Contaminated Soil: An Overview

Community Dialogue on the
Management of Contaminated Soil
Los Angeles
October 28, 2017

Department of Toxic Substances Control

Co-hosts: Del Amo Action Committee & The People's Senate

What is the DTSC?

- Mission: To protect California's people and environment from harmful effects of toxic substances by:
  - restoring contaminated resources (*site cleanup*),
  - enforcing hazardous waste laws,
  - reducing hazardous waste generation,
  - and encouraging the manufacture of chemically safer products.

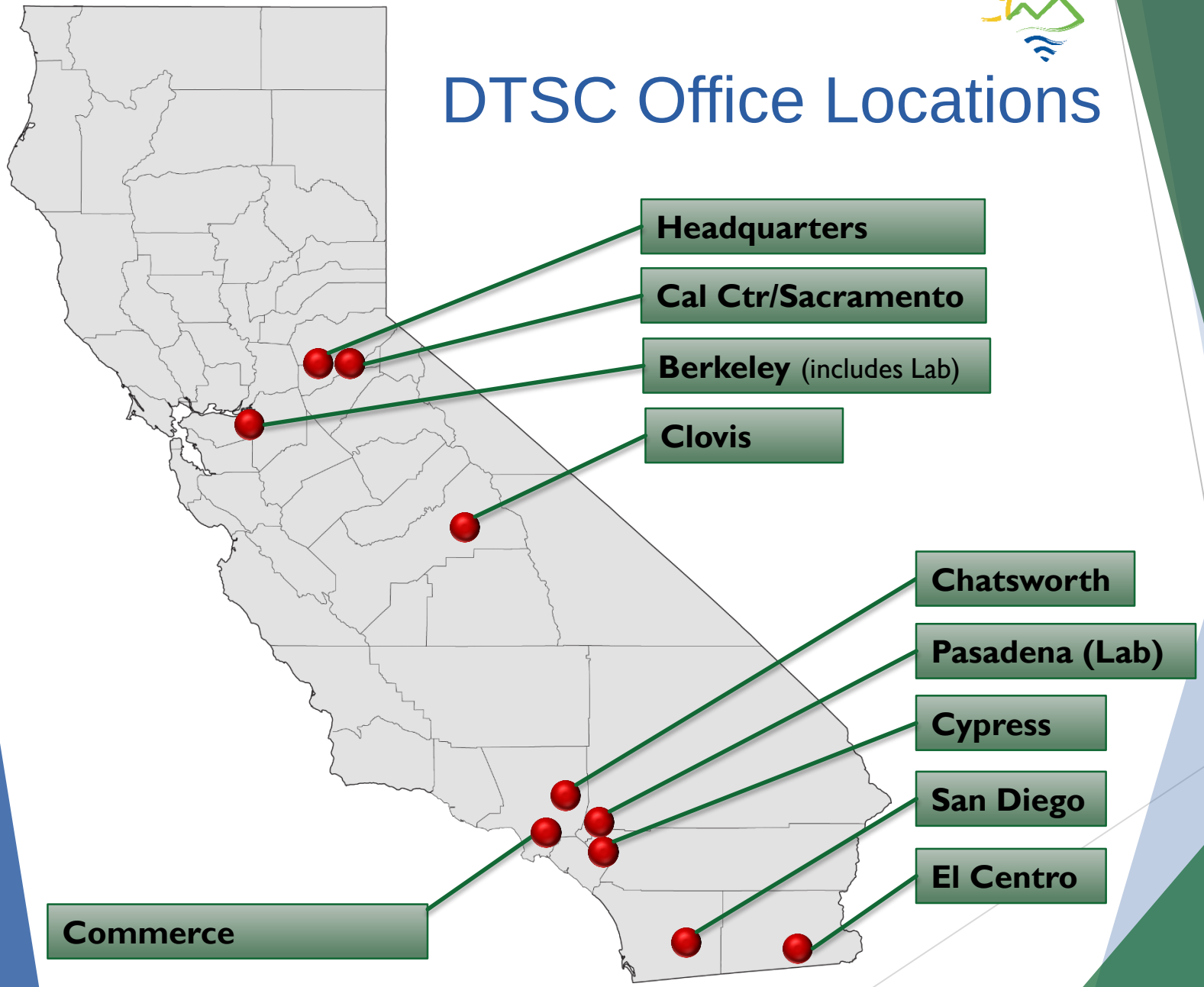
DTSC's Cleanup Program

- Cleanup Program oversees the cleanup and restoration of contaminated sites.
  - Includes soil, soil vapor, and groundwater contamination.
- DTSC regulates "responsible parties" who are liable for site contamination and cleanup.

DTSC's Cleanup Program (cont'd)

- Different kinds of site cleanups overseen by DTSC
  - Voluntary cleanups
  - Brownfields
  - Corrective action
  - Federal or State Superfund
  - Federal facilities / military cleanups
  - Schools

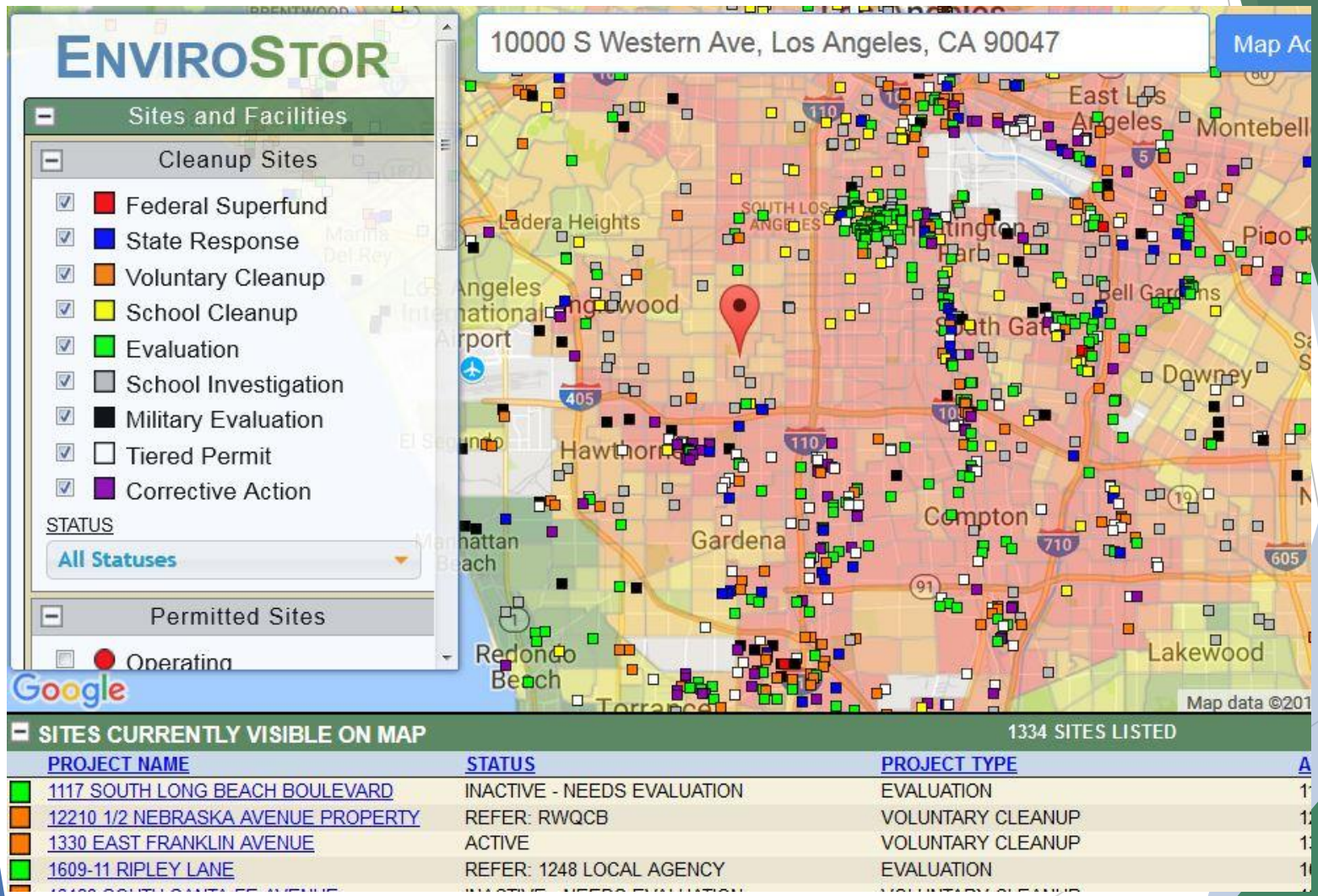
DTSC Office Locations



Examples of Federal, State, and Local Agencies that Oversee Cleanups

How Does the Public Learn More?

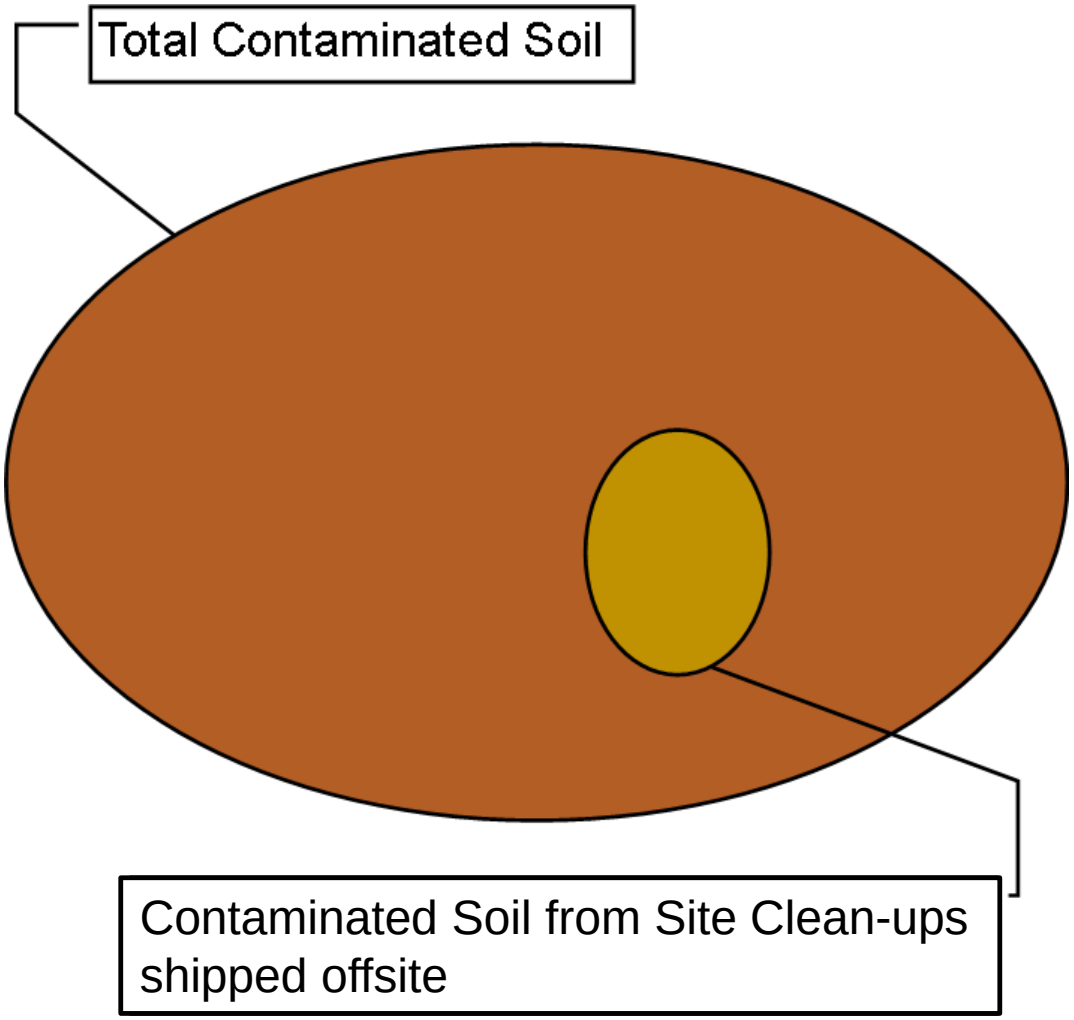
envirostor.dtsc.ca.gov



What is Contaminated Soil?

Universe of Contaminated Soil	Soil containing chemical compounds potentially harmful to human health or the environment; contamination from sources that are not naturally occurring (i.e. man-made).
Hazardous Waste	A waste with properties that exceed regulatory standards, and which is potentially dangerous and/or harmful to human health or the environment.
Contaminated Soil from site cleanups	Contaminated soil in the ground is not considered a waste. However, once it is excavated and stored, treated, or transported for disposal, contaminated soil may be regulated as a hazardous waste. Contaminated soil shipped off site must be manifested (tracked) in accordance with applicable environmental regulations.

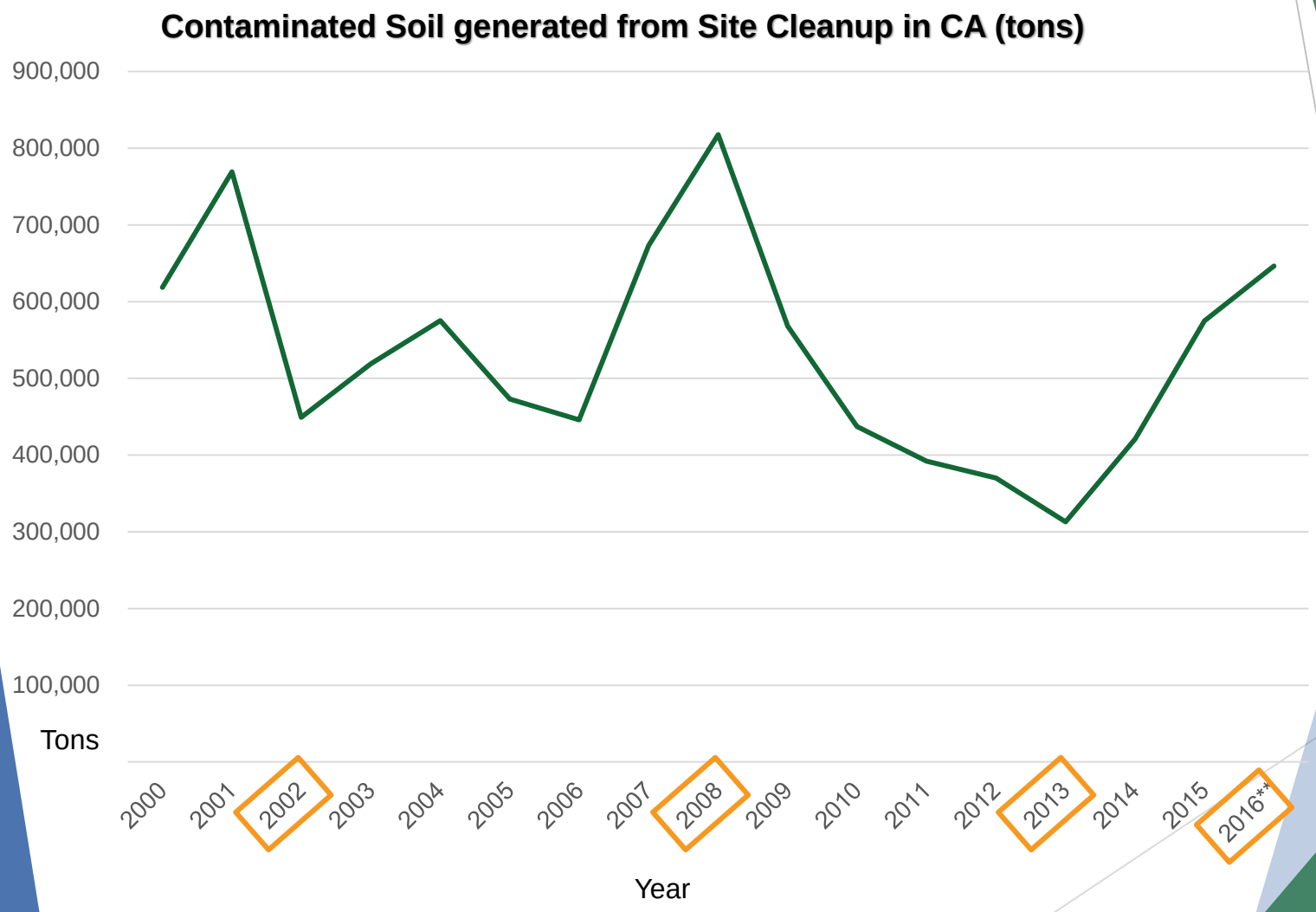
How Much Contaminated Soil?



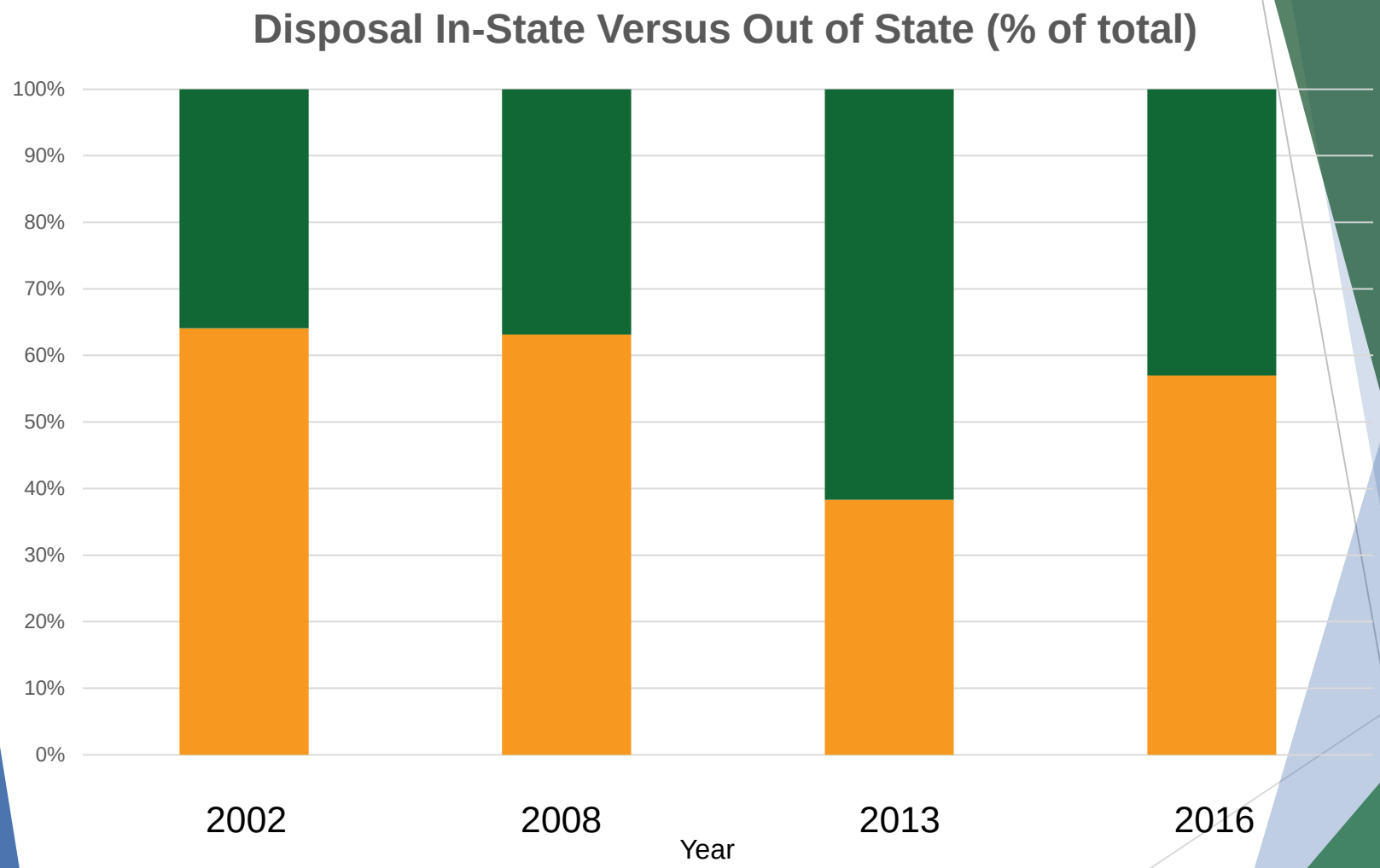
NOT TO SCALE

*The total quantity of contaminated soil on all contaminated sites is not a quantity that is calculated or reported to DTSC.

How Much Contaminated Soil is Generated from Site Cleanups?



Where is the Soil Going?



Common Categories of Soil Contaminants

- Inorganics
  - Lead, chromium, arsenic, mercury, other metals
  - Smelting, battery recycling, leaded gasoline, lead-based paint, plating shops, various manufacturing processes.
- Semi-volatile organics
  - Polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), dioxins / furans, pesticides
  - Capacitors, transformers, manufactured gas plants, burn pits, agricultural processes.

Common Categories of Soil Contaminants (cont'd)

- Volatile organic compounds
  - Solvents, benzene
  - Dry cleaners, metal cleaning, degreasing, chemical & plastics manufacturing.
- Fuels
  - Gasoline, diesel, jet fuels, waste oils,
  - Underground storage tanks, refineries, oil water separators.

Options for Soil Cleanup

- Immobilization
  - Solidification and stabilization
  - Containment (landfill, capping)
- Extraction
  - Soil vapor extraction
  - Thermal desorption
  - Soil flushing / washing
- Destruction or alteration
  - Thermal (incineration)
  - Biological (bioremediation)
  - Chemical (in situ chemical oxidation)