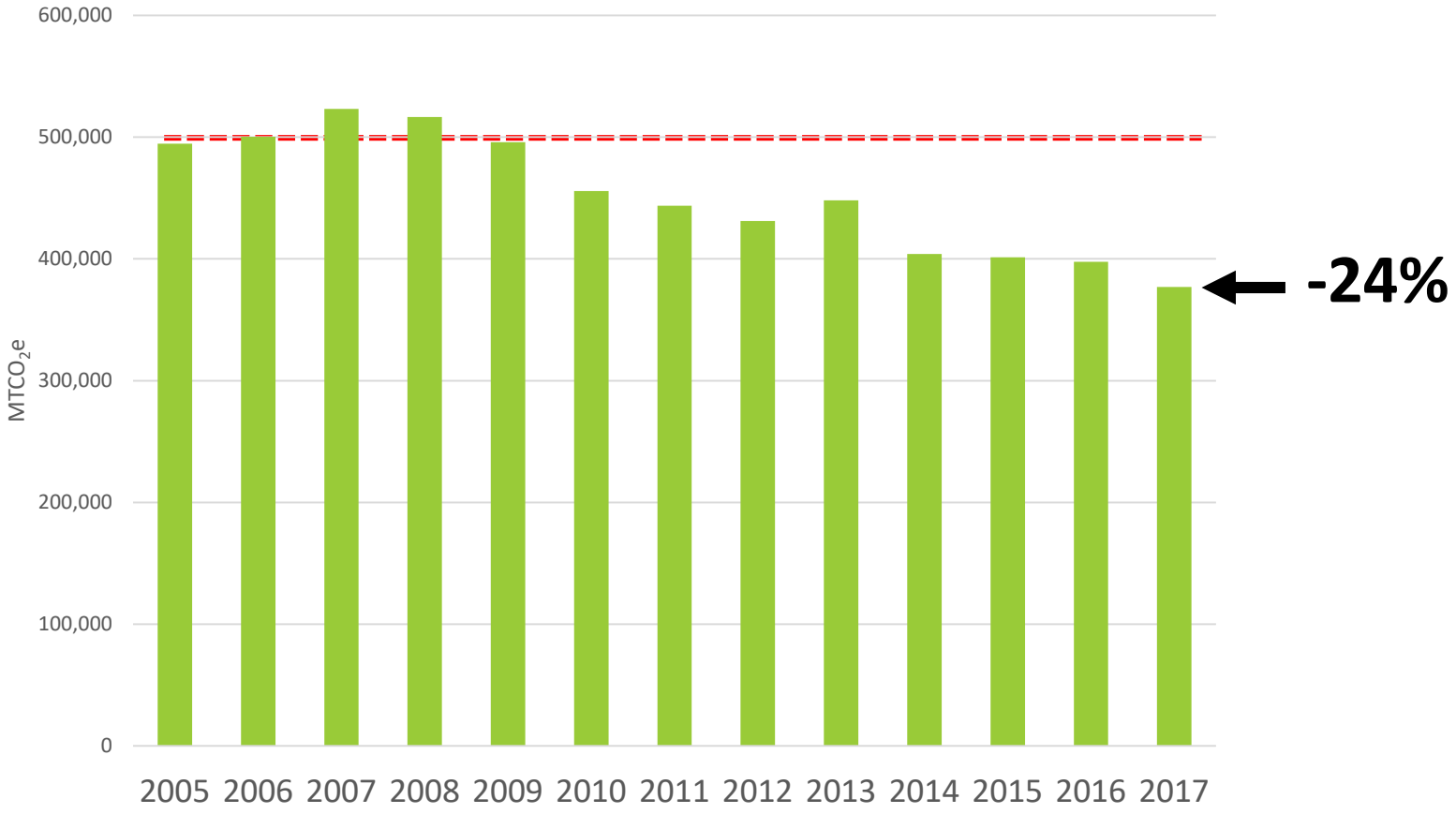
- Goal to reduce emissions 30% below 1990 levels
- 23 community measures and 29 government measures
- Most implemented and some overperformed targets

Goal	Actual
Increase Deep Green participation to 5%	12.5%
Install 20 new EV stations	66
Reduce per capita water use 20%	Exceeded
Install solar on 20% of residential buildings and 15% of commercial buildings	About 6%
Divert 83% of waste from landfill	66%

Drawdown: Marin

- Launched in 2017 – Marin County Board of Supervisors adopted a resolution
- September 2018 – present: launch of 6 working groups designing solutions; 17 solutions so far and 2 have been “preliminarily endorsed” by the Drawdown Steering Committee
- These solutions could end up as CAP solutions; example solutions:
  - Drive Clean Marin
  - Marin Carbon Farming Initiative
  - Biochar Tree Planting Pilot (as part of Biomass Study)
  - Electric Mobility Hub at Larkspur Ferry Terminal
  - Blue Carbon Pilot Project – Carbon Sequestration Potential of Seaweed

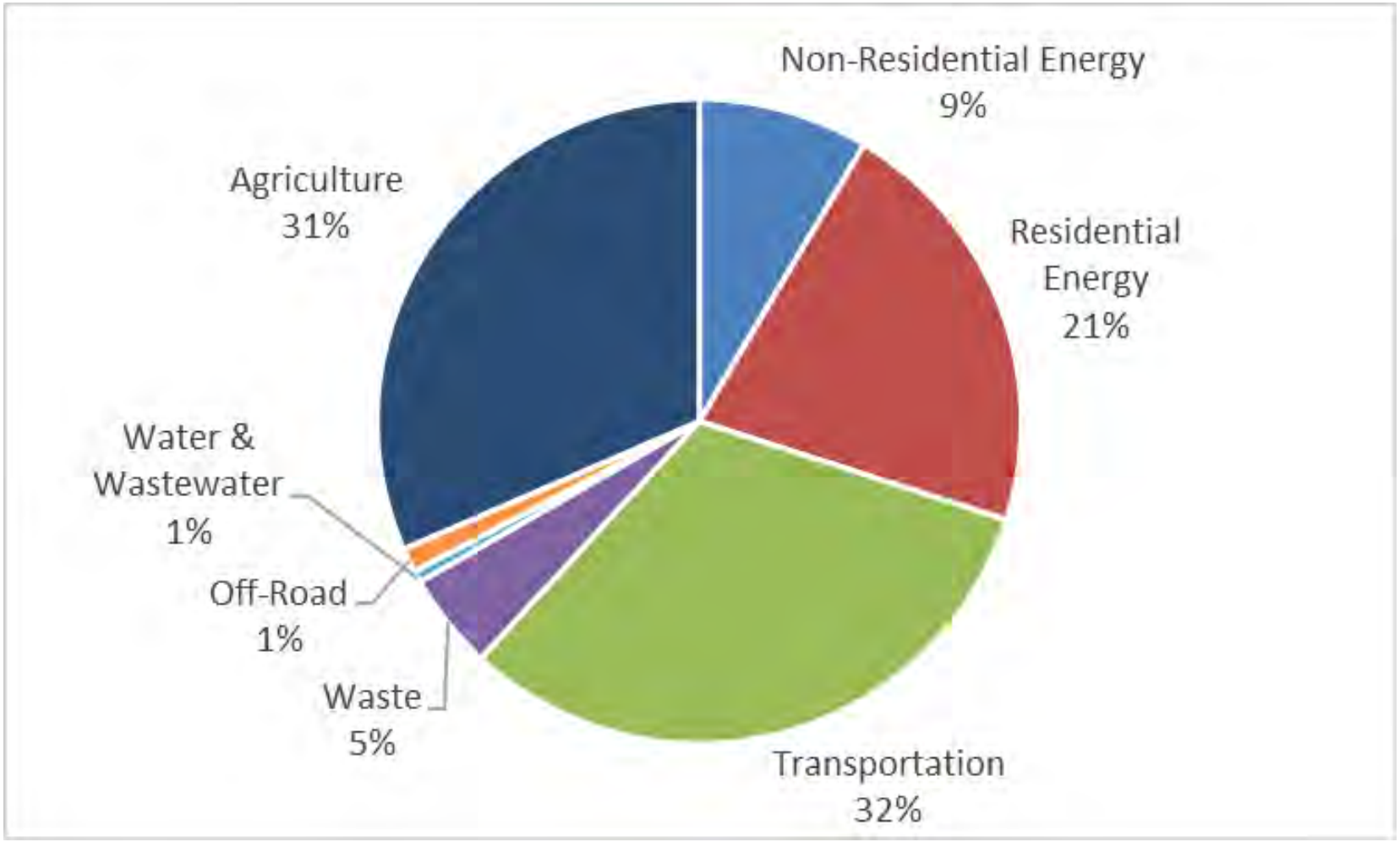
Trend in Unincorporated County Community Emissions



CAP Requirements

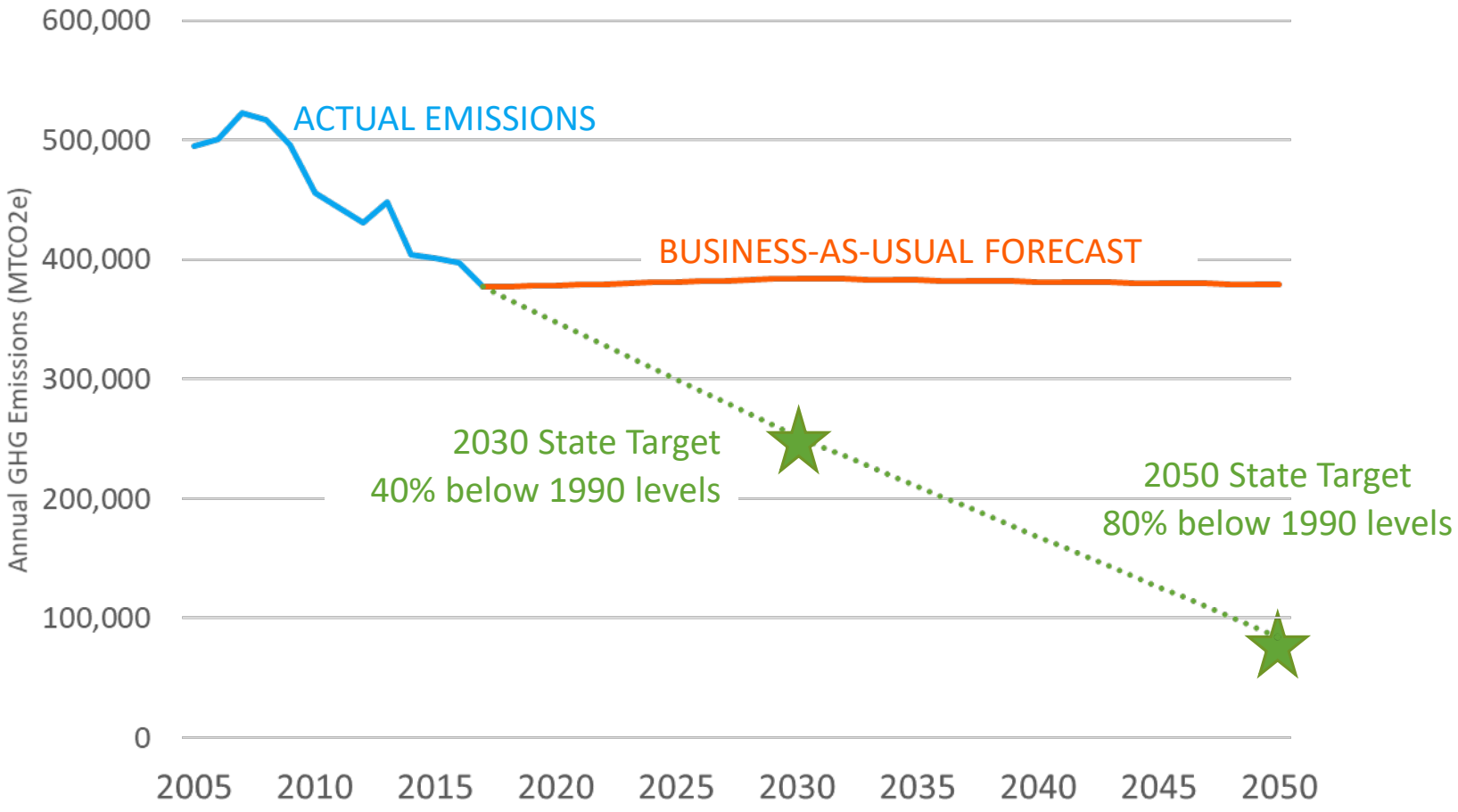
1. Quantify emissions for area under jurisdiction
2. Forecast emissions under a “business-as-usual” scenario for a target year
3. Set a goal
4. Identify State actions that will reduce emissions
5. Identify local actions to meet goal

Unincorporated Area Emissions by Sector, 2017



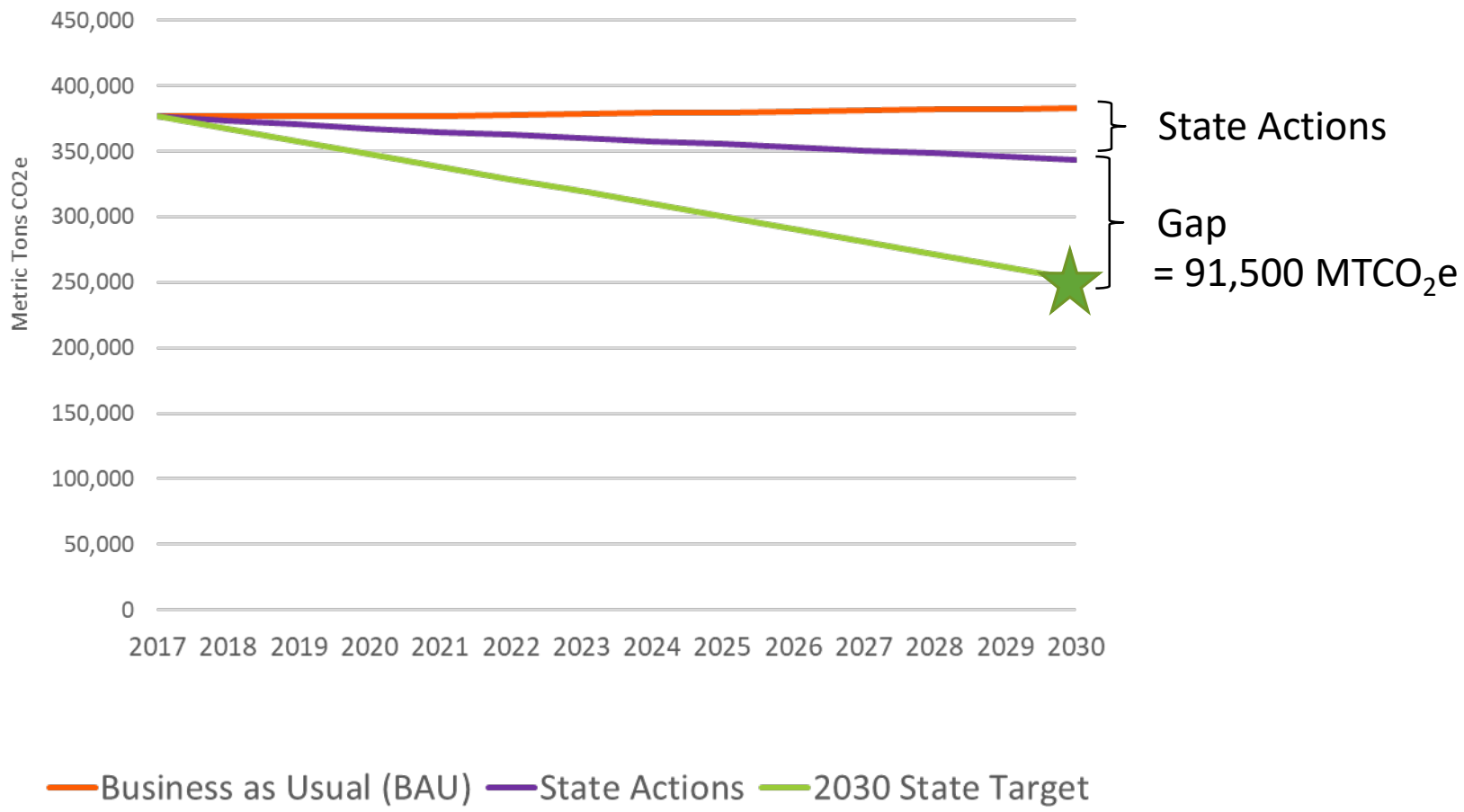
376,900 $MTCO_2e$

Emissions Trend, BAU Forecast and Reduction Targets



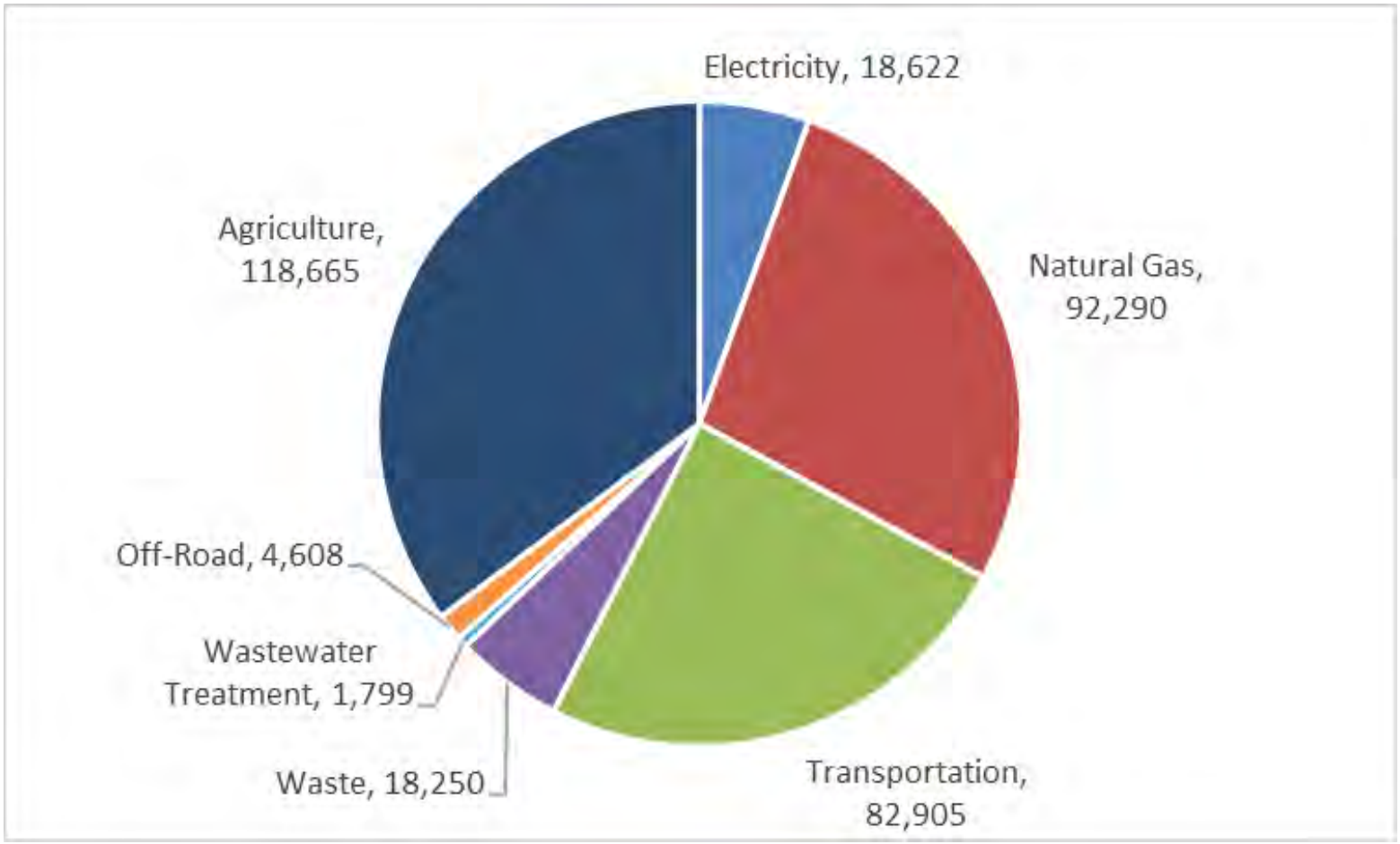
For unincorporated area only

Gap Analysis



For unincorporated area only

Where are the Opportunities to Reduce Unincorporated Area Emissions on the Local Level?



Gap is 91,500 $MTCO_2e$

Renewable Energy

- MCE's goal is to be 100% GHG-free
- State law requires 60% of electricity to come from renewable sources by 2030
- Solar installation growing at about 15% annually countywide
- State law requires new homes to install solar
- Opportunity to convert natural gas appliances and systems to renewable electricity
- County's reach code and Electrify Marin program

Energy Efficiency

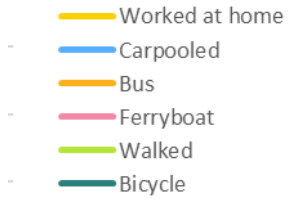
- State building codes ratchet up energy efficiency requirements every 3 years
- County's reach code increases EE requirement 10-30% for buildings that use natural gas
- EE programs (rebates, audits, technical assistance, financing)
- LEDs
- Opportunity to improve efficiency of existing buildings

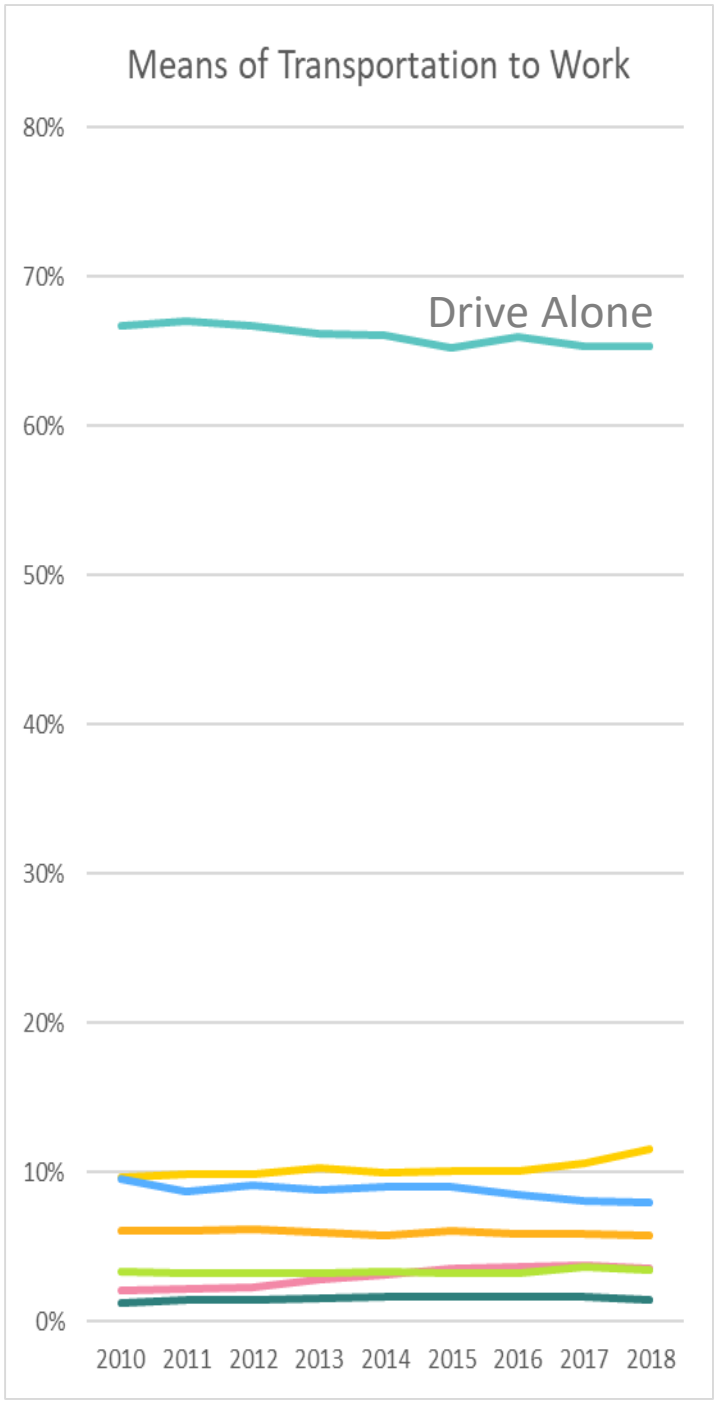
Transportation

- About 4% of autos registered in Marin are EVs
- State's goal is 5 million EVs by 2030, about 13% of registered vehicles
- Marin has 2nd highest EV rate in the state
- County has installed 66 EV chargers
- 297 public EV chargers installed countywide as of December 2019
- Rebates and technical assistance

Transportation

- Not much change in commute modes
  - Drive Alone down 2%
  - Work At Home up 2%
  - Carpool down 2%
  - Ferry up 2%
- Businesses with 50+ employees must offer TDM programs
- Local programs to encourage carpools, vanpools, transit, biking and walking such as Marin Commutes





Waste

- Total landfilled waste is down 20% since 2005
- State's goal is to divert 75% of organic material and recover 20% of edible food by 2025.
- State law requires businesses to have organic waste recycling service, 65% of construction and demolition waste to be diverted.
- SB 1383 and food recovery programs like ExtraFood
- Curbside pick up of organic waste for composting

Water

- Water consumption down 20% since 2005
- MMWD purchases Deep Green electricity
- Sonoma County Water Agency purchases GHG-free electricity
- Emissions from water consumption down 92% since 2005

Agriculture & Carbon Sequestration

- 20 Carbon Farm Plans completed by the Marin Resource Conservation District
- $1.5 million State grants issued to Marin ranchers to assist with the implementation of carbon farming practices across 16 different projects.
- The County and partners granted $72,000 to update and expand the CAP's agriculture and working lands chapter.

Low Carbon Transportation

Derek McGill, Transportation Authority of Marin

How can we get more people to walk, bike, take the bus, take SMART, and drive an EV?

Renewable Energy

Leanne Hoadley, MCE

How can we get more people to install solar? To electrify appliances and systems that use natural gas?

Energy Efficiency

Alice Zanmiller, County Sustainability Team

How can we get more people to improve the energy efficiency of their homes and commercial buildings?

Waste Reduction, Reuse, Composting, and Recycling

Judith Silver, Zero Waste Marin

How can we get more people to recycle and compost food waste? To produce less waste?

Low Carbon Water and Conservation

Matt Sagues, MMWD

How can we get more people to conserve water?

Agriculture & Carbon Sequestration

Jeffrey Creque, Carbon Cycle Institute

David Lewis, UC Cooperative Extension

How can we get more people to plant trees and practice carbon farming?

Table Discussion

- Consider kick-off questions through the following lenses:
  1. Education and outreach
  2. Incentives (e.g., rebates, fee reduction, rate changes, etc.)
  3. Regulatory (e.g., government mandates through state laws and local ordinances)
- What else is important to do in this topic area?
- Prioritize actions: what should be done first?

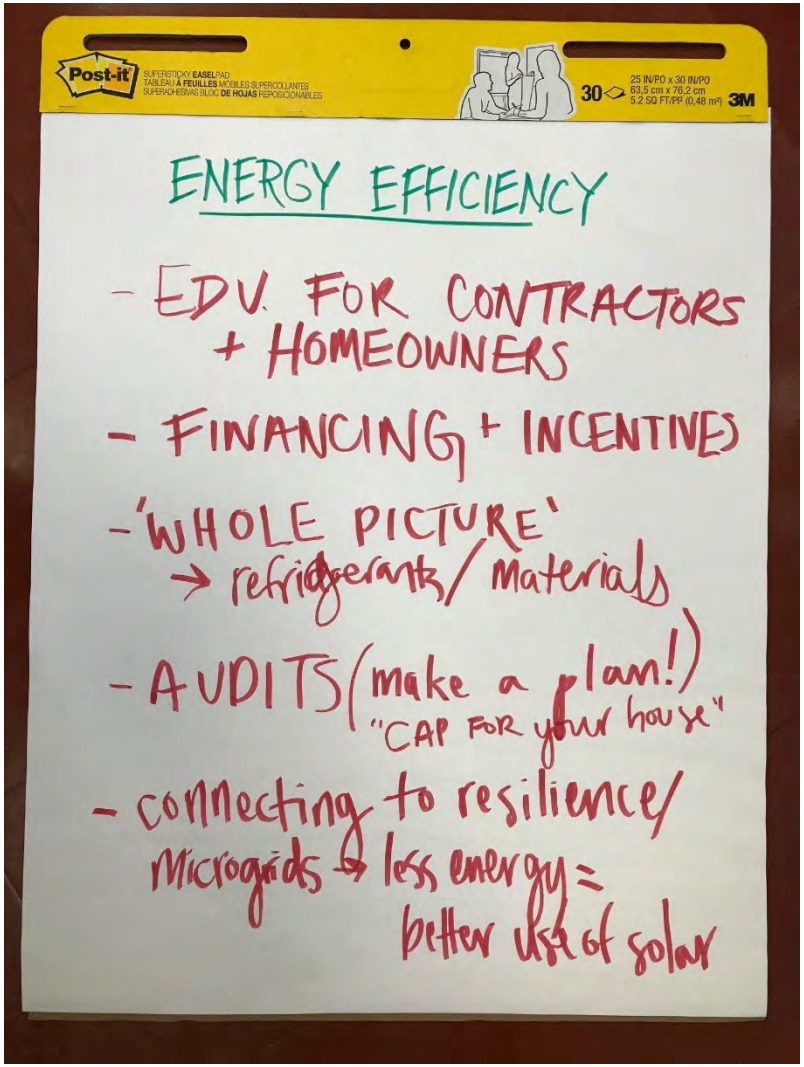
Breakout Group Discussions

The following slides include photos and posters from the breakout group discussions.


WASTE
ZERØ
WASTE
MARIN

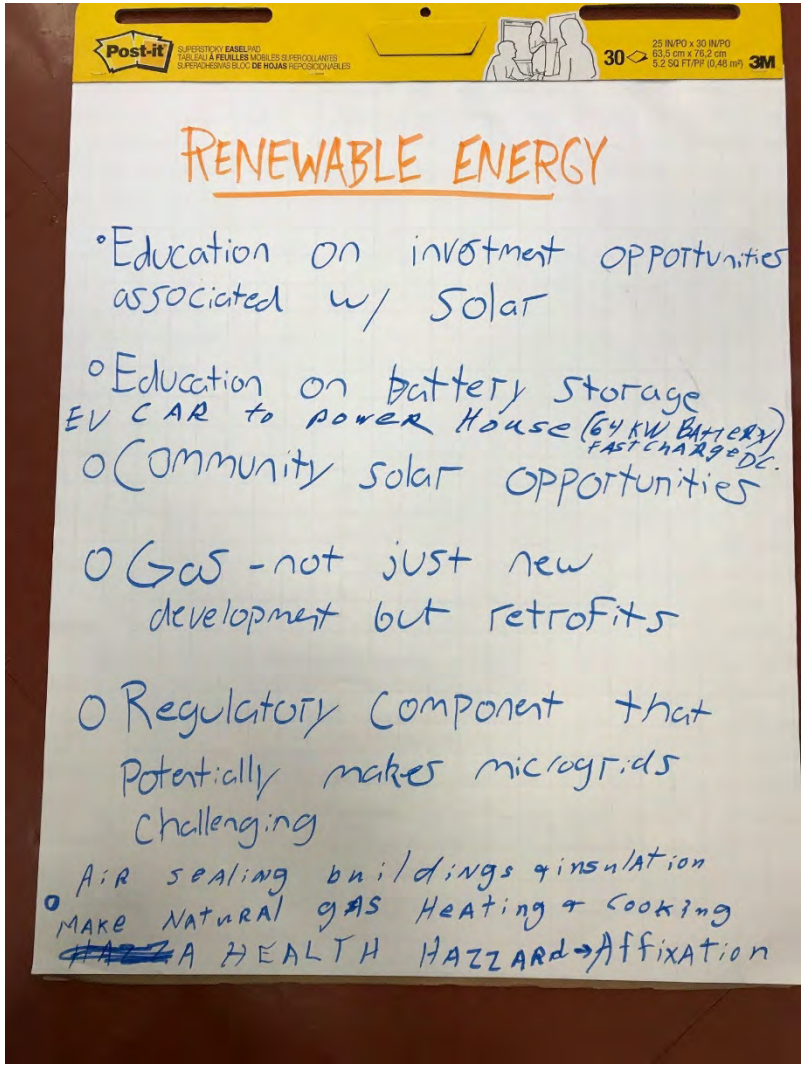

SEQUESTRATION
- Wildland forest management
+ tree planting in wildlands
- Urban tree planting
- Ag - pasture lands - ideal - 25% oak
cover


WASTE
WATER
LOW CARBON WATER AND CONSERVATION
RENEWABLE ENERGY



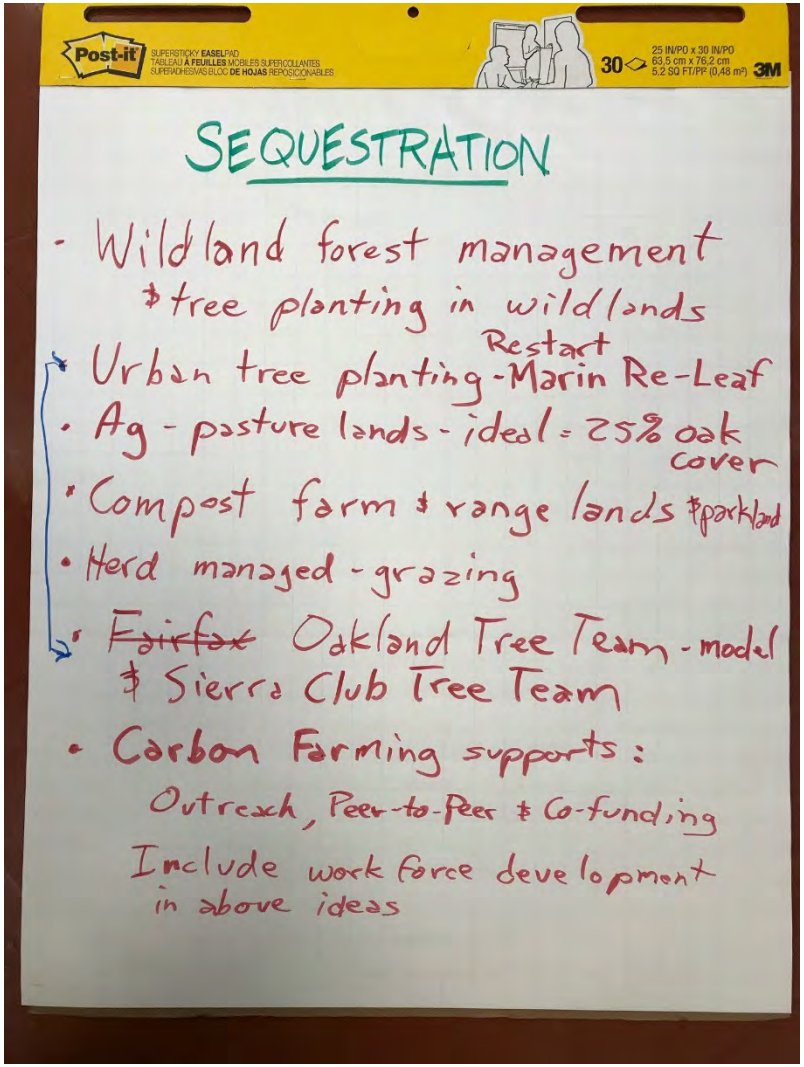
Energy Efficiency

- EDV for contractors & homeowners
- Financing & Incentives
- "Whole Picture"
  - Refrigerants/materials
- Audits (make a plan!)
  - "CAP for your house"
- Connecting to resilience/microgrids
  - Less energy = better use of solar



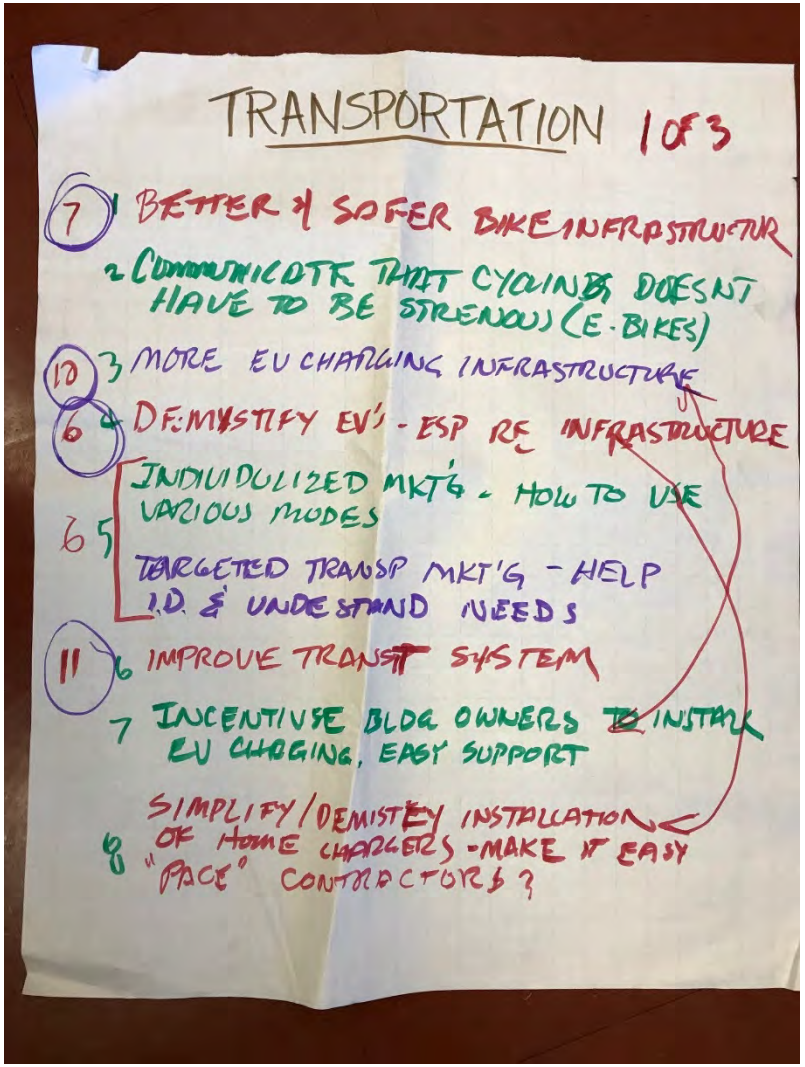
Renewable Energy

- Education on investment opportunities associate with solar
- Education on battery storage
- EV Car to power house (64 kW battery fast charge DC)
- Community solar opportunities
- Gas: Not just new development but retrofits
- Regulatory component that potentially makes microgrids challenging
- Air sealing buildings & insulation make natural gas heating & cooking a health hazard (affixiation)



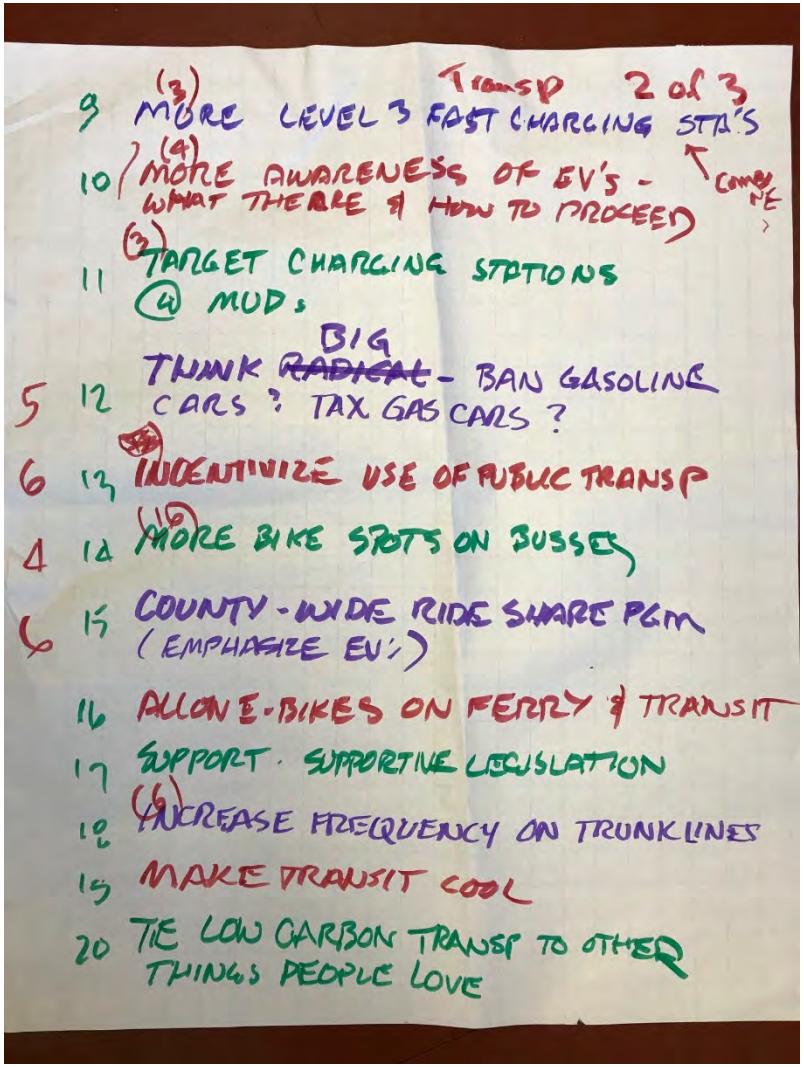
Sequestration

- Wildland forest management & tree planting in wildlands
- Urban tree planting
  - Restart, Marin Re-Leaf, Oakland Tree Team model, Sierra Club Tree Team
- Ag: Pasturelands, ideal = 25% oak cover
- Compost farm, range lands & park land
- Herd managed grazing
- Carbon Farming supports:
  - Outreach, peer-to-peer, & co-funding
  - Include workforce development in above ideas



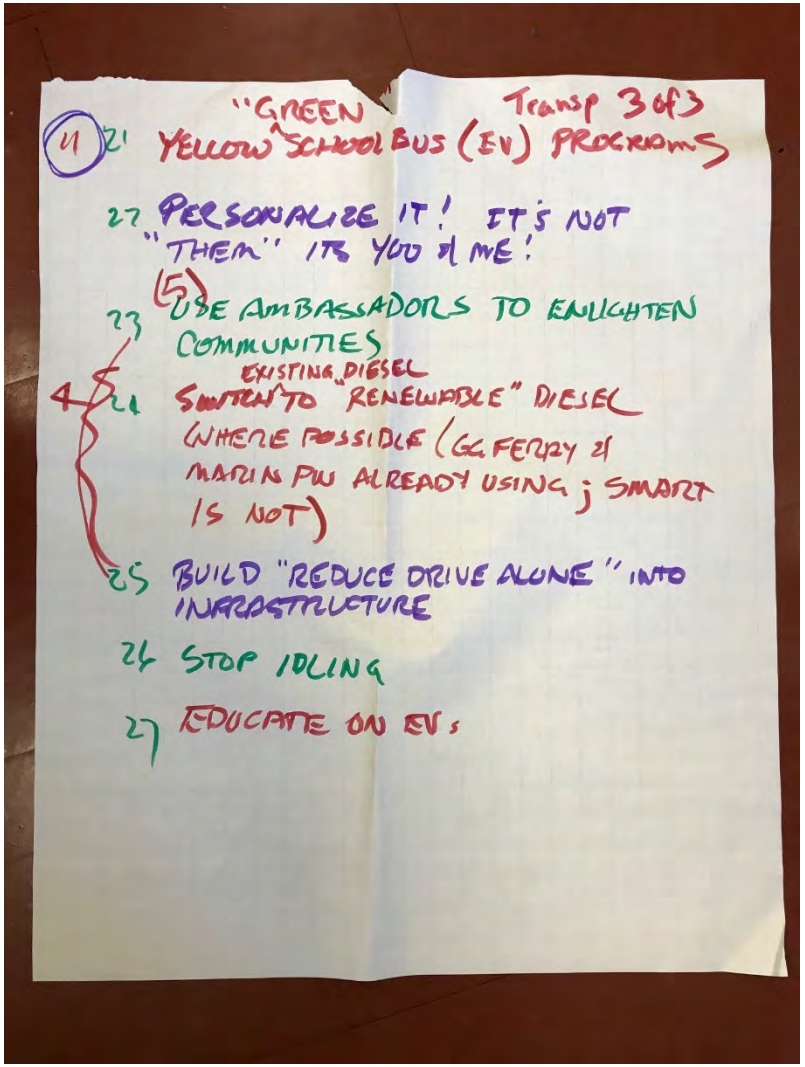
Transportation (1 of 3)

- Better & safer bike infrastructure
- Communicate that cycling doesn't have to be strenuous (e-bikes)
- More EV charging infrastructure: Incentivize building owners to install EV charging, easy support
- Demystify EVs, especially regarding infrastructure: Simplify installation of home chargers, make it easy
  - "PACE" contractors?
- Individualized marketing: How to use various modes
- Targeted transportation marketing: help identify & understand needs
- Improve transit system



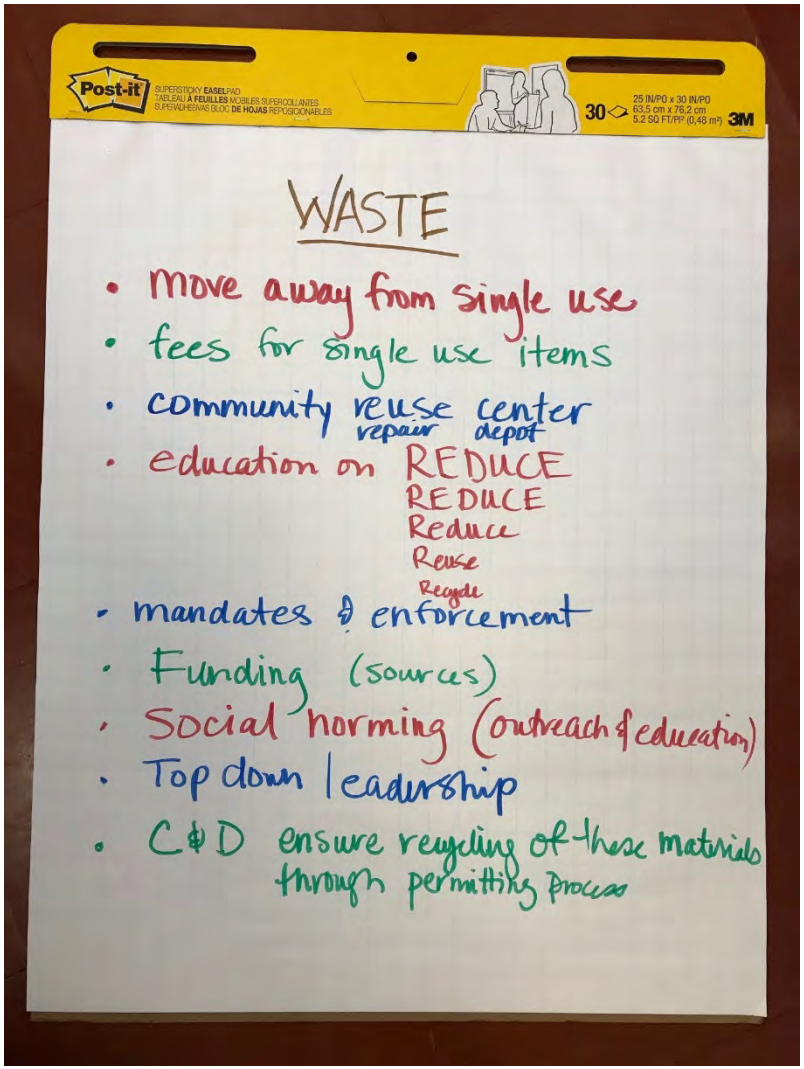
Transportation (2 of 3)

- More level 3 fast charging stations
- More awareness of EVs (what they are and how to proceed)
- Target charging stations at multiple unit dwellings (MUDs)
- Think big: Ban gasoline cars? Tax gas cars?
- Incentivize use of public transportation
- More bike spots on busses
- County-wide ride share program (emphasize EVs)
- Allow e-bikes on ferry & transit
- Supportive legislation
- Increase frequency on trunk lines
- Make transit cool
- Tie low carbon transportation to other things people love



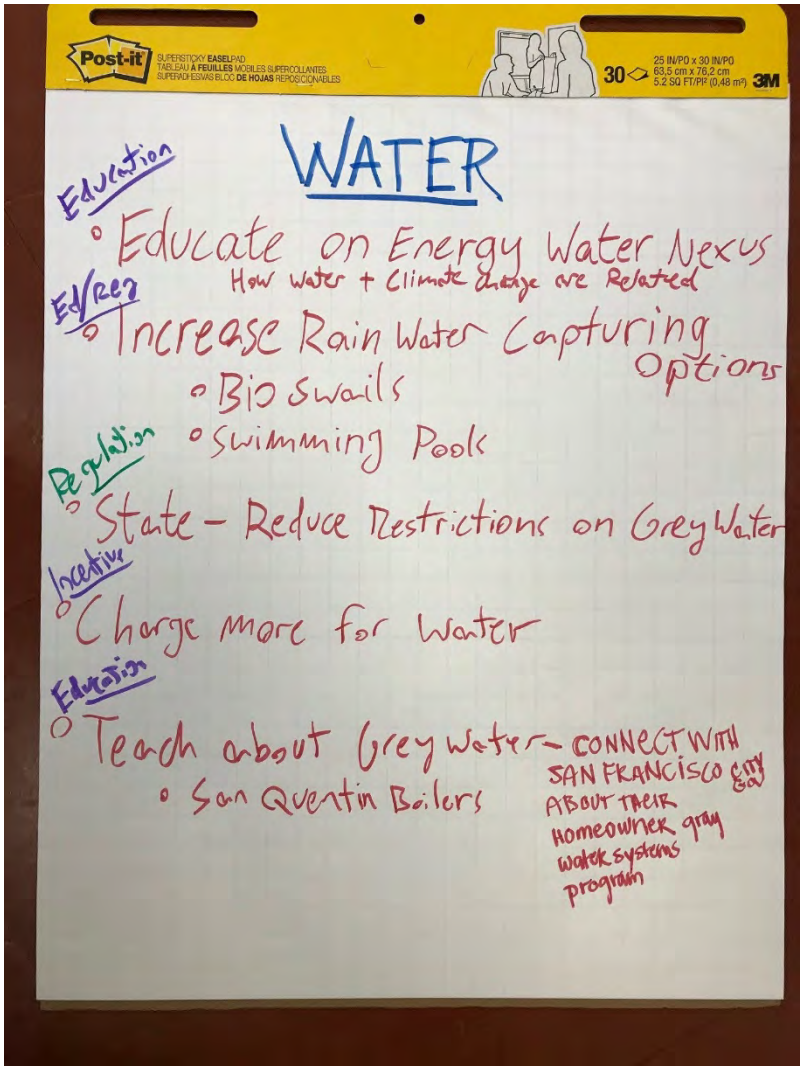
Transportation (3 of 3)

- "Green" yellow school bus (EV) programs
- Personalize it! It's not "them", it's you and me!
- Use ambassadors to enlighten communities
- Switch existing diesel to "renewable" diesel where possible (Golden Gate Ferry & Marin Public Works already using; SMART is not)
- Build "reduce drive alone" into infrastructure
- Stop idling
- Educate on EV



Waste

- Move away from single use
- Fees for single use items
- Community reuse center
  - Repair depot
- Education on:
  - Reduce
  - Reduce
  - Reduce
  - Reuse
  - Recycle
- Mandates & enforcement
- Funding (sources)
- Social norming (outreach & education)
- Top-down leadership
- Construction & demolition ensure recycling of these materials through permitting process



Water

- (Education) Educate on energy water nexus
  - How water & climate change are related
- (Education/Regulation) Increase rain water capturing options
  - Bioswales
  - Swimming pools
- (Regulation) State: Reduce restrictions on greywater
- (Incentive) Charge more for water
- (Education) Teach about greywater
  - Connect with San Francisco city government about their homeowner greywater systems program
  - San Quentin boilers