INTRODUCTION.

Invisible-5 is a self-guided critical audio tour along California's Interstate 5 between San Francisco and Los Angeles. The two CDs contain two and a half hours of audio organized into twenty-three tracks, each tied to a site encountered during the five to eight-hour long drive.

Invisible-5 attempts to illuminate the invisible toxic landscape along the Interstate through stories of people and communities fighting for environmental justice throughout the traveled route. Additionally, it contextualizes natural, social and economic histories such as the infrastructure of California's State and Federal Water Projects, Native American displacement, and habitat destruction. The project combines stories and oral histories of resident-activists, fenceline neighbors, community organizers, farmers, historians, writers, geographers and advocates, with field recordings, found sound, music, and archival audio.

As a critical pathway along the West Coast for trade, tourism, and migration, the I-5 is part of the infrastructure bundle that parallels it, supporting the symmetrical movement of water, oil, and gas. Running north/ south along the San Joaquin Valley's west side, the I-5 is a vital intermodal shipping corridor for California's economy in terms of national and international trade. Sited along the freeway are intensive agricultural production, massive livestock operations, military and industrial manufacturing, housing and prison development, waste dumping and incineration, and gas and oil production; whose activities have drastically altered the landscape over the last one hundred and fifty years.

Usually driven at high speed, most travelers along the Interstate experience the trip as a blur. As a result, few drivers grasp how polluted the spare, majestic landscape is. Often, there is little to see, smell, or taste of the mostly invisible pollutants. The few sites that hint at the pollution such as smokestacks or feedlots stand out like exclamation points. But as much of the pollution is transient, many of the tour's sites are fugitive.

The movement of traffic along the I-5 itself creates a river of pollution over the freeway, dense with sprayed pesticides, diesel emissions, and other airborne toxins. The greatest health risks from these contaminants are not to drivers, but to residents along the highway who live in close proximity to it and who bear the physical impacts of current and historic noxious activities along the route, often hidden within their bodies, and only made legible as illness.

Invisible-5 examines the historic reasons why polluting industries and businesses are often sited near low-income, rural and inner-city communities of color. In the areas around San Francisco and Los Angeles, communities sit directly under or adjacent to the I-5 with homes, playgrounds, and schools just yards from the freeway. Communities in the San Joaquin Valley along the I-5 are often just out of sight of the freeway, where easy truck access moves toxic waste to hidden landfills near small towns like Patterson, Kettleman City, or Buttonwillow.

Invisible-5 travels along the I-5 corridor, where low-income communities of color are selected to site these types of hazardous uses, and are unequally burdened by the resulting environmental pollution. Resistance by impacted communities has manifested in the growing environmental justice movement, and the demand that environmental rights are civil rights.

The environmental justice movement is a group of people of color and other low-income people in urban, rural, desert, and indigenous communities disproportionately impacted by pollution and environmental racism. Erupting out of a context and legacy of racism and social and economic injustice, it became a movement when it was recognized that specific communities were targeted and disproportionately impacted by pollution. Kettleman City, Bayview Hunters Point, and East LA are historic sites of struggle in California. Invisible-5 presents the stories of these conflicts and others, mapped to the places where they continue to occur. This project does not attempt to be a definitive record of environmental justice along the I-5, but to map the geopolitics of place to invisible sites of struggle along the freeway.

What Is Environmental Justice?

Environmental Justice is the right to a decent, safe quality of life for people of all races, incomes and cultures in the environments where we live, work, play, learn and pray. Environmental Justice emphasizes accountability, democratic practices, equitable treatment and self-determination. Environmental justice principles prioritize public good over profit, cooperation over competition, community and collective action over individualism, and precautionary approaches over unacceptable risks.

Environmental racism refers to any environmental policy, practice or action that negatively impacts communities, groups or individuals based on race or ethnicity, and creates the need for environmental justice.

HOW TO DRIVE INVISIBLE-5.

Invisible-5 is designed for listening while driving the I-5 between San Francisco and Los Angeles. The simplest way to know when to start tracks is to use road signs as visual cues.

Below you will find directions for driving the route in either direction. Road sign cues are listed later in this booklet, along with other stop information

The majority of the audio stops are tied to very little visual information and some stops, such as Tule Fog, are inherently site-shifting and unfixed. The stops are meant however, to give you a specific sense of locale wherever possible. Consequently, the spacing of stops is highly irregular due to the physical spacing of the actual sites. There are lengthy (up to 50 minute) gaps between some stops and some are clustered together.

DIRECTIONS.

Southbound
San Francisco to Los Angeles

From San Francisco, head east on I-80 (Sign: 80/Bay Bridge/Oakland) over the Bay Bridge toward Oakland. Just after you exit the bridge, get in the right-hand lane. Take the I-880 southbound ramp (Sign: south 880/Alameda/San Jose) and head southbound on I-880 until you reach the exit for I-238/I-580 east (Sign: Stockton/Fresno). Take the I-238/580 ramp and continue on I-580 to the south I-5/Fresno/Los Angeles exit, just after Altamont Pass. From there, stay on I-5 to Los Angeles. Invisible-5 ends after the Boyle Heights stop concludes.

Northbound
Los Angeles to San Francisco

From Los Angeles, enter I-5 northbound from any ramp south of the Soto Street exit in Boyle Heights. Stay on I-5 through much of the San Joaquin Valley until just north of Westley. Where the I-5 and the I-580 diverge, take I-580 west towards San Francisco (Sign: 580/Tracy/San Francisco only). Follow I-580 to the I-238 connector (Sign: 238 to 880 exit only). Follow the connector and merge onto I-880 north towards Oakland (Sign: 880 north/Oakland). Follow the I-880 (Sign: 880/80/San Francisco/Berkeley) to I-80, towards the Bay Bridge Toll Plaza and San Francisco (Sign: West/ San Francisco/Bay Bridge). Invisible-5 northbound concludes with the Bayview Hunters Point stop.

LOOPS

There are two side trip loops off of the I-5, through Elk Hills and Kesterson National Wildlife Refuge. Directions are listed with the related stop.

MAP

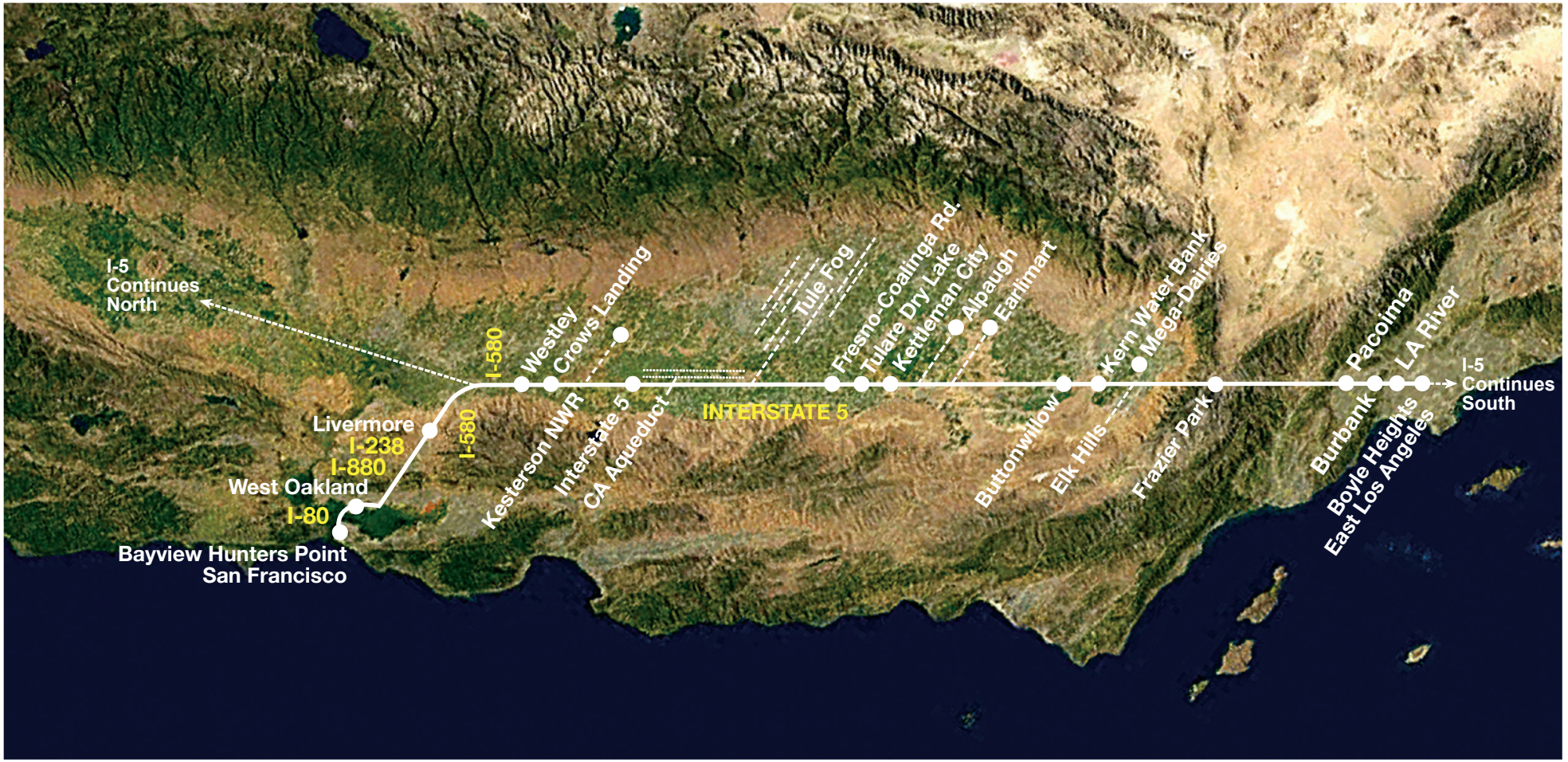
See the centerfold for a map of the route, which shows the audio stops, and should provide a sense of the general clustering of the sites. You may wish to take along an additional map for a better sense of distances and the overall terrain, for which we recommend Benchmark Maps California Road & Recreation Atlas.

VISUAL TRACK CUEING

We have created sets of Northbound (NB) and Southbound (SB) cues based on exit and mileage road sign names. These signage cues work well in the daytime, but are difficult to follow at night. The stops can also be listened to as a non-cued, unbroken whole.

Depending on your driving speed, a few stops may run over each other slightly around Alpaugh, the south end of the San Joaquin Valley, and Los Angeles.

Downloadable audio files for this project are available online at **www.invisible5.org** and both northbound and southbound audio, directions and cues are available there.


I-5
Continues
North
I-580
Westley
Crows Landing
Tule Fog
Fresno-Coalinga Rd.
Tulare Dry Lake
Kettleman City
Alpaugh
Earlimart
Kern Water Bank
Mega-Dairies
Pacoima
LA River
I-5
Continues
South
Livermore
I-238
I-880
West Oakland
I-80
Bayview Hunters Point
San Francisco
I-580
Kesterson NWR
Interstate 5
CA Aqueduct
INTERSTATE 5
Buttonwillow
Elk Hills
Frazier Park
Burbank
Boyle Heights
East Los Angeles

STOP: BAYVIEW HUNTERS POINT SAN FRANCISCO

SB CUE: Begin when you get on the Bay Bridge heading eastbound on I-80
NB CUE: Begin when you get on the Bay Bridge heading westbound on I-80

SITE: PG & E Power Plant, Hunters Point Naval Shipyard site
LOCATION: PG&E, 1000 Evans Ave., Hunters Point Naval Shipyard, 322 Innes Ave.
THREATS AND CONTAMINANTS: Groundwater, sediment, soil, and surface water contamination with asbestos, fuel, pesticide, heavy metals, PCBs, off-gas from VOCs, radium 226, cesium 137, non-point source pollution, air pollution
VOICE: Marie Harrison, Greenaction for Health And Environmental Justice

The Bayview Hunters Point neighborhood is bounded by Cesar Chavez Street to the north, the San Francisco Bay to the east, Highway 101 to the west and the City/County border of San Francisco to the south. The neighborhood is home to one Superfund site, a PG&E power plant, the former Hunters Point Shipyard site, a sewage treatment plant, 100 Brownfield sites, twenty-five underground petroleum storage tanks, and more than a third of the city's 1,263 hazardous waste generators. When operating, PG&E's Hunters Point Power Plant discharges almost 321 tons of pollution into the air each year, including PM10 particles, carbon monoxide, sulfur dioxide, nitrogen dioxide, and volatile organic compounds (VOCs).

The health of local residents has been heavily impacted by the ongoing environmental contamination of the area's air, water, and soil with toxic particulate matter, pesticide residual, petrochemicals, heavy metals, asbestos, and radioactive materials — more than 200 known toxic chemicals and materials according to the Environmental Protection Agency (EPA). Most impacted are the 12,000 residents who live east of Third Street, in proximity to heavy industry, power plants, and truck traffic. Of these households, approximately seventy percent are African American and fifteen percent are of Asian descent.

Asthma is one of the most serious environmental health challenges facing residents of Bayview Hunters Point. Additionally, health surveys show that in Bayview Hunters Point rates of cervical and breast cancer were found to be double the rate found in other parts of the Bay Area. Hospitalization rates for congestive heart failure, hypertension, diabetes, and emphysema were found to be more than three times the statewide average. Bayview Hunters Point and the bordering neighborhood of Potrero Hill account for more than half of all infant mortality in the San Francisco area.

STOP: WEST OAKLAND

SB CUE: When you merge on to the South 880 ramp
NB CUE: Hegenberger Rd./ Coliseum exit

SITE: West Oakland
LOCATION: South Prescott Park is located at 3rd St. & Chester Avenue; across from the AMCO Chemical Superfund site at 114 3rd St.
THREATS AND CONTAMINANTS: AMCO site, former Red Star Yeast Factory, diesel emissions, particulate matter, vinyl chloride, lead
VOICE: Renee Morrison, Chester Street Block Club Association

South Prescott is a historically significant eight-block neighborhood in West Oakland, bounded by Seventh Street to the north, Peralta Street to the west, Nelson Mandela Parkway to the east, and Third Street to the south. West Oakland is the poorest neighborhood in the Bay Area, where fifty-five percent of households earn less than $25,000 per year. More than sixty percent of the 24,000 residents of West Oakland are African American and eighty-nine percent are people of color, according to the 2000 Census.

Health threats for people living in West Oakland include lead and other toxic contamination in South Prescott Park, a vinyl chloride plume, diesel truck traffic fumes originating from three freeways that interchange above the neighborhood, and intensive shipping and traffic at the Port of Oakland—where a planned expansion could generate 22,000 truck trips per day by 2010. Thousands of diesel trucks travel through West Oakland daily, dropping off and picking up containers from the Port, which is the fourth busiest in the nation. Average diesel emissions per square mile in West Oakland are more than ninety times greater than average emissions for the rest of the state. West Oakland children are seven times more likely to be hospitalized for asthma than other California children.

In a 2003 victory for West Oakland residents, members of the community and a coalition led by the Chester Street Block Club Association (CSBCA) with Greenaction and others, successfully forced the shutdown of the Red Star Yeast Plant at Fifth and Mandela after residents learned that the factory's foul-smelling emissions contained illegal and dangerous levels of acetaldehyde – a carcinogen, neurotoxin, and developmental toxin produced when sugar is metabolized by yeast during fermentation. Before its closure, the factory had emitted 30,000 pounds of acetaldehyde annually under an exemption for businesses involved in food processing.

STOP: LIVERMORE

SB CUE: North Livermore Ave./Downtown Livermore Exit
NB CUE: North Greenville Rd./ Laughlin Rd.- 1mi.

SITE: Lawrence Livermore National Laboratory (LLNL)
LOCATION: Westgate Drive at Vasco Rd.
LLNL Discovery Center, 7000 East Ave.
THREATS AND CONTAMINANTS: Beryllium disease, brain and prostate cancer, melanoma, diseases linked to ionizing radiation, tritiated water
VOICE: Tara Dorabji, Tri-Valley CAREs

Lawrence Livermore National Lab (LLNL) is one of two major nuclear weapons design labs in the U.S. Operated by the University of California, research at the lab is primarily for weapons development. In 2006, one billion dollars was requested for weapons equaling eighty-seven percent of the lab's total budget request. The lab has two Superfund sites–one at the Livermore main site, and one off of Coral Hollow Road, at the Site 300 high explosives testing facility.

Tri-Valley CAREs is an anti-nuclear watchdog group focused on the lab since 1983. Using the Freedom Of Information Act, Tri-Valley CAREs found that including two major radiation leaks at the Tritium Facility in the 1960s and 70s, over one million curies of airborne radiation were released by the lab over the last fifty years. Tritium is radioactive hydrogen. Studies show that low-level exposure to tritium is extremely hazardous; there is no safe minimum threshold for radiation exposure to tritium. Over 1,500 claims have been filed by Livermore Lab employees, former employees, or relatives for compensation from on the job exposure to radiation, beryllium and other poisonous substances, resulting in terminal illness or death from working in proximity to these materials.

The lab is seeking to significantly expand the amount of radioactive materials onsite. The Department of Energy predicts that these increases will more than triple the ionizing radiation dose to the public. In addition, groundwater contamination at the LLNL site is currently about two miles from some of Livermore's public water supply wells. In January 2005, the plutonium facility was shut down for over a year due to systemic safety deficiencies. In February 2006, the lab announced plans to install Gatling guns capable of shooting a target a mile away around the perimeter of the facility. Residential housing is located just across Vasco Road and Arroyo Seco Elementary School is within the one-mile fire range. The white tritium facility stack can be viewed from I-580 if you look south from the hills just above Greenville Road.

SECONDARY SITE: Site 300 is the eleven-square mile Lawrence Livermore Experimental Test Site, located west of I-5 on Coral Hollow Road. This Superfund site has groundwater contamination from solvents, VOCs, tritium, uranium-238, high explosive compounds (HMX, RDX), nitrate, and perchlorate. The primary health threat is from drinking contaminated groundwater. (Source: USEPA)

SAN FRANCISCO > < OAKLAND

LIVERMORE > < WESTLEY

STOP: WESTLEY

SB CUE: Westley 4/Los Angeles 311 mileage sign
NB CUE: Westley Exit 1mi.

SITE: Westley Tire Fire site
LOCATION: The vicinity of 4401 and 4549 Ingram Creek Road, Westley
THREATS AND CONTAMINANTS: Toxic air pollution, groundwater contamination from 50,000 gallons of pyrolytic oil, and four million gallons of contaminated fire fighting water runoff, respiratory illness and other potential harmful human health effects
VOICE: Juan Luna, Maria Luna, John Mataka, Grayson Neighborhood Council

On September 22, 1999 a lightning strike ignited a tire fire in Westley, California where an estimated five million scrap tires burned for thirty-four days at an illegal tire dump on forty acres owned by rancher Ed Filbin.

The large smoke plume from the fire impacted nearby farming communities of Westley, Patterson, and Newman causing widespread concern of potential damaging human and environmental health affects from exposure to the toxic contaminants in smoke. Health problems affecting area residents included eye discomfort, chronic headaches, nosebleeds, asthma, bronchitis, skin irritation, sore throat, runny nose, coughing, wheezing and dizziness. The fire produced a dense layer of black smoke containing an array of toxic substances including benzene, polynuclear aromatic hydrocarbons, 1,3-butadiene in addition to other human carcinogens including arsenic, lead, chromium and dioxin – recognized by the EPA in 1985 as the most potent carcinogen known to science.

Once considered the largest tire dump in the world according to Modern Tire Dealer, the scrap tire pile contained forty-two million tires stacked as high as sixty feet that had been collected by Filbin for over forty years. During the late 1980s through the 1990s, Filbin leased his land to a privately owned tire-burning power plant for operation, which also purchased the tire pile for fuel. Ownership of the plant and the physical pile changed hands several times, eventually closing in 2000. The same year, the State along with 11,000 plaintiffs filed a civil suit against Filbin and other defendants, which at this time is still unresolved. It is estimated that the eventual cleanup of the site could run over a half-million dollars.

Photo courtesy of Stanislaus County Emergency Services

STOP: CROWS LANDING

SB CUE: Crows Landing 4
NB CUE: Crows Landing Exit 1mi.

SITE: The Covanta Incinerator
LOCATION: Covanta Stanislaus, Inc., 4040 Fink Road, Crows Landing
THREATS AND CONTAMINANTS: Hazardous waste incineration, dioxin and toxic air contaminants, soil and groundwater pollution from incinerator ash
VOICE: John Mataka, Grayson Neighborhood Council, Bradley Angel, Greenaction for Health and Environmental Justice

The Covanta garbage incinerator is located just west of I-5 at the Crows Landing exit. In presently importing and burning 800 tons of garbage per day, the incinerator emits dioxin and metals into the air, and threatens to contaminate the soil from byproduct buried at the nearby Fink Road Landfill and through diesel exhaust generated by trash hauling.

While Covanta claims that the design and technology of their incinerator system results in low atmospheric emissions of pollutants, the facility continues to produce and emit dioxin from its smokestack in the incineration of chlorinated plastics like polyvinyl chloride (PVC), according to Bradley Angel of Greenaction. In 2000, Westside Stanislaus residents, Grayson Neighborhood Council (GNC) and Greenaction successfully defeated plans to ship in and burn toxic medical waste at the Covanta incinerator.

The Grayson Neighborhood Council is a community and environmental justice group working to assist the Westside residents of Stanislaus County to defend themselves from disproportionate and discriminatory pollution threats, including attempts to operate and site noxious facilities in their midst. GNC is working toward the closure and remediation of existing toxic facilities and sites that currently threaten Westside residents' health.

The west side of Stanislaus County has multiple toxic sites, including dumps, waste incinerators, Superfund sites, and industrial Brownfields. Polluting sites on the west side include the Naval Air Logistics Force Superfund site (VOCs, heavy metals, and petroleum byproducts), the Paul Oil Co. (a commercial oil recycling plant), and the F & A Dairy, which releases eleven tons of nitrogen oxides per day.

STOP: KESTERSON NATIONAL WILDLIFE REFUGE

SB CUE: Gustine/Merced 1mi.
NB CUE: 140/Gustine/Merced

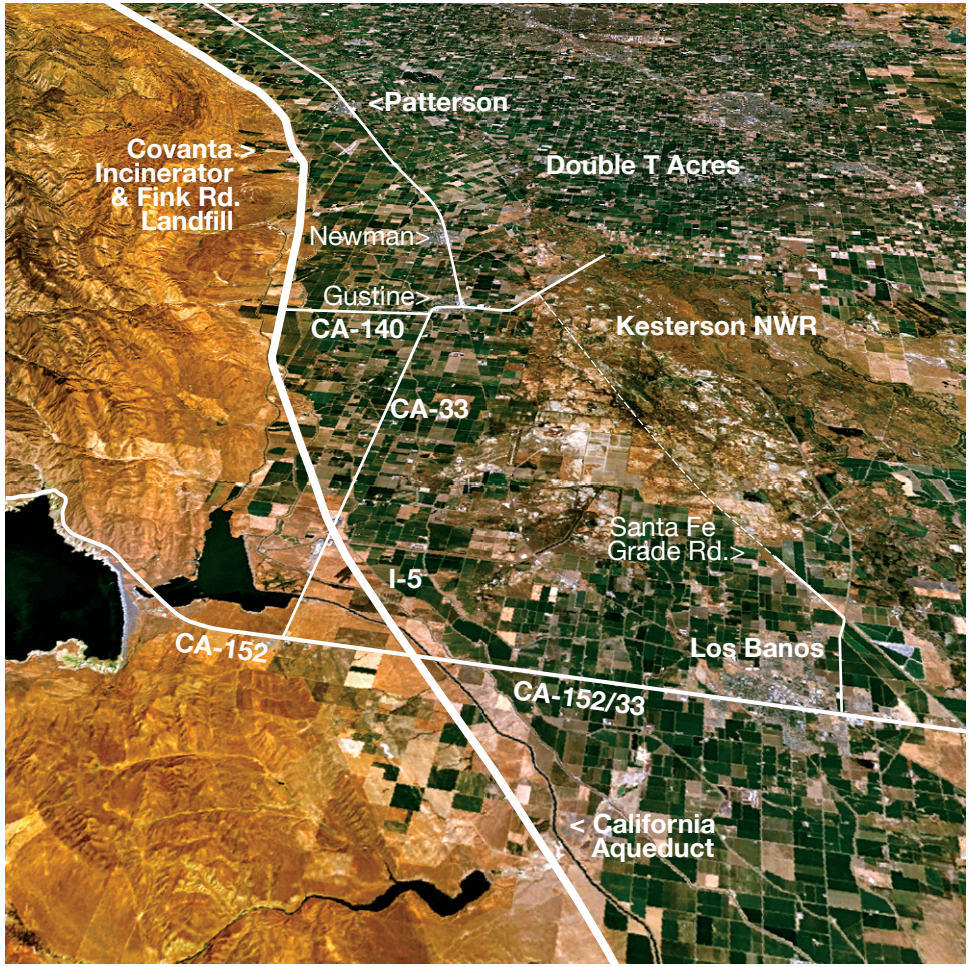
SITE: Kesterson (NWR)
LOCATION: Visit the Kesterson National Wildlife Refuge by exiting at 140 East. The refuge is approximately seven miles from the I-5 and a few miles outside of the town of Gustine.
THREATS AND CONTAMINANTS: Catastrophic selenium poisoning from agricultural run-off
VOICE: Gary Zahm, former Kesterson NWR complex manager

Part of the larger San Luis National Wildlife Refuge, the Kesterson National Wildlife Refuge is located eighteen miles north of Los Banos. Established in 1970 as part of a federal U.S. Bureau of Reclamation (BOR) project, the 10,621-acre refuge was designed to aid farmers in transporting agricultural runoff away from West Side farms. By the 1980s Kesterson would become the site of a devastating wildlife selenium poisoning disaster that would make national news.

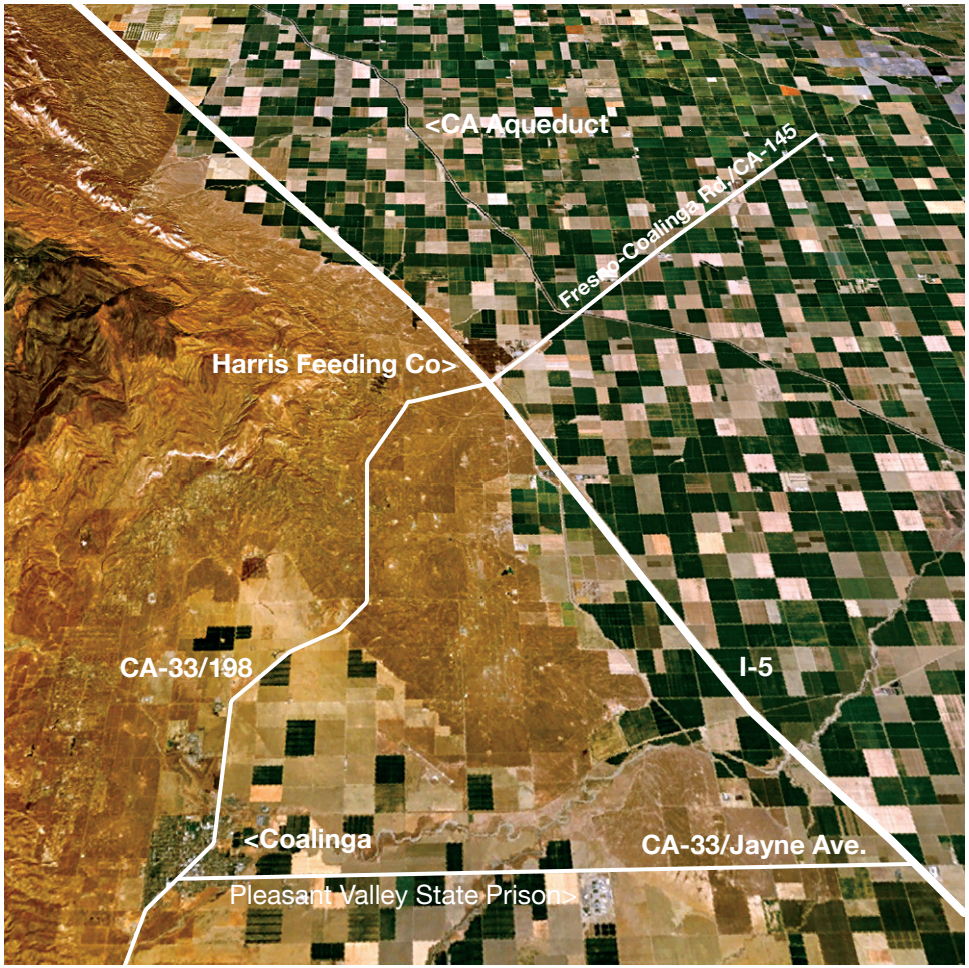
Proper agricultural drainage is necessary to flush out toxic buildup of salts and other minerals that would otherwise ruin crops. To address this an eighty-two-mile long concrete-lined channel was constructed by the BOR for drainage terminating at the Kesterson Reservoir. Here, twelve evaporation ponds on 1,280 acres were planned for construction to dually serve as run-off retention ponds and wetland habitat for the 12,000 wintering waterfowl that use the area.

The plan seemed a logical solution and some ponds were constructed. By 1981, however, routine field tests administered by San Luis NWR complex manager Gary Zahm and personnel indicated excessive levels of selenium at the reservoir—over 300 times the maximum limit listed by the federal government. Selenium is a naturally occurring trace element found in western desert soils. It is necessary for both human and animal biological functions but can be toxic at high levels. Thousands of dead and deformed birds were discovered throughout the reservoir by 1983 with newborn birds exhibiting grisly deformities. Excessive selenium levels were eventually attributed as the cause. The Department of the Interior was forced to abandon the Kesterson wastewater drainage project by 1988.

Wetlands Loop (Southbound directions): From the I-5, take Hwy. 140 east through Gustine. About two and a half miles east of Gustine, look carefully for Santa Fe Grade Road, and turn right, heading south. (Warning: This is a dirt road, and difficult after rain) This will take you through wetlands just southwest of the Kesterson Unit. You will eventually meet up with Hwy. 165 south. Turn right, and follow Hwy. 165 southbound to Hwy. 152. At Hwy. 152, take a right and head west to rejoin I-5.



CROWS LANDING > < KESTESRSON NWR > < INTERSTATE-5 > < CALIFORNIA AQUEDUCT



TULE FOG > < FRESNO-COALINGA RD

STOP: INTERSTATE 5

SB CUE: 152/Monterey/Los Banos
Jct. 1 mi.
NB CUE: Hwy 152/33 South/Los Banos/San Jose

SITE: I-5
LOCATION: From the border of Canada to the border of Mexico
THREATS AND CONTAMINANTS: Diesel emissions, particulate matter
VOICE: Richard Walker, Professor of Geography, UC Berkeley

Interstate 5 is a high-speed controlled access highway running north/south along the West Coast, between the Canadian and Mexican borders, through Washington, Oregon, and California. Influenced by the military potential of the German autobahn, Dwight D. Eisenhower in 1956 proposed the National Defense Highway System, a project to create a national roadway infrastructure for military troop movement and for mass evacuation of cities in the event of nuclear attack. The I-5 opened during the 1960s.

The Interstate system superceded the US and state highway system and sometimes overlays the older roads. Through the San Joaquin Valley the I-5 runs parallel to the west of US 99, the older major north/south highway. While the 101 also runs north/south through California, I-5 is considered an “Intermodal Corridor of Economic Significance.” A major NAFTA shipping route, I-5 moves freight between the ports of Oakland and Long Beach and urban centers and distribution hubs along the west coast. "You can't look at California and the West Coast without focusing on Interstate 5," said former Caltrans Director Jeff Morales. "It is the backbone of the state. It is the backbone of the region."

The Bay Area was briefly connected to the I-5 by the I-5W, a western spur of the Interstate that completed the route between San Francisco and Los Angeles. The I-5W signage was replaced by I-580 and I-505 by the mid-1960s.

STOP: CALIFORNIA AQUEDUCT

SB CUE: When you see the Dos Amigos Pumping plant, east of I-5
NB CUE: Nees Ave., or Dos Amigos Pumping Station

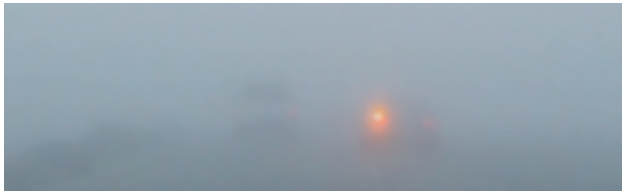
SITE: California Aqueduct
LOCATION: Throughout the state
THREATS AND CONTAMINANTS: Water quality, water subsidies, inequity in infrastructure development and common-pool resource access
VOICE: John Gibler, writer, Edmund ”Pat” Brown, Former California Governor

California’s two monumental water projects, the State Water Project (SWP) and the federally funded Central Valley Project (CVP) are the largest of their kind in the world. Both convey water from the northern part of the state to the southern end with many disbursements in between. Twenty-nine water contractors including urban and agricultural water agencies buy water from the SWP totaling over four million acre-feet a year, with seventy percent going to urban users and thirty percent to agricultural users.

The CVP on the other hand provides one-fifth of the state’s domestic and irrigation water, approximately seven million acre-feet annually. Ninety percent of this amount goes to agricultural uses and about half of this amount is historically provided to farmers for free.

Considered its crown jewel, the SWP’s Edmund G. Brown California Aqueduct is the state’s largest and longest water transport system, stretching 444 miles from the Sacramento-San Joaquin Delta in the north to Lake Perris in Southern California. The aqueduct and associated channels supply water for about one million acres of farmland. Pitched during Brown’s tenure as governor, the SWP was initially sold to the public in 1960 for an estimated total cost of $1.75 billion in state bonds—a misleading and low-balled figure. Construction began in 1961 and though still incomplete, the total cost for the project has grown over $4.3 billion for twenty-five dams and reservoirs, eighteen pumping plants, 683 miles of aqueducts, and eight hydro-electric power plants.

In a 1979 interview with the University of California’s Oral History Program Brown commented, “I was absolutely determined I was going to pass this California Water Project. I wanted this to be a monument to me.”



STOP: TULE FOG

SB CUE: Panoche Ave.
NB CUE: Panoche Ave.

SITE: Tule Fog
LOCATION: San Joaquin Air Basin
THREATS AND CONTAMINANTS: Diesel emission particles (DEP), ammonia, methane, pesticides, herbicides, and other particulate matter (PM) trapped in fog
VOICE: Dr. David Pepper, Department of Family and Community Medicine UCSF

Between November and March, Tule Fog can sit for days over large swaths of the San Joaquin Valley. During Tule Fog, visibility is uneven and can drop rapidly while driving, from 600 feet to as little as ten feet. In December 1997, five people died and twenty-eight were injured when twenty-five cars and twelve big rig trucks collided inside a fog bank on I-5 south of Sacramento.

Tule Fog is a type of radiation fog created when the earth's surface cools air near the ground to a temperature at or below its dewpoint, usually at night or in the early morning, and when the ground is moist or wet. Air pollutants are hygroscopic, readily absorbing moisture, and can act as condensation nuclei, causing the fog to be comprised of small droplets, rather than large droplets, resulting in denser fog, similar to that of industrial-era London. High concentrations of particulate matter from diesel exhaust, ammonia from dairying, incineration, and other pollution sources in the Valley help fog form more easily, and may make Tule Fog more frequent.

Fog particles can absorb higher concentrations of pollutants than the surrounding air, and contaminated fog may pose a greater health threat than contaminated air because the concentrated pollutant particles in fog stay in the lungs. The smallest particles are particularly dangerous. They get transported down into the lungs and across into the blood, causing acute irritation and inflammation in the lungs, as asthma, and long-term disease, like emphysema, bronchitis, lung cancer, heart disease, and strokes. James N. Siebert, an environmental toxicologist, identified sixteen different pesticides in Tule Fog.

In findings from the 2003-2005 Sacramento / Interstate-5 Aerosol Transect Study, the I-5 “was identified as a major source of the fine particulate pollution… with roughly one-third attributable to diesel particulates and smoke-producing gasoline cars. It was also determined that at certain times and under certain conditions, particulate pollution in Sacramento comes up on slow winds from the San Joaquin Valley. These particulates travel parallel to Hwy. 99 and I-5, and produced the worst air quality at the monitoring sites…”

STOP: FRESNO-COALINGA ROAD

SB CUE: 33 South - Coalinga Junction 1mi.
NB CUE: Fresno-Coalinga Rd.

SITE: Harris Feeding Company
LOCATION: Fresno-Coalinga Road at I-5
THREATS AND CONTAMINANTS: Methane, ammonia, carbon dioxide, nitrous oxide, pathogens
VOICE: Dr. David Igler, Department of History at UC Irvine, Richard Walker, Professor of Geography, UC Berkeley

Located near Coalinga, the Harris Ranch conglomerate includes the Harris Feeding Company, Harris Ranch Beef Company, Harris Farms, a hotel with two restaurants, a thoroughbred horse division and an airport.
The 800-acre Harris Ranch feedlot is located east of the I-5 on Fresno-Coalinga Road. The feedlot can process up to 250,000 head cattle annually. At any given time, seventy to 100 thousand head of cattle are present at the lot. Cattle typically spend twelve to sixteen months grazing before arriving at the feedlot at 650 to 750 pounds. Once there, the cows spend three to four months fattening up to an additional 400 pounds before they are slaughtered at Harris Ranch's Selma plant.

Now the largest cattle feeder on the West Coast, Harris Ranch produces nearly 200 million pounds of beef a year but is still considered a moderately sized operation. The nation's largest operations located in the Midwest and Texas can feed over 400,000 head of cattle at one time. Mega-feedlot operations such as these pose significant human and environmental health threats including surface and groundwater contamination and air pollution including emission of greenhouse gases.

Through a process called rumination, cows generate methane gas as a digestive by-product. Globally, ruminant livestock produce about eighty million metric tons of methane annually, accounting for about twenty-eight percent of global methane emissions from human-related activities. In the U.S., cattle emit about 5.5 million metric tons of methane per year into the atmosphere, accounting for nineteen percent of global human - related methane emissions. After carbon dioxide (also produced by livestock), methane is the second most significant greenhouse gas contributing to global warming. Although methane breaks down within the atmosphere in ten years it has the potential to trap twenty percent more heat than carbon dioxide.

STOP: TULARE DRY LAKE

SB CUE: Jayne Ave.
NB CUE: Jayne. Ave/Coalinga – Exit 325

SITE: Tulare Dry Lake
LOCATION: The Tulare Lake Bed lies southeast of the I-5 from Kettleman City. Historically, the lake covered nearly all of Kings County and part of Tulare and Kern Counties
THREATS AND CONTAMINANTS: Native American displacement and extermination, broken treaties, habitat destruction
VOICE: Gerald Haslam, historian/writer

Desertified by the ranchers and farmers who settled here during the nineteenth century, the "phantom" Tulare Lake formed at a broad alluvial fan near the town of Hanford with inflows from the Sierra Nevada's Kings, Kaweah, White and Tule rivers. During the early part of the 18th century Tulare Lake was considered the largest fresh body of water west of the Great Lakes. Named for the "tules," or bulrushes that surrounded the lake, Tulare at its wettest recorded year covered nearly 760 square miles and supported vast populations of deer, elk, antelope, grizzly bear, migratory waterfowl, and aquatic species.

Before Spanish and Anglo-American settlement the Tulare Lake region supported the Yokut, a large semi-permanent aboriginal civilization, which consisted of sixteen regional subcultures. The Yokuts were considered one of the highest regional populations in North America with an estimated 18,000 to 50,000 individuals in the early 18th century. By mid-century their numbers had drastically diminished from disease epidemics and forced removal.

Non-native settlement increased throughout the region with completion of the 1853-55 Federal Land Survey. Implementation the Swamp and Overflowed Lands Act of 1850 consequently sealed the lake's fate as settlers were encouraged to reclaim "unproductive" land by draining wetland habitat, further reducing native flora and fauna dependent of the lake's ecology. Livestock grazing, agriculture practices and the introduction of exotic European grasses significantly altered the original native ecology of the greater region. Today for the most part dry, the basin will on occasion metamorphose into a small, intermittent lake yielding a fleeting glimpse of its former self.

STOP: KETTLEMAN CITY

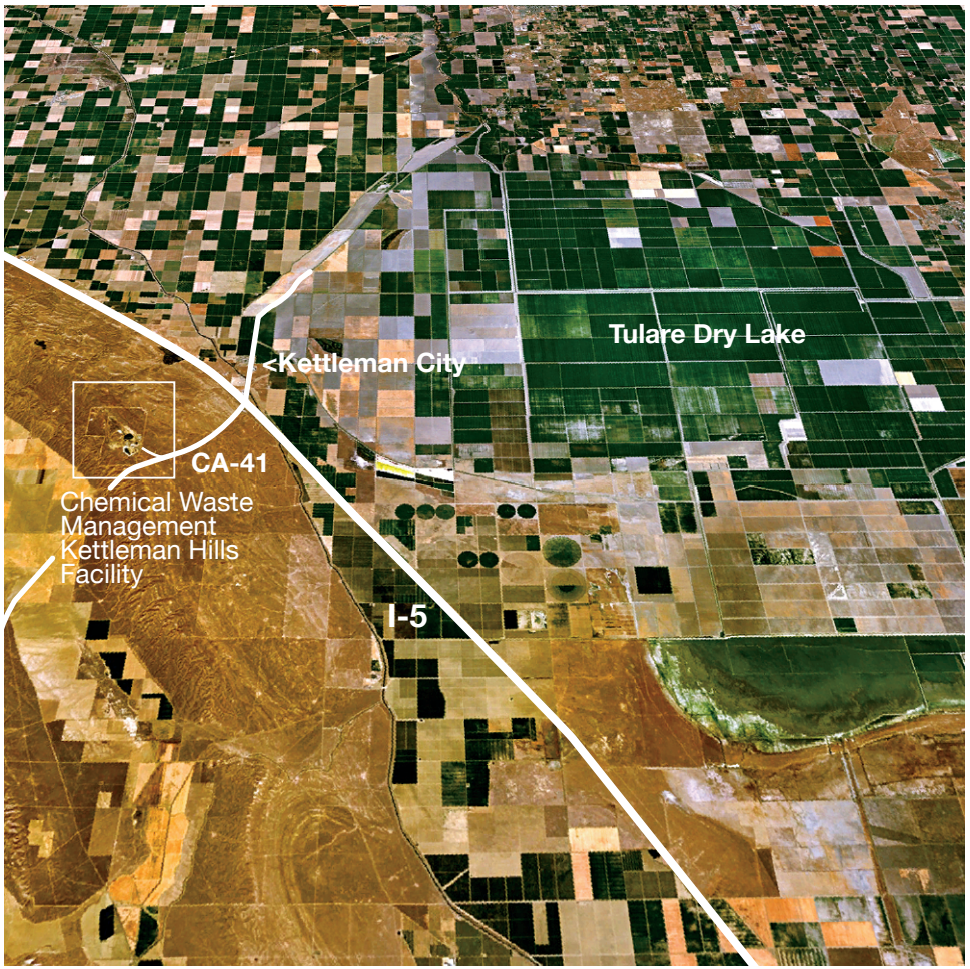
SB CUE: Kettleman City 1mi.
NB CUE: Kettleman City/Fresno/41

SITE: Chemical Waste Management Kettleman City Landfill
LOCATION: 2.5 miles west of the intersection of I-5 and Route 41
THREATS AND CONTAMINANTS: polychlorinated biphenyls (PCBs), benzene, asbestos
VOICE: Mary Lou Mares, People for Clean Air and Water (El Pueblo Para el Aire y Agua Limpio)

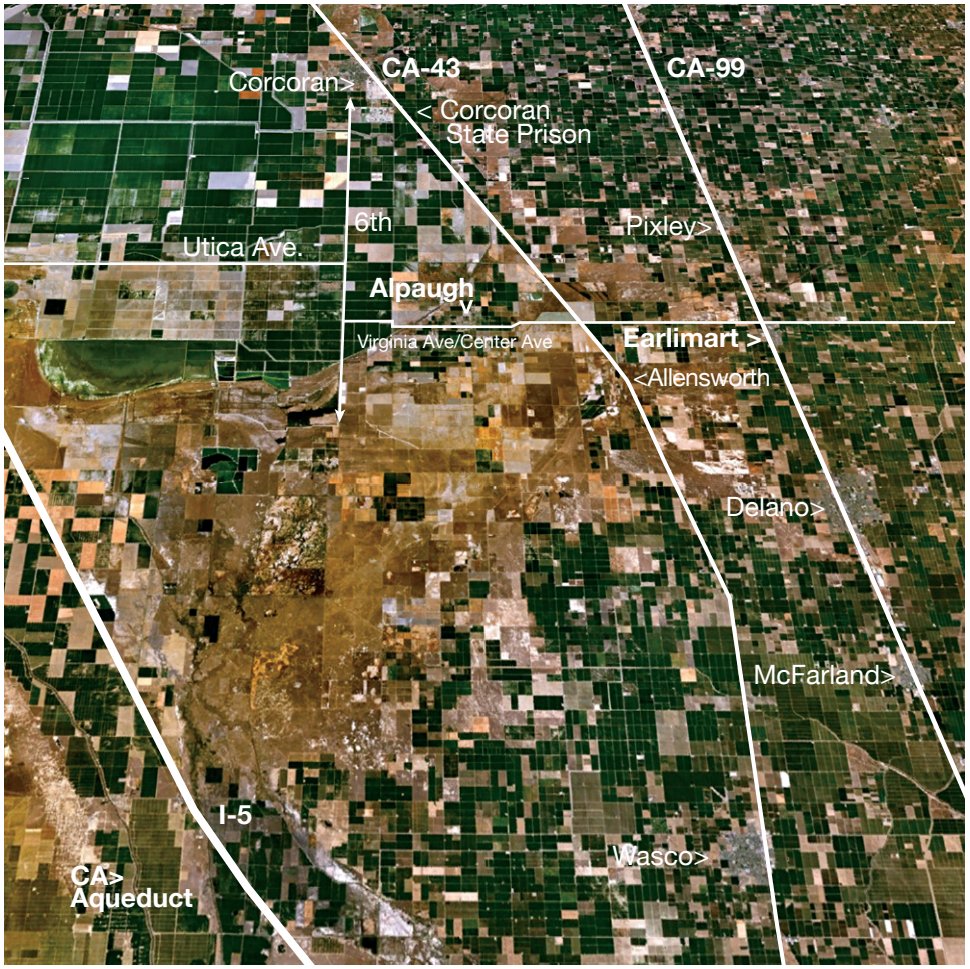
In 1979, much to the surprise of residents of Kettleman City (a community ninety-five percent Latino), a toxic dump owned by Chemical Waste Management–the world's largest waste disposal company–was established at a site where each day, up to 200 twenty-ton trucks filled with chemical wastes like PCBs, benzene, and asbestos would pass within four miles of the town center on their way to their final destination where the toxins were treated, stored or buried.

In 1985 Chemical Waste Management was fined $3.5 million by the EPA and state for faulty record keeping and other violations such as toxic leakage into water supplies. In 1990, Chemical Waste proposed to build a hazardous waste incinerator near the same location to take advantage of the pre-existing toxic dump. Its incinerator would annually consume between 50,000 and 100,000 tons of hazardous waste including byproducts from auto and electronics manufacturing, unused or banned pesticides, dry-cleaning chemicals, oil wastes, solvents, paint sludge, contaminated soil, and water from Superfund sites.

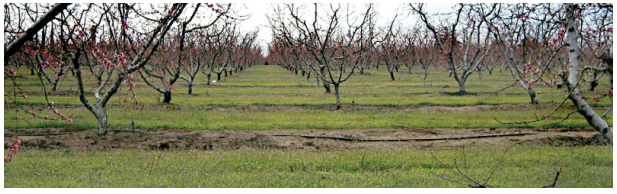
Inspired by the community-led closure of incinerators in Vernon and Casmalia, CA, resident-activists (such as Mary Lou Mares), farm workers, agribusiness growers, and politicians organized to oppose the planned incinerator. In February 1991, a lawsuit filed by California Rural Legal Assistance on behalf of the community coalition El Pueblo Para el Aire y Agua Limpio formally stated that the permit process violated the civil rights of residents, as meetings, hearings, and technical information were given only in English. Significantly, this allegation of environmental racism was the first case in the nation to allege civil rights violations in an attempt to block a toxic incinerator. By 1994, the efforts of protesters, more stringent requirements under the Clinton administration, and the two successful lawsuits filed by California Rural Legal Assistance instigated Chemical Waste Management to abandon its plans.



TULARE DRY LAKE > < KETTLEMAN CITY



ALPAUGH > < EARLIMART



STOP: ALPAUGH

SB CUE: Utica Ave.
NB CUE: Utica Ave.

SITE: Alpaugh
LOCATION: Center Ave., between 6th Ave. and Hwy. 43
THREATS AND CONTAMINANTS: Fertilizer manufacturing, attempted incinerator siting, groundwater arsenic contamination, pesticide drift
VOICE: Linda MacKay

Alpaugh is a small rural farming community in between I-5 and Hwy. 99, in the corner of Kings and Tulare counties. The town sits on land that was once an island in the now-drained Tulare Lake. Settled by Dust Bowl migrants in the 1930s, it is now largely a low-income farm worker community, whose 761 inhabitants are fifty-four percent Latino, and where twenty-eight percent of families have incomes below the poverty line. This isolated farm town has been perceived as a convenient place to site polluting industries since the 1970s, when the Western Farms West Isle Production Plant was built there. The plant produces 33,000 tons of liquid fertilizer annually and recently had a chemical spill that led to evacuations.

In 1990, residents of Alpaugh including Linda MacKay learned they had been targeted as the proposed site of a waste incineration plant by Pro-Kleen. They immediately joined together to oppose the project, and were able to stop the incinerator plan through well-organized community resistance.

More recently Alpaugh faced a water access crisis. When the area's well failed in 2002, the community struggled to get potable water when no alternative water resource was provided to replace it. At that time, residents had to buy their own bottled water for everyday use – an expensive necessity. Resident Sandra Meraz also discovered the well water was contaminated with eighty-six parts per billion (PPB) of arsenic, but that the community had not been informed. (At the time, the EPA's maximum allowable limit of arsenic in potable water was fifty PPB, which has since been lowered to ten PPB).

The community came together to address the failure the old water infrastructure, high water rates, contaminated drinking water, and a lack of community representation on the local water board. Meraz and the community-based Committee for a Better Alpaugh went to the media and helped rally local advocacy organizations to apply pressure on the local and state government for fair water access. In a victory for the community, ground was broken for a new well and new infrastructure in Alpaugh in 2004.

STOP: EARLIMART

SB CUE: Twisselman Rd.
NB CUE: Twisselman Rd.

SITE: Earlimart
LOCATION: A transient cloud of pesticides that drifted through Lane Ave.
THREATS AND CONTAMINANTS: Metam sodium pesticide drift, acute and long-term risks from a broad range of pesticides
VOICE: Teresa De Anda, El Comite Para el Bienestar de Earlimart, Tracy Brieger, Californians for Pesticide Reform

Earlimart is a campesino town in heavily agricultural Tulare County, where 12,000,000 lbs. of pesticides were applied in 2003.

In November 1999, Wilbur-Ellis Company fumigated a seventy-five-acre potato field near Earlimart with metam sodium, which drifted as a toxic cloud into nearby homes, forcing 180 residents to evacuate. Exposed Earlimart residents experienced nausea, vomiting, headaches, burning eyes, and shortness of breath. In a sequence of local emergency response failures, residents' distressed phone calls were initially dismissed, and then poisoned residents were subject to a humiliating and ineffectual decontamination attempt at a local football field. After the incident, it took a county health team nine days to come to Earlimart and treat poisoning victims who could not afford medical care. Forty-six people sought medical attention at the time of the incident, and twenty-eight have reported ongoing medical problems. An investigation by the California Department of Pesticide Regulation and the Tulare County Agricultural Commissioner's Office concluded that Wilbur-Ellis failed to take appropriate safeguards to prevent the fumes from drifting.

In direct response to the incident, Earlimart resident Teresa de Anda formed El Comite Para el Bienestar de Earlimart to help educate and advocate for Earlimart about pesticide drift. She was instrumental in the passage in 2004 of SB 391, the Pesticide Drift Exposure Response Act, which set out improved procedures for pesticide drift response, and financial responsibility for the medical bills of victims of pesticide exposure.

Metam sodium is used as a fumigant, herbicide, fungicide, microbiocide, and algaecide (with 5,919,588 lbs. applied to carrot crops alone in California in 2003). It's potential toxic effects include acute skin irritation, serious irritation of mucous membranes, eyes, and lungs; and is a carcinogen and developmental toxin. In 1999 almost 78 million pounds of pesticides (active ingredients) were applied in Fresno,Tulare and Kern counties.

STOP: BUTTONWILLOW

SB CUE: Buttonwillow-McKittrick
NB CUE: 58/Buttonwillow/McKittrick

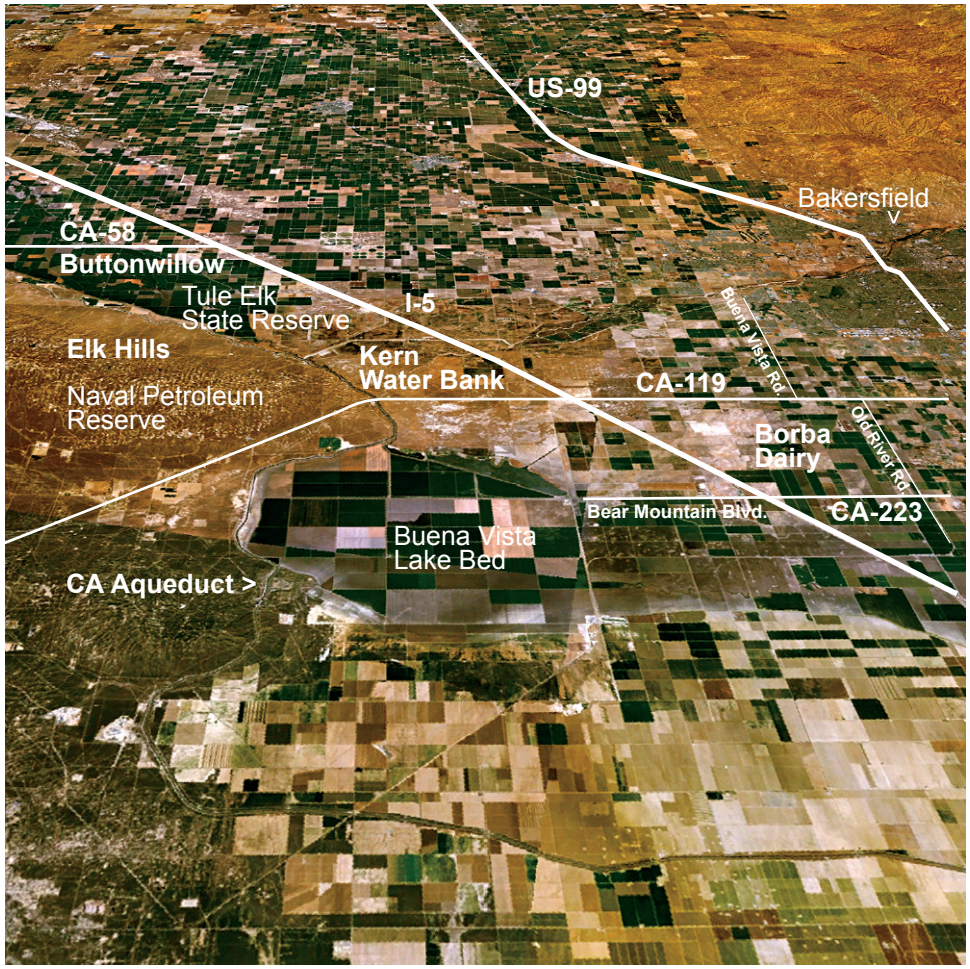
SITE: Clean Harbors Buttonwillow Landfill
LOCATION: 2500 West Lokern Road, Buttonwillow
THREATS AND CONTAMINANTS: PBT chemicals, air, ground, and water toxic waste releases, radioactive waste
VOICE: Luke Cole of The Center on Race, Poverty & the Environment

Originally founded by Miller and Lux Enterprises in 1885, the low-income, predominantly Spanish-speaking farmworker community of Buttonwillow has a population of approximately 1,300. Located a few miles outside of the town center on 320 acres is California's second largest Class I toxic waste site (the state has three total). The site is owned and operated by Clean Harbors, one of North America's largest operators of hazardous waste facilities, with more than fifty sites including the state's third largest Class I, located in Westmorland in Imperial County.

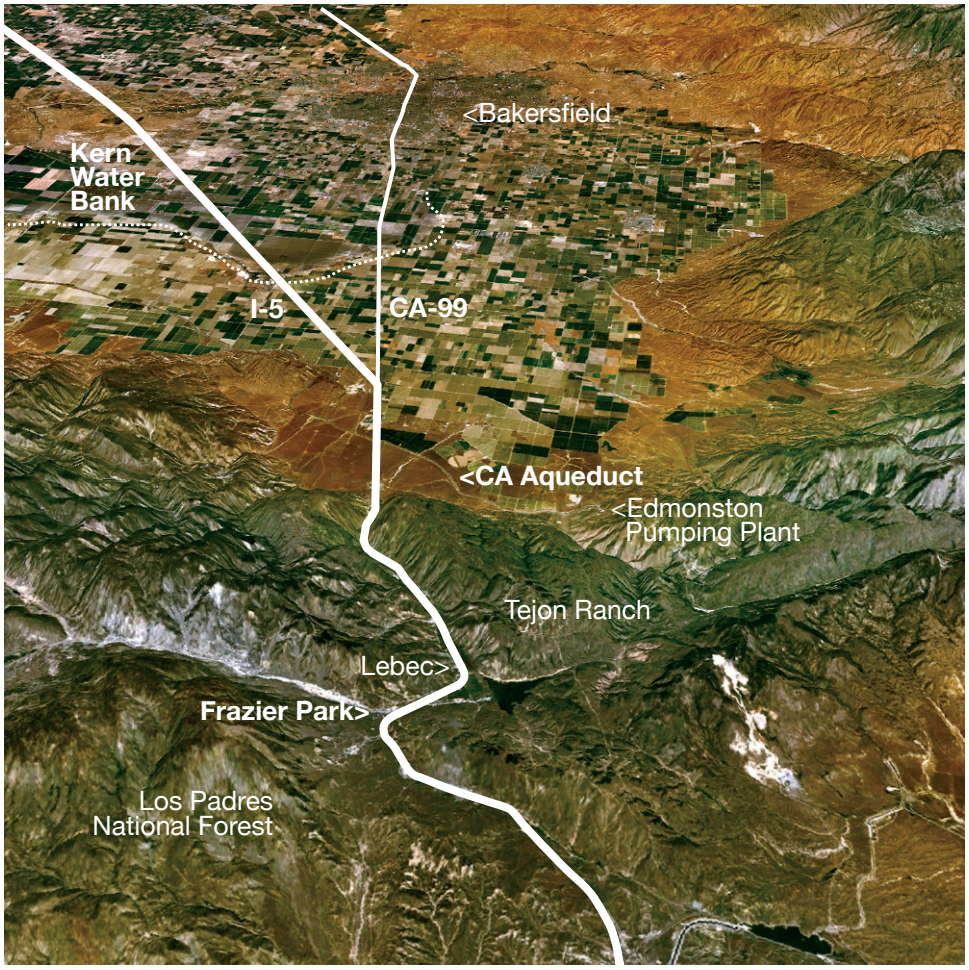
According to the EPA's California Toxics Release Inventory Fact Sheet from June 2004, Clean Harbors Buttonwillow (formally Laidlaw Environmental Services Inc. and Safety-Kleen Corporation) is listed as the second top facility for total on- and off-site releases of all chemicals in California, contributing 2.6 million pounds. It is also listed as the third largest contributor for both total on- and off-site releases of PBT chemicals (persistent, bioaccumulative and toxic chemicals such as lead, mercury, PCBs, dioxin) and total on- and off-site releases of lead compounds in California.

Over an eight-month period in 1992, two babies were born with neural tube birth defects to mothers from Buttonwillow. The occurrence of two cases in one year created a rate twenty-five times higher than expected for Kern County, according to the California Birth Defects Monitoring Program (CBDMP). Area residents suspected that the Laidlaw facility (the operator at the time) was responsible for the defects, and attempted to force the dump's closure through community participation in the permitting and permit appeals processes.

The Center on Race, Poverty & the Environment (CRPE) represented the Padres Hacia una Vida Mejor (a Buttonwillow community activist group) in a series of civil litigations that eventually forced Safety-Kleen to stop accepting radioactive waste that it had been illegally accepting from the U.S. Army Corps of Engineers, from remediation of a former Manhattan Project production facility in upstate New York, but were unable to close the dump, which has since expanded.



BUTTONWILLOW > < KERN WATER BANK > < MEGA-DAIRIES > < ELK HILLS



TEJON RANCH > < FRAZIER PARK

STOP: KERN WATER BANK

SB CUE: CA-119
NB CUE: CA-119

SITE: Kern Water Bank
LOCATION: The I-5 crosses over the 20,000 acre Kern Water Bank at CA-119
THREATS AND CONTAMINANTS: Privatization of natural resources, loss of democratic control of and access to water
VOICE: John Gibler

The Kern Water Bank is an underground water storage facility—the largest of its kind—located in the lower San Joaquin Valley near Bakersfield. Created over thousands of years, the water bank is in actuality a naturally occurring aquifer sustained by runoff from the Kern River and other tributaries originating from the Sierra Nevada. In the early part of the twentieth century farmers and ranchers drained the aquifer dry through excessive overdrafts, which has dropped the valley floor as much as eight feet in towns like Maricopa.

State agencies early on recognized the potential for water storage in the empty aquifer during drought years. Through a process referred to as recharge, the water bank could be replenished by flooding the land above it. Water would eventually seep down into the subterranean reserve, where it could be stored for long periods with little loss from evaporation. In 1988, the CA Department of Water Resources (DWR) purchased 19,900 acres adjacent to the Kern River for $74 million dollars, establishing the Kern Water Bank, capable of storing one million acre-feet of water. The Kern Water Bank is an integral part of California's public water delivery system and was activated during the drought years of 1991, 1992 and 1994.

A series of closed-door meetings in 1994 led to the creation of a document known as the Monterey Amendments. During these meetings, the DWR agreed to turn the water bank over to the Kern County Water Agency, which signed it over to the Kern Water Bank Authority, a supposedly public entity comprised of a collection of water districts and one private company–Westside Mutual Water Company–a "paper company" owned by Paramount Farming Company, which in turn is owned by Roll International Corporation— one of the largest privately owned companies in the world.

The privatization of the Kern Water Bank raises concerns that the largest agribusinesses and development corporations in the nation are manipulating the state's complex and opaque water governance process to market and resell state-subsidized water back to Californians at a profit, further undermining equitable access to and distribution of water in California.

STOP: MEGA-DAIRIES

SB CUE: Hwy. 223/Bear Mountain Blvd./Arvin – Exit 239
NB CUE: Hwy. 223/ Bear Mountain Blvd. – Exit 239

SITE: Borba Dairy
LOCATION: The Borba Dairies are located about two miles east of the I-5 on Old River Road between State Route 119 and State Route 223
THREATS AND CONTAMINANTS:
Air emissions of ammonia and hydrogen sulfide, volatile organic compounds (VOCs), nitrate contamination of drinking water, NOX, PM, smog, pathogens
VOICE: Tony Azevedo, Brent Newell, Center on Race, Poverty, and the Environment (CRPE)

California dairies are the number one milk producers in the nation. As the state's largest agricultural industry they produce $4 billion worth of milk annually (as measured at the farm, not after processing). More than two million cows are spread across 1,500 dairies in the San Joaquin Valley with the majority located in Tulare County, the top milk-producing county in the nation.

Over the past twenty years the dairy industry has transformed from traditionally family-run enterprises with 100 to 300 cows to industrial-sized mega-dairies with thousands of animals. This trend is illustrated in the controversial Borba dairies south of Bakersfield. Each will have 14,000 cows, totaling 28,000 cows in one area.

The cumulative environmental consequences of constructing these mega-dairies is staggering considering that the San Joaquin is already burdened with the some of the nation's worst air quality and has extensive groundwater contamination. Mega-dairies can emit air pollution in such volume as to be comparable to traditional stack emission sources like refineries and power plants.

An adult cow produces twenty times more organic waste per day than a human. Dairy waste not used for fertilizer applications is stored into large, open-air "lagoons" which emit millions of pounds of ammonia and other smog-forming gases each year, according to the San Joaquin Valley Air Pollution Control District. In August 2005, the district updated the annual VOC emission factor per head of dairy cattle from 12.8 to 19.3 pounds making dairies the largest source of VOCs in the Valley basin. With these new statistics dairies now surpass gas-powered vehicles as the Valley's number one air pollution source.

STOP: ELK HILLS

SB CUE:
Hwy. 166/Mettler/Maricopa
NB CUE: Hwy.166/Maricopa/Taft Exit 225

SITE: "Super giant" oilfields
LOCATION: The hills west of I-5 between Hwy. 119 and Hwy. 58
THREATS AND CONTAMINANTS: Air, water and soil contamination, broken treaties
VOICE: Gerald Haslam, writer and historian, Richard Walker

Land and resource giveaways by the government to big business have shaped the geopolitical, economic, and environmental landscape of the Elk Hills area, which has been drilled for oil and gas since the late 19th century.

While the Bakersfield region is often associated with oil production, major oilfields are also located on the west side of the I-5 in Kern County between the communities of Lost Hills in the north and Maricopa to the south.

Included in this area are three "super giant" oilfields (an oilfield must produce over one billion barrels of oil to qualify); the Midway Sunset Oilfield near Taft (the largest oilfield in the lower forty-eight states); the Elk Hills Oilfield (formally the Elk Hills Naval Petroleum Reserve No.1) north of Highway 119; and the South Belridge Oilfield north of McKittrick. At present, Kern County produces more than 500,000 barrels of oil per day accounting for approximately ten percent of total U.S oil production and one percent of global production.

Much of the oil found in Kern County is "heavy crude" and is best retrieved by injecting steam into the ground to force oil to the surface. Chemical and waste byproducts produced throughout the various stages of oil and gas production contaminate air, water, and soil. The towns of Taft, Maricopa, McKittrick, and Tupman are located within or in close proximity to oil drilling and refinery activity.

Once occupied by the Kitanemuk for thousands of years, the 47,000-acre Elk Hills oilfield is now privately owned by Occidental Petroleum (Oxy), a company known for its poor environmental and human rights record. The sale in 1997, under the guidance of then Vice President Al Gore was the largest privatization of Federal land in U.S. history. The Gore family is a significant stockholder in the company. Tribal members have been fighting Oxy to curtail destruction of and regain access to their ancestral lands to no avail.

Elk Hills Loop (Southbound directions): Take Hwy. 58 west through Buttonwillow. Head south on Hwy. 33 at McKittrick, which will take you past Elk Hills, and through Taft. Just south of Taft, turn left on to Hwy.119 and head northeast until you rejoin I-5.

STOP: FRAZIER PARK

SB CUE: Frazier Mountain Park Rd.
NB CUE: Lockwood Valley - Frazier Park - Exit 207

SITE: Pacific Custom Materials Inc.
LOCATION: 17410 Lockwood Valley Rd., Frazier Park
THREATS AND CONTAMINANTS: Particulates and other air pollutants
VOICE: Sylvia Swan, Matt Richards, Tri-County Watchdogs

Frazier Park is located in the San Emidio Mountains northwest of Tejon Pass's summit. This small community of approximately 2,300 residents is situated at the border of Kern, Ventura, and Los Angeles Counties.

Residents of the area since 1992, the Swan family moved to a home in Lockwood Valley basin, part of Frazier Mountain area, in December 1998. Shortly thereafter, Sylvia Swan's oldest son began experiencing hydrocephalitic seizures. She and her husband were also experiencing respiratory problems themselves, along with their neighbors. It turned out that their new home was less than 600 feet from a diesel-burning facility – Pacific Custom Materials Inc., also known as TXI, Inc.

Considered one of Frazier Park's biggest polluters, TXI operates two kilns that convert clay into lightweight aggregate. The facility runs 24-hours-a-day, seven days a week, producing 218,280 tons of aggregate per year. Sylvia wanted to know why the community had not been informed of this health hazard and why state and county regulators allowed the facility to burn over four million gallons of diesel annually in a residential neighborhood.

Between March 2000 and February 2003, the Ventura County Air Pollution Control District cited TXI sixteen times for violations of emission standards and in conjunction with the California Air Resources Board sued TXI in 2002 for exceeding sulfur dioxide emission limits in the company's air quality permit. Sulfur dioxide is a known respiratory irritant, according to state health officials. Under the terms of the state and Air Pollution Control District lawsuit, TXI was required to pay $350,000 to a state fund, file monthly reports on emissions and diesel consumption, and retrofit several pieces of diesel-powered heavy equipment with cleaner technology.

STOP: PACOIMA

SB CUE: Where I-5 and I-405 diverge
NB CUE: Immediately after you finish Burbank, or at Van Nuys Blvd.

SITE: Multiple sites
LOCATION: Price-Pfister Faucet Manufacturing Plant, 13500 Paxton St., Holchem, Inc. 13546 Desmond St.
THREATS AND CONTAMINANTS: Diesel emissions, particulate matter (PM), chrome, lead, groundwater contamination, Brownfield redevelopment with inadequate remediation, asthma
VOICE: Lucia Torres, Pacoima Beautiful

First permanently settled in 1887, Pacoima was an agricultural community that grew up around the Southern Pacific Railroad tracks. The Southern Diaspora fed the growing World War II manufacturing industry in the San Fernando Valley, and the need for worker housing at Lockheed's Burbank aircraft plant led to the construction of the racially integrated San Fernando Gardens housing project in Pacoima. After the war, Pacoima continued to house manufacturing industries now associated with groundwater contamination, such as hexavalent chromium from chrome plating.

Surrounded by three freeways, Pacoima covers nine square miles of the San Fernando Valley. The community is eighty-two percent Latino, with a population of over 97,000. Pacoima is heavily residential, and diesel trucks cycle through residential neighborhoods, emitting diesel fumes into homes. Schools in Pacoima are located close to the freeways, contributing to a high rate of youth asthma. Additionally, weather patterns push and hold air pollution in Pacoima against the San Gabriel and Verdugo Mountains. Daytime heating patterns in Los Angeles also complicate the problem of groundwater contamination, causing it to vaporize in the day and recondense at night, leading to the potential for subsurface vapor intrusion into homes.

Pacoima is home to five Superfund sites; American Etching and Manufacturing, D & M Steel, Holchem, Inc., HR Textron-Glenoaks, and Price Pfister, Inc. The former Price-Pfister Faucet Plant Superfund site was recently redesignated as a Brownfield for redevelopment. After Pacoima residents were sickened during the removal of contaminated soil at Price-Pfister, Pacoima Beautiful succeeded in halting unsafe clean-up practices, and adding community input to the soil remediation process.

STOP: BURBANK

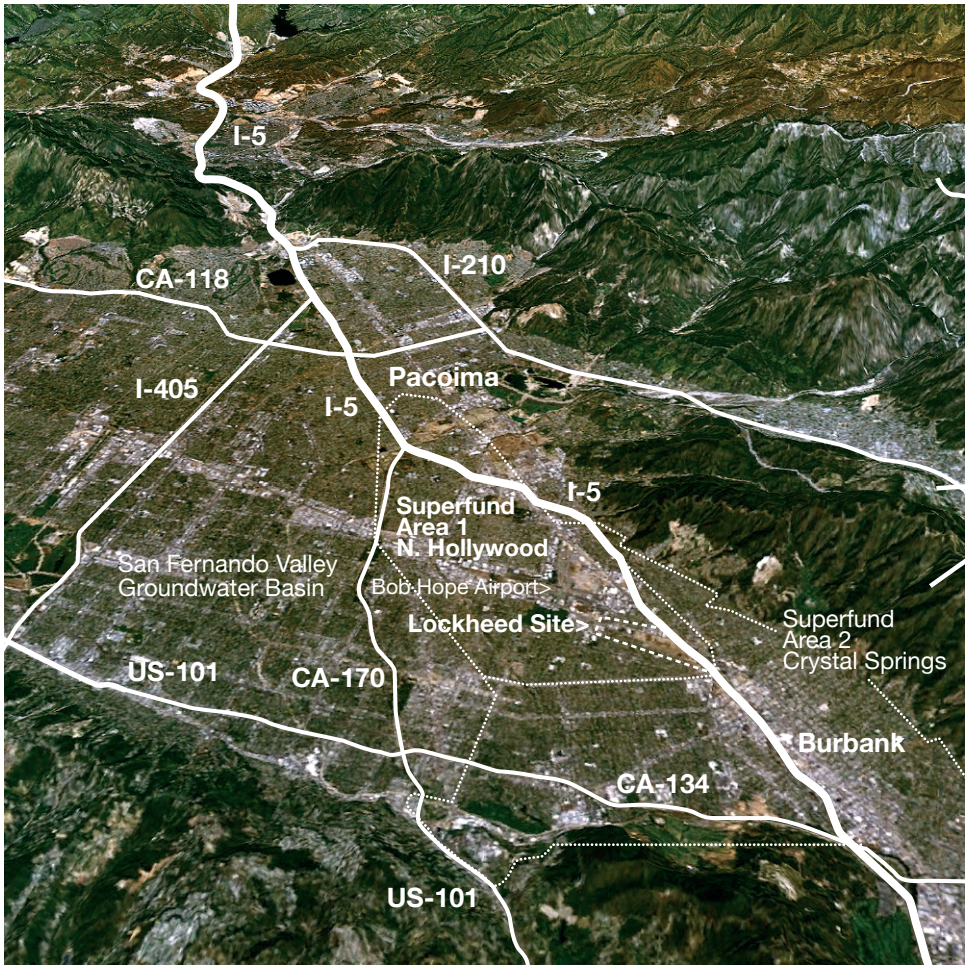
SB CUE: Where I-5 and CA-170 diverge
NB CUE: Olive St.

SITE: Former site of Lockheed Aircraft Corporation's Plant B-1
LOCATION: Adjacent to the I-5, bordered by Victory Place to the east, Empire Avenue to the north, Buena Vista Street to the west and railroad tracks to the south.
THREATS AND CONTAMINANTS: Trichloroethene (TCE) and tetrachloroethene (PCE), volatile organic compound contamination (VOCs), hexavalent chromium groundwater contamination
VOICE: Craig Paup and Maria Hall

Lockheed opened a plant in Burbank in the 1930s, and during WWII employed over 80,000 people in producing aircraft there. In 1943 Burbank became home to Lockheed's secret aerospace development facility, formerly codenamed the Skunk Works, which was located at Plant B-1, 2300 Empire Avenue, and covered over 100 acres adjacent to the Bob Hope/ Burbank Airport. Lockheed–Martin moved out of Burbank in the early 1990s, but left behind a toxic legacy of its activities, including a plume of contaminated groundwater. The many chemicals improperly disposed of on site over the Skunk Works sixty-year Burbank tenure included solvents TCE and PCE, and hexavalent chromium, a known carcinogen.

The former Lockheed facility is considered a major polluter of the designated San Fernando Valley Superfund Site (Area 1), which defines a four-mile zone of contaminated groundwater. Groundwater monitoring from 1981 to 1987 revealed that approximately fifty percent of the water supply wells in over 5254 acres of the eastern portion of the San Fernando Valley were contaminated. In 1984 TCE and PCE groundwater contamination was discovered in water supply wells in Burbank. The area is part of the San Fernando Valley groundwater basin, an aquifer that had provided drinking water to over 800,000 local residents. Contamination sources at Lockheed included underground storage tanks, sumps, degreasers, and pipes. Exposure to groundwater contaminants can occur through ingesting drinking water, washing or bathing, and through inhalation of VOCs in vapors during showering.

In 1996, thousands of Burbank residents sued Lockheed after learning the company had paid out $66 million in secret settlements to 1,357 residents, and $30 million to workers for illness and loss of property value. In 2002, Lockheed Martin Corp. agreed to pay $1.25 million to settle all outstanding claims by residents who contend that they were sickened by decades of chemical contamination at the site. Besides civil lawsuits, Lockheed has had to pay more than $265 million since the late 1980s to clean up underground drinking-water supplies, and they could spend as much as $100 million more in the next two decades.



PACOIMA > < BURBANK

LA RIVER > < BOYLE HEIGHTS - EAST LA

STOP: LOS ANGELES RIVER

SB CUE: Colorado St.
NB CUE: Immediately after the Boyle Heights stop finishes

SITE: Los Angeles River
LOCATION: The Glendale Narrows can be viewed directly from the freeway along the Glendale/Los Feliz corridor and can be accessed via foot or by bike at the Guardians of the River Gate on Los Feliz Blvd. just off the I-5.
THREATS AND CONTAMINANTS: Water pollution and habitat destruction
VOICE: Lewis MacAdams, FoLAR co-founder and writer

The Friends of the Los Angeles River (FoLAR) was co-founded in 1986 by activist, writer and filmmaker Lewis MacAdams to revitalize and protect the Los Angeles River, one of the most hydraulically modified urban rivers in the world. Nearly seventy-five percent of the fifty-two mile long river is enclosed in concrete. Channelization of the river was initiated in 1938 by U.S. Army Corps of Engineers as part of a massive flood control project, which continued until the late 1950s.

FoLAR has been responsible for cleaning up sections of the river through community-based volunteer activities which include restoration of native habitat, removal of invasive exotic species, monitoring the river's water quality, and controlling toxic pollution from dumping and storm drains. The non-profit organizes educational and community activities including monthly river walks.

Renewed interested in the river initiated in part by FoLAR has spawned numerous "pocket parks" which include pedestrian walkways, bike paths, and wildlife viewing areas. Viewable from the I-5, one of the publicly accessible areas known as the Glendale Narrows shows evidence of the river's former ecology and alludes to its vibrant past. This section of the river is soft-bottomed and lies close to the underlying water table. Because of this the Corps was discouraged from encasing it in cement as they did with the majority the river's channel. Within this riparian corridor foliage and trees push through the channel's floor forming islands of vegetation, which sustain an array of flora and fauna including willow groves, cattails, sycamores and up to 140 species of birds along with a few secluded transient encampments.

STOP: BOYLE HEIGHTS - EAST LOS ANGELES

SB CUE: After you cross Hwy.10
NB CUE: Soto St.

SITE: Boyle Heights
LOCATION: East Los Angeles
THREATS AND CONTAMINANTS: Lead, particulate matter, attempts to site toxic waste incinerators and other polluting industries
VOICE: Juana Gutierrez, Ricardo Gutierrez, Madres del Este de Los Angeles/Mothers of East Los Angeles – Santa Isabel (MELA-SI)

Mission Road to the north, the Los Angeles River to the west, and the Los Angeles city limits to the east and south bound Boyle Heights. As many as 320,000 drivers a day pass through the two-mile long East Los Angeles Interchange on the west side of the Boyle Heights, one of the busiest in the U.S, and the first high-speed interchange ever built.

Boyle Heights has historically been a gateway for immigration into Los Angeles, and from 1920 to 1950 was the city's most ethnically diverse neighborhood. As of the 2000 census, nearly ninety-five percent of Boyle Height's residents are listed as Latino.
The Mothers of East Los Angeles-Santa Isabel (MELA-SI) grew out of a successful community-led fight in the early 1980's against plans to site a state prison in Boyle Heights. This collective group of community activists has since continued to fight against projects like toxic facilities intended for East LA, including plans to site a "waste-to-energy" municipal garbage incinerator—the Los Angeles City Energy Recovery project (LANSER).

The incinerator, destined for a mostly African-American and Latino area, would have burned 1600 tons of trash daily. Already surrounded by congested freeways and heavy industry, and where residents suffered an increased risk of respiratory illnesses and cancer, MELA-SI organized and fought against it in coalition with Concerned Citizens of South Central from 1983 to 1987, when the LANSER project was finally defeated.

Many of the residents who mobilized successfully against the project had never spoken publicly, and were self-educated in the politics of incinerator siting. Their efforts, in coalition with other activist groups, also defeated a proposed incinerator in the City of Vernon in 1988.

The Madres are considered a model for environmental justice and multiracial community organizing, and have traveled to other communities in California, such as Casmalia and Kettleman City, to help local residents organize and fight proposed hazardous waste projects.

CONTACT THE ORGANIZATIONS IN INVISIBLE-5 TO FIND OUT MORE ABOUT THEIR WORK OR TO GET INVOLVED.

Greenaction for Health & Environmental Justice
www.greenaction.org

Chester Street
Block Club Association
(510) 776-8984

Tri-Valley CAREs
www.trivalleycares.org

Grayson Neighborhood Council
graysonneighborhoodcouncil.50megs.com

People for Clean Air and Water
El Pueblo Para el Aire y Agua Limpio
alatmig@netzero.com
(559) 386-9645

Californians for Pesticide Reform
www.pesticidereform.org

Center on Race, Poverty & the Environment
www.crpe-ej.org

TriCounty Watchdogs
www.tcwdogs.org

Pacoima Beautiful
www.pacoimabeautiful.org

Physicians for Social Responsibility
www.psr.org

Friends of the Los Angeles River
www.folar.org

Mothers of East LA
Madres del Este de Los Angeles
latino.sscnet.ucla.edu/community/intercambios/melasi/

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Full credits and citations can be found at **www.invisible5.org**

Invisible-5 only highlights some of the environmental justice organizations and environmental justice struggles in California today. At **www.invisible5.org** you can find more links to organizations, and further research resources.