Resilient Policies and Regulations: Getting Rules Right

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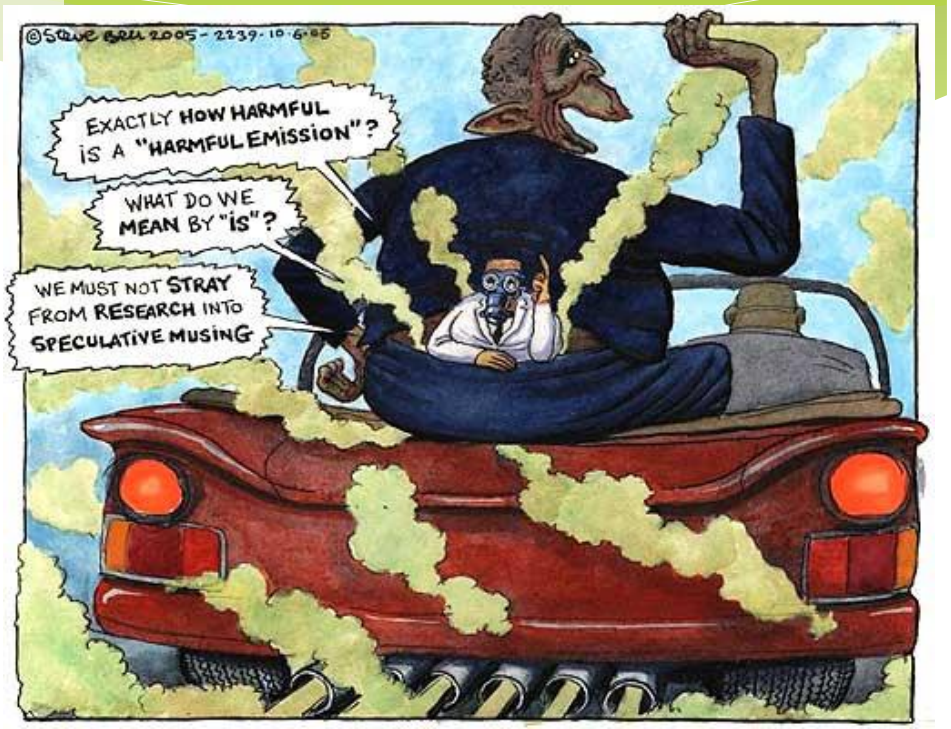
Outline

- Introduction to National Policies
- California Policies
- San Diego Policies
- Case Studies
  - What goals are we meeting?
  - What policies can we adopt from other cities that are successful?



Source: The Guardian

Source: Khabar Magazine

What is Cap and Trade?

* An environmental policy that sets a mandatory cap on emissions while giving flexibility in how they are met.

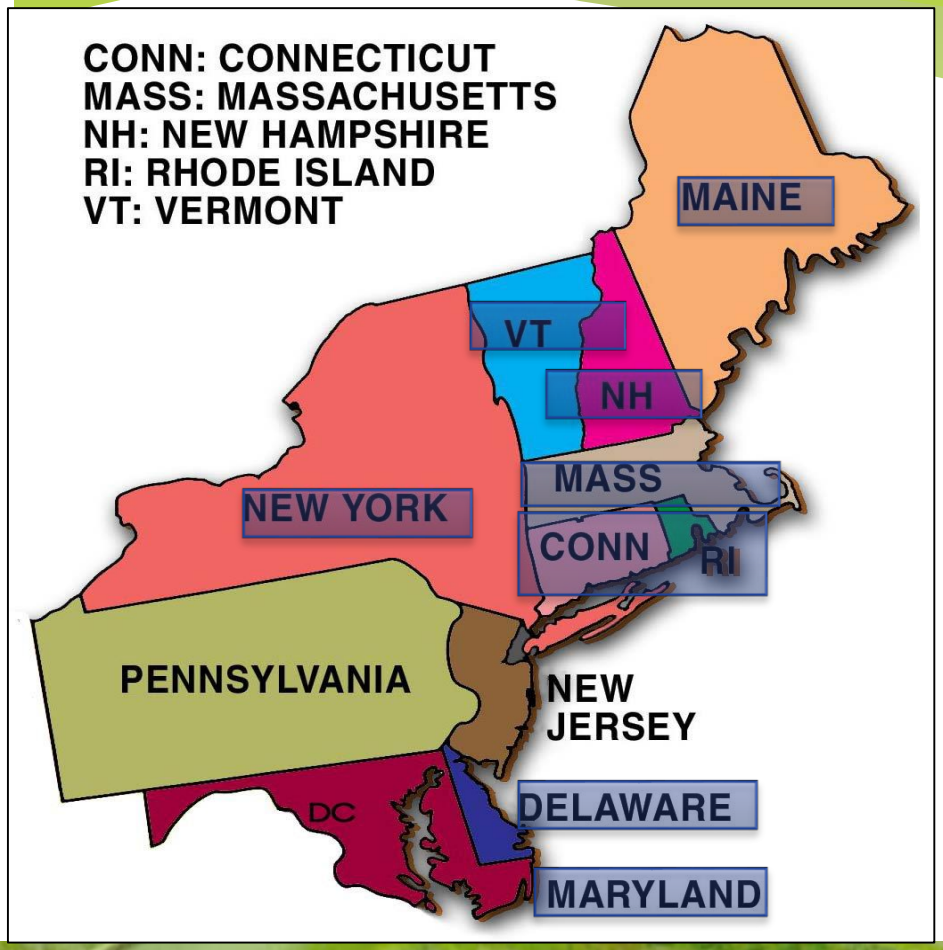
  Source: EPA

* Examples of Successful Cap and Trade Programs:
  * Acid Rain Program
  * Regional Greenhouse Gas Initiative (RGGI)
  * Global Warming Solutions Act of 2006 (Assembly Bill 32)

Source: Cal Watchdog

Regional Greenhouse Gas Initiative (RGGI)

States Involved in RGGI



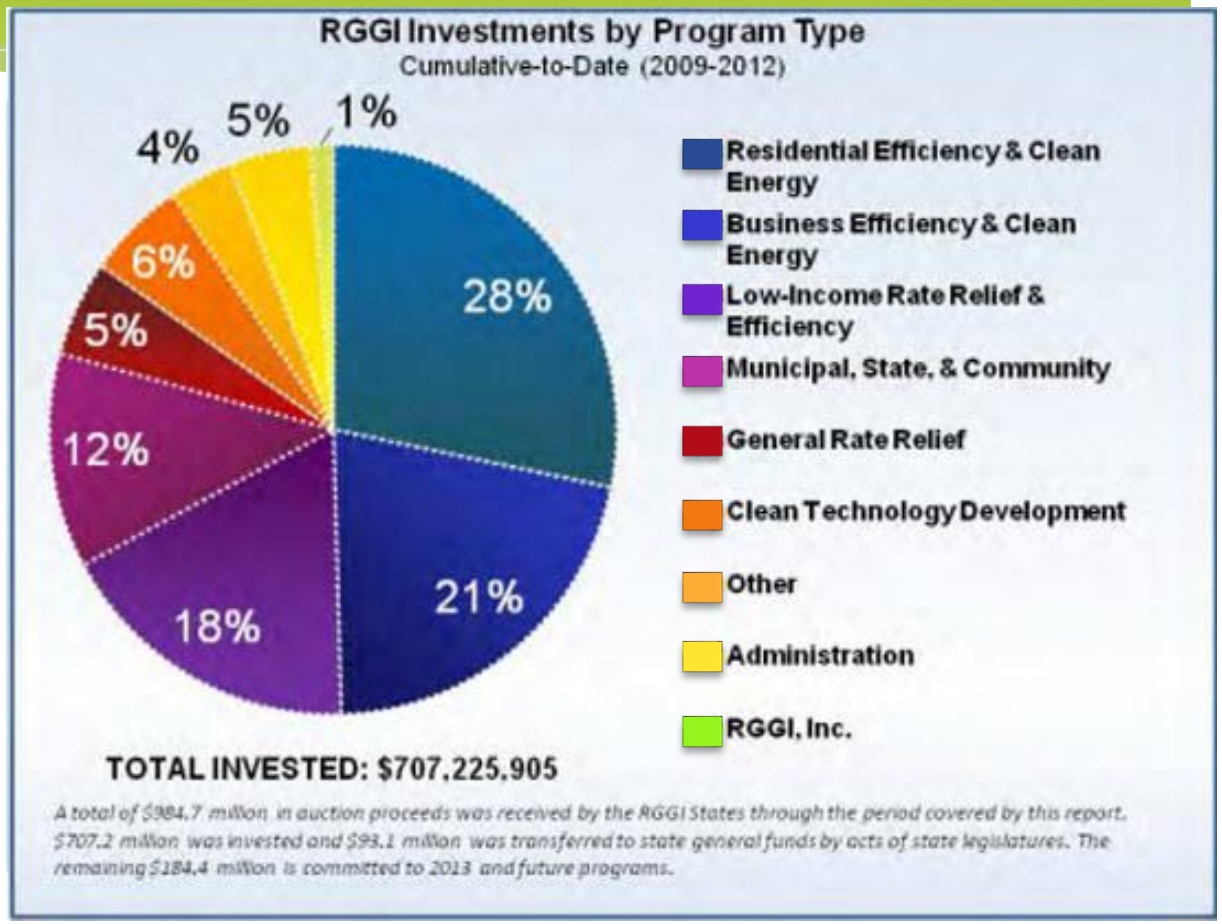
- First market-based regulation in U.S. that reduces GHG emissions.
- RGGI is a collaborative effort among Northeastern and Mid-Atlantic states to cap and reduce CO_2 emissions in the power sector
- RGGI establishes a cap on the power sector's CO_2 emissions and requires power plants to have exchangeable CO_2 allowance for every ton of CO_2 that is emitted

Source: Regional Greenhouse Gas Initiative

What RGGI does well

* RGGI gives a market-based approach to regulate CO_2 emissions
* State participants auction 63% of the profits from CO_2 allowances to deploy more renewable energy technologies

Source: Regional Greenhouse Gas Initiative



Source: Environmental Leader

Carbon Fee and Dividend Policy

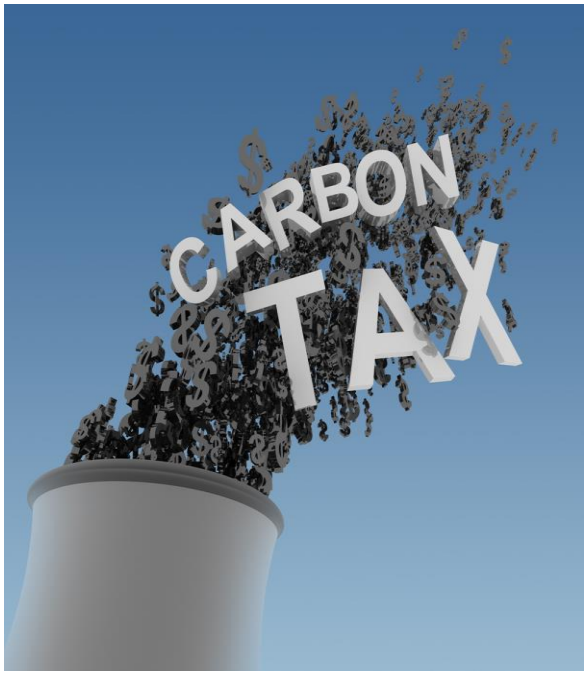
What is it?

* A fee is placed on the amount of CO_2 in fossil fuels based on the source of the fuel
* Revenue from these fees are reimbursed to American families

Why it works?

* It sends a price alert to encourage consumers to use fossil fuels more efficiently or move to low emission technologies

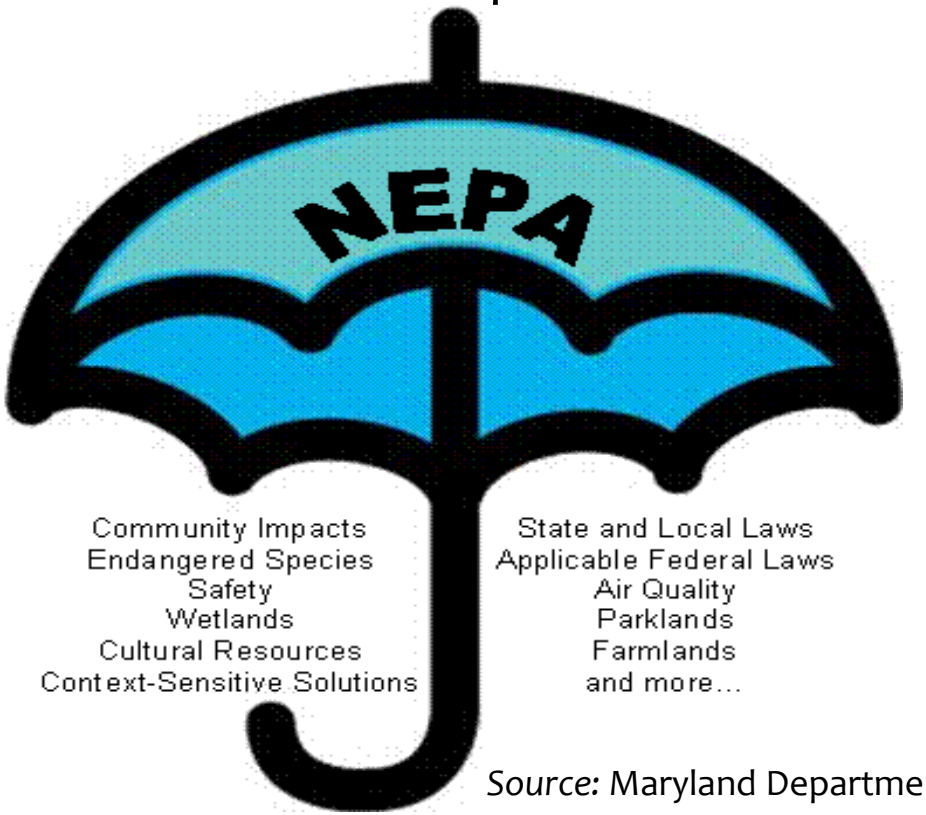
Source: Boomer Warrior



Source: The Energy Collective

National Environmental Policy Act (NEPA)

* The NEPA mandates federal companies to make corporate decisions while taking into account their environmental impacts.

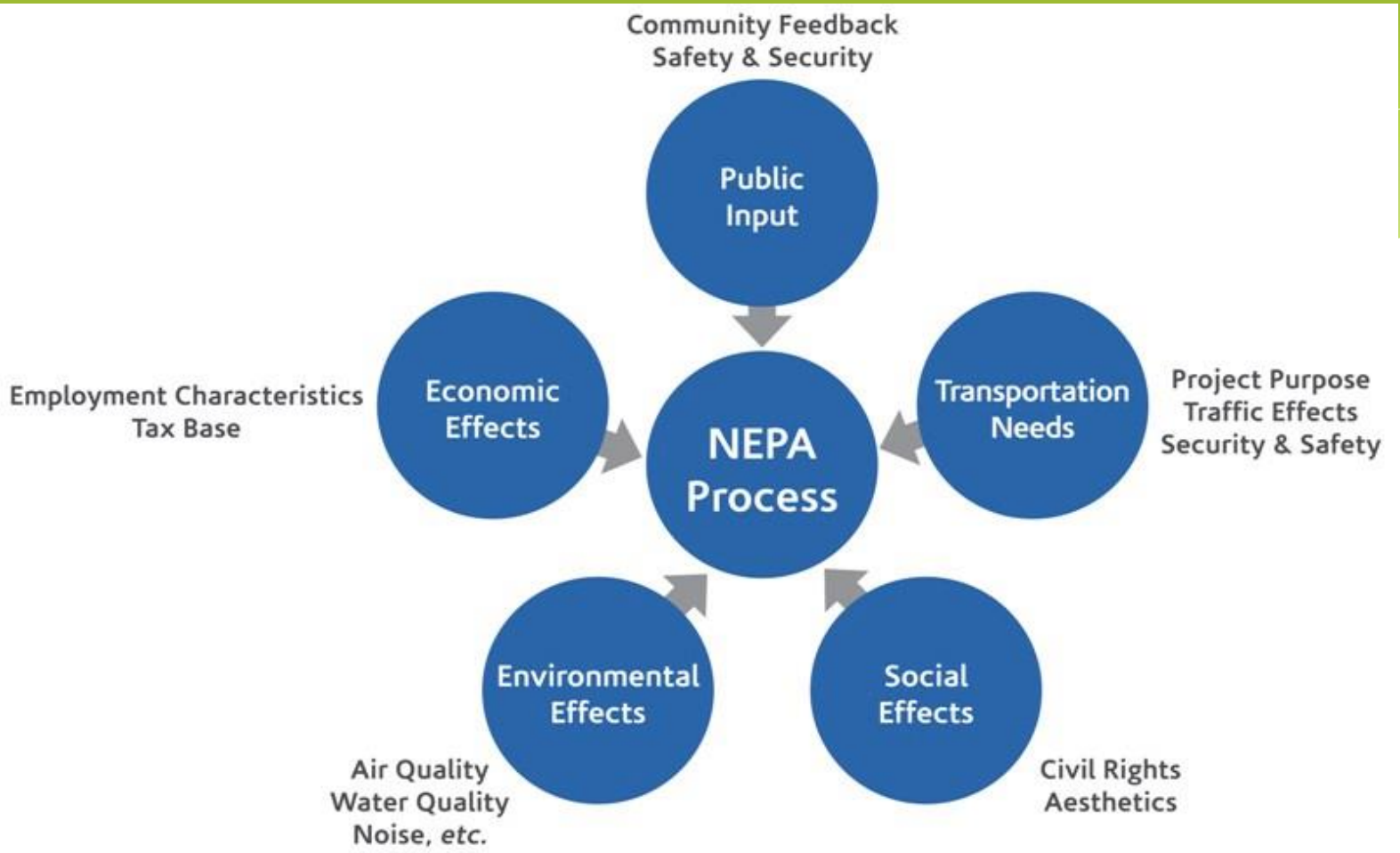


Source: Maryland Department of Transportation

* NEPA Process of analysis is an assessment of the environmental impacts of a federal project.
  * Categorical Exclusion
  * Environmental Assessment (EA) / Finding of No Significant Impact (FONSI)
  * Environmental Impact Statement (EIS)

Source: EPA

The NEPA Process



Source: Maryland Department of Transportation

* What NEPA **DOES**?
  * Requires public participation in planning processes
  * Requires announcement of action, alternatives, environmental effects, and mitigation
  * Presents the environmental concerns of the public
  * Insists environmental impacts of projects be considered during decision-making process

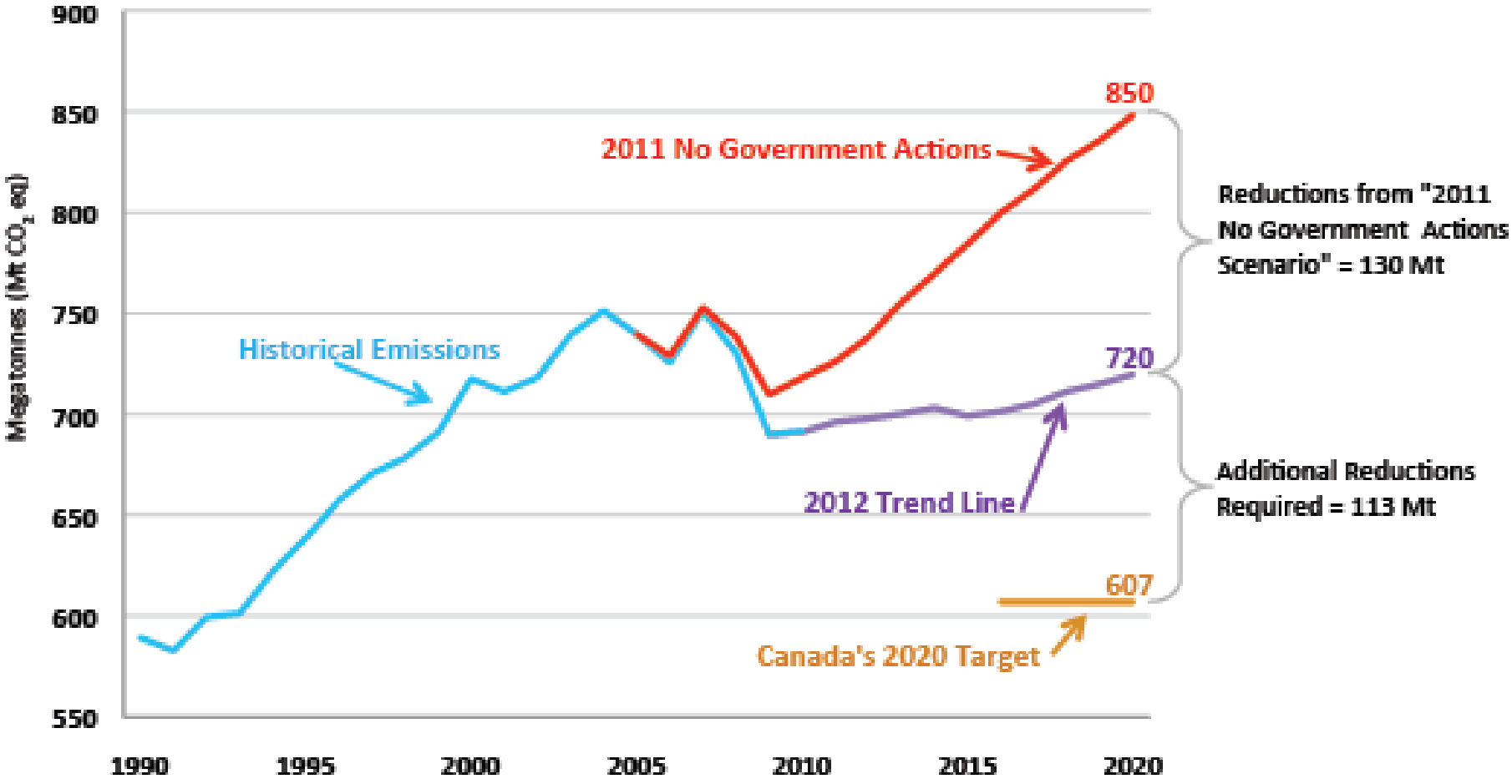
Source: U.S. Bureau of Reclamation

* What NEPA **DOES NOT DO**?
  * Decide the best alternative solution to a project
  * Prevent environmental impacts from occurring
  * Guarantee decisions you like

Source: Logan Simpson Design Inc.

Source: Simmons Hanly Conroy

Canada's Clean Air Agenda



Source: Canada's Emissions Trends 2012

Goals of Clean Air Act

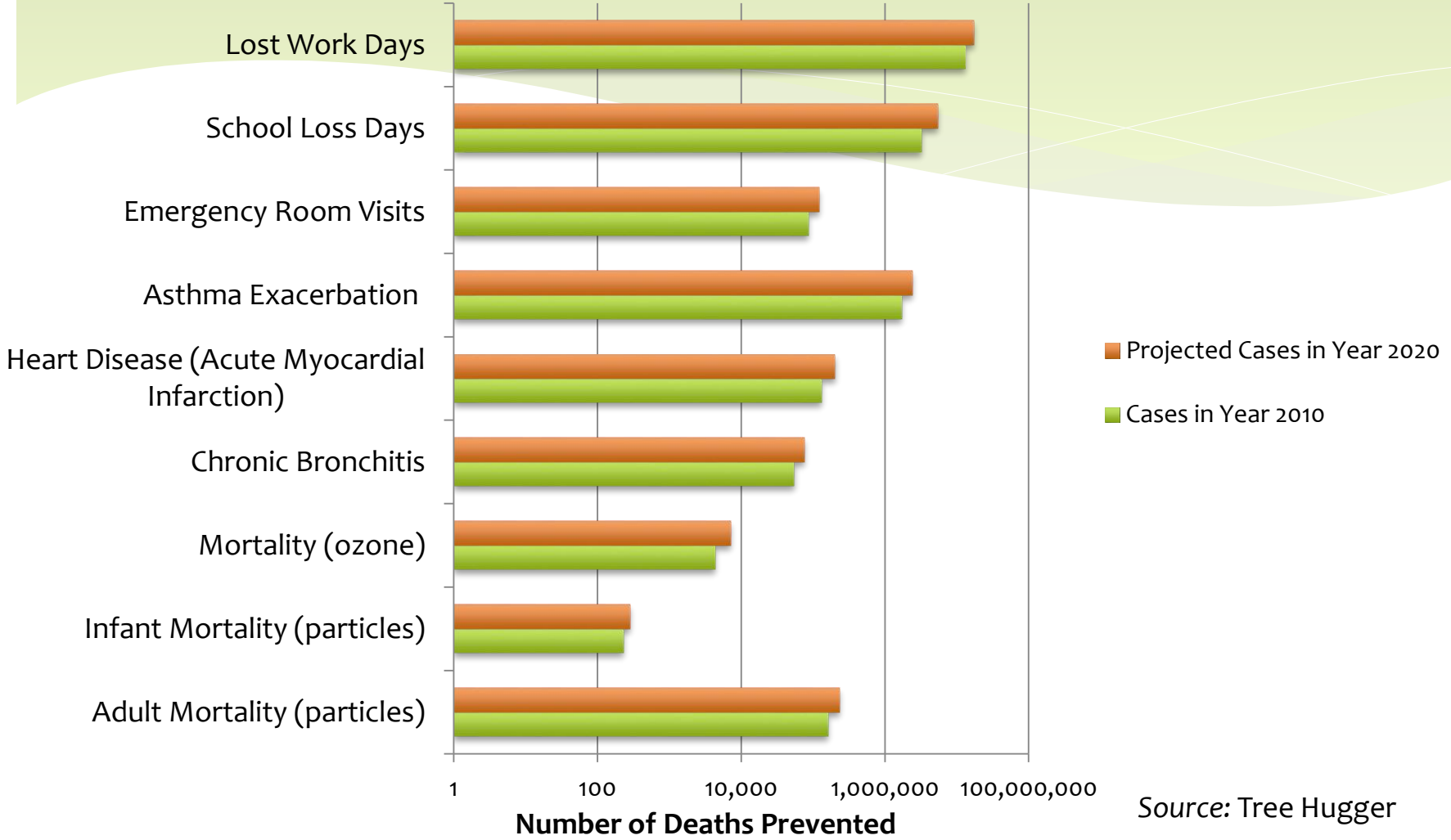
* Set up National Ambient Air Quality Standards (NAAQS) in every state by 1975 and direct states to create state implementation plans (SIPs), applicable to certain industrial sources in the state, to meet air pollutant standards
* **Section 112:** Requires EPA establish emission standards that require greatest reduction of emissions from hazardous air pollutants

Source: EPA

Source: LegalPlanet

Source: Face the Facts USA

1990 Clean Air Act Amendments Present vs. Projected



Source: Tree Hugger

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

* Establishes system to register pesticide use with U.S. Department of Agriculture
* Under FIFRA, a pesticide is defined as "any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest"
* According to FIFRA, a "pest" is:
  * Any insect, rodent, fungus, or weed
  * Any other form of terrestrial or aquatic plant/animal life or virus, bacteria, or other microorganism

Source: Bergeson & Campbell

Source: EPA

Source: EcoWatch

Federal Food, Drug, and Cosmetic Act (FFDCA)

* **Section 408:** Permits EPA to set tolerances for pesticides available in foods
  * In order to be deemed safe, EPA tests pesticides on their toxicity and their breakdown products in addition to any potential risks to infants and children

Source: EPA

* It required Food and Drug Administration (FDA) to set max residue levels (tolerances) for unavoidable poisonous substances in food

Source: The Encyclopedia of Earth

Source: The Little Green Blog

Clean Water Act (CWA)

* Regulates discharge of pollutants into U.S. waters and regulating water quality.
* Under CWA, EPA established pollution control programs including, wastewater standards for industry and water quality standards for all surface waters.

Source: EPA

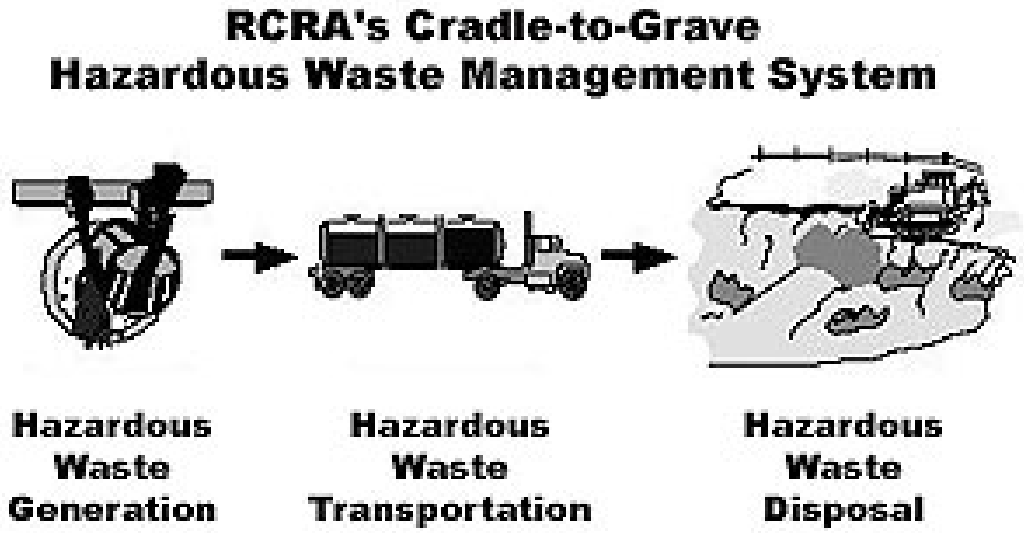
Source: CleanImage

Source: Columbia Riverkeeper

Resource Conservation and Recovery Act (RCRA)

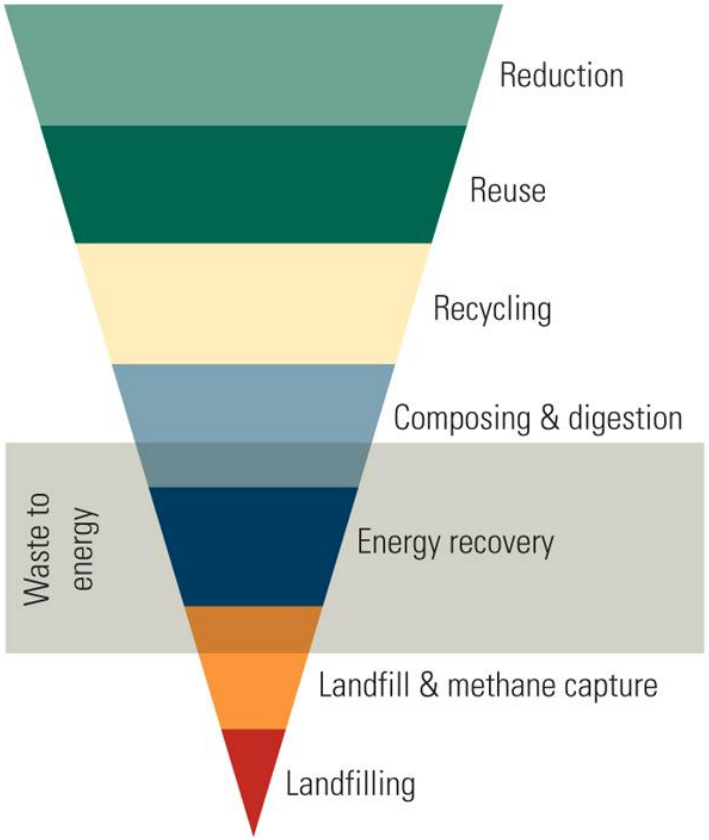
* EPA creates regulations to assure safe management and cleanup of hazardous waste.
* Goals of RCRA
  * Protect Communities and Environment
  * Clean up Land and Water
  * Conserve Resources
  * Partnering and Innovating

Source: DuraLabel



Source: EPA

What Has RCRA Accomplished?



Environmental hierarchy for solid waste management

Source: POWER Mag

* Developed federal/state system that manages hazardous waste from "cradle-to-grave"
* Established framework for states to execute municipal solid waste management programs
* Preventing contamination from impacting local communities by developing waste regulations
* Restoring 18 million acres of contaminated lands for reuse
* Creating award programs that give incentives to businesses that reduce waste generated and reuse materials
* Improve nation's recycling program by increasing municipal solid waste (MSW) recycling rate from < 7% to ~35%

Source: EPA

Toxic Substances Control Act (TSCA)

* EPA has the ability to ask for reports, testing requirements, and restrictions related to chemical substances
* TSCA specifically addresses production, importation, use, and disposal of chemicals including asbestos, polychlorinated biphenyls (PCBs), and radon/lead-based paints.

Source: EPA

Source: The Mesothelioma Center

President Obama's Climate Action Plan

Source: White House

* The Obama Administration has established the toughest fuel economy standards in the U.S. for passenger vehicles
* These vehicles must have performance equivalent to 54.5 miles/gallon by 2025
* This could save drivers ~ $8,000 in fuel costs over the duration of the vehicle and reduce 6 billion metric tons of carbon pollution

Source: White House

President Obama's Plan to Promote Resilience in Public Health

* Department of Health and Human Services will partner with healthcare industry to give guidance on achieving a resilient medical system to climate impacts
* It will train public-health officials and community leaders to successfully communicate health risks and resilient actions to prepare the public for the effects of climate change

Source: White House

Source: U.S. Department of Health and Human Services

Conservation of Land/Water Resources

* Obama Administration worked with Gulf State partners after Deepwater Horizon oil spill to improve barrier islands and marshes that can protect land from severe storms
* Federal agencies have identified ways to
  * improve natural defenses against extreme weather
  * protect biodiversity
  * conserve natural resources
  * manage public lands to store more carbon

Source: White House

Source: The Encyclopedia of Earth

President Obama's Plan to Maintain Agricultural Stability

* Department of Agriculture is building 7 new Regional Climate Hubs that work with universities and the Department of Interior and National Oceanic and Atmospheric Administration to support climate resilience
* Natural Resources Conservation Service and Department of Interior's Bureau of Reclamation are giving grants to agricultural water users to fund water-efficient practices

Source: White House

Source: USDA

Drought Management

Source: National Oceanic and Atmospheric Administration

* Obama Administration will launch the National Drought Resilience Partnership to help communities prepare for future droughts and reduce drought impacts
* Communities can better manage drought-related risks with the connections between information, drought preparedness, and long-term resilience strategies

Source: White House

Reducing Wildfire Risks

* Federal agencies will improve forest and rangeland restoration projects to make natural lands less vulnerable to fires
* Department of the Interior and Department of Agriculture are launching the Western Watershed Enhancement Partnership

Source: White House

Source: Albuquerque Journal

What does the Western Watershed Enhancement Partnership do?

* It is an effort between Arizona, California, Idaho, Washington, and Montana to reduce wildfire risks by removing extra shrubbery around critical areas, like water reservoirs.

Source: White House

Source: US Army Corps of Engineers

Flood Preparation

* Federal agencies will update flood-risk reduction standards for funded projects that take into account sea-level rise and other flood risks
* This improves on work done by the Hurricane Sandy Rebuilding Task Force
  * This task force states all federally funded Sandy-related rebuilding projects will be meet all flood-risk reduction criteria, including projected sea-level rise, and other extreme weather events related to climate change

Source: White House

Source: Clawback

California Climate Policies

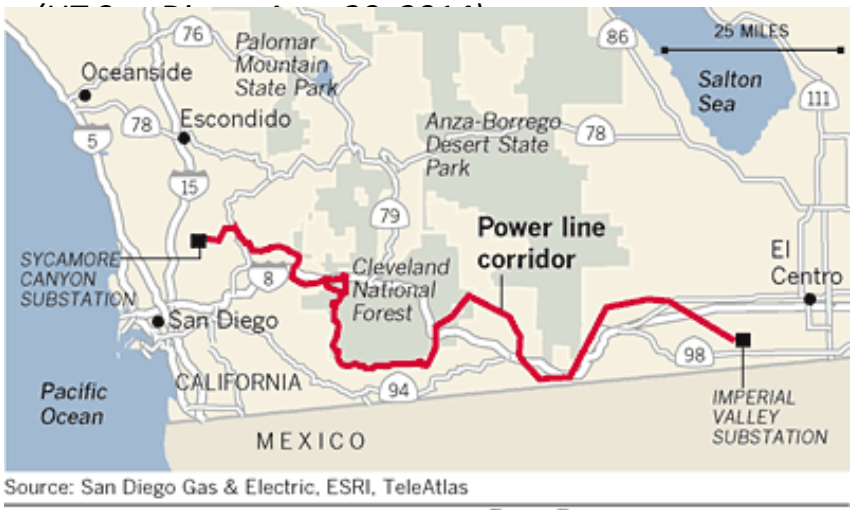
What is the state doing to address climate change?

Climate Legislations for Energy

Legislation	Description
AB 32	***California Global Warming Solutions Act of 2006,*** requires California to reduce its GHG emissions to 1990 levels by 2020.
SB X1-2	Directs the increase in the amount of electricity generated from renewable energy to at **least 20% of total electricity by 2013, 25% by 2016, and 33% by 2020.**
SB 1	Directs the ***expansion of the Million Solar Roofs*** plan to more customers, and requires municipal utilities to create solar rebate programs. New homes must offer the option of a solar energy system to all customers.

"We will be, by the end of this year, at 33 percent renewable. That's six years ahead of the state's goal." - Jim Avery

SDG&E Senior Vice President of Power Supply



Sunrise Powerlink

Climate Legislations for Transportation

Legislation	Description
AB 118	Establishes the ***Alternative Fuels & Vehicles Technologies program*** to provide funding to public projects to develop and deploy new technologies
AB 1493	**Pavley Global Warming Bill** allows GHG emissions standards for new passenger vehicles beginning with the 2009 model year
SB 375	***Sustainable Communities & Climate Protection Act*** requires GHG emission reduction targets for passenger vehicles for 2020 and 2035

(Nissan News)

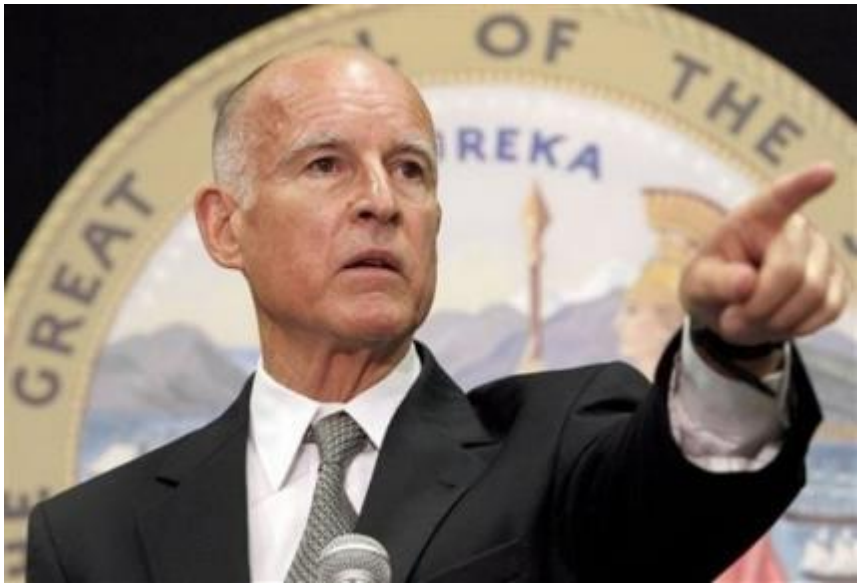
Climate Legislations for Waste & Health

Legislation	Description
AB 341	Sets requirements of the statewide **mandatory commercial recycling program** to reduce GHG emissions by diverting commercial solid waste to recycling efforts.
SB 535	***California Healthy Air Revitalization Trust*** requires at least 10% of any revenues generated under AB 32 be used in **disadvantaged communities** for GHG reduction projects, mitigation of health impacts of climate change, and support for green collar jobs.

CalRecycle

Sectors to Address in Climate Policies

- ❑ Energy
- ❑ Water
- ❑ Transportation
- ❑ Waste
- ❑ Food & Agriculture
- ❑ Public Health



Jerry Brown, California State Governor

More needs to be done to address climate impacts in these sectors through city and state policies and programs

- Fees
- Financial incentives
- Funding assistance
- Specific emergency procedures
- Target setting and enforcement
- Collaboration between government, public utilities and services, and urban planners

Food & Agriculture

Policies to ensure food security, food safety, and financial assistance

What do we need to prepare for?

The Risks

Drought could lead to:

- Shortages in local food supply
- Increase in water demand & potentially costs
- Financial losses for farmers

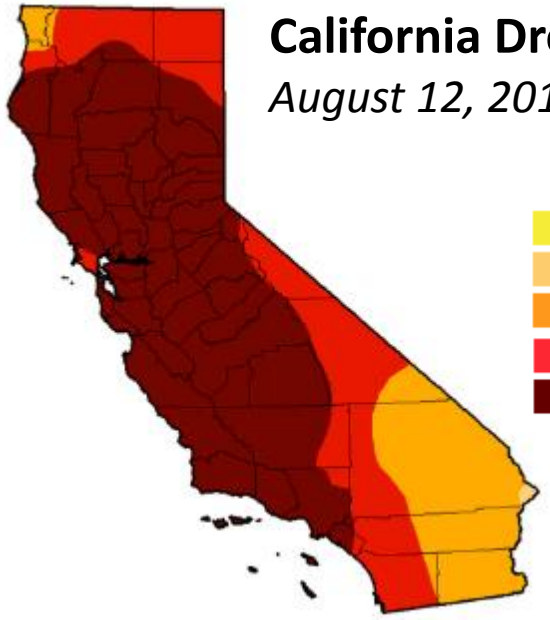
Demand for imported food can increase food prices

- Potential disadvantage for population with low socio-economic status

Increased temperature could threaten food safety due to pest infestation

Our Needs

- ❑ Food security
- ❑ Food safety
- ❑ Financial security for farmers, ranchers, and livestock producers



(National Drought Mitigation Center)

What is California doing?

DROUGHT RESOURCES & ASSISTANCE PROGRAMS

from the California Department of Food & Agriculture:

- Livestock forage program
- Emergency Farm Loans
- Emergency Community Water Assistance Grant
- Find more at: www.cdfa.ca.gov/drought/#farm

More we need to do:

- ❑ Address food security and safety for residents and vulnerable groups
- ❑ Create collaboration between government and businesses with production and resource management to prepare for times of food shortage

Possible response: Urban farming *Produce from Community Supported Agriculture farm in Imperial Beach.*

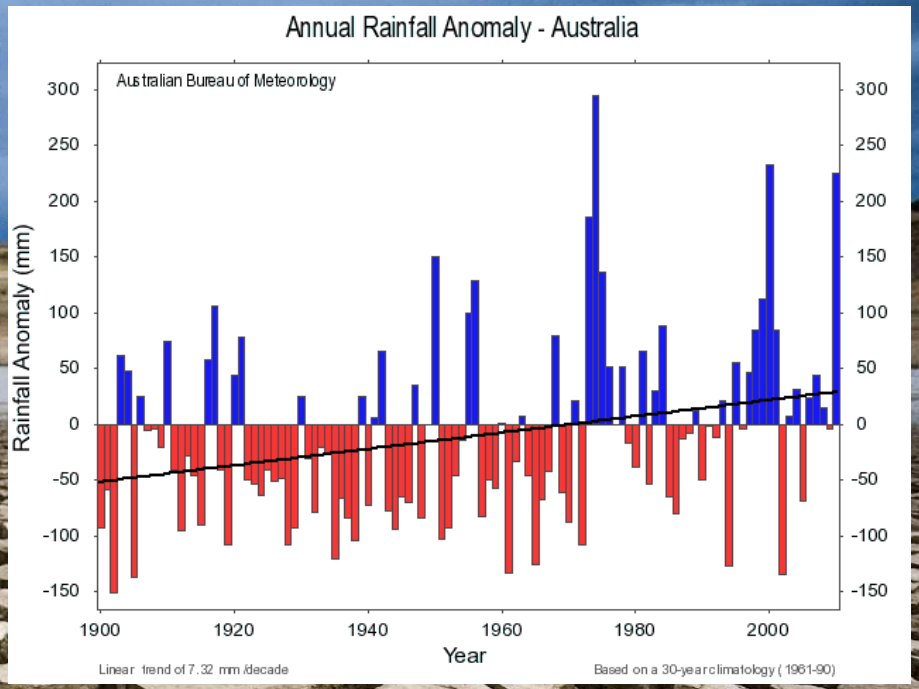
Australia: Drought Policy

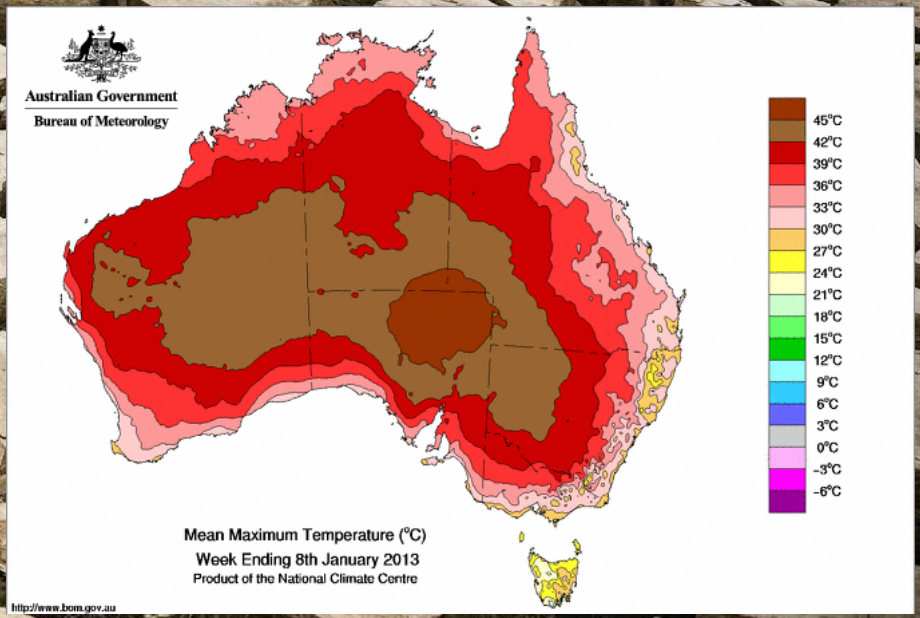
Drought is a traditional climate impact and source of uncertainty for farm business. The country must be prepared and resilient to face long-lasting economic stresses.

1992 & 2014 National Drought Policies

OBJECTIVES

- Encourage primary producers and other sections of rural Australia to ***adopt self-reliant*** approaches to managing for climatic variability
- ***Maintain and protect*** Australia's agricultural and environmental resource base during periods of extreme climate stress
- ***Ensure early recovery*** of agricultural and rural industries, consistent with long term sustainable levels





Australia: Drought Policy

Encourages farmers to adopt improved property management practices through:

- *Incentives*
- *Information transfer*
- *Education & training*
- *Land-care group projects*
- *Research and development*

New Rural Adjustment Scheme

- Ensure sustainable, long-term profitability
- Provide adjustment assistance during recovery phase
- Give household support to help meet day-to-day living expenses

Other assistance measures:

- Targeted Community Care Program
- Pest Management Programs

Australia's Drought Policy History

Sept. 1, 1994 – May 1, 1995
The total sum of assistance was ***$276 million*** over several years. More than 10,000 families were approved for assistance.

Jan. 1, 2001 – Jan. 1, 2009
The ***Millennium Drought*** affected most of the country and much of the Murray-Darling Basin. It included two severe drought years in 2002 and 2006 with the remaining years recording near-t-below average rainfall. It was this lack of reprieve which characterized this drought event.

Urban Food Policies

POLICIES FOR SHAREABLE CITIES

by Sustainable Economies Law Center

"This approach promotes health, local jobs, and community interaction, while reducing the environmental degradation, food insecurity, health risks, and unequal access associated with industrial agriculture and disjointed food systems."

1. Allow urban agriculture and neighborhood produce sales

San Francisco, CA

"Neighborhood Agriculture" land use category

- *Omits zoning laws which challenge urban food production and sales*
- *Allows community gardens, community-supported agriculture, market gardens, and commercial farms to sell and donate produce*

Urban Food Policies

2. Encourage urban agriculture on vacant lots using tax credits and incentives

Philadelphia, PA

Carrot and stick approach for owners who cultivate land for vacant and abandoned lots by decreasing or eliminating vacant lot registry fees

3. Conduct land inventories to explore potential food cultivation on unused land

Portland, OR

Resolution 36272

calls for inventory of city-owned lands suitable for agriculture uses

San Francisco, CA

Mayor Newsom's directive to conduct audits of unused land that have potential to be used at community gardens or farms

Urban Food Policies

4. "Food membership distribution points" permitted throughout city

Establish Community Supported Agriculture (CSA) programs which allow regular delivery of fresh produce to distribution points around cities to diversify methods of food access.

Portland, OR

Updated zoning code to make food distribution an accessory use

5. Allow parks and other public spaces to be used for food sharing

Ft. Myers, FL

Hunger Task Force was established to coordinate public food sharing efforts after a controversial attempt to limit food sharing in public parks.

Right: Food sharing event hosted by Harry Chapin Food Bank, also known as the Hunger Task Force (plantgreenrecycle.com)

Urban Food Policies

6. Food-gleaning centers & programs

Reroute food waste and consolidate and distribute food to people in need

Iowa City, IA

Public school district was given funding from the USDA to test a food gleaning initiative to allow safe and easy transportation of recovered food

Portland, OR

Urban gleaners and B-Line Sustainable Delivery retrieve edible food from farmers markets, restaurants, grocery stores and event sites and delivers it to local agencies that feed the hungry.

Urban Gleaners

B-Line Sustainable Delivery

Urban Food Policies

Chicago, IL

An ordinance allows licensed produce vendors to sell whole and uncooked agricultural, plant-based items on moveable stands especially in areas underserved by grocery stores

7. Promote mobile food vending

Neighborhood Carts Program responds to 2 major issues in Chicago: unemployment & access to healthy foods.
It helps create a business models for new vendors who receive intensive training, including modules on sales and marketing techniques, customer acquisition and customer service.

(Neighborhood Capital)

Urban Food Policies

8. Allow certain food production activities as a home occupation

California

Homemade Food Act (AB 1616) allows the issuance of home business permits to those in cottage food production

SAN DIEGO COTTAGE FOODS

9. Create or subsidize shared commercial kitchens

New York, NY

Entrepreneur Space is a city-sponsored business incubator in Queens used to assist food-related business start-ups across New York City. It is open 24 hours a day and consists of affordable workspace to provide food or other business-related needs.

ENTREPRENEUR SPACE

QEDC Queens Economic Development Corporation

Public Health

Preparing our healthcare systems for climate change stresses

What do we need to prepare for?

The Risks

- Increased temperature puts population at risk to heat-related illnesses, reduce air quality, and vector-borne diseases
- Higher demand and stress upon public health services
- Spike in costs for water, energy, and health care due to increased demand

Our Needs

- ❑ Public health services are able to meet needs of population
- ❑ Residents, especially vulnerable groups, are educated with risks and responses practices to extreme heat
- ❑ Low socioeconomic households have easy access to health care
- ❑ Urban heat island mitigation measures are being done

What can be done?

Building Resilient Cities
Week 9:
Planning for Public Health Stresses

Extreme Heat

- Refine California Heat Contingency Plan to specifically fit San Diego
  - Identify and implement heat adaptation strategies with health co-benefits
- Increase health care system's extreme heat preparedness and "surge capacity"

Health Services

- Improve Heat-Health Alert Warnings
- Improve access to cooling centers
  - Provide transportation
- Ensure back-up energy sources for cooling centers
- Educate vulnerable populations on how to be prepared for extreme heat

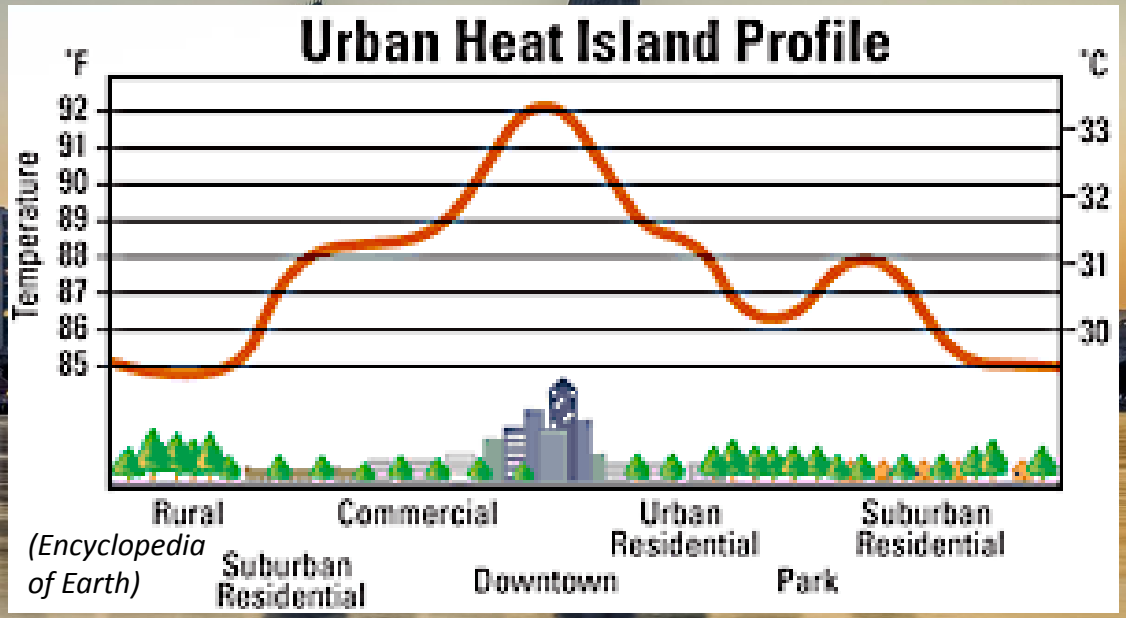
Air Quality

- Expand the Electronic Death Reporting System for the continuous monitoring of asthma
- Create our own Spare the Air Program like the Bay Area Air Quality Management District

Urban Heat Islands (UHI)

City Recommendations

- Create a urban heat island effect index
  - set quantifiable goals for heat reduction
- Create policies and programs to increase reflective and vegetated surfaces
  - Rebates for construction
  - Regulations for urban canopies and green infrastructure



(Encyclopedia of Earth)

CHULA VISTA

- **Cool Pavements Study** conducted to seek benefits of reflective, porous pavements
- **Shade Tree Planting program** works to include shade trees in all new parking lots

SAN DIEGO CLIMATE ACTION PLAN

- Achieve 15% urban tree coverage by 2020

Addressing UHI in Washington, DC

- **RiverSmart Communities** program offers a 60% rebate for low-impact development projects
- **RiverSmart Rewards** offers single-family homes storm water utility-fee reductions for installed green infrastructure
- **Green Building Act of 2006** requires buildings larger than 50,000 square feet and publicly financed projects be LEED certified
- **2013-2014 Green Roof Rebate** of $7 per square food for residential, commercial and institutional facilities

RiverSmart
clean water starts here
A program of the District Department of the Environment

Objective of River Smart program is to reduce storm water runoff that harms local waterways.

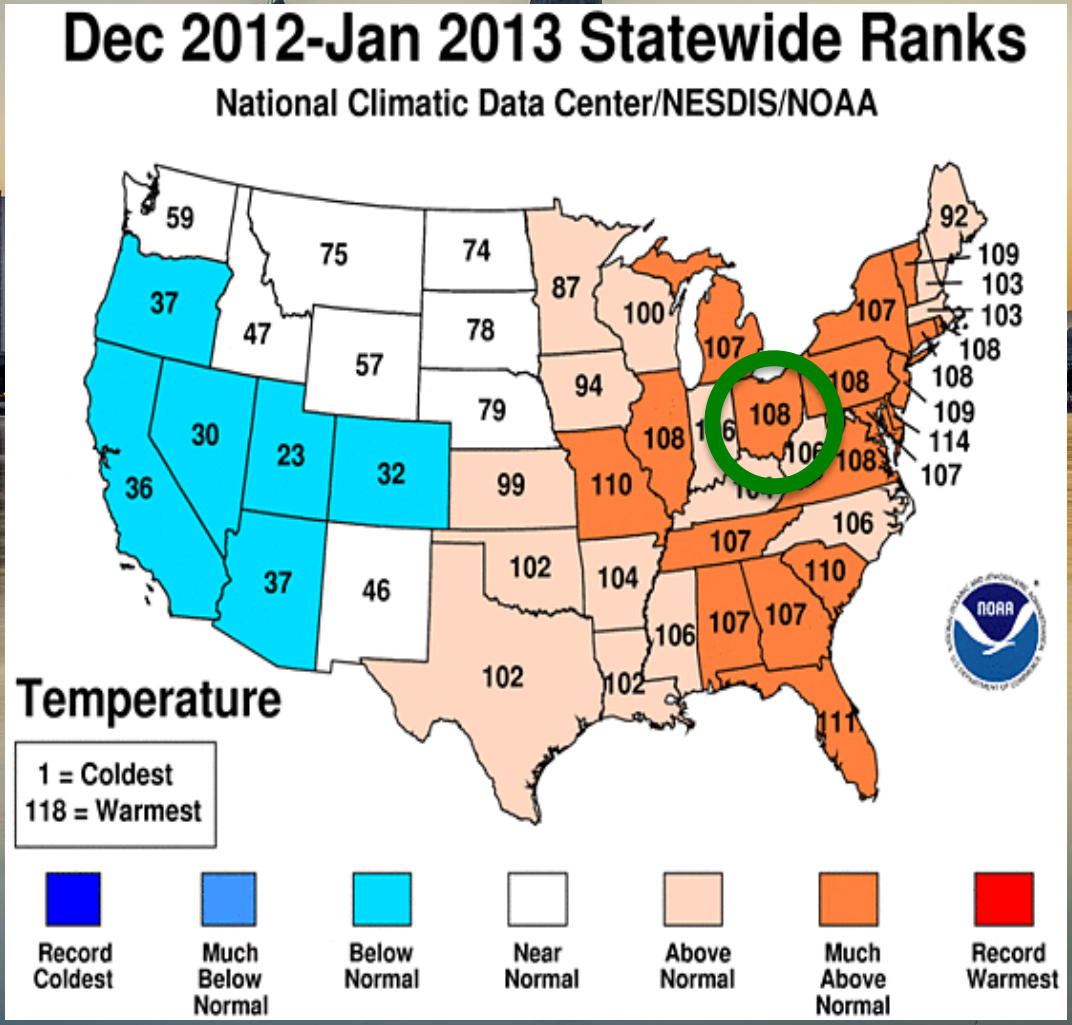
By-product: Reduction of UHI impacts and energy and water savings

- *District Department of Transportation, in collaboration with local electric utilities,* initiated a program focused on **thoughtful placement of urban trees** to maximize shade and ensuring branches do not interfere with electric lines and important infrastructure

Public Health in Cincinnati, OH

2013 Climate Protection Action Plan goals:

- Increase acreage of high-quality green space by 10% by 2020
- Incorporate specific language for heat emergencies into city emergency plan
- See no increase in heat-related hospital admissions
- Plant 2 million more tress by 2020
- Encourage green and cool roofs to reduce total energy consumption in building environment by 15%



(Cool Policies for Cool Cities Report by American Council for an Energy Efficient Economy & Global Cool Cities Alliance)

Risks to Heat in Ohio

Table 2: Increases in EHE-Attributable Mortality Caused by Climate Change

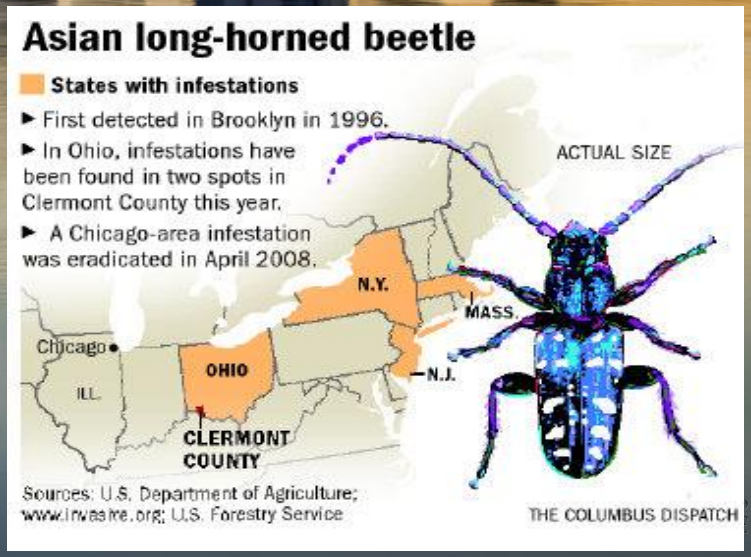
Location	Average Mortality per Summer (Historical Average 1975-2004)	Mortality Per Summer: By Mid-Century (2045-2055)		Mortality Per Summer: By End-of-Century (2090-2099)		Cumulative Additional Mortality: By Mid-Century (2050)	Cumulative Additional Mortality: By End-of-Century (2099)
		Climate Change Will Increase Per-Summer Average Mortality by...	...Making the New Total Summertime Mortality Increase to	Climate Change Will Increase Per-Summer Average Mortality by...	...Making the New Total Summertime Mortality Increase to	Year after year of increased mortality due to climate change adds up to...	
Cincinnati, OH	12	9	21	16	28	245	897
Cleveland, OH	40	93	133	446	486	2,530	16,625
Columbus, OH	4	38	42	151	155	1,066	6,001
San Diego, CA	0	4	4	7	7	119	396

(Killer Summer Heat Report by Natural Resources Defense Council)

Ohio is at risk to more intense heat waves and increased threat to heat-related illnesses

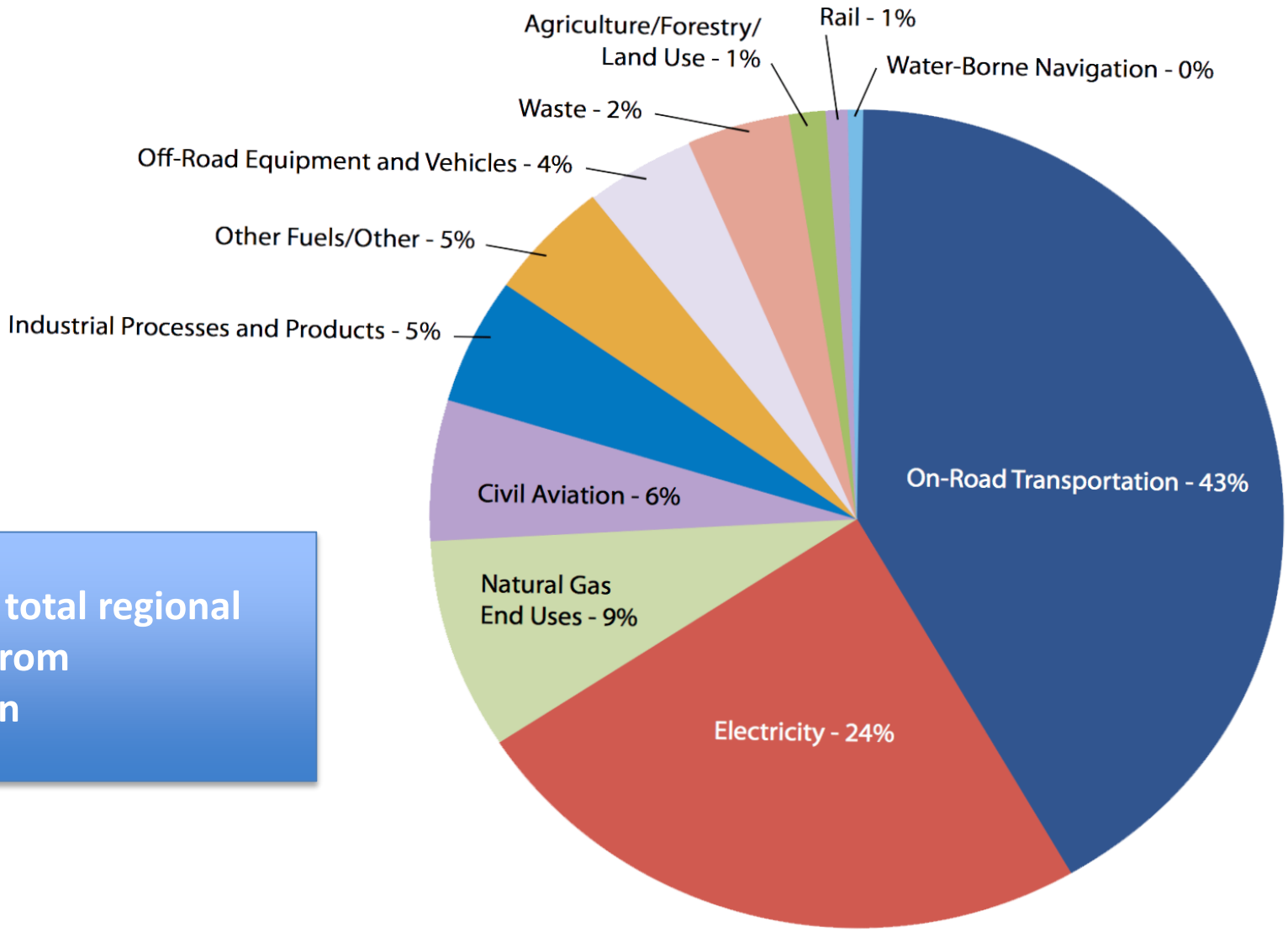
Insect infestation as affected nearly 10,000 trees in Cincinnati, most of which have been cut down which increases health threats to UHI.

(Cincinnati.com)



Transportation Policies and Regulations

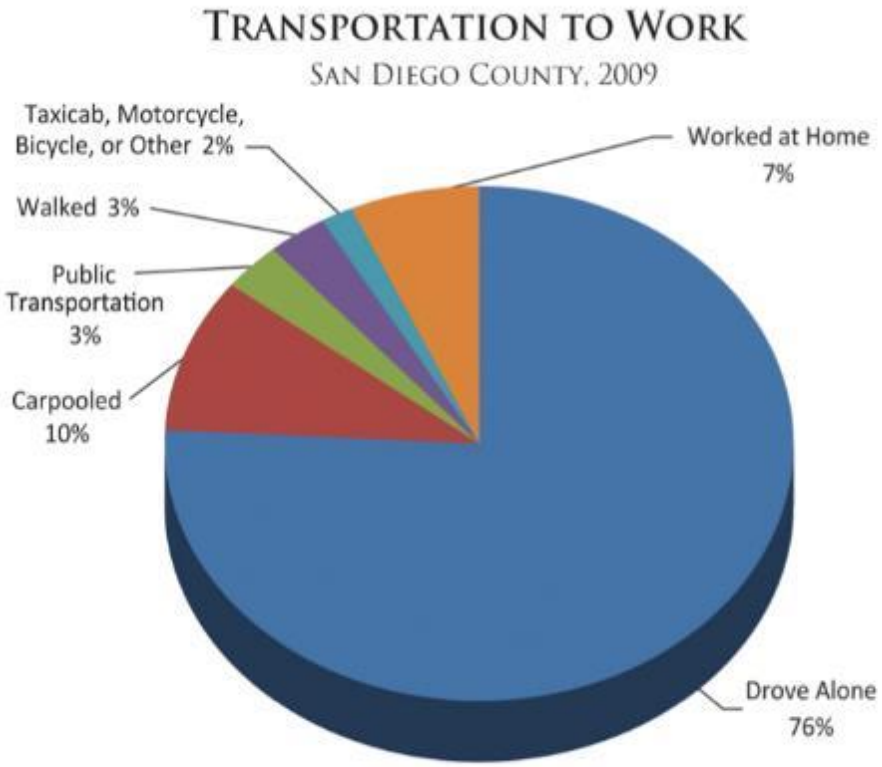
Transportation is the LARGEST source of emission



A majority of total regional emissions is from transportation

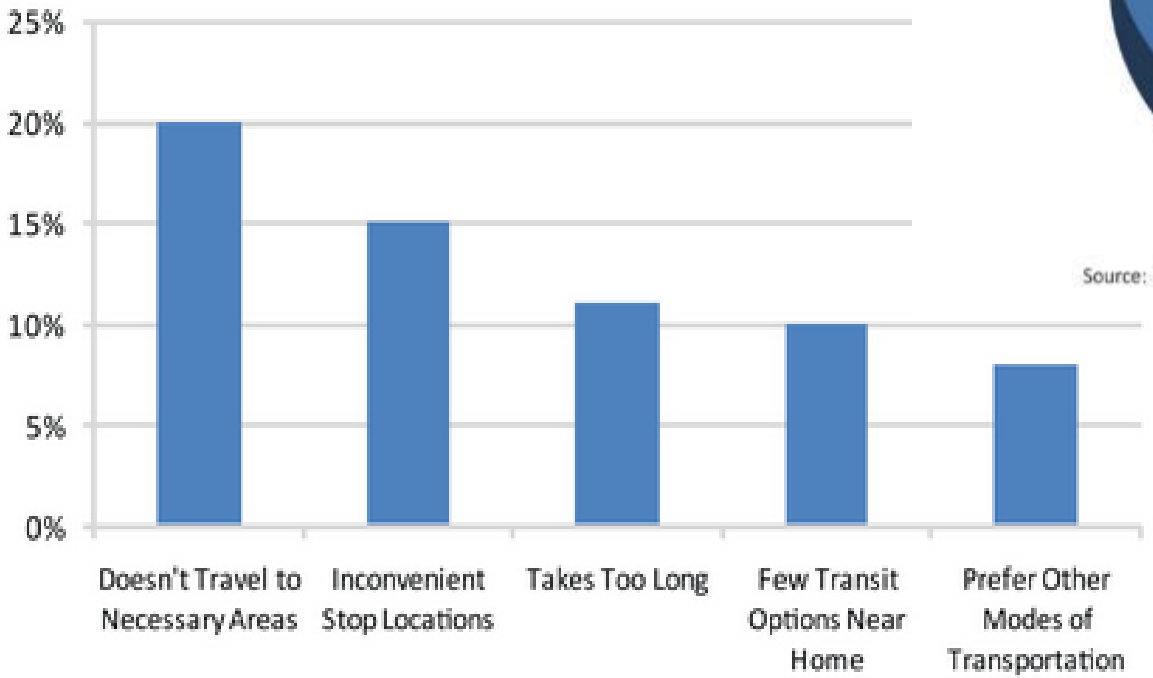
Source: San Diego County GHG Inventory Executive Summary

San Diego's Mode of Transportation



Source: Equinox Center, 2010; American Community Survey, 2009 (Table C08301)

Primary Barriers to Increased Public Transit Ridership in San Diego County



Source: Equinox Center, 2010; San Diego Regional Transportation Public Opinion Study, 2008 (Fig. 21)

2050 Regional Transportation Plan/ Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act supports the State's climate action goals to reduce greenhouse gas emissions through coordinated transportation and land use planning with the goal of more sustainable communities.

Each of California's metropolitan planning organizations must prepare a "sustainable communities strategy" as an integral part of its regional transportation plan. The sustainable communities strategy contains land use, housing, and transportation strategies that would allow the region to meet its green house gas emission reduction targets (SB 375).

SB 375 sets regional targets for reducing greenhouse gas emissions

Region	2020	2035
San Diego (SANDAG)	7% reduction	13% reduction

Source: California Environmental Protection Agency: Air Resources Board

2050 Regional Transportation Plan/ Sustainable Communities Strategy

Source: SANDAG

- Provides for the region's future transportation needs with 900,000 more people, 273,00 new housing units and over 300,000 new jobs expected by 2035
- Result in regional per capita greenhouse gas emission reductions by 13% by 2035
  - Larger investments on bus rapid transit services, active transportation such as biking and walking, commuter networks
- Enhancement to SANDAG's public outreach and involvement programs
- By 2035, 80% of new housing will be close to transit systems

San Diego Regional Bicycle Plan

- Policy Objective
  - *"Create more walkable and bicycle-friendly communities consistent with good urban design concepts"*
- Policy Actions & Goals
  1. Improve the connectivity and quality of network
  2. Provide policy direction and funding to assist local jurisdictions with planning and implementation
  3. Support bicycle integration into major employment and activity centers. Encourage multi modal travel
  4. Ensure convenient and secure bicycle parking and supporting facilities
  5. Institutionalize complete streets principle
     - "Complete streets make it easy to cross the street, walk to shops, and bicycle to work" – Smart Growth America
  6. Increase education, encouragement, enforcement, and performance monitoring.

Source: SANDAG riding to 2050

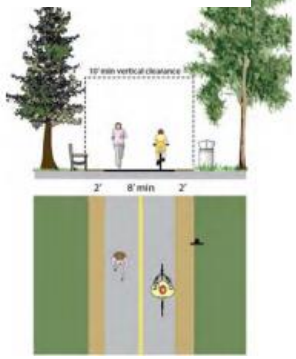
San Diego Biking Network

Facility Type and Mileage for the Regional Bicycle Network

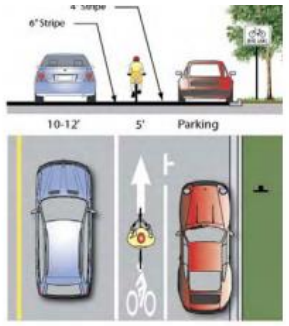
Facility Type	Mileage	Percent of Total
Class I – Bike Path	227.8	44.2 %
Enhanced Class II – Bike Lane	212.5	41.3 %
Enhanced Class III – Bike Route	32.7	6.3 %
Cycle Track	8.3	1.6 %
Bicycle Boulevard	34.2	6.6 %
TOTALS	**515.5**	**100 %**

Source: Alta Planning + Design, April 2009

Class I – Bike Path

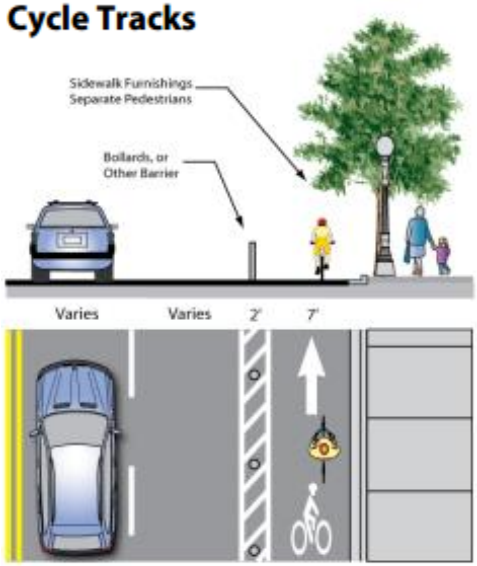


Class II - Bike Lanes

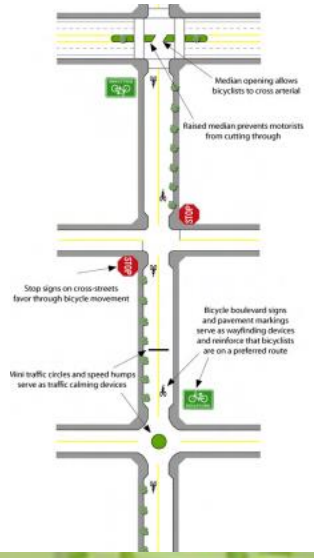


Class III - Bike Routes

Cycle Tracks



Bicycle Boulevards



Source: SANDAG riding to 2050

Policy Programs

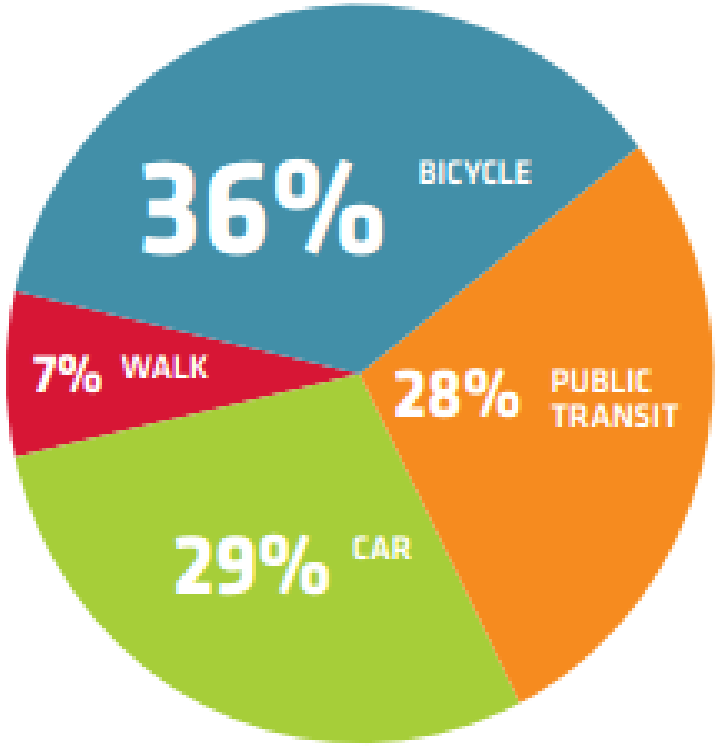
Cycling Skills & Safety Courses (Adult & Youth)	
Target	Adult cyclists, school-age children
Primary agency	Bicycle organizations, school districts, cities' public safety, police and planning departments
Partners	Parent groups at schools, community volunteers
Key elements	On-bike skills and safety training
Cost	$50,000 to $100,000
Potential funding sources	State-legislated Program (SR2S) and the federally-legislated Program (SRTS) Safe Routes to School grant funding; local, state or national health grants (e.g. Robert Wood Johnson Active Living by Design grants); TDA & *TransNet* funds
Sample programs	LAB's curriculums: http://www.bikeleague.org/programs/education/index.php BTA's Bike Safety Education Program: http://www.bta4bikes.org/resources/educational.php

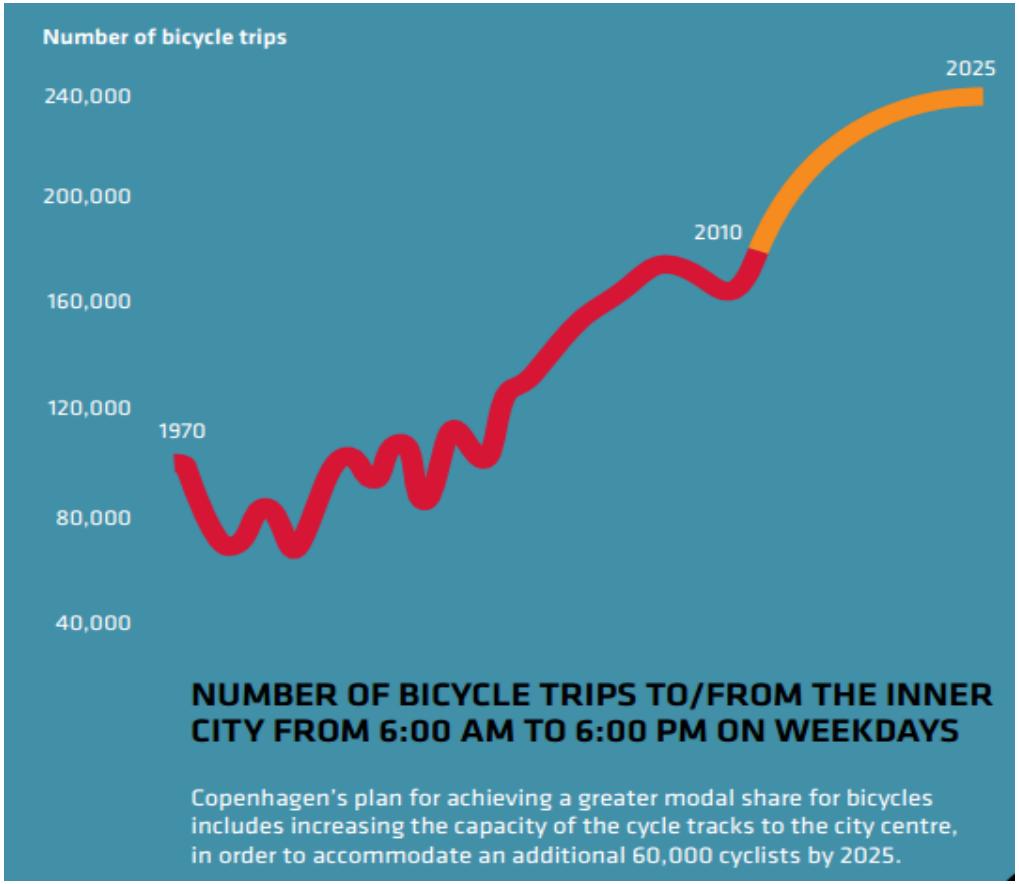
Bike Sharing Program	
Target	Bicyclists and potential bicyclists
Primary agency	SANDAG
Partners	Local governments; MTS
Key elements	Rental bikes available at key locations. Comprehensive outreach.
Cost	$100,000+
Potential funding sources	CMAQ (Congestion Mitigation/Air Quality) funds; SAFETEA-LU; TE, ; public transportation funds; TDA & *TransNet* funds
Sample programs	Paris' Velib: http://www.en.velib.paris.fr/ Germany's Call a Bike: http://www.callabike-interaktiv.de/kundenbuchung/process.php?proc=english&f=500&key=d77b3782346423c9f6ea41d27f412b00...00000 City of Houston:

Source: SANDAG riding to 2050

Good, Better, Best –
The City of Copenhagen's Bicycle Strategy 2011-2015

Modes of transportation to work or educational institutes





Source: City of Copenhagen

Good, Better, Best – The City of Copenhagen's Bicycle Strategy 2011-2015

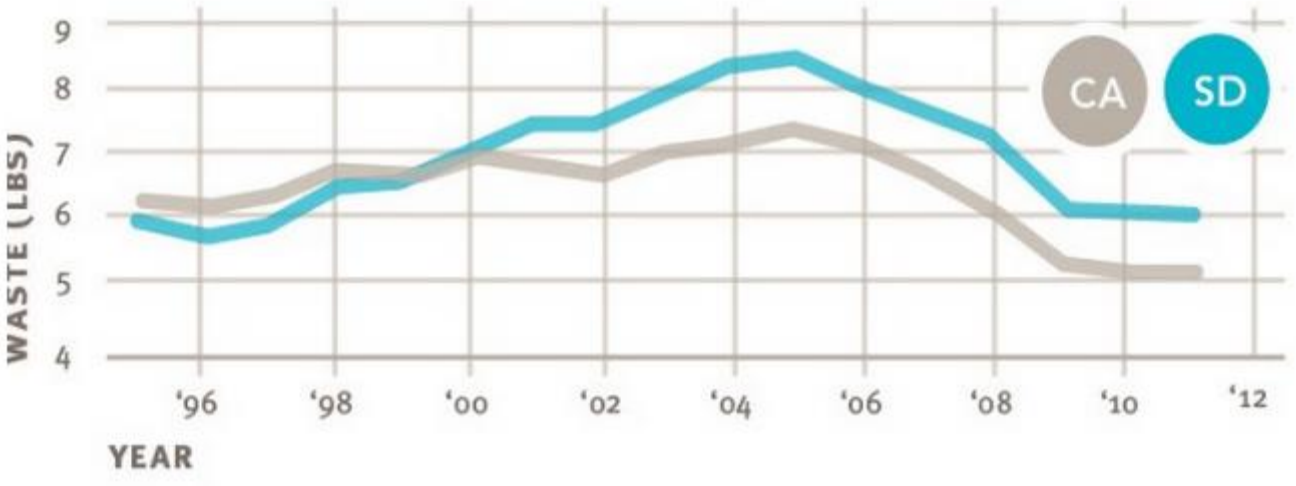
- City Life
  - Bicycle is a more flexible and space-saving transport form
  - Campaigns aimed at groups who have potential to cycle more
  - Majority of shopping trips made by cyclers
- Comfort
  - Smoother and cleaner cycle tracks
  - Great and effective bicycle parking and services

- Speed
  - 48% of Copenhagen cyclers choose because it is faster
  - Bicycle Superhighways
  - Effective short cuts
  - Lower speed limits for cars
- Sense of Security
  - Wider and new cycling tracks
  - Safer routes to schools
  - Bicycle connections away from cars
  - Traffic policy taught at various schools

Source: City of Copenhagen

REGULATIONS AND POLICIES ON WASTE SYSTEMS

San Diego's Trash



SOURCE: EQUINOX CENTER, 2012; CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING & RECOVER, 2012

Average waste disposal in San Diego County is declining since 2005

But San Diego County's average daily per capita waste disposal is still higher than the surrounding counties

SOURCE: EQUINOX CENTER, 2012; CALRECYCLE, 2012.

Where does our trash go?

- Miramar Landfill receives about 910,000 tons of trash yearly
- Methane is captured and used to fuel 90% of power electrical generators
- At this rate, the Miramar Landfill will reach capacity and close by 2022
- San Diego waste reduction and recycling programs helped extend the lifespan of the Miramar Landfill
- Yet, two-thirds of San Diego's trash can still be recycled

Recycling in San Diego

1989

→ AB 939: requires 50% diversion by 2000

2011

→ AB 341: statewide goal of 75% diversion by 2020

2013

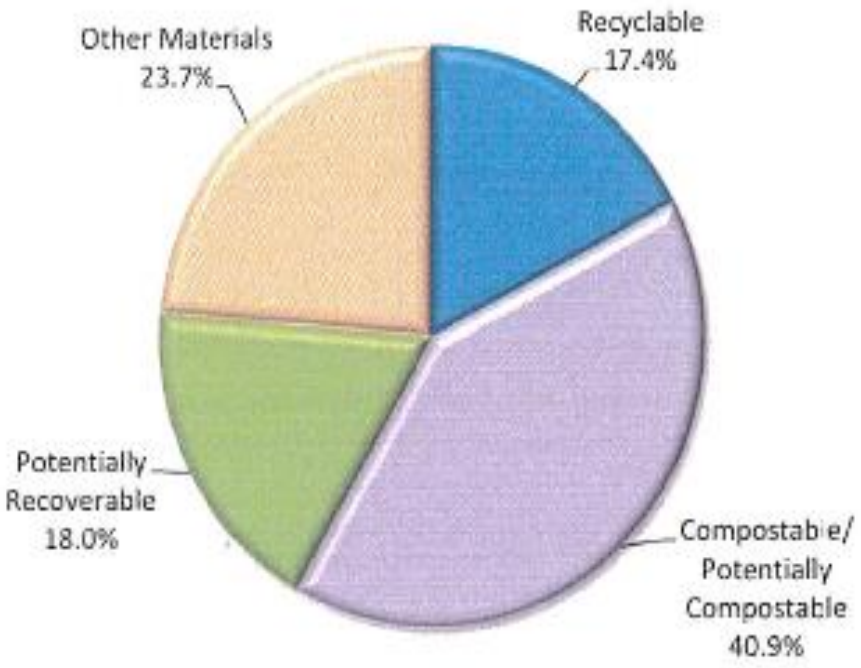
→ San Diego has an overall 67% diversion rate

- Residential Recycling Rate- 23%
- Commercial and Multi-Family- 26%
- City Sites- 27%
- C & D-71%

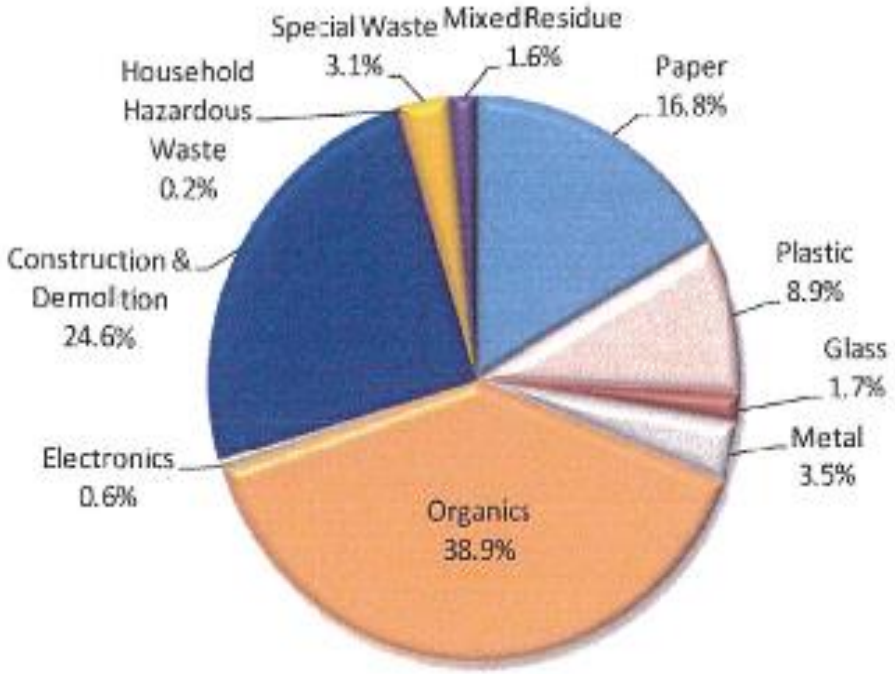
Source: City of San Diego Environmental Services Department

Recycling in San Diego

Composition by Recoverability Group



Composition by Material Class



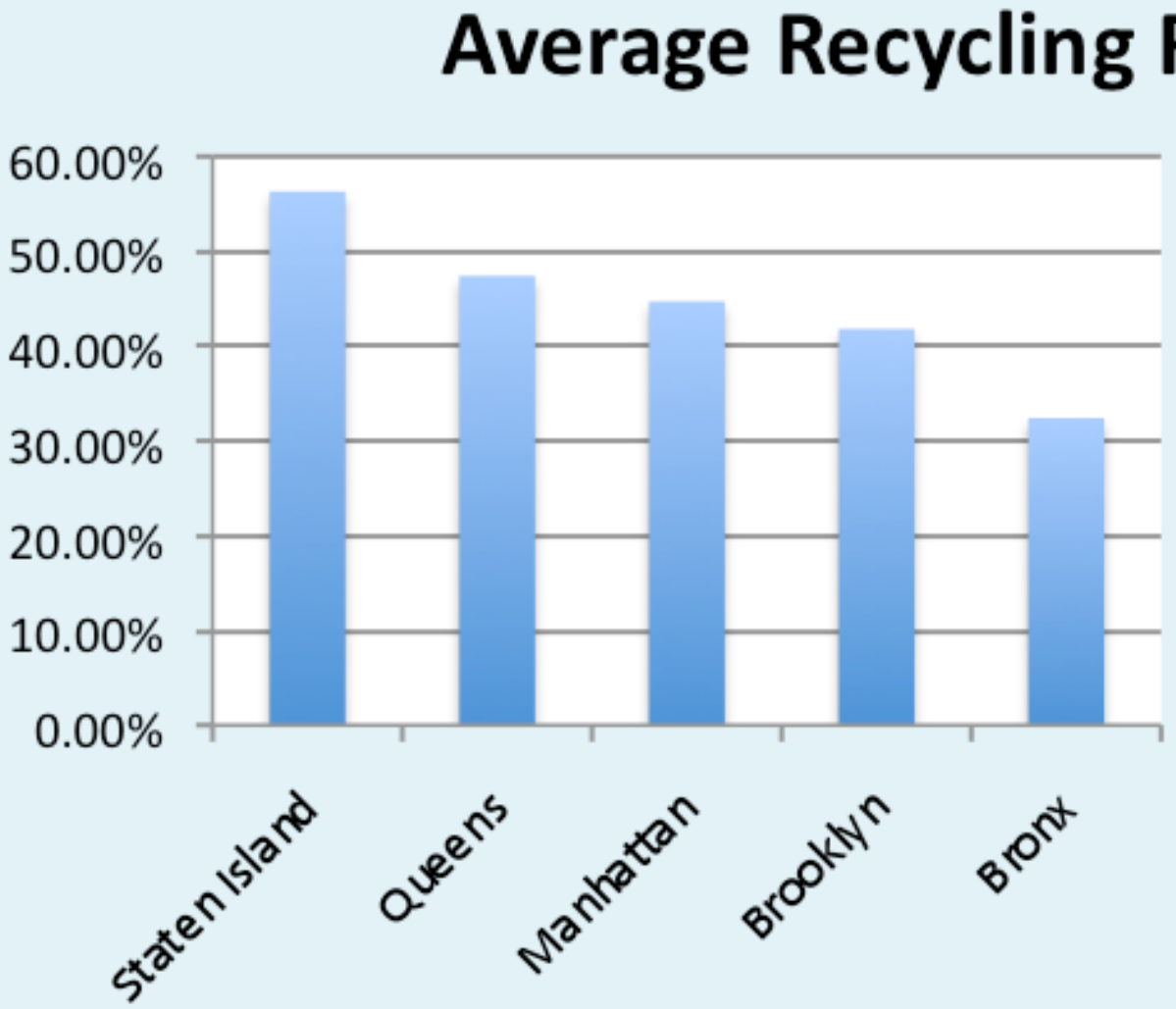
More than 76% of San Diego's overall waste is recoverable

Source: City of San Diego Waste

New York Recycling Programs

- Product Stewardship is the act of minimizing health, safety, and environmental impacts and maximizing economic benefits
  - It creates incentives for manufacturers to redesign products and packaging to be less toxic and more recyclable
- Apartment Building Recycling Initiative
  - Invited to training sessions to learn how to improve apartment building recycling
  - Staff will visit building to see how recycling is set up
  - Provide buildings with posters and other materials to encourage recycling

New York Recycling



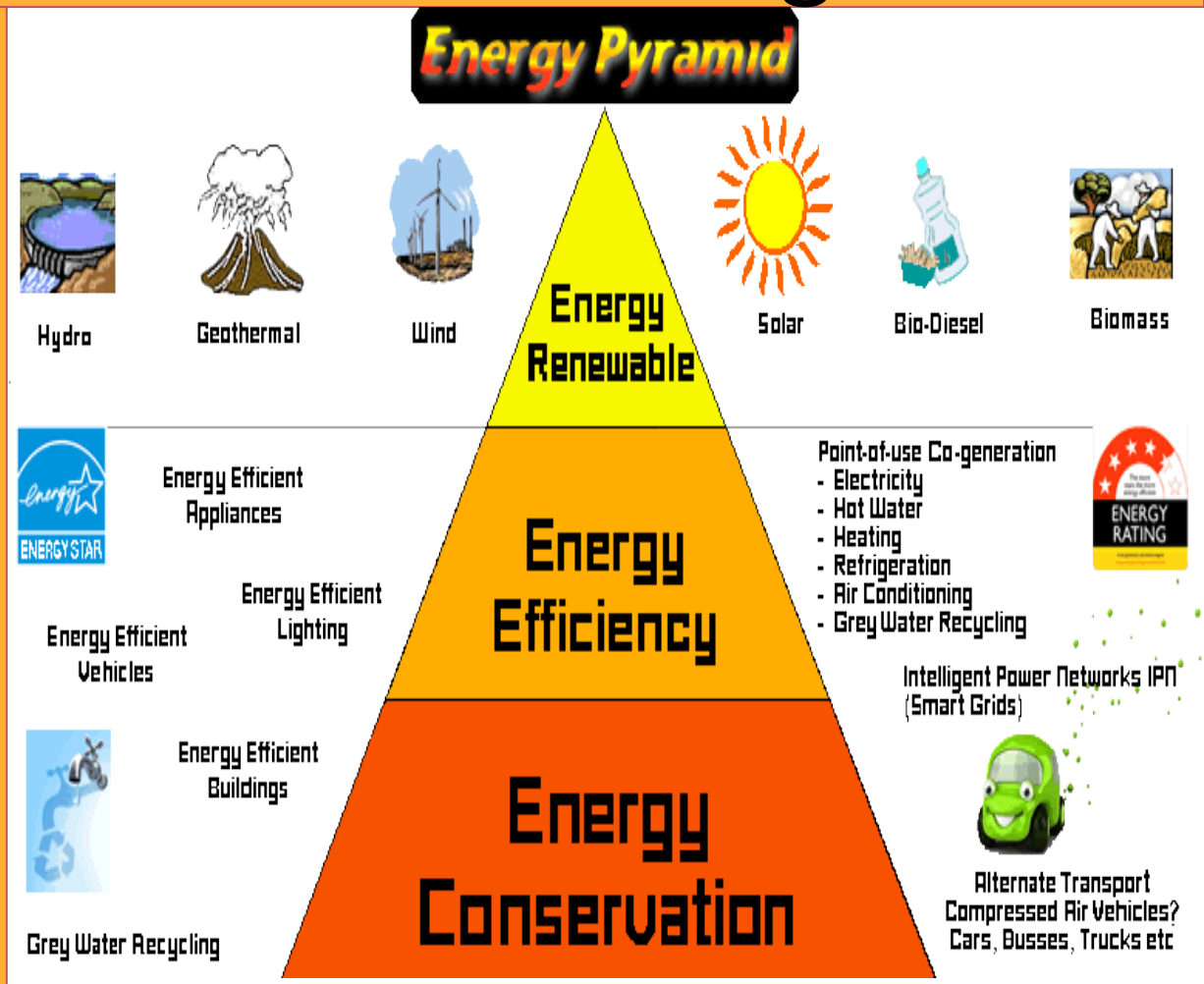
In 2013,San Diego reached a rate of 67%. Even with recycling intensive policies in New York, San Diego is doing a lot better than most cities

Resilient Energy Policies in San Diego

SDG&E Energy Efficiency Programs for 2009-2011 in San Diego

SDG&E has requested from the CPUC $280 million in funding for the next three years to implement energy efficiency programs. The projected energy saving goals:

- 610 million kWh savings
- 116,000 MW
- 13.6 million Therms
- 4.5 million tons of CO2 reduction



Source: SDG&E

Pilot Programs

- **"Zero net energy" buildings --** The CPUC has established milestones to achieve **zero net residential construction** by 2020 and **commercial construction** by 2030. Will be working with cities developers to design a program
- **Whole House program --** Encourage home owners to implement a comprehensive upgrade.
  - The assistance of realtors and contractors to capture the new home buyer and home renovator and work with them to consider **energy efficiency**, **demand response and renewable** in their project.

LPL Financial Headquarter Tower II, La Jolla

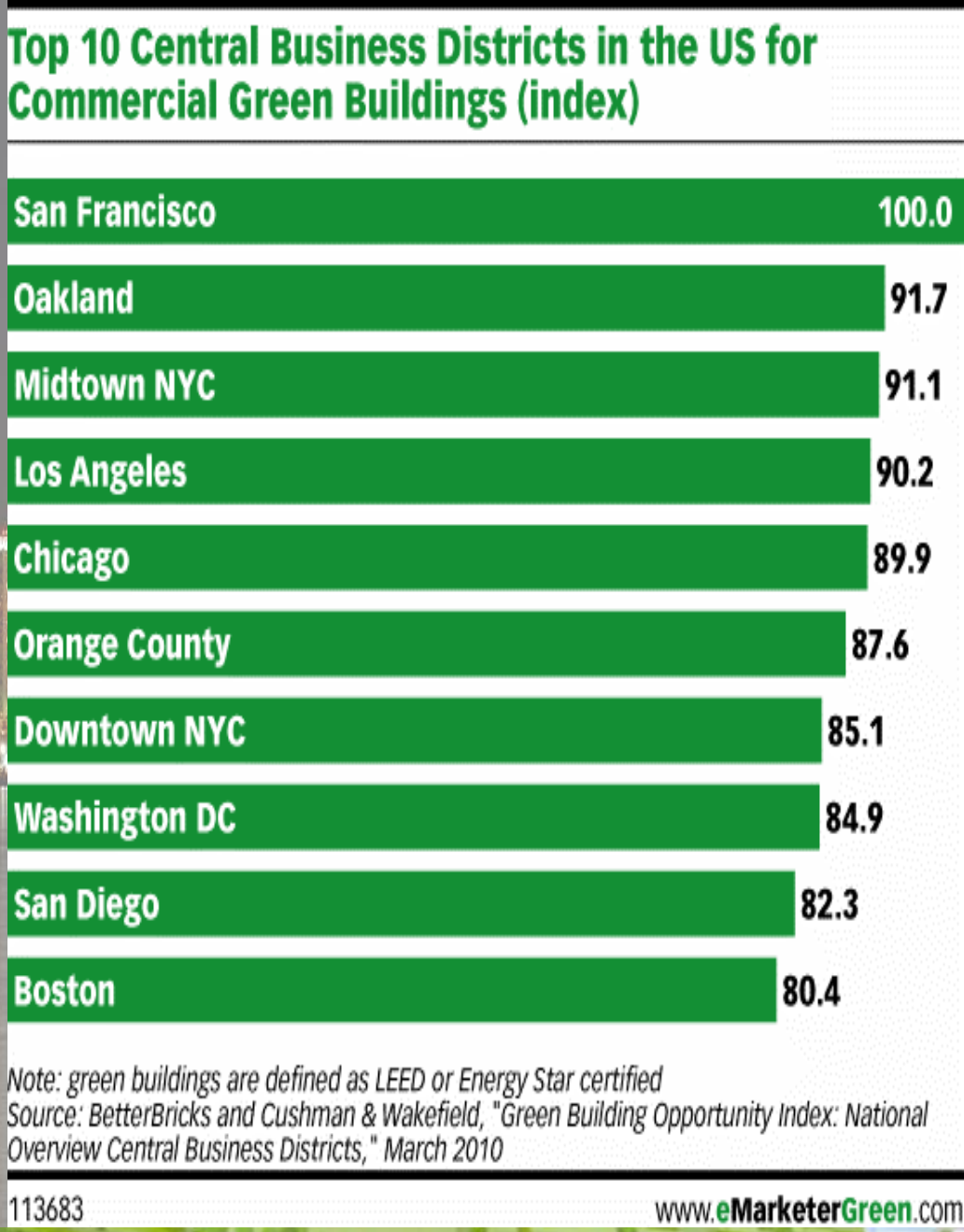
Source: SDG&E

GREEN

Building Incentive Program

- The County of San Diego Green Building Incentive Program is designed to promote energy efficiency, use of resource efficient construction materials, and water conservation in new and remodeled residential and commercial building

Source: County of San Diego



UCSD's new sustainable student housing which targets LEED certification

Source: Inhabitat.com

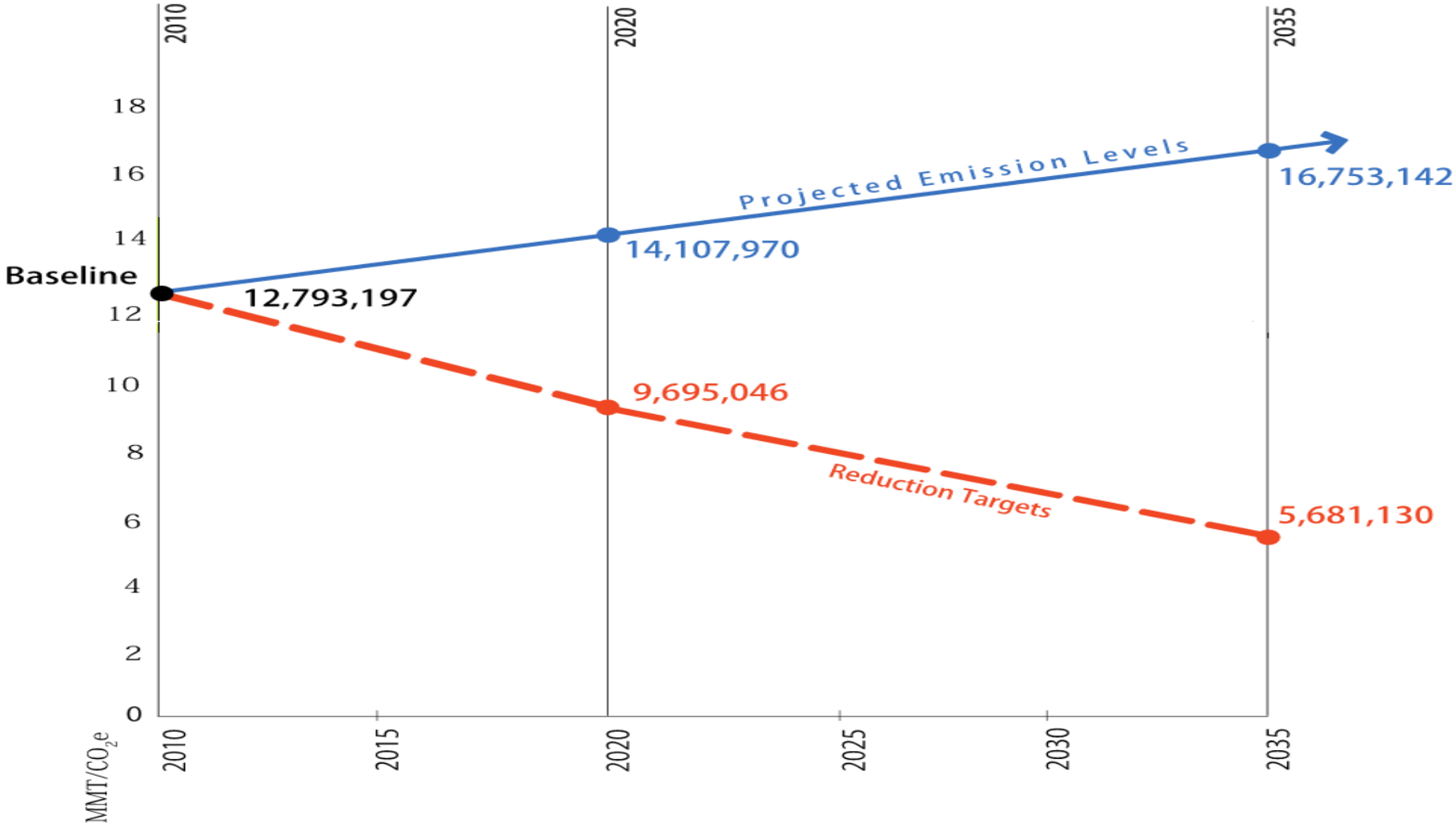
Tax Incentives In New York

- Residential Wood Heating Fuel Sales Tax Exemption
- Solar Sales and Compensating Use Tax Exemption
- Energy Conservation Improvements Property Tax Exemption
- Refundable Clean Heating Fuel Tax Credit
- Biofuel Production Tax Credit

Loan Programs In Texas

- Low-interest loans for energy-related, cost-reduction retrofits at state, public school district, public college district, and tax-district supported public hospital facilities
- Applicants repay loans through energy cost savings realized from project
- Maximum incentive of $7.5m; project must have composite payback of ten years or less

Green House Gas Emission Reduction Goals



San Diego Climate Action Plan (Draft)

Strategy 1: Energy & Water Efficient Buildings

- **Reduce nonresidential building energy consumption.**
  - Reduce energy use by 15% per square foot in 25% of total non-residential square feet in 2020 and 50% of total square feet in 2035.
- **Reduce residential building energy consumption.**
  - Reduce energy use by 15% in 20% of residential housing units by 2020 and 50% of units by 2035.
- **Reduce municipal energy consumption.**
  - Reduce energy consumption at municipal facilities by 15% in 2020 and 2035.
- **Reduce daily per capita water consumption.**
  - Reduce daily per capita water consumption by 4 gallons per person per day by 2020 and 9 gallons by 2035.

Strategy 2: Clean & Renewable Energy

- **Adopt a Community Choice Aggregation Program**
  - Add additional renewable electricity supply to achieve 100% renewable electricity by 2035 citywide.
- **Increase installed photovoltaics.**
  - All new residential buildings will be net zero energy by 2020 and all new commercial buildings by 2030.

Resilient Water Policies in San Diego

Household Level: Conservation is Key

Mandatory Water Restrictions
Stage 2 Drought Alert
effective July 24, 2014

City of San Diego Requirements

- Water landscapes < 3 times per week before 10AM, after 6PM.
- Use hand held hose with shut off valve for car washing
- Serve water to restaurant patrons only upon request

Protect your family from water shortage and malnutrition

- Visit EPA's WaterSense for tips on conserving water, such as replacing leaky pipes.
- Agricultural water users can find conservation options with a local Cooperative Extension Service agent.

Source: San Diego Gov

Policy for a **Sustainable** Water Supply in San Diego

- Development of a diverse local supply including conservation, desalination, gray water and rainwater collection and wastewater recycling
- Collaboration between local and regional businesses, agencies and other partners for securing water reliability
- Rate structures that encourage conservation and discourage waste

WATER CONSERVATION

Recycling Waste Water

- 1st large scale reclamation plant
- Treats 30 million gallons of wastewater per day
- Non-potable water used for irrigation

North City Reclamation Plant located in Mira Mesa.
Source: City of San Diego Public Utilities

Storm Water Development Plans

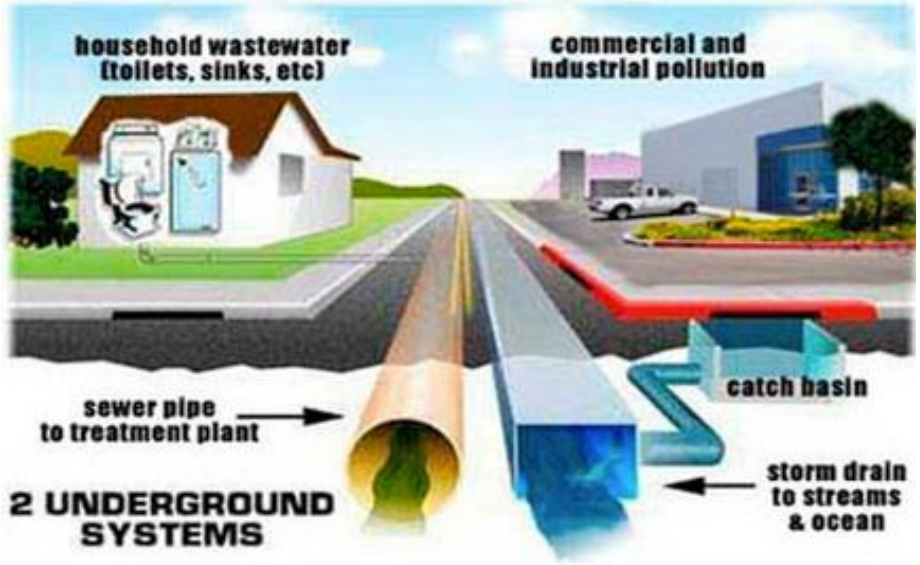
Manages and prevents urban runoff

- Urban runoff = biggest threat to water quality in San Diego

4 Primary tools of storm water management:

- Paving, channeling, storage, filtration

Storm water crew cleaning channel in Sorrento Valley 2012.
Source: Union Tribune San Diego



San Diego has 2 underground systems for our storm water management.
Source: San Diego Think Blue

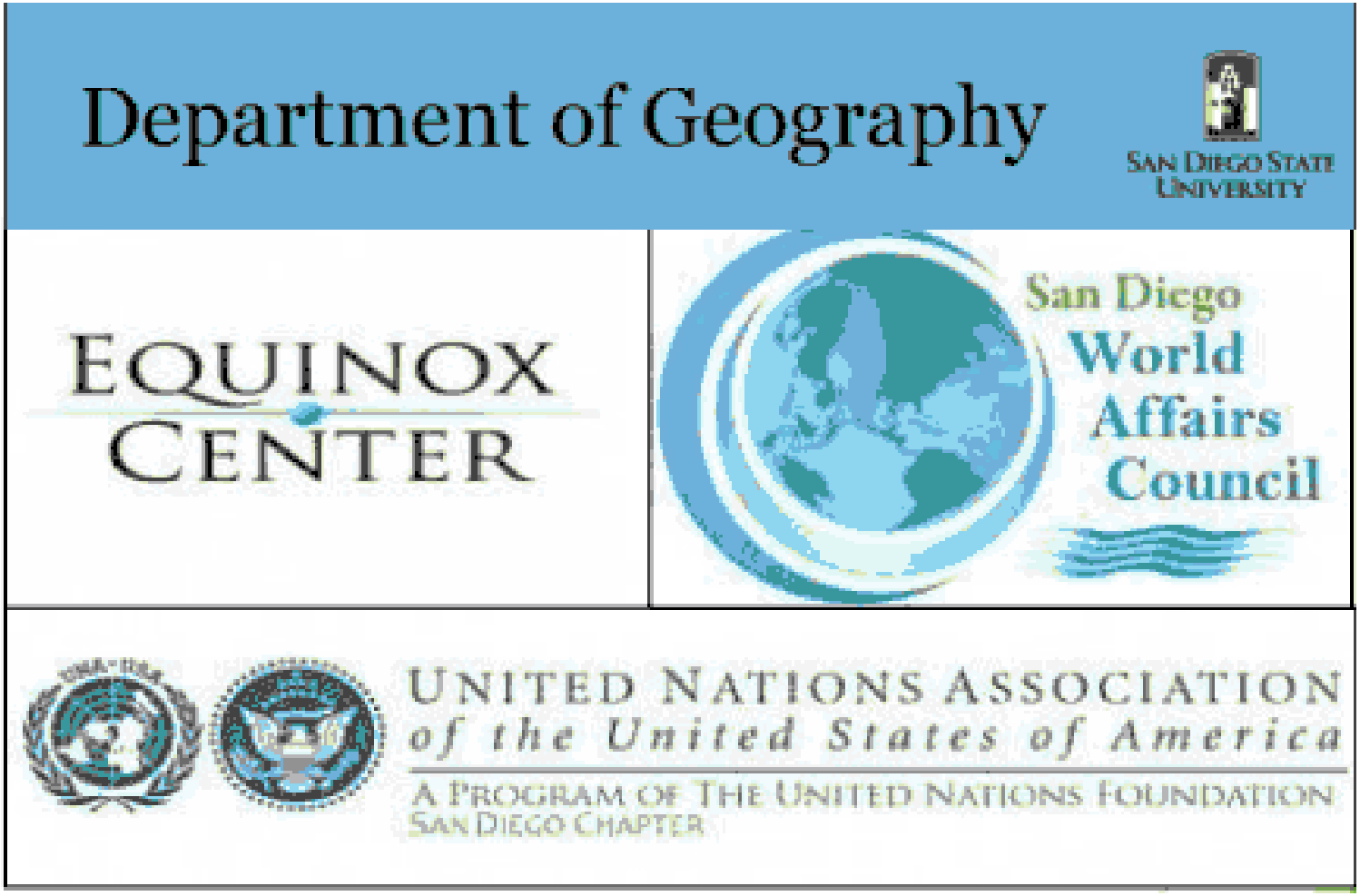
Proactive approach to flooding in city

Host and Sponsors

Hosted by:

Sponsored by:

Partners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A Program of The United Nations Foundation
San Diego Chapter

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