HAZARDOUS MATERIALS

Orange County, among the most rapidly growing counties in California, continues to experience residential, employment, and economic growth. However, this growth does have its costs. Virtually all sectors of the County's economy are users of materials that, if improperly handled, stored, transported, or disposed of, can pose health and environmental problems. No master list of hazardous materials exists which can be agreed upon by all agencies that manage or regulate them. Existing lists will change as more is learned about the effects of hazardous substances or as new substances become part of our technology. In addition, definitions of hazardous materials also vary from source to source. The current descriptions used in federal and state legislation are:

- A hazardous material is one that is ignitable, reactive, corrosive, toxic, or any combination of these properties (Resource Conservation and Recovery Act)
- A hazardous material is a substance or combination of substances which, because
 of its quantity, concentration or physical, chemical, or infectious characteristics
 may either:
 - o Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness
 - O Pose a substantial present or potential hazard to humans or the environment (State Health and Safety Code, Chapter 6.5)
- A hazardous material is an injurious substance, including pesticides, herbicides, toxic metals and chemicals, liquefied material gas, explosives, volatile chemicals, and nuclear fuels (California Government Code)

The increasing volume and variety of hazardous materials that are generated, stored, or transported through Orange County have created a potential threat. A hazardous substance poses a threat due to its inherent characteristics. Its actual impact, however, depends on where the episode occurs and on weather, geography, population, and other site-specific conditions that influence its behavior in the environment and can vary greatly. Incidents may occur at fixed facilities where the opportunity for development of site-specific contingency plans is great. They may also occur at any place along any land, water, or air transportation route, and (in the case of vessel mishaps, aircraft accidents, agricultural chemicals and illegal dumping) may occur in unpredictable areas, relatively inaccessible by ground transportation. Further, hazardous material incidents often cause some type of transportation problem within the vicinity of the incident and may even require localized evacuation of people, pets, etc.

In Orange County the majority of hazardous material incidents are handled prior to their becoming a disaster. Hazardous material incidents require specialized technical expertise that varies depending on the materials involved and the type of incident. The resources and personnel required to react to a hazardous materials incident may involve various local, special district, state, and federal agencies. First responders are usually fire or law enforcement services followed by HCA/Environmental Health. Other local agencies may include Orange County Public Works; HCA/Emergency Medical Services, and Epidemiology; Sheriff's Department Control One (hereafter referred to as Control One); Integrated Waste Management Department; and the Orange County Agricultural Commissioner. A long list of state and federal agencies may be included as well as districts such as South Coast Air Quality Management District, Orange County Sanitation Districts, Orange County Water & Irrigation Districts and private agencies, associations and companies. Each agency is expected to provide on-scene assistance consistent with its operational capabilities, when requested.

With the amount of hazardous materials of all descriptions generated, stored, and transported through the County, access of these materials to potential terrorists is a concern. A terrorist acting alone or in a group has the potential for attaching explosive devices to the various modes of transportation used throughout the County. Such an incident will cause a major hazardous materials spill that can be timed to create the most disruption. Further, such an incident may not occur within the County geographical boundaries but in some other County when the transport of the materials begins within Orange County. Another consideration for potential terrorist activity would be in the theft of quantities of materials that could be used to develop explosive devices, "dirty bombs," or just the simple release of the materials within highly populated areas such as sporting events, amusement parks, and shopping malls.

Hazardous materials are used in all segments of our society. Hazardous material users include manufacturing and service industries, agriculture, military bases, hospitals, schools and households. Specific areas of concern within Orange County include hazardous materials incidents during transportation on the County's highways and roads or along 155 miles of railroad lines, as well as incidents at any of the large facilities such as John Wayne Airport, current and/or former military bases, three large rocket propulsion test facilities, and numerous petroleum product producers with large storage facilities and hundreds of miles of pipelines throughout the County. Environmentally sensitive areas historically affected by hazardous spills include the coastline and bays, major agricultural areas, and waterways.

More than 100 million gallons of hazardous waste is produced annually in Orange County. Hazardous waste production is increasing at a rate of about two percent a year.

According to a July 1985 study by the South Coast Air Quality Management District, eight chemicals that pose the highest risk for southern California are: chlorine, hydrogen fluoride, hydrogen chloride, anhydrous ammonia (ammonia gas), chloropicrin, gasoline lead additive, vinyl chloride, and benzene. Chlorine is considered the riskiest chemical in southern California because it is stored in large quantities. For example, at Orange County Sanitation District facilities in Huntington Beach and Fountain Valley, large quantities are on hand, and the Metropolitan Water District's Diemer Water Filtration Plant in Yorba Linda also has large quantities of chlorine on site.

In general, hazardous materials are normally stored in secured, on-site areas, in small containers or large aboveground or underground storage tanks. As of 2001, there are approximately 9,500 underground storage tanks storing over 60 million gallons of hazardous materials at 2,875 facilities in Orange County. Hazardous Materials sites are shown in Figure 16.

HAZARDOUS MATERIALS TRANSPORTATION

Highways and freeways are the major transportation routes in Orange County, as shown in Figure 15. Over 250 miles of interstate highway, including the third busiest highway transportation corridor in the country (Highway 5), and 719 miles of other major transportation routes run through Orange County. The CHP has designated these highways as hazardous materials transportation corridors.

In addition to the freeway system, Orange County's major transportation routes include surface streets and railroads. These routes are used daily to transport hazardous materials from suppliers to users. On these routes, transportation accidents involving hazardous materials can occur. The threats posed by a transportation accident involving hazardous materials include explosions, physical contact by emergency response personnel, and exposure to the public via airborne exposure. In the late '70s and again in the early '90s large freight trains in the Cajon Pass lost their ability to slow down as they came down the grade into San Bernardino. In both instances the trains derailed resulting in hazardous materials spills and associated damage. Derailments in Orange County involving hazardous materials can result in the closure of freeways and surface streets, an extreme hazard to the public and the first responders, and evacuation of large areas.

The Federal Department of Transportation (DOT) is the primary regulatory authority for the interstate transport of hazardous materials. The DOT regulations establish criteria for safe handling procedures (e.g., packaging, marking, labeling, placarding, and routing). Criteria also exist regarding personnel qualifications and training, inspection requirements, and equipment specifications. The CHP enforces regulations related to the intrastate transport of hazardous materials and hazardous wastes.

Another major hazardous materials transportation mode in Orange County is that of underground pipelines. These pipelines predominately transport crude or refined petroleum, gasoline, and jet fuel. The major threats posed by this transportation method include explosions, fire, and contamination of groundwater potentially used as a source of drinking water. The regulatory agency responsible for enforcement as well as inspection of pipelines transporting hazardous materials is the California State Fire Marshal's Office, Hazardous Liquid Pipeline Division. Under mandate from Title 49 of the Code of Federal Regulation, the agency is charged with compliance review of:

- 1) Inspection and enforcement
- 2) Pipeline failure and investigation

3) Pipeline training and certification

Locally the Orange Count Fire Authority (OCFA) has emergency response authority for responding to hazardous materials incidents.

Figure 15 - Highways and Major Arterial Network in Orange County

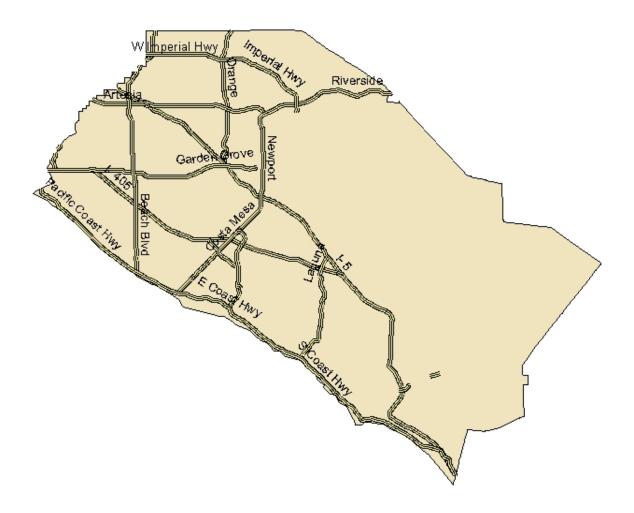
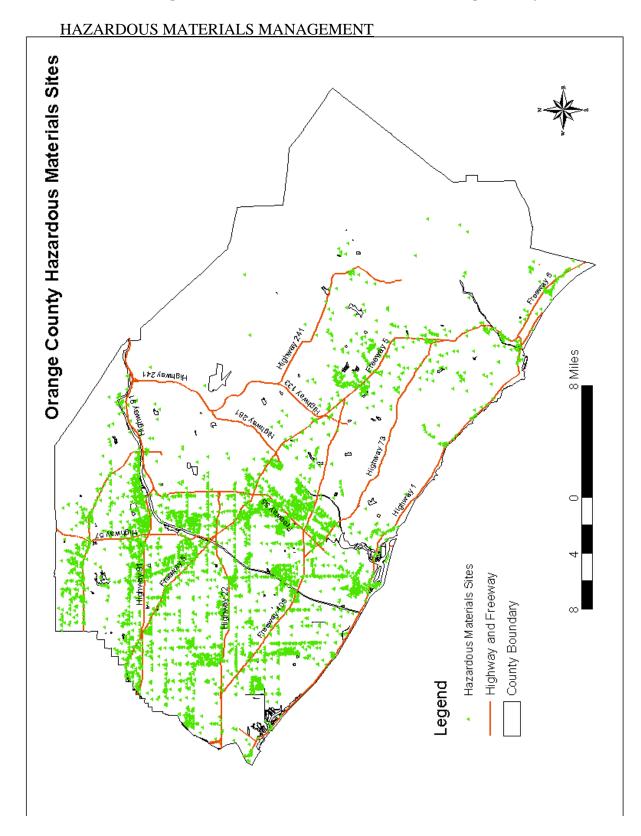


Figure 16 - Hazardous Materials Sites in Orange County



1) Underground Storage Tank Program

The HCA has been designated by the Board of Supervisors as the agency to enforce the Underground Storage Tank (UST) program. The HCA Underground Storage Tank Program regulates approximately 7,000 of the 9,500 underground tanks in Orange County. This program does not regulate underground tanks in the cities of Santa Ana and Orange, which implement their own programs. The comprehensive program, implemented by HCA, includes conducting regular inspections of underground tanks, oversight of new tank installations, issuance of permits, regulation of repair and closure of tanks, ensuring the mitigation of leaking underground storage tanks, pursuing enforcement action, and educating and assisting the industries and general public about the laws and regulations governing underground storage tanks.

2) Hazardous Materials Disclosure Program

The Hazardous Materials Disclosure Program began as a direct result of two major incidents: the tragedy in Bhopal, India in December 1984, and the three-day fire at the Larry Fricker pesticide warehouse in Anaheim in June 1985. On November 5, 1985, the Board of Supervisors adopted an ordinance relating to hazardous materials disclosure (Orange County Code, Title 4. Division 3, Article 4). It requires that businesses using or handling a minimum of 500 pounds or 55 gallons of hazardous materials must provide disclosure information to OCFA. Businesses are required to file biannually and within 15 days of any significant changes. In addition, under AB 2185 (California Health and Safety Code, Section 25500 et. sea.), any business that handles hazardous materials is required to submit a business emergency plan, which will be approved and maintained by the OCFA. The business plans will also serve as a tool for the expedient and appropriate handling of local hazardous materials incidents.

As noted above, the OCFA is the designated agency to:

- Inventory the distribution of hazardous materials in commercial or industrial occupancies;
- Develop and implement area emergency plans to respond to a hazardous materials incident; and
- Require businesses that handle hazardous materials to develop business emergency plans to deal with a fire or release of these materials.

The information disclosed by the industrial community is stored in a computerized data base and is made available to fire and police response personnel, the Sheriff's Department, the HCA, all hazardous materials response teams in the County, and the planning departments of the cities served by the OCFA. Title 4 of the Orange County Codified Ordinances mandates an orderly program for the acquisition of basic information on the use and disposal of hazardous materials in the County. By contractual agreement or resolution of the individual city, the OCFA administers the provisions of the state law, the Heath and Safety Code Chapter 6.95, in the unincorporated areas and in

twenty of the incorporated cities of the County. The remaining twenty cities have adopted their own ordinances and are administering similar programs.

HAZARDOUS MATERIALS PLANNING AND COORDINATION

On February 7, 1984, the Orange County Board of Supervisors established the Hazardous Materials Task Force (HMTF) to review the County's hazardous materials activities and make recommendations to ensure effective coordination and control of county-wide resources. The work begun by the HMTF continues under the jurisdiction of the HCA. The functions and responsibilities of the Hazardous Materials Program Office include:

- Facilitating the coordination of various parts of the County's hazardous materials
 program, and assisting in coordinating County hazardous materials activities with
 outside agencies and organizations including various state, federal, special
 districts, industry and community agencies and groups that impact or are involved
 with hazardous materials management issues/activities.
- Providing comprehensive, coordinated analysis of hazardous materials issues including the needs and priorities of all the various organizations involved in hazardous materials activities.
- Directing the preparation, implementation, and modification of the County's Hazardous Waste Management Plan as required by state law (Tanner Bill, AB 2948).
- Acting as a clearinghouse for information and increase public awareness of hazardous materials issues/activities.