EL DORADO COUNTY

HAZARDOUS WASTE MANAGEMENT PLAN

VOLUME 1

NOVEMBER 5, 1990

The final El Dorado County Hazardous Waste Management Plan was jointly prepared by the Community Development Department and George Wheeldon and Associates under the guidance of the County Hazardous Waste Management Plan Advisory Committee.

ADVISORY COMMITTEE

Name	Capacity
Ron Duncan	Technical Advisor
Edio Delfino	Agricultural Representative
Virginia-Jane Harris	Environmental Representative
Wayne Pearce	Community at Large
Ozzie Scarriot	Industry Representative
Al Herzig	Placerville City Representative
Bob Harmon	Placerville City Representative
Joan Phillipe	South Lake Tahoe City Representative
Clifford Zipp	South Lake Tahoe City Representative

PROJECT STAFF

Jon Morgan	Environmental Health Division
Sharon Lester	Planning Division
Jena Tortorici	Planning Division
Ramona Rothe	Blue Ribbon Temporary Personnel

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HAZARDOUS WASTE MANAGEMENT PLAN

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14. Goals, policies, objectives	Section 1.5
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VOLUME III - APPENDIX LISTING

ACRONYMS USED IN EL DORADO CHWMP

ABAG	Association of Bay Area Governments
ACW	Asbestos-Containing Waste
APCD	Air Pollution control District
CAC	California Adminstrative Code
CDF	California Department of Forestry
CDFA	California Department of Food and Agriculture
CHWMP	County Hazardous Waste Management Plan
CIMP	Comprehensive Hazardous Material/Hazardous Waste Inspection and Monitoring Program
COSWMP	County Solid Waste Management Plan
CPCFA	California Pollution Control Financing Authority
DEH	Department of Environmental Health
DHS	Division of Health Services (California)
DIS	Hazardous Materials and Hazardous Waste Data Information System
EDDS	El Dorado Disposal Service
EPA	Environmental Protection Agency
FCC	Fluidized Catalytic Cracker
HSC	Health and Safety Code (California)
HWIS	Hazardous Waste Information System
JPA	Joint Powers Authority
LQG	Large Quantity Generator
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheets
MSW	Municipal Solid Waste
OES	Office of Emergency Services
OPR	Office of Planning & Research
PCB	Polychlorinated Biphenyl
POTW	Publicly-Owned Treatment Works
PLMC	Pooled Loan Marketing Corporation
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act (1976)
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SBA	Small Business Administration
SIC	Standard Industrial Classification
SMUD	Sacramento Municipal Utility District
SQG	Small Quantity Generator
STAA	Surface Transportation Assistance Act
STLC	Soluble Threshold Limit Concentration
SWRCB	State Water Resources Control Board
TRM	Technical Reference Manual
TRPA	Tahoe Regional Planning Agency
TSD(F)	Treatment, Storage and Disposal (Facility)
TTLC	Total Threshold Limit Concentration
WPCP	Water Pollution Control Plants

FEDERAL AND STATE
HAZARDOUS WASTE MATERIALS LEGISLATION

AB 650	State Hazardous Waste Management Plan
AB 1362	Underground Storage Tanks (Sher)
AB 1803	Safe Drinking Water Act
AB 1809	Household Hazardous Waste
AB 2185/ 2187	Hazardous Materials Storage and Emergency Response (Waters Bill)
AB 3777/ 1059	Acutely Hazardous Materials Risk Management (La Follette Bill)
AB 2948	County Hazardous Waste Management Plan (Tanner Bill)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CEQA	California Environmental Quality Act
CHWCA	California Hazardous Waste Control Act
HSA	Hazardous and Solid Waste Amendments
HSWA	Hazardous and Solid Waste Amendments of 1984
Proposition 65	Safe Drinking Water and Toxic Enforcement Act of 1986
RCRA	Resource Conservation and Recovery Act of 1976
SARA	Superfund Amendments and Reauthorization Act, of 1986
TOSCA	Toxic Substances Control Act of 1976

GLOSSARY

Acid - Chemical compound or solution which has a low pH (below 7). Strong acids are corrosive to many materials, especially metals. Acids with pH equal to or below 2.0 are considered hazardous.

Acid Waste - A waste material with a pH less than 7. An acid waste is considered hazardous when its pH is 2.0 or less (see pH).

Activated Sludge Treatment - Treatment process using micro-organisms to break down organic wastes. Wastes are oxidized to carbon dioxide, water and other inert material; the sludge medium provides nutrients and surfaces for microorganisms to colonize.

Acute - Rapidly occurring and/or short-term effects which are soon manifested after exposure to a hazardous material.

Absorption - Assimilation of gas, vapor or dissolved matter into another material. In hazardous waste treatment, the process of removing low concentrations of a contaminant in a waste stream by contact with another material.

Aerobic - Occurring in the presence of oxygen, e.g., biological processes requiring air.

Alkaline Waste - A waste with a pH above 7. Highly alkaline materials, such as lye, are caustic. Such a material is considered hazardous when pH is above 12.5.

Alternative Technology - The application of technology to the reduction of waste generation, promotion of recycling, and alternatives to land disposal of hazardous waste (DHS).

Ambient - Surrounding existing conditions (e.g., temperature, humidity, pressure, etc.) of air, water or other media.

Ambient Air Quality Standards - Designated levels of atmospheric contami- nation by single or combined pollutants permitted under laws or ordinances enforced by municipal, state or federal agencies.

Authority to Construct - An authorization issued by Air Pollution Control Districts and Air Quality Management Districts, which is required prior to construction for proposed facilities which will emit significant levels of pollutants into the atmosphere.

Baghouse Waste - Particulate waste collected by air pollution control devices in industries producing smoke or dust, as in smokehouses or mills.

Base - A large class of chemical compounds with the capacity to react with acids to form salts. Basic solutions have high pH (between 7 and 14). Strong bases include solutions of bicarbonates, carbonates, hydroxides, and occasionally borates, silicates and phosphates.

Bill of Lading - A receipt listing goods shipped; issued by a common carrier.

Biological Treatment - Treatment processes utilizing living microorganisms to decompose organic hazardous wastes into simpler organic or inorganic substances. The five principal techniques include activated sludge, aerated lagoons, trickling filters, waste stabilization ponds and anaerobic digestion.

Bioaccumulative - Substances that accumulate in living organisms and increase in concentration through the food chain. For example, a chemical absorbed by insects' bodies may become ten times more concentrated in insect-eating fish, and one-hundred times more concentrated in fish-eating birds.

Biosludge - Sludge resulting from biological treatment methods of organic wastes, largely consisting of dead cells.

Boiler - A container for boiling liquids, usually water, under controlled conditions or temperature and pressure, often for heating or power generation.

Btu (British Thermal Unit) - The quantity of heat required to increase the temperature of one pound of water one degree Fahrenheit.

Carcinogen - A material which causes cancer or promotes the growth of malignant tumors.

Catalyst - A substance which accelerates the rate of a chemical reaction without being consumed in the process. Industrial catalysts are usually added in relatively small concentrations to reaction mixtures.

Caustics - A group of chemical compounds, mostly bases, which form solutions with a high pH (7 to 14). Strong caustics are corrosive to materials and neutralize acidic solutions to salts (see Alkaline).

Cell - A unit of compacted solid waste, enclosed by cover materials such as natural soil in a sanitary landfill.

Cement Kiln Incineration - The process of burning organic wastes at high temperatures in kilns used for the production of cement.

Characteristics of Hazardous Wastes - Characteristics identifying substances as hazardous waste, by their physical and chemical properties. EPA has established four characteristics that can be determined by tests:

- **Ignitability** - The ability to catch fire.
- **Corrosivity** - The ability to wear away or destroy other materials, including human tissue.
- **Reactivity** - The ability to enter into a violent chemical reaction, which may involve explosion or fumes.

- **EP (Extraction Procedure) Toxicity** - The ability to release certain toxic constituents when leached with a mild acid.

Chronic - Long-term or delayed effects such as prolonged disease. Compare with acute.

Criteria Pollutants - Certain air pollutants for which standards have been set at levels that are considered to be safe for human exposure.

Dechlorination - Removal or neutralization of chlorine from chemical compounds or solutions.

Deep Well Injection - Disposal of waste material by injection deep into the ground.

Designated Waste - Hazardous waste which has been granted a variance from hazardous-waste management requirements, pursuant to Section 66210, CAC Title 27, because of small quantity, low concentration, or physical and chemical characteristics limiting its hazard to human or animal life (see also Special Waste).

Developer - A person, agency or company which proposes to construct a hazardous waste TSD facility.

Disposal - Abandoning, depositing, intering, or otherwise discarding waste as a final action after use has been achieved or a use is no longer intended (section 66048, Title 22, CAC; the Department of Health Services is proposing to revise this definition).

Disposal Site - An area, location, tract of land, building, structure or premises used or intended to be used for disposal of refuse or hazardous waste.

Dissolution - The process of dissolving a material into a liquid solvent.

Distillation - A process used to separate mixtures and recover component liquids with different boiling points. A mixture is heated to vaporize components which are then collected in a condenser.

Drum Decantation - Removal of the liquid portion of a solid-liquid mixture from a drum, leaving the settled solids in the drum.

Electrostatic Precipitator - A device for collecting dust, mist or other particles from a gas stream by first electrically charging the particles and later attracting them to an oppositely charged electrode plate.

Environmental Protection Agency - A federal agency, established in 1970, which, among other duties, has the responsibility for ensuring that governmental, residential, commercial and industrial waste-disposal activities do not adversely impact the environment.

Evaporation - The physical process of vaporizing volatile

liquids. In a mixture, evaporation of volatile liquids concentrates the remaining less volatile or solid matter.

Exposure - Intimate contact (e.g., with a hazardous material) through direct skin contact, inhalation, injection or consumption.

Fair Share - Denotes that each county is responsible for the disposition of its own waste; that is, responsible for its fair share of waste management.

FCC Waste - Fluidized catalytic cracker waste. Results from oil refinery operations.

Filtration - A process for separating mixtures into component liquids and solids by passing the mixture through a sieve, filter or semi-permeable membrane.

Fixation - A process of converting waste to an unchangeable or stationary state; a form of stabilization.

Flammable - Material which will burn below 140F, either spontaneously or as a result of coming in contact with sparks or flame.

Fluidized Bed Incineration - The process of burning waste material in an agitated bed of inert granular material.

Generator - The person or facility who, by nature of ownership, management or control, is responsible for the generation of hazardous waste.

Geology - (1) The physical composition and structure of the earth's crust; (2) the science of the earth's crust.

Halogenated - Combined with chlorine, bromine, fluorine and/or iodine atam(s), e.g., chemicals having these elements within their structure. Halogenated chemicals are often hazardous.

Hazardous Substances Account - A state fund derived from fees paid by persons who submit more than 500 pounds per year of hazardous or extremely hazardous waste to on- or off-site hazardous waste disposal facilities. This is the primary funding source for the state Superfund program.

Hazardous Waste Control Account - An ongoing state fund, derived from fees paid by operators of on- and off-site hazardous waste disposal facilities, which is the basic funding source for the Department of Health Services'hazardous waste management program.

Hazardous Waste Control Act - A California law, enacted in 1972, which was the first comprehensive hazardous waste control law in the United States. It established the state's hazardous waste management program within the Department of health Services.

Heavy Metals - A group of metallic elements with high atomic weights and densities. Toxic heavy metals include arsenic, cadmium, chromium, lead, mercury, nickel, selenium, silver, and thallium.

Herbicide - A chemical used to kill plants. A potential hazard to groundwater and drinking water reservoirs.

High Priority Wastes - A category of hazardous waste of high toxicity, potential for bioaccumulation, persistence in the environment, and potential for air, soil and groundwater contamination due to their mobility and volatility.

Hydrogeology - The science dealing with chemical properties, distribution and flow of groundwater.

Incineration - The controlled combustion of burning solid, liquid or gaseous waste, producing gases and ashy residue containing little combustible material.

Inert - Exhibiting no chemical activity, totally unreactive.

Ions - Electrically charged atoms, molecules, or groups of atoms.

Landfill - Deposition of refuse on land covering with soil periodically so that no nuisance or hazards to the environment result.

Land Disposal Method - Disposal, storage or treatment of hazardous wastes on or into the land, including, but not limited to, landfill, surface impoundment, waste piles, deep-well injection, land spreading, and co-burial with municipal garbage.

Landfarming (Land Application, Land Spreading) - A treatment technique which involves spreading the waste on land and utilizing evaporation and microbial action to degrade the wastes. (Not the same as landfilling.) Used primarily for sewage sludge waste.

Leachate - Liquid that has percolated through a land disposal site and which contains dissolved, suspended and/or microbial contaminants from the solid waste.

Leachate Collection System - The system collecting landfill leachate and transporting it to the surface for treatment.

Lead Agency - The public agency which has the principal responsibility for the execution or approval of a project. For example, under the California Environmental Quality Act, such an agency decides if an EIR or negative declaration will be required for the project and causes the document to be prepared.

Liner - A relatively impermeable barrier, such as plastic or dense clay, designed to prevent leachate from leaking out of a landfill.

Listed Waste - Waste "listed" by the EPA as hazardous by definition, even in cases where the "characteristics" identifying hazardous wastes may not have been measured or may not apply.

Local Assessment Committee - Review group created by a host or neighboring community to analyze a proposed hazardous waste management facility. In some states such Committees have the authority to negotiate with the facility proponent (on behalf of

the community) regarding the conditions under which the hazardous waste management facility may be built.

Local Veto Authority - Within the context of hazardous waste management facility siting, refers to the ability of cities and counties to unilaterally reject proposed facilities by denying local land-use approval.

Manifested Waste - Hazardous waste generated by a person, business or activity and shipped off-site under a manifest. Each shipment is required by law to be accompanied by a manifest, under the Uniform Hazardous Waste Manifest Act.

Memorandum of Agreement (MOU) - A written record between administrative agencies which clarifies or establishes joint procedures or authorities necessary to administer a program.

Metal Dust - Fine particulate matter of elementary metal or metallic compounds, usually referring to hazardous metals (e.g., mercury, arsenic, silver, etc.).

Microorganisms - Any living things microscopic in size, including the bacteria, algae, ectinomycetes, yeasts, simple fungi, rickettsiae, spirochaetes, slime molds, protozoans, and some simpler multicellular organisms. In reference to biological treatment of waste, those used for the stabilization or degradation of hazardous waste.

Monitoring Well - A test well used to collect samples of ground water near a potentially contaminated site, such as a treatment facility, for analysis of possible contamination.

Mutagenic - Causing mutations, i.e., alterations in the genetic material of living things.

Neutralization - A treatment process involving the chemical reaction of acids and bases to form water and salts as products.

New Source - Within the context of air pollution control, this refers to a new facility or a modification of an existing facility which will become a new source of air pollution. (May cause restrictions on the development of some hazardous waste facilities.)

Nonattainment Area - Area whose ambient air levels of pollutants exceeds federal or state standards. (May be difficult to approve certain kinds of hazardous waste facilities, such as incinerators, in nonattainment areas.)

Nonhalogenated - Refers to chemical compounds without chlorine, bromine, fluorine or iodine atoms present in their molecular structure.

Offset - Emissions reductions required to be made at another facility or on other equipment of the same owner in order to mitigate the increased emissions caused by a new source (hazardous waste facility). The offset is intended to maintain or improve the quality of the air.

On-site Disposal - Treatment of waste material on the premises where they were generated.

Operator - A person, industry, or agency that conducts the treatment, disposal and/or storage of hazardous materials.

Organic - A large class of chemical compounds, often of animal or vegetable origin, containing carbon. Such group includes hydrocarbons, amines, carboxylic acids, aldehydes, ketones, alcohols, and ethers.

Organometallic Compounds - Organic compounds which incorporate metallic element(s) into their molecular structure. Example: tetraethyl lead, a component of leaded gasoline.

Oxidation - A chemical reaction involving the removal of electrons from an atom or molecule, often through combination of a substance with oxygen.

Permit Streamlining Act (AB 884, California) - Legislation enacted in 1977 which imposes time frames and requirements on governmental agencies to speed and simplify permitting processes for development projects.

Permit to Operate - A mandate issued by Air Pollution Control Districts and Air Quality Management Districts, which is required before operation of a facility, based on a demonstration that the facility can comply with applicable rules, regulations and conditions imposed in the Authority to Construct.

Pesticide - A chemical used to kill pests, such as destructive insects or other small animals, fungus or weeds. Includes insecticides, fungicides, herbicides, rodenticides, and wood preservatives.

pH - The negative log of hydrogen ion concentration present in a solution. Chemical neutrality occurs at pH = 7.0 (i.e., hydrogen ion concentration equal to 10^{-7}); acids have pH below 7.0; bases have pH above 7.0.

Physical Treatment - The process of altering the physical properties of a material (e.g., temperature, pressure, etc.) without changing its chemical structure. Examples: freezing, vaporization, filtration.

Ponding - The storage of solution in ponds, allowing the passage of liquids downward through the soil and evaporation of volatile chemicals.

Precipitation - A chemical process causing a dissolved substance to become solid, allowing it to be removed from solution through filtration or settling.

Pyrolysis - The process of heating combustible hazardous waste in the absence of oxygen, usually breaking the waste down to a residue of reduced toxicity.

Recycling - The removal of waste material from the waste stream and processing it so that it can be used again as raw material.

Reduction - A chemical reaction involving the addition of electrons to atoms or compounds; the opposite of oxidation.

Refractory Organics - Organic compounds that are highly resistant to decomposition through combustion or high-temperature processes.

Resin - Highly polymerized organic material derived from acids and neutral substances; examples include polystyrene, epoxy.

Residuals Repository - A hazardous waste disposal facility for collection of residuals from hazardous waste treatment facilities and other irreducible, stabilized or detoxified hazardous wastes.

Rotary Kiln Incinerator - A device used for the controlled combustion of waste material, usually a large inclined cylinder. Rotation of cylinder improves efficiency of combustion process.

Sludge - A semi-liquid substance consisting of suspended material combined with water and other dissolved matter.

Small Quantity Generator (SQG) - A generator of waste material amounting to less than 1,000 kilograms of hazardous waste per month.

Solidification - A treatment process for liquid or liquid-containing hazardous waste material, involving the formation of a solid, e.g., by mixing cement with contaminated water.

Solid Waste - Useless, unwanted, or discarded material with insufficient liquid to be free-flowing. Examples of this include garbage, rubbish, paper, ashes, industrial wastes, abandoned vehicles, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes, and other discharged solid and semisolid wastes. Also, liquid wastes disposed of in conjunction with solid wastes at solid waste transfer/processing stations or disposal sites, but excluding (a) sewage collected and treated in a municipal or regional sewerage system; or (b) material or substances having commercial value, which have been salvaged for reuse, recycling, or resale.

Solvent - A liquid capable of dissolving another substance. Common solvents include acetone, alcohol, and paint thinner.

Solvent Extraction - A separation process for removal of contaminants (usually organic) from wastewater by mixing a solvent with the water; the contaminant dissolves in solvent, which is separated from the waste water.

Special Waste - Defined by DHS in Title 22, Section 66744, as waste that contains an inorganic or organic substance(s) which causes chronic toxicity to human health or the environment. In many cases, designated and special waste categories overlap.

Stabilization - A treatment process reducing the mobility of hazardous materials and their potential release into the environment, often by mixing with cement or other material to form an insoluble solid.

State Preemption Override - In the context of hazardous waste management facility siting, state preemption refers to the State preempting local decision-making authority over hazardous waste management facility siting such that no local decision is required to site such facilities.

Surface Impoundment - A temporary holding site, either natural or manmade, designed to accommodate liquid wastes.

Synergistic - Refers to the joint effects of two or more coexisting agents whose combined effects are greater than the sum of their individual effects. Example: two toxic chemicals that, when combined, are more toxic than either chemical alone.

TSDF (Treatment, Storage and Disposal Facility) - A TSD facility is defined under the Federal Resource Conservation and Recovery Act (RCRA) as being any building, structure or installation where a hazardous substance is treated, stored, or disposed of.

Thermal Treatment - The process of applying heat under controlled conditions to promote the degradation and/or detoxification of hazardous waste material. Includes incineration, pyrolysis, and other processes.

Toxic - Capable of producing injury, illness, or damage to humans, domestic livestock or wildlife through ingestion, inhalation, or absorption through any body surface.

Toxic Air Contaminant - An air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

Transfer Station - A fixed facility used for transferring waste from small collection trucks or trains, loading it into larger vehicles, and directing it toward large capacity treatment or disposal facilities.

Waste Exchange - A network connecting waste generators with parties that can use treated or untreated hazardous wastes as raw materials for industrial processes.

Waste Stabilization Pond - Storage land sites used to stabilize the composition of liquid or liquid-containing hazardous waste material.

PART A

EXECUTIVE SUMMARY

EL DORADO COUNTY HAZARDOUS WASTE MANAGEMENT PLAN

EXECUTIVE SUMMARY

INTRODUCTION

This Executive Summary provides a synopsis of the hazardous waste setting in El Dorado County and recommended goals, objectives, policies and programs for hazardous waste management and facility siting. It serves as a summary of the approximately 300-page El Dorado County Hazardous Waste Management Plan (CHWMP), and provides a valuable overview for decision makers, agency staff and the public. Please reference the El Dorado CHWMP for detailed information.

Legal Basis, Purpose

Tanner Legislation (AB 2948) authorizes California counties to prepare hazardous waste management plans (CHWMPs) and identify potential areas for the siting of needed future hazardous waste facilities. The Department of Health Services (DHS) administers the local hazardous waste planning process. The El Dorado CHWMP has been prepared in accordance with DHS guidelines.

The El Dorado CHWMP will encourage proper management practices by all hazardous waste generators in El Dorado County, including industry, small businesses, government and households. This will bel achieved by County level implementation of the policies, facilities, siting plans, programs and ordinances as described in the CHWMP. This plan is compatible with Federal and State regulations and programs and, for efficiency, incorporates major hazardous waste materials requirements. The CHWMP is intended to serve El Dorado County for the next twenty years and will be updated every three years, or more often if necessary.

County Setting

In comparison to other California counties, El Dorado County has a small population (106,100 in 1986), a modest number of small industries, and a rural, mountainous setting. In 1986, the County generated approximately 3,782 tons of hazardous waste. Analysis indicates most wastes are unmanifested and generated by small businesses and industries. El Dorado County faces challenges in encouraging proper management of hazardous waste generated by approximately 1,011 small businesses and industries, over 40,000 households, as well as institutions and governmental agencies.

Hazardous waste management is complicated by the geographical split of the County by the Sierra Nevada Mountains into two population centers: the South Lake Tahoe area in the Lake Tahoe Basin east of the Sierra, and the Placerville-El Dorado Hills population corridor along US 50 on the "western slope." Over 70 percent of the population lives outside the incorporated Cities of Placerville and South Lake Tahoe. More than half of the County is in Federal ownership, largely El Dorado National

Forest. The Lake Tahoe Basin is subject to environmental sensitives and regulatory controls under the Tahoe Regional Planning Agency Master Plan.

GOALS AND OBJECTIVES

The goals and objectives of the El Dorado CHWMP are defined below.

GOALS:

1. **To protect the health, safety and property of the residents and visitors of El Dorado County, and minimize damage to the environment from the adverse effects of hazardous wastes while maintaining the economic viability of the County and the State.**

2. **To manage hazardous wastes in a way that is consistent with sound management approaches in this order of priority: source reduction, recycling and reuse, treatment (on-site and off-site), and residuals disposal.**

3. **To develop a plan that will fulfill the criteria established by DHS to meet State legislated local hazardous waste management plans (AB 2948, Tanner) and acquire the funding sources to implement the plan.**

4. **To assess and accommodate the current and future needs for hazardous waste management practices and facilities for proper recycling, transfer, treatment, storage of hazardous wastes and disposal of treated residuals.**

OBJECTIVES:

Objective 1 - Ensure Proper Management of Hazardous Materials and Wastes. Bring all businesses and public and private institutions into compliance with applicable Federal, State, and local regulations for generation, storage, transportation, packaging and handling of hazardous materials, including wastes.

Objective 2 - Promote Source Reduction and Waste Minimization. Promote reduction, and, where feasible, elimination of hazardous wastes by the generators as the most preferred hazardous waste management strategy. Where source reduction is not feasible, promote recycling and other waste minimization techniques that reduce the amount of hazardous wastes which may require treatment and/or disposal.

Objective 3 - Develop Public Education Programs. Implement a program to educate El Dorado County's residents, business managers, work force and public officials on the proper management of hazardous materials and hazardous wastes in their homes, work places, recreational facilities, and public buildings.

Objective 4 - Improve the Management of Small Business and Household Hazardous Wastes. Increase the awareness of El Dorado County residents and small business about hazardous wastes

generated by them and encourage the proper disposal of those wastes.

Objective 5 - Promote Clean-up of Contaminated Sites. Develop a program to track contaminated sites and monitor State and Federal efforts to assure proper clean-up, thereby reducing the current and future number of contaminated sites.

Objective 6 - Minimize Improper and Illegal Disposal. Minimize hazardous waste from being illegally or improperly disposed in El Dorado County's solid wastestream, to the public sewer systems, and to public or private property.

Objective 7 - Eliminate Land Disposal of Untreated Hazardous Waste. Ensure that all hazardous wastes generated in El Dorado County are properly treated before disposal at residual repositories by May 8, 1990, as required by State law.

Objective 8 - Ensure Adequate Facility Capacity. Ensure that sufficient capacity exists, both within and outside El Dorado County, to treat, store, transfer, and dispose of El Dorado County's hazardous wastes through the year 2000 (State specified planning period).

Objective 9 - Reduce Export of Hazardous Waste. Reduce El Dorado County's reliance on out-of-County facilities for treatment, storage and disposal of hazardous waste through source reduction, waste minimization, and through siting and development of economically, geographically and environmentally appropriate facilities within El Dorado County.

Objective 10 - Establish Agreements with Exporting and Importing Counties. Establish effective interjurisdictional agreements with other counties to provide the off-site capacity needed for hazardous waste treatment and residuals disposal. ~~according to each jurisdiction's fair share of the hazardous was stream and environmental suitability for different types of f ities.~~

Objective 11 - Develop Facility Siting Criteria and Identify Potential Areas. Develop siting criteria and identify general areas consistent with those criteria for hazardous waste facilities within El Dorado County while protecting human health and the environment.

Objective 12 - Ensure Environmentally Sound Development and Operation of Waste Management Facilities. Coordinate with DHS to ensure that existing and future hazardous waste facilities for treatment, storage, and disposal in El Dorado County are developed and operated in an environmentally sound manner.

Objective 13 - Implement Programs for Monitoring and Enforcement. Revise and expand county programs, to the extent of delegated authority, to monitor and enforce existing and future local, State, and Federal hazardous waste management laws and regulations.

Objective 14 - Ensure Emergency Response Capability. Implement programs to reduce emergency incidents and to improve existing programs that provide response to hazardous material discharges to the environment.

Objective 15 - Promote Safe Transport. Provide for the safe transport of hazardous wastes from the source of generation to points of management through proper routing and emergency response planning.

Objective 16 - Coordinate Hazardous Waste Planning with Local Plans and Programs. Coordinate planning for hazardous materials and hazardous waste management with El Dorado County's land use planning process to ensure compatible land use development, and with existing hazardous materials and waste management programs to provide comprehensive and effective management.

Objective 17 - Coordinate with Regional and State Plans. Implement a process to coordinate County waste management programs with other appropriate counties, the Tahoe Regional Planning Agency and program efforts of the States of California and Nevada. Intercounty coordination is recommended with adjacent counties facing similar hazardous waste management concerns and with counties which receive hazardous wastes exported from and through El Dorado County.

Objective 18 - Promote Public-Private Sector Cooperation . Implement programs in the near term that strengthen and expand the public-private cooperation in managing hazardous materials and wastes.

Objective 19 - Promote Public Participation. Assure the interests and inputs of the public, industry, environmental organizations and local and State government are considered in the preparation and approval of the El Dorado County Hazardous Waste Management Plan through the implementation of a public participation program.

CURRENT AND FUTURE HAZARDOUS WASTE QUANTITIES

Definitions

"Hazardous Materials" versus "Hazardous Wastes," as used throughout this text and Plan, require distinct definitions to prevent confusion. A "hazardous material" is a substance or combination of substances, which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may pose a potential hazard to human health or the environment when improperly handled. A "hazardous waste" is a hazardous material which (1) has no use or reuse and is intended to be discarded, or (2) is recyclable. A hazardous waste, because of its nature, presents the same hazard as hazardous materials. Proper management of hazardous materials and hazardous wastes are integrated, as both substances present the same threat to the environment when not properly managed.

Small Business and Industry Hazardous Waste Generation

In 1986, small business and industry accounted for the generation of 3,495 tons of hazardous waste in El Dorado County (see table below). These hazardous wastes were generated by one large quantity generator and approximately 1,011 small quantity generators. Not considering future source reduction efforts, in

the year 2000 El Dorado County expects an increase in hazardous waste generation to a level of 5,581 tons originating from over 1,614 small businesses and industries (assumes a 3.4% annual growth rate).

Waste oil is, and will remain, the primarily type of hazardous waste being generated from industrial and commercial sources in El Dorado County. As the figure below indicates, approximately 62% of the total hazardous wastestream from small business and industry is waste oil. Miscellaneous wastes, consisting largely of used car batteries, ranks second as the major hazardous waste group in both the present and future.

Generators that ship hazardous waste off-site are required by the Environmental Protection Agency (EPA) to comply with the Uniform Hazardous Waste Manifest system. Under California State law a manifest, or the invoicing document used to track the transport of hazardous wastes from "cradle to grave," is required by all generators that ship **any** amount of hazardous waste off-site. In contrast, Federal law only requires that generators of more than 100 kilograms (or approximately 220 pounds) of hazardous waste per month manifest their wastes.

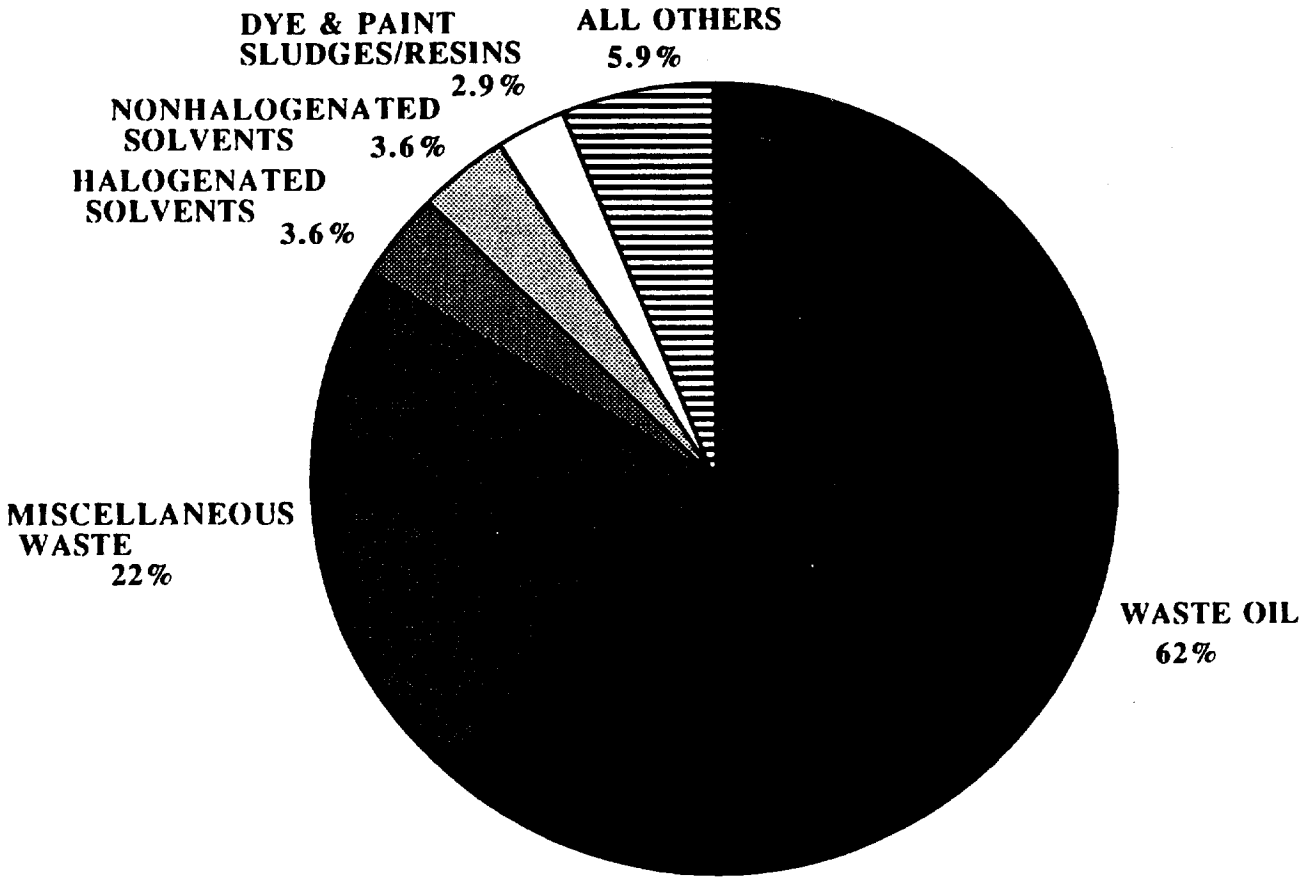
Currently the majority of hazardous waste shipped off-site from small business and industry in El Dorado County are not manifested. Many small businesses are exempt from manifesting small quantities of hazardous waste because they utilize commercial collection services, which manifest the total volume of hazardous waste under their own manifest. Examples of this practice are waste oil haulers who periodically pick up waste oil from El Dorado County's many gasoline service stations and auto repair shops, or dry cleaning waste collection services by solvent distributors.

SMALL BUSINESS AND INDUSTRY HAZARDOUS WASTE GENERATION IN EL DORADO COUNTY

Generator	Quantity (tons) Current (1986)	Future[a] (2000)
Large Quantity Generators Generates more than 1000 kg (or about 1.1 ton)/month Number in 1986 = 1	8	13
Small Quantity Generators Generates less than 1000 kg (or about 1.1 ton)/month Number in 1986 = 1,011	3,487	5,568
TOTAL	**3,495**	**5,581**

[a]Proportions between large and small quantity generators were assumed to be constant over the study period.

SMALL BUSINESS AND INDUSTRY HAZARDOUS WASTE GENERATION IN EL DORADO COUNTY IN 1986 AND 2000



TYPES AND QUANTITIES OF HAZARDOUS WASTE GENERATED BY SMALL BUSINESS AND INDUSTRY IN EL DORADO COUNTY
(Estimates do not include potential source reduction)

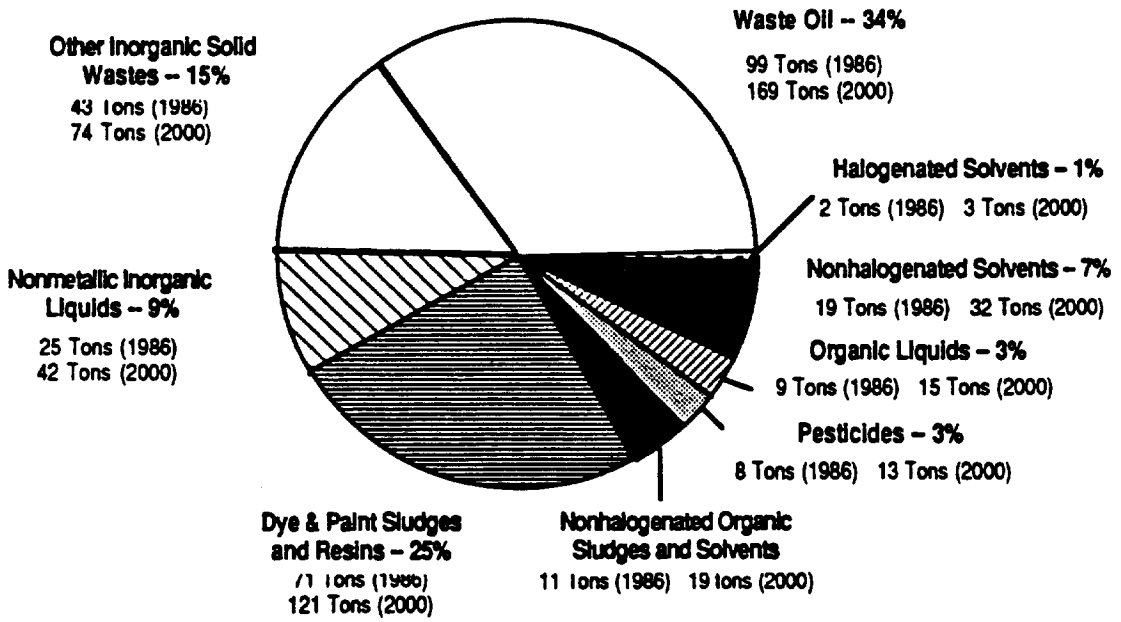
DHS 17 Waste Groups	Percent of Total	Quantity(tons) 1986	2000	Primary Industries
Waste Oil	62.0%	2,178	3,479	Construction, Trucking, Service Stations, Auto Repair
Miscellaneous Wastes	22.0%	759	1,212	Construction, Trucking, Service Stations, Auto Repair
Halogenated Solvents	3.6%	125	200	Construction, Service Stations, Manufacturing, Auto Repair
Nonhalogenated Solvents	3.6%	125	200	Construction, Service Stations, Manufacturing, Auto Repair
Dye & Paint Sludges & Resins	2.9%	101	162	Construction
Nonmetallic Inorganic Liquids	1.4%	49	78	Manufacturing, Auto Repair
Pesticides	1.1%	39	62	Agriculture
Nonhalogenated Organic Sludges and Solids	0.9%	32	51	Construction, Services
Metal-Containing Sludges	0.7%	24	38	Services
Metal Containing Liquids	0.7%	23	37	Manufacturing
Organic Liquids	0.6%	21	33	Services
PCBs & Dioxins	0.3%	11	17	Utilities
Halogenated Organic Sludges & Solids	0.1%	4	7	Manufacturing
Cyanide & Metal Containing Liquids	<0.1%	1	2	Manufacturing
Nonmetallic Inorganic Sludges	<0.1%	1	2	Services
Oily Sludges	0.00	0.00	0.00	---
Contaminated Soil	0.00	0.00	0.00	---

Household Hazardous Wastes

In El Dorado County 40,810 households generated an estimated 287 tons of hazardous wastes in 1986, or 8 percent of the total wastestream. This amounts to 15.5 pounds per household or 5.8 pounds per person. It is projected that by the year 2000 over 160,000 residents of El Dorado County in over 65,000 households will generate 488 tons of hazardous wastes, or a per household generation of approximately 17.9 lbs/year and per capita generation of 6.7 lbs/year. This increase reflects the current trend of increased household generation. With source reduction through education efforts, product substitution, and other methods, this trend can be reversed.

Current and projected household hazardous waste generation is illustrated below.

HOUSEHOLD HAZARDOUS WASTE GENERATION
IN EL DORADO COUNTY IN 1986 AND 2000



TOTAL QUANTITY GENERATED
287 Tons (1986)
488 Tons (2000)

The following table displays the primary household hazardous wastes by weight/volume.

HOUSEHOLD HAZARDOUS WASTES AND THEIR ASSOCIATED DHS HAZARDOUS WASTE GROUP

Primary Household Hazardous Wastes	DHS Waste Group
Used motor oil/grease	Waste oil
Waste paints and dye	Dye and paint sludges & resins
Used batteries	Miscellaneous wastes
Household cleaners	Nonmetallic inorganic liquids
Solvents, thinner, adhesives	Nonhalogenated or halogenated solvents
Polishes	Organic liquids
Pesticides	Pesticides

Clean-up Wastes

Contaminated Sites. Hazardous wastes, or materials which ultimately became a hazardous waste (e.g., soil contaminated by leaking underground fuel storage tanks), have been potentially identified at 55 different sites within El Dorado County. With the exception of leaking underground tank sites, potential hazardous substances suspect to be located on any of the 55 sites have yet to be fully characterized or the extent of contamination completely evaluated. The following table summarizes the listing agencies, list title and the number of sites on each list. The complete lists are contained in Section 2 of the main document. For further information on any specific site, readers should contact the listing agency and the El Dorado County Division of Environmental Health.

SUMMARY OF POTENTIAL CONTAMINATED SITES IN EL DORADO COUNTY

Responsible Agency	List	Number of Listed Sites
EPA	National Priorities List	0
EPA	CERCLIS	8
DHS	Bond Expenditure Plan List	0
DHS	Abandoned Site Program Information System	25
OPR	Hazardous Waste & Substance Site List	22
SWRCB	Solid Waste Disposal Site List	14
DEH	Active Leaking Underground Tank Site List	15
	Total No. of Listed Sites	84
	Total No. of Different Sites	**55**

Underground Tank Sites. El Dorado County has implemented an underground storage tank permitting and inspection program by ordinance. The status of underground tank sites is as follows: there are approximately 600 registered tanks in the County that are in compliance with the regulations. Twenty-eight are known to have leaked. These sites have now been cleaned up or are under investigation. In response to DHS direction, El Dorado County is to assume that all its 545 single-walled tanks (there are 55 double-walled tanks), will leak by the year 2000. Accordingly, an estimate of 3,359 tons/year of contaminated soil is projected to be generated from alleged tank leaks.

Asbestos Containing Wastes. No estimates are available at this time. The County is researching a number of schools constructed before 1973. Removal has been completed in the South Lake Tahoe District only. Asbestos abatement plans are required by October 12, 1988 to meet Federal and State requirements.

In recent years local concerns have been raised concerning the potential threat of asbestos-containing serpentine road base. Until the Federal and State determinations of the potential health threat, if any, has been made of this concern, it will not be addressed in this plan.

Summary of Clean-up Wastes. Clean-up wastes are considered one-time generation and not part of the continuous wastestream or "planning estimate." With the exception of leaking underground tank sites, none of the contaminated sites in El Dorado County have been sufficiently characterized to project the amount of contaminated wastes to be generated. An estimate of 3,359 tons/year has been projected for leaking underground tank sites.

Other Wastes

No pretreatment sludge, designated or special waste or new wastestreams are anticipated in El Dorado County in the near future. Renewed mining activity, residue from sawdust burning at timber mills or other new industrial activities could generate additional wastes in the future. The CHWMP data information system would be updated if new generators come on line.

Improper/Illegal Disposal

Only three percent of El Dorado County's estimated hazardous waste in 1986 was manifested. This does not include a large volume of waste oil, solvents and other waste types from El Dorado County manifested by out-of-County collection services. Therefore, proper disposal of small business and industry hazardous wastes is estimated to be 70 to 80 percent. With implementation of small business education, technical assistance, inspection and monitoring programs, improper disposal should be minimal in the future. Monitoring of solid waste and sewage wastes will also identify and minimize illegal disposal.

The highest percentage of improper disposal may occur at the household level. Educational efforts and support of collection

and transfer station services will provide the alternatives needed to minimize improper disposal of household hazardous wastes.

Total Estimated Quantities

Hazardous waste generation in El Dorado County may originate from small business and industry, households, clean-up sites and new wastestreams. In 1986, an estimated quantity of 3,782 tons was generated, and in the year 2000 it is estimated that approximately 9,427 tons will be generated. These planning estimates, and their breakdown by source and waste type, serve as the basis on which facility needs are assessed and future programs are identified.

SOURCE REDUCTION/WASTE MANAGEMENT STRATEGY

Waste Management Hierarchy

A "waste management hierarchy" guides State and Federal decision making and provides the framework for the CHWMP. The hierarchy consists of a set of preferred waste management options in descending order of priority:

HAZARDOUS WASTE MANAGEMENT HIERARCHY

Source Reduction	Involves steps to reduce and/or avoid waste generation.
⇩	
Waste Minimization (Recycling)	The use of recycling and treatment techniques at the source of generation.
⇩	
Treatment	The reduction/elimination of toxic hazardous properties.
Example: Incineration, Thermal Destruction	The process of applying heat under controlled conditions to promote the degradation and/or detoxification of hazardous waste materials.
Example: Stabilization, Solidification	The treatment process of reducing the mobility of a hazardous waste material, often by mixing with cement or other material, to form an insoluble solid.
⇩	

Residual Repository	A hazardous waste disposal facility for collection of residuals from hazardous waste treatment facilities and other irreducible, stabilized or detoxified hazardous wastes.
	
Land Disposal of Untreated Wastes	The disposal of untreated hazardous wastes on or into land (banned in 1990).

Source Reduction Potential in El Dorado County

It is estimated that source reduction measures in El Dorado County could result in approximately a 10% reduction in total hazardous waste generation. Waste reduction potential is limited because of the small business nature of the generation and dominance of waste oil and miscellaneous wastes in the hazardous wastestream. Source reduction potential for waste oil is estimated to be approximately 8%, miscellaneous wastes at 2-12%, dye and paint sludges and resins 5%, halogenated solvents 9%, and nonhalogenated solvents 1%. The remaining 12 DHS waste groups constitute only 9% of the County's wastestream.

EXISTING AND NEEDED TSD FACILITIES

Currently no hazardous waste treatment, storage and/or disposal (TSD) facilities exist within El Dorado County. Hazardous waste manifested in 1986 was exported to five facilities located in five other counties, as far away as Santa Barbara County, plus approximately 14% was unaccounted for and apparently exported out-of-state.

As hazardous waste generation increases into the year 2000, there will be a greater need for treatment capacity. Since there are no TSD facilities in El Dorado County, there needs to be sufficient capacity available to accommodate projected hazardous waste generation. By fully implementing source reduction and waste minimization efforts, future hazardous waste generation in the year 2000 could reduce estimated treatment capacity requirements to 9,062 tons from 9,427 tons, and estimated capacity for residuals disposal to 2,563 tons from 2,659 tons. Because waste oil will remain a significant portion of the County's total hazardous waste, continued waste oil collection, and subsequent recycling of the waste thereof, ranks as the County's highest need.

Nearly all of El Dorado County's hazardous waste is generated by small businesses and households. Therefore, the most important immediate facility need may be for transfer station services. Two transfer stations could serve the County's population centers in the South Lake Tahoe Basin and the Placerville-El Dorado Hills corridor at this time. El Dorado County does not appear at this time to generate hazardous waste in sufficient quantities to economically justify an industrial TSD facility, including a residual repository, but this is ultimately determined by the private sector. Hydrological, topographical and other

environmental and socio-economic constraints would also limit the siting and feasibility of such facilities.

SITING ANALYSIS FOR FUTURE HAZARDOUS WASTE FACILITIES

Tanner legislation (AB 2948) and the DHS Guidelines for Preparation of CHWMPs require counties to develop and apply criteria for the siting of future hazardous waste facilities and to identify potential general areas or sites for facilities. Future facilities siting is premised on consistency with the County's siting criteria and the general areas identified in the Plan.

Siting Criteria

El Dorado County has recognized the DHS Guidelines criteria to protect public health, safety and the environment, particularly aquifers, the Tahoe Basin and unsafe transportation corridors. The criteria are consistent with the County's General Plan and the goals, objectives and policies of this plan (which will be adopted as an element of the General Plan.)

Potential General Areas (Map #11)

The criteria were applied county-wide on a gross scale to identify potential general areas suitable for consideration for future facility siting. Several criteria could not be mapped at a country-wide scale because of incomplete information or the need for site specific data. The potential general areas identified on map #11 may not meet the siting criteria on a site specific basis. Future industrial TSD facilities should be located in areas zoned industrial where water, sewer and emergency services are provided or made available prior to project approval.

HAZARDOUS MATERIALS AND WASTE AUTHORITY AND PROGRAMS

The management of hazardous materials and hazardous waste in El Dorado County occurs within the context of a complex interaction of Federal, State and local legal requirements developed principally over the past 15 years. Most of the resulting programs have developed in the past five to ten years, and few of these are yet fully implemented.

Depending on the circumstances pertaining to the specific issue, hazardous materials and hazardous waste management requirements have first found expression at either the Federal, State or local level. Now many issues are addressed at two levels, or at all three levels of governmental response.

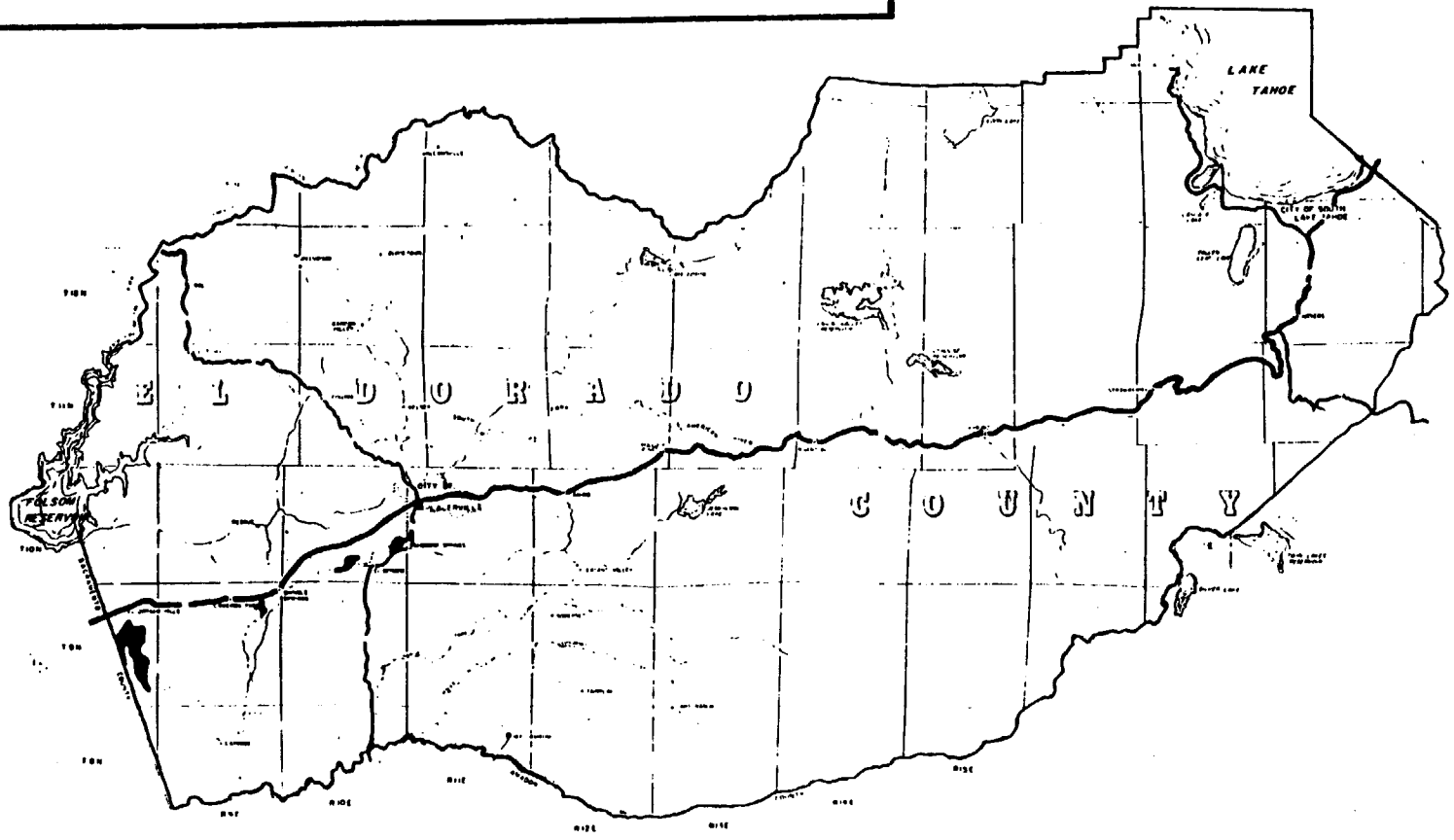
Map 11: Areas Least Constrained For Siting Hazardous Waste Facilities

CONSTRAINED □

LEAST CONSTRAINED ■

El Dorado County

Hazardous Waste Management Plan



The El Dorado CHWMP was developed within the context of existing Federal and State hazardous waste mandates. The primary pieces of Federal legislation are:

- Resource Conservation and Recovery Act (RCRA) of 1976 - hazardous waste management
- Hazardous and Solid Waste Amendments (HSWA) of 1984 - hazardous waste management
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 - cleanup of contamination
- Superfund Amendments and Reauthorization Act (SARA) of 1986 - cleanup of contamination

Primary direction in California comes from these State laws:

- California Hazardous Waste Control Act of 1972 - hazardous waste
- Safe Drinking Water and Toxic Enforcement Act of 1986 or "Proposition 65" - hazardous waste
- Hazardous Substances Act (HSA) of 1981 - cleanup of contamination
- California Environmental Quality Act (CEQA) of 1970 - environmental impact report

EXISTING PROGRAMS

The State government consults with the local agencies to ensure regulatory consistency state-wide and to provide resources that would not otherwise be available to the County. The primary State agencies with jurisdiction over hazardous materials and waste are the Regional Water Quality Control Boards (RWQCBs) and the Department of Health Services (DHS). Other state agencies involved in toxics include the Department of Fish and Game, Department of Food and Agriculture, Department of Industrial Relations, State Office of Emergency Services, Air Resources Board, Department of Transportation, and the Solid Waste Management Board.

In El Dorado County, the agencies and their **current** hazardous waste/materials management responsibility include:

AGENCY	PROGRAM
Environmental Health Division	Improper/illegal handling and disposal Underground Tanks Contaminated Sites Water Quality (including Proposition 65) CHWMP Coordination

Planning Division	Facility Siting and CEQA CHWMP Coordination
Office of Emergency Services	Hazardous Material Inventory/ Disclosure Emergency Response Planning Air Emissions
Agricultural Commission	Pre-use registration and granting of permits for use of pesticides
Local Fire District	Some of the 17 districts inspect and regulate hazardous materials storage
Law Enforcement	Emergency response (scene/incident commander)

------IMPLEMENTATION------

Local Review Process for Facility Applications

- CEQA process for review of hazardous waste facility application
- Proper General Plan and zoning designations
- Special Use Permit application process

Criteria for Special Use Permit Review

- Flood plains
- Unstable soils
- Seismic safety
- Wetlands
- Aquifer recharge areas
- Endangered species habitats
- Distance from residences
- Distance from immobile populations
- Transportation routes
- Prime agriculture lands
- Permeable strata and soils
- Nonattainment air areas
- Depth to groundwater
- Recreation, cultural or aesthetic areas
- Proximity to waste stream
- Mineral resource area
- State, Federal and Indian lands
- Waste reduction

Actions Required Within 180 Days of Final DOHS Approval
County and City Responsibilities

- Incorporate CHWMP into general plans
- Modify zoning codes to regulate hazardous waste facilities

Improvements to Existing Programs

Underground Storage Tanks

- Review program/Set priorities
- Complete inspections/Determine scale of problem
- Enlist support of EPA, DHS, RWQCB
- New tank compliance
- Fee structure/Financing
- Accurate soil testing
- Incorporate into Comprehensive Inspection and Monitoring Program (CIMP)
- Incorporate data into Data Information System (DIS)

Water Quality

- Comply with Proposition 65
- Inform public regarding Proposition 65
- Monitor Proposition 65 documents
- Issue safety warnings: Proposition 65 toxics
- Enforce Proposition 65/AB 1803
- Reduce use of carcinogens

Infectious Wastes

- Survey
- Hospital incineration agreement
- Education programs
- Transfer station use

Emergency Response

- Implement response
- Conduct response drills
- Develop training program
- Assist in business response plans
- Compile/review AB 3777 data
- Incorporate business plans into County plan

Hazardous Materials Inventory

- Complete implementation strategy
- Complete info packet and questionnaire
- Develop computer database

Air Quality

- Increase coordination with TRPA
- Incorporate air quality management activities into CIMP

Pesticide Contamination Prevention

- Monitor non-restricted pesticide use
- Encourage recycling of restricted pesticides

- Establish transfer station for restricted pesticides
- Research and education in integrated pest management

New Programs

Local programs for hazardous materials and waste management recently mandated by Federal and State law are just being implemented or formulated at the County level. Therefore, El Dorado County is in a good position to adopt and implement a comprehensive management plan that incorporates and improves upon the existing programs. In addition to improving existing programs, four "new" programs and regional coordination are proposed. The program elements recommended to improve existing programs,and to establish new programs, are listed below:

Comprehensive Inspection and Monitoring Program (CIMP)

- Hazardous Materials release response plans and inventory
- Hazardous waste generator inspection
- Underground storage

Small Business Program

- Identify waste generators
- Identify treatment/disposal needs
- Education/technical assistance
- Non-enforcement inspection
- Private sector support
- Consider labeling requirements
- Provide County support

Household Hazardous Waste Program

- Education program
- Public workshops
- School curricula & group forum packets
- Collection service
- Transfer station

Data Information System (DIS)

- Assign coordination to one agency
- Reorganize existing system into management & enforcement tool
- Design flexibility, integration
- Data correlation
- Include hazardous material/waste information
- Data collection procedure
- Cross-media transfer
- Coordinate with businesses and institutions
- Interface with regional and State system
- Review and update DIS

Regional Coordination

- Establish Memorandum of Understanding (MOU) with other counties and jurisdictions
- Establish MOU/coordination with the Tahoe Regional Planning Agency (TRPA)

- Promote regional transfer station to serve southern Tahoe Basis (El Dorado County, Douglas County, Nevada)

Organizational and Staffing Needs

- To be determined by County administration
- Staff and data made available at both County offices

Funding Sources for Future Programs

- Fees
- Service areas
- Loans
- Grants
- In-kind assistance
- Increased enforcement

CONCLUSION

El Dorado County can go a long ways toward ensuring proper hazardous waste management in the years ahead. This would be achieved through the recommended series of new and improved management programs high lighted above. However, implementation success is dependent on future funding and staffing. Voluntary private sector implementation and compliance is also critical to the CHWMP's success.

The Draft County Hazardous Waste Management Plan was subject to a public review period May through September, 1988. Approximately 110 copies of the Draft CHWMP were distributed to affected agencies, schools, fire districts, police departments, newspapers, and were made available at all five branches of the El Dorado County library. During the public review period, the public was encouraged to review and comment on the Plan. Several public meetings and hearings will be held to seek public input. The Plan was revised based on public comments and on comments supplied by the State DHS. It will then be submitted to the Cities of South Lake Tahoe and Placerville and the County Board of Supervisors for approval. This Final Plan will then be submitted to the State DHS for final approval.

PART B

HAZARDOUS WASTE SETTING IN EL DORADO COUNTY

(BACKGROUND REPORT)

Section 1

Introduction

SECTION 1.0
CHWMP INTRODUCTION

1.1 PURPOSE OF EL DORADO COUNTY HAZARDOUS WASTE MANAGEMENT PLAN

El Dorado County has elected to prepare a plan for the management of hazardous materials and wastes within the Cities of Placerville, South Lake Tahoe and the unincorporated County. The preparation of this plan, hereafter referred to as the County Hazardous Waste Management Plan (CHWMP), was authorized under AB 2948 (Tanner, 1986). The Department of Health Services (DHS) administers the local hazardous waste management plan process. The El Dorado CHWMP has been prepared in accordance with the Guidelines for the Preparation of Hazardous Waste Management Plan (DHS, June 30, 1987).

The purpose of the El Dorado County Hazardous Waste Management Plan is to encourage proper management practices by all hazardous waste generators and facilities in El Dorado County, including industry, small business, government and households. This will be achieved by implementing, at the County level, the policies, siting plans, programs and ordinances recommended in this report.

The Plan is designed to be compatible with Federal and State laws, regulations and program requirements. The El Dorado CHWMP therefore forms the third tier of hazardous waste regulatory management.

To achieve this purpose,goals and objectives were formulated by the advisory committee through the public participation process. These goals and objectives are stated in Section 1.5. This Plan is intended to serve El Dorado County through the year 2000. The CHWMP will be updated every three years. The public participation process and input are discussed in greater detail in Section 8.9 and Appendix P.

The El Dorado CHWMP covers hazardous, designated, and special waste generated by public agencies, the private sector, and individuals in both incorporated and unincorporated areas of the County. The hazardous waste management system operated by private industry which collects, handles, transports, treats, stores, and disposes of hazardous waste generated in El Dorado County extends far beyond the County's own boundaries. More than most local planning issues, hazardous waste warrants regional and statewide coordination.

1.2 LEGAL CONTEXT FOR CHWMP

The El Dorado CHWMP was developed within the context of existing Federal and State hazardous waste mandates. The primary pieces of Federal legislation are:

- Resources Conservation and Recovery Act (RCRA) of 1976 - hazardous waste management
- Hazardous and Solid Waste Amendments (HSWA) of 1984 - hazardous waste management

- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 - cleanup of contamination

- Superfund Amendments and Reauthorization Act (SARA) of 1986 - cleanup of contamination

Primary direction in California comes from these State laws:

- California Hazardous Waste Control Act of 1972 - hazardous waste

- Safe Drinking Water and Toxic Enforcement Act of 1986 or "Proposition 65" - hazardous waste

- Hazardous Substances Act (HSA) of 1981 - cleanup of contamination

- California Environmental Quality Act (CEQA) of 1973 - environmental impact report

Section 7.0 and Appendix G contain further discussion of these and other Federal and State regulations affecting local hazardous waste planning. Some generalizations about divisions of responsibility among Federal, State, and local levels can be made. Historically, local governments have taken the lead for the management of hazardous materials and emergency response programs; State governments have taken over the "cradle-to-grave" management of hazardous waste which is based on Federal RCRA regulations (40 CFR) and the uniform manifest systems; and the Federal government has taken the lead in cleanup of contamination.

1.3 STRUCTURE OF EL DORADO CHWMP

The El Dorado CHWMP consists of three volumes. Volume I - El Dorado County Hazardous Waste Plan, Volume II - El Dorado County Hazardous Waste Management Plan Program Environmental Impact Report (EIR), and Volume III - Technical Appendices to the El Dorado CHWMP. The Plan is organized into the following Parts and Sections for planning and regulatory purposes and to promote ease of use.

Part A **CHWMP Overview and Summary** **Section 1.0**

Purpose, legal basis, county setting, goals and objectives, summary of wastestream quantities and management options, summary of recommended plan, CEQA compliance.

Part B **Hazardous Waste Setting (Background Report)**
Current Hazardous Waste Quantities **Section 2.0**

Existing quantities by waste classification and generator type.

Projected Hazardous Waste Quantities **Section 3.0**

Source Reduction and Other Waste Management Options **Section 4.0**

Waste management practices including source reduction, on- and off-site treatment methods and characteristics of TSDF's and residuals repositories.

Part C **El Dorado CHWMP Recommendations (Planning Report)**

Facilities and Management Practices Needs **Section 5.0**

Existing facilities, future facilities needs and management practices to reduce needs.

Siting of Future Hazardous Waste Facilities **Section 6.0**

Criteria, application, potential areas, siting requirements for proposed future facilities.

Existing Management Regulations and Programs **Section 7.0**

Federal and State laws and regulations, existing management responsibilities and programs in El Dorado County.

Implementation Strategies **Section 8.0**

Plan and ordinance adoption, improvements to existing programs, new programs, organization and staffing, sources of funding, future plan review and update, public participation, CHWMP approval.

Part D **El Dorado CHWMP Program EIR** **VOLUME II**

Environmental impact report for CEQA compliance-plan EIR, not for project (site specific) compliance.

Part E **Appendices** **VOLUME III**

Reference document - detailed background information, and data sources.

A plan for the future of hazardous waste management contains programs which carry far-reaching benefits for residents and businesses. It also embodies aspects that affect land use County-wide inclusive of the two cities and the future unincorporated areas. Although a CHWMP is not a mandated element of a county general plan, the El Dorado CHWMP and the County's General Plan must be consistent with each other.

1.4 COUNTY SETTING

El Dorado County is a rural, mountainous county in northeastern California, situated between Sacramento County to the west and the Nevada state line to the east (see Location of El Dorado County, Figure 1-1). It encompasses roughly 1,805 square miles, 54% of which is controlled by public entities and 46% of which is private land (1983). The U. S. Forest Service (44% of total) is the major public land owner. Only 5% of the county is urbanized, and 6% is set aside as agricultural preserves.

The County is traversed north-south by the Sierra Nevada Mountains and east-west by U. S. Highway 50, the major transportation route. (See El Dorado County base map, Figures 1-2).

El Dorado County contains diverse ecosystems ranging from the gently rolling, oak covered hills of the western slope, to the pine covered forests of the Sierra Nevada. Climate is as varied as the topography, with the western slope eperiencing seasonal temperatures and humidity similar to the Central Valley, and the Lake Tahoe Basin being much cooler and wetter on an annual average.

El Dorado County contains four main watersheds: the South Fork of the American River, the Consumnes River, the North/Middle Fork of the American River, and the Lake Tahoe Basin. These watersheds provide water of good quality for commercial and domestic purposes.

Air quality is typically very good. However, the western slope is impacted by prevailing winds from the San Francisco and Sacramento metropolitan areas.

The topography of the Tahoe Basin tends to trap air pollution from various sources. The Tahoe Regional Planning Agency and El Dorado County have adopted nonattainment plans for the Basin and western slope designed to improve the air quality.

The Lake Tahoe Basin is a unique geographic unit with environmental sensitivities and regulatory controls that are, in many ways, very different than the rest of El Dorado County. To protect its uniqueness, the Tahoe Regional Planning Agency (TRPA) was created by the States of California and Nevada and ratified by the United States Congress. TRPA has initiated studies, adopted environmental thresholds, formulated a master plan and policies, and issued regulations to preserve the unique nature of the Basin.

TRPA is concerned about hazardous wastes management as it may affect water, land and air quality. Hazardous waste management in the Basin must be compatible with Federal and State laws and regulations. TRPA is supportive of the El Dorado CHWMP since it encourages proper waste management practices, discourages improper disposal and will therefore result in improved water, air and land quality.

El Dorado County had an estimated population of 106,000 in 1986 and approximately 40,810 households. The population has more than doubled since 1970.

Figure 1-1

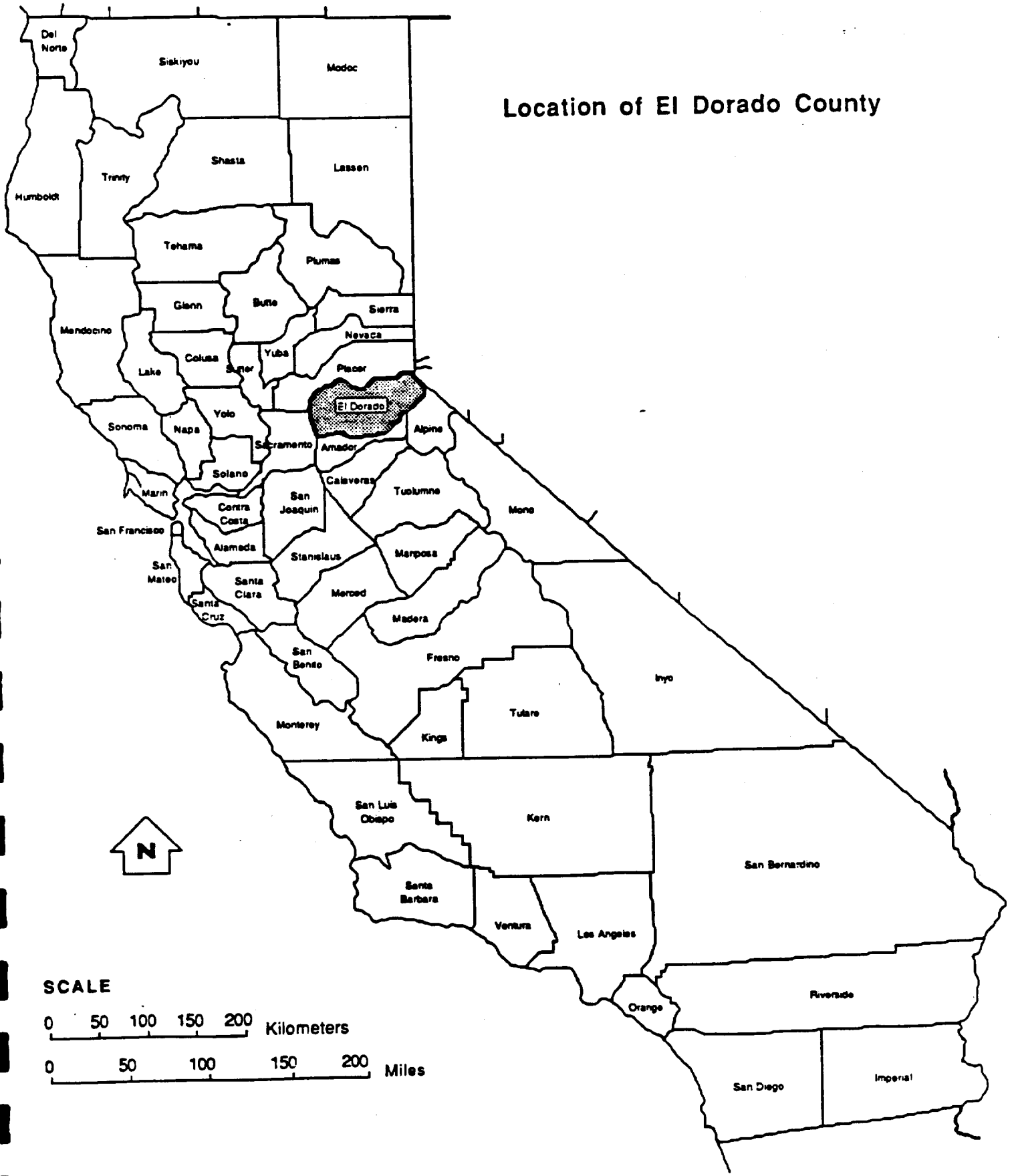
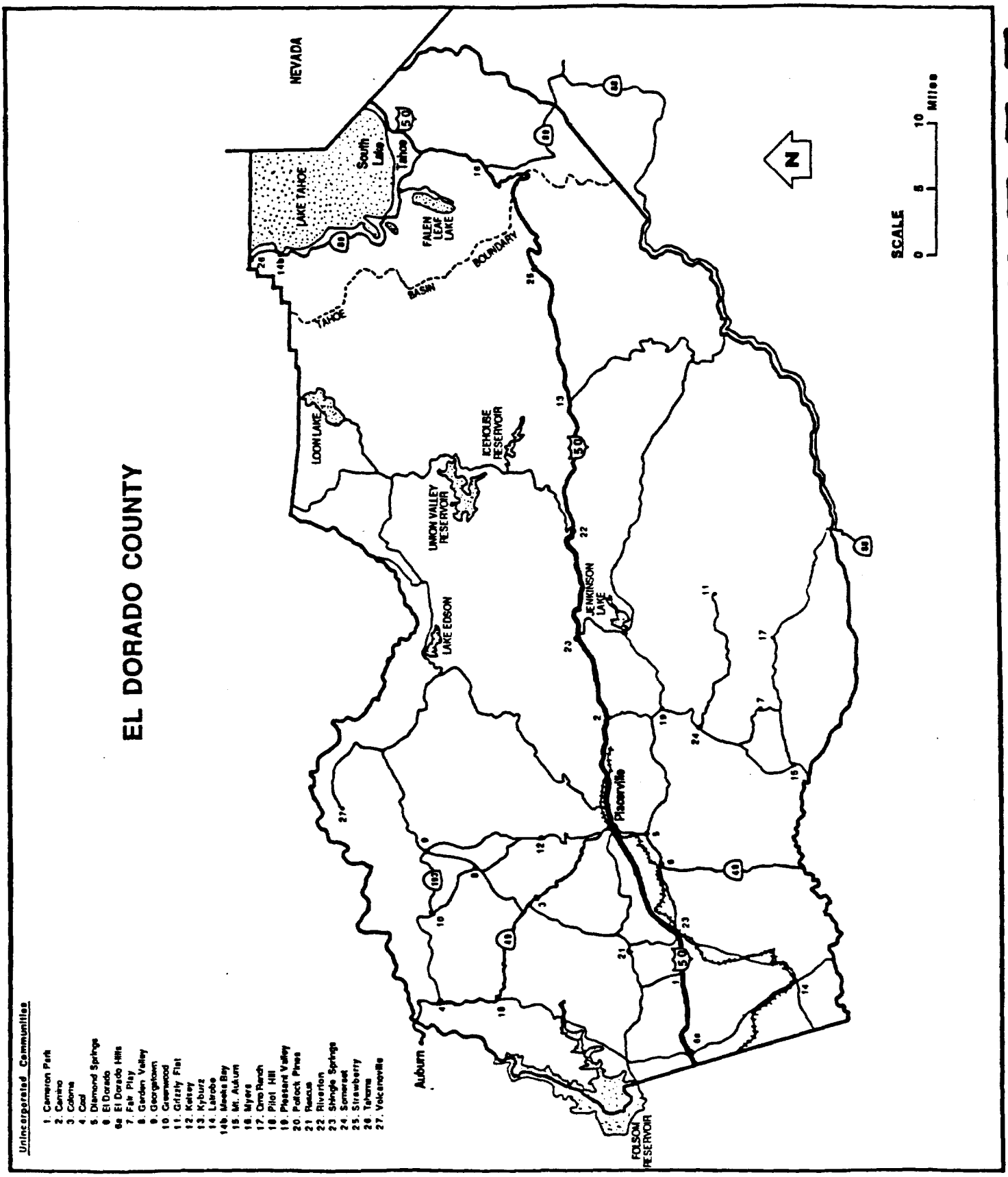

Location of El Dorado County
Del Norte
Siskiyou
Modoc
Humboldt
Trinity
Shasta
Lassen
Tehama
Plumas
Glenn
Butte
Sierra
Nevada
Mendocino
Colusa
Yuba
Lake
Sutter
Placer
El Dorado
Yolo
Sonoma
Napa
Sacramento
Amador
Alpine
Solano
Calaveras
Marin
Contra Costa
San Joaquin
Tuolumne
Mono
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Santa Cruz
Madera
San Benito
Fresno
Inyo
Tulare
Monterey
Kings
San Luis Obispo
Kern
San Bernardino
Santa Barbara
Ventura
Los Angeles
Orange
Riverside
San Diego
Imperial
N
SCALE
0 50 100 150 200 Kilometers
0 50 100 150 200 Miles

Figure 1-2


EL DORADO COUNTY
NEVADA
LAKE TAHOE
South Lake Tahoe
FALEN LEAF LAKE
TAHOE BASIN BOUNDARY
LOON LAKE
ECHO RESERVOIR
UNION VALLEY RESERVOIR
LAKE EDSON
JENKINSON LAKE
Placerville
Auburn
FOLSOM RESERVOIR
N
SCALE
0 5 10 Miles
Unincorporated Communities
1. Cameron Park
2. Camino
3. Coloma
4. Cool
5. Diamond Springs
6. El Dorado
6a. El Dorado Hills
7. Fair Play
8. Garden Valley
9. Georgetown
10. Greenwood
11. Grizzly Flat
12. Kelsey
13. Kyburz
14. Lotobo
14b. Meeks Bay
15. Mt. Aukum
16. Myers
17. Omo Ranch
18. Pilot Hill
19. Pleasant Valley
20. Pollock Pines
21. Rescue
22. Riverton
23. Shingle Springs
24. Somerset
25. Strawberry
26. Tahoma
27. Volcanoville

Residents live primarily in two areas, the Placerville urban center corridor, beginning in the incorporated city of Placerville and running along U. S. Highway 50 to the Sacramento County border; and the south shore of the Lake Tahoe Basin, including the incorporated City of South Lake Tahoe.

The economy of El Dorado County is based primarily on recreation and tourism (especially in the Tahoe Basin), and secondarily on agriculture and timber which occur on the western slope. Gold mining (and the mining of 21 other minerals) was the major activity from the mid-1800's until World War II. Currently there are no known major mining operations in El Dorado County.

While locally important, agricultural and timber production are not major by State standards. The County's 722 farms occupy 13.4% of the land area, with ranching and orchards the primary agricultural land uses.

Tourism is the major industry in El Dorado County, especially in the South Lake Tahoe area. Two-thirds of all employees work in the retail trade and service sectors. High employment figures for eating and drinking establishments, hotel and other lodging places, amusement and recreational services and real estate, for example, confirm the critical role recreation and tourism play in the County's economy. There are also a large number of second homes and vacation homes in El Dorado County.

With a small population, only a modest number of industries, and a rural setting, El Dorado County is not a major generator of hazardous wastes compared to the rest of California. Nonetheless, El Dorado County faces substantial challenges to ensure that hazardous wastes from households, businesses, industries, institutions, and local, State and Federal agencies are properly managed.

1.5 GOALS AND OBJECTIVES FOR HAZARDOUS WASTE MANAGEMENT

This Section contains the goals and objectives for hazardous waste management in El Dorado County. These goals and objectives are intended to provide the basis for the development of this plan and to guide the future of hazardous waste management within El Dorado County. These guiding principles are based on perceived needs and issues specific to El Dorado County, requirements in State law, and the guidelines for preparation of county hazardous waste management plans issued by Department of Health Services.

GOALS:

1. **To protect the health, safety and property of the residents and visitors of El Dorado County, and minimize damage to the environment from the adverse effects of hazardous wastes while maintaining the economic viability of the County and the State.**

2. **To manage hazardous wastes in a way that is consistent with sound management approaches in this order of priority:**

source reduction, recycling and reuse, treatment (on-site and off-site), and residuals disposal.

3. **To develop a plan that will fulfill the criteria established by DHS to meet State legislated local hazardous waste management plans and acquire the funding sources to implement the plan (AB 2948, Tanner).**

4. **To address the current and future needs for hazardous waste management and siting of facilities for the proper recycling, transfer, treatment, storage of hazardous wastes and disposal of treated residuals.**

The nineteen objectives that follow focus on more specific aspects of hazardous waste management. The order in which the objectives are listed does not imply priority or importance.

Objective 1 - Ensure Proper Management of Materials

Bring all businesses and public and private institutions into compliance with applicable Federal, State, and local regulations for generation, storage, transportation, packaging and handling of hazardous materials, including wastes.

Objective 2 - Promote Source Reduction and Waste Minimization

Promote reduction, and, where feasible, elimination of hazardous wastes by the generators as the most preferred hazardous waste management strategy. Where source reduction is not feasible, promote recycling and other waste minimization techniques that reduce the amount of hazardous wastes which may require treatment and/or disposal.

Objective 3 - Develop Public Education Programs

Implement a program to educate El Dorado County's residents, business managers, work force and public officials on the proper management of hazardous materials and hazardous wastes in their homes, work places, recreational facilities, and public buildings.

Objective 4 - Improve the Management of Small Business and Household Hazardous Wastes

Increase the awareness of El Dorado County residents and small business about hazardous wastes generated by them and encourage the proper disposal of those wastes.

Objective 5 - Promote Clean-up of Contaminated Sites

Develop a program to track contaminated sites and monitor State and Federal efforts to assure proper clean-up, thereby reducing the current and future number of contaminated sites.

Objective 6 - Minimize Improper and Illegal Disposal

Minimize hazardous waste from being illegally or improperly disposed in El Dorado County's solid wastestream, to the public sewer systems, and to public or private property.

Objective 7 - Eliminate Land Disposal of Untreated Hazardous Waste

Ensure that all hazardous wastes generated in El Dorado County are properly treated before disposal at residual repositories by May 8, 1990, as required by State law.

Objective 8 - Ensure Adequate Facility Capacity

Ensure that sufficient capacity exists, both within and outside El Dorado County, to treat, store, transfer, and dispose of El Dorado County's hazardous wastes through the year 2000 (State specified planning period).

Objective 9 - Reduce Export of Hazardous Waste

Reduce El Dorado County's reliance on out-of-County facilities for treatment, storage and disposal of hazardous waste through source reduction, waste minimization, and through siting and development of economically, geographically and environmentally appropriate facilities within El Dorado County.

Objective 10 - Establish Agreements with Exporting and Importing Counties.

Establish effective interjurisdictional agreements with other counties to provide the off-site capacity needed for hazardous waste treatment and residuals disposal. ~~according to each jurisdiction's fair share of the hazardous waste stream and environmental suitability for different types of facilities.~~

Objective 11 - Develop Facility Siting Criteria and Identify Potential Areas.

Develop siting criteria and identify general areas consistent with those criteria for hazardous waste facilities within El Dorado County while protecting human health and the environment.

Objective 12 - Ensure Environmentally Sound Development and Operation of Waste Management Facilities

Coordinate with DHS to ensure that existing and future hazardous waste facilities for treatment, storage, and disposal in El Dorado County are developed and operated in an environmentally sound manner.

Objective 13 - Implement Programs for Monitoring and Enforcement

Revise and expand county programs, to the extent of delegated authority, to monitor and enforce existing and future local, State, and Federal hazardous waste management laws and regulations.

Objective 14 - Ensure Emergency Response Capability

Implement programs to reduce emergency incidents and to improve existing programs that provide response to hazardous material discharges to the environment.

Objective 15 - Promote Safe Transport

Provide for the safe transport of hazardous wastes from the source of generation to points of management through proper routing and emergency response planning.

Objective 16 - Coordinate Hazardous Waste Planning with Local Plans and Programs

Coordinate planning for hazardous materials and hazardous waste management with El Dorado County's land use planning process to ensure compatible land use development, and with existing hazardous materials and waste management programs to provide comprehensive and effective management.

Objective 17 - Coordinate with Regional and State Plans

Implement a process to coordinate County waste management programs with other appropriate counties, the Tahoe Regional Planning Agency and program efforts of the States of California and Nevada. Intercounty coordination is recommended with adjacent counties facing similar hazardous waste management concerns and with counties which receive hazardous wastes exported from El Dorado County.

Objective 18 - Promote Public-Private Sector Cooperation

Implement programs in the near term that strengthen and expand the public-private cooperation in managing hazardous materials and wastes.

Objective 19 - Promote Public Participation

Assure the interests and inputs of the public, industry, environmental organizations and local and State government are considered in the preparation and approval of the El Dorado County Hazardous Waste Management Plan through the implementation of a public participation program. These goals and objectives direct formulation of the El Dorado County Hazardous Waste Management Plan. In particular, the objectives are used to identify the CHWMP policies and recommended actions and programs to address areas of concern for the local management of hazardous materials and wastes.

1.6 CEQA COMPLIANCE

Part D, the El Dorado CHWMP Program EIR, contains the Environmental Impact Report (EIR) and related documentation needed to comply with the California Environmental Quality Act (CEQA), as amended. A program format is used which references appropriate sections in the CHWMP. This document is a plan EIR, and is not intended to meet CEQA compliance requirements for project and site specific hazardous waste management facilities that may choose to locate in El Dorado County in the future.

Section 2.0

EXISTING HAZARDOUS WASTE QUANTITIES

SECTION 2.0

CURRENT QUANTITIES OF HAZARDOUS WASTE

2.1 OVERVIEW

Planning for the future of hazardous waste management in El Dorado County is partially based on establishing how much and what kinds of hazardous wastes there are now and are expected to be in the future. The purpose of this section is to describe the types and quantities of hazardous wastes produced by El Dorado County's businesses, farms, industries, institutions and households. This section will help serve as the basis for determining what kinds of facilities will be needed to manage El Dorado County's waste, and will serve to focus attention on the future management programs of El Dorado County.

Individuals and businesses, including agriculture, that produce a hazardous waste are referred to as "generators" whether they produce, for example, a few gallons of leftover paint or hundreds of tons of waste oil, solvents, or sludges containing heavy-metals. El Dorado County, with a population of 106,000 (1986), has 40,810 households, and approximately 1,011 businesses and institutions, such as schools, hospitals, civic facilities, State and Federal agencies that may generate hazardous waste.

Section 2.2 describes the categories of hazardous waste that fall within the scope of this plan. The Department of Health Services has recommended a simplified set of categories for consistent use by all California counties in their CHWMPs.

Sections 2.4 through 2.12 provide descriptions and estimates of the amounts of hazardous waste produced in El Dorado County in the base year 1986 (adjusted from 1985 and 1986 data). Wastes are classified broadly by source (e.g. households), by location of disposal (e.g. on-site) or by type of waste (e.g. waste oil). Duplications between categories are noted where known. For some types of wastes, actual estimates of waste quantities have been made, based on the best available data. Wastes for which no data exists are described in narrative only. Where numerical estimates are included, the formats recommended in the DHS guidelines are used. The correspondence of the data tables in this plan to the DHS tables in the Technical Reference Manual is indicated as a subheading to each table.

This plan embodies the first attempt by El Dorado County to gain a comprehensive picture of the magnitude of hazardous waste generated by its businesses, institutions, industries and residences. Estimates presented are derived from the data available where necessary. A clear need for the future is an enhanced data reporting and analysis system for hazardous waste materials and wastes.

2.2 DEFINITION, CRITERIA, AND CLASSIFICATION OF HAZARDOUS WASTE

2.2.1 Hazardous Waste Definitions

AB2948 and the DHS Guidelines set the scope of the County hazardous waste plans. The plans must include these categories of waste:

- o Hazardous waste
- o Extremely hazardous waste
- o Designated waste
- o Special waste

Radioactive waste, including low-level radioactive wastes from hospital and lab facilities, are not included in local plans; these wastes are regulated by Federal agencies.

Hazardous Waste:

A waste, or combination of wastes, which because of its quantity, concentration, physical, chemical, or infectious characteristics, may either:

(1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed.

Unless expressly provided otherwise, "the term 'hazardous waste' shall be understood to also include extremely hazardous waste." (Section 25117(b), Health and Safety Code).

Extremely Hazardous Waste:

A waste, or combination of wastes, which has been shown through experience or testing to pose an extreme hazard to the public health because of its carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties or persistence in the environment, when improperly treated, stored, transported, disposed of or otherwise managed. (Section 25117, Health and Safety Code.)

Restricted Hazardous Waste:

A liquid hazardous waste having a pH less than or equal to 2, or containing any contaminants of the following concentrations:

- o Free cyanides 1,000 mg/l
- o Arsenic 500 mg/l

o	Cadmium	100 mg/l
o	Chromium	500 mg/l
o	Lead	500 mg/l
o	Mercury	20 mg/l
o	Nickel	134 mg/l
o	Selenium	100 mg/l
o	Thallium	130 mg/l
o	PCB	50 mg/l
o	Halogenated organic compounds	1,000 mg/l (Total Concentration)

(Health and Safety Code Sec. 25122.7)

Special Wastes:

A waste which is a hazardous waste only because it contains an inorganic substance or substances which cause it to pose a chronic toxicity hazard to human health or the environment, which meets all of the criteria and requirements of California Administrative Code, Section 66742, and which has been classified as a Special Waste pursuant to CAC Section 66744, d(22 CAC Section 66191.)

Designated Wastes:

(1) Non-hazardous waste which consists of, or contains, pollutants which, under ambient environmental conditions (at a disposal site) could be released at concentrations in excess of applicable water quality objectives, or which could cause degradation of the waters of the State.

(2) Hazardous waste which has been granted a variance from hazardous waste management requirements pursuant to Section 66310 of Title 22 (a variance as it pertains to Class I disposal). (23 CAC Section 2522)

Hazardous Waste Facilities:

All contiguous land and structures, other appurtenances, and improvements on the land, used for handling, treating, storing or disposing of hazardous waste. (22 CAC Section 66096)

Hazardous Waste Management:

The systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous waste. (22 CAC Section 66130)

Toxic:

Capable of producing injury, illness, or damage to humans, domestic livestock, or wildlife through ingestion, inhalation, or absorption through any body surface.

Treatment:

Any method, technique, or process, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, so as to recover energy or material resources from the waste, so as to render such waste nonhazardous or less hazardous (safer to transport, store, dispose of, more amenable to recovery), or so as to reduce the waste in volume. (22 CAC Section 66216)

A waste that meets the definition of hazardous or extremely hazardous waste presented in the Health and Safety Code or satisfies any of the criteria of hazardous waste, shall be considered a hazardous (or extremely hazardous) waste whether or not the waste is cited in the regulations by name.

Major additional definitions of hazardous wastes, substances, or materials are found in Federal regulations. It should be noted that most of the hazardous wastes on the list are process residues, emission control dusts, or wastewater treatment sludges. It is also important to note that not all materials are hazardous when recycled. EPA categorizes recycling activities according to the types of secondary materials (which are listed in the regulations) involved.

2.2.2 Criteria for Hazardous Waste

Clearly many new and potentially hazardous chemicals are being discovered and created every day. It is therefore neither possible nor realistic to compile a complete list of hazardous materials. An alternative is to compile a simple set of criteria for hazardous materials against which chemicals are compared. The following criteria are summarized from the California Administrative Code (CAC) Article 11, Section 66693 through 66720. Any waste which is hazardous pursuant to any of the criteria set forth in Article 11 of CAC Title 22 is a hazardous waste. Detailed specifications on how tests are conducted are not included here; the reader may refer to relevant sections of the CAC for the detailed information.

Toxicity Criteria:

A waste, or material is toxic and hazardous if it:

1. has an acute oral LD50 less than 5,000 mg/kg; or

2. has an acute dermal LD50 less than 4,300 mg/kg; or

3. has an acute inhalation LC50 less than 10,000 ppm as a gas or vapor; or

4. has an acute aquatic 96-hour LC50 less than 500 mg/l when measured in soft water; or

5. contains any of the following substances at a single or combined concentration equal to or exceeding 0.001% by weight: 2-AAF, Acrylonitrile, 4-Aminodiphenyl, Benzidine and its salts, BCME, VCM, Methyl Chloromethyl Ether, DBCP, DCB, DAB, EL, 1-NA, 2-NA, 4-NBP, DMN, BPL; or

6. has been shown through experience or testing to pose a hazard to human health or the environment because of its carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties or persistence in the environment; or

7. is listed in Title 40 Code of Federal Regulations 261 (codified July 1, 1982) as a hazardous waste.

Exceptions: A waste containing one or more materials which are toxic according to the criterion of the same section may be classified as non-hazardous if the waste is not hazardous by any other criterion of the same article and its head-space vapor contains no such toxic materials in concentration exceeding their respective eight-hour inhalation LC50 or their LC/Lo. Also, they may be classified as non-hazardous if the waste is not hazardous by any other criterion of the same article and the calculated oral LD50 of the waste mixture is greater than 5,000 mg/kg and the calculated dermal LD50 is greater than 4,300 mg/kg.

(Note: LD50 is a dosage level required to kill 50% of a sample of laboratory animals. LC50 is an airborne or aqueous concentration enough to kill 50% of a sample of lab animals either breathing the airborne chemical or swimming (e.g., fish) in the aqueous solution. LD/Lo and LC/Lo are the lowest doses or concentrations known to kill test animals.)

Persistent and Bioaccumulative Toxicity Criteria:

Any waste is a hazardous waste which contains a substance listed in subsections (b) or (c) of CAC Title 22, Article 11, Section 66699, in concentrations exceeding the Soluble Threshold Limit Concentration or Total Threshold Limit Concentration listed for that substance.

Ignitability Criteria:

A waste, or material, is ignitable and hazardous if it:

1. is a liquid, other than an aqueous solution containing less than 24% alcohol by volume, and has a flashpoint less than 60°C (140oF); or

2. is not a liquid, and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard; or

3. is a flammable compressed gas as defined in 49 CFR 173.300;

or

4. is an oxidizer as defined in 49 CFR 173.151.

Reactivity Criteria:

A waste, or a material is reactive and hazardous if it:

1. is normally unstable and readily undergoes violent change without detonating; or

2. reacts violently with water; or

3. forms a potentially explosive mixture with water; or

4. generates toxic gases, vapors, or fumes, when mixed with water, in a quantity sufficient to present a danger to human health or the environment; or

5. is a cyanide- or sulfide-bearing waste which, when exposed to pH conditions between 2 and 12.5, generates toxic gases, vapors, or fumes, when mixed with water, in a quantity sufficient to present a danger to human health or the environment; or

6. is capable of detonation or explosive reaction if it is subject to a strong initiating source or is heated under confinement; or

7. is readily capable of detonation, explosive decomposition, or reaction at standard temperature and pressure; or

8. is a forbidden explosive.

Corrosivity Criteria:

A waste or material is corrosive and hazardous if it:

1. is aqueous and has a pH less than or equal to 2 or greater or equal to 12.5 or its mixture with an equivalent weight of water produces a solution having a pH less than or equal to 2 or greater or equal to 12.5; or

2. is a liquid, or when mixed with an equivalent weight of water produces a liquid, which corrodes steel at a rate greater than 6.35 mm (0.25 in.) per year.

Extremely Hazardous Waste Criteria:

A waste, or material is extremely hazardous if it:

1. has an acute oral LD50 less than or equal to 50 mg/kg; or

2. has an acute dermal LD50 less than or equal to 43 mg/kg; or

3. has an acute inhalation LC50 less than or equal to 100 ppm or a gas or vapor; or

4. contains any of the substances listed in Section 66696 (a)(5) at a single or combined concentration exceeding 0.1% by weight; or

5. has been shown through experience or testing to be extremely hazardous to public health because of its carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties or persistence in the environment; or

6. is water-reactive.

2.2.3 Hazardous Waste Classifications

Consistent hazardous waste management planning requires a common basis of language and definition of terms. The language of hazardous waste management planning is complicated by chemical listings, scientific criteria, and sometimes unclear definitions. Regulations seeking to define these wastes use broad "health- and environment-based" considerations to develop criteria. Classification schemes derived for various regulatory purposes are summarized briefly here and shown in more detail in Appendix A.

For any organization or business dealing with hazardous waste management, judging whether a chemical or waste is hazardous can be a practical issue of major concern. Identifying a waste as hazardous costs money and requires experienced staff. The determination process and its findings clearly have financial, legal, and administrative implications to both government agencies and private industries as well.

Categorization of a waste as hazardous or nonhazardous include:

- A comparison of chemicals against published lists; and/or
- A chemical analysis or a toxicity criteria evaluation of materials for disposal as waste, can be run, following the technical details listed in the California Administrative Code, to decide whether the material falls under regulatory criteria.

Judgments from recognized authorities such as from the DHS Toxic Substances Control Division, the Regional Water Quality Control Boards or EPA can also be obtained as to the toxicity of particular wastes.

In California, waste classification is performed by two separate state agencies with separate regulatory authority (Marschak, 1987). The Department of Health Services (DHS) classifies wastes as 'hazardous,' 'restricted hazardous,' 'special' and 'non-hazardous.' The State Water Resources Control Board, together with the nine Regional Water Quality Control Boards (RWQCB), classify waste as 'hazardous,' 'designated,' 'non-hazardous,' and 'inert' based on the threat to the beneficial waters of the State. The Lahontan Regional Water Quality Control Board is the regional board for El Dorado County within the Lake Tahoe watershed and the Central Valley Regional Water Quality Control Board

impacts the remainder of El Dorado County including the American River watershed.

Two waste categories in the DHS system are equivalent to the designated waste category: special wastes, and waste for which a variance form hazardous waste management requirements has been granted by DHS. These variances, pursuant to Title 22, Section 66310, are routinely granted when it can be demonstrated that the wastes do not pose a threat to human health and safety, due to low concentrations of toxic substances, or due to the physical characteristics of the waste.

The relationship between the Title 22 and 23 classification schemes and the landfill category permitted to receive the wastes are shown in Table 2-1.

It should be noted that landfills within California are classified either Class I, II, or III where containment, monitoring, geological and management requirements are most stringent for the Class I site. El Dorado County has only one authorized landfill, Union Mine, which is a Class III site.

Designated waste may be disposed of only at Class I (TSD) or Class II disposal facilities. Special waste may be disposed of at non-hazardous disposal facilities which are permitted by the RWQCB to receive the waste. Wastes with variances from hazardous waste management may be disposed of at Class II or III sites, in accordance with the stated conditions of the variance. Categories of waste which can be classified as designated (or its equivalent) are listed in Table 2-2.

Table 2-1
RELATIONSHIP BETWEEN REGULATORY CLASSIFICATION SCHEMES

Landfill Category	Classification Under Title 22 (DHS)	Classification Under Title 23 (RWQCB)
No land disposal	Restricted	Restricted
Class I (or TSD)	Hazardous	Hazardous
Class II	Special and Hazardous with variance	Designated
Class III	Nonhazardous	Nonhazardous
Unclassified	--	Inert

Table 2-2
DESIGNATED AND SPECIAL WASTES
AND HAZARDOUS WASTES WITH VARIANCES

Organic	Inorganic
Sawmill Waste Treated Wood Waste	Contaminated Soils from Cleanup Sites Auto Shredder Waste*
Septage (Dewatered) Sludges from Sewage Treatment (Dewatered) Organic	Air Pollution Control Wastes* (Baghouse, Scrubbers) Inorganic
Refinery Wastes* (Catalyst, Coke Waste) Chemical Industrial Chemical Industrial Process Wastes*	Ash from Combustion Processes* (Industrial Boiler, Sewage Sludge Incineration, Cogeneration, Waste-to-Energy) Gas Well Production Wastes Oil and Gas Industry Drilling Muds Ores and Minerals Extraction (Tailings)* Cement Kiln Dust* Sand from Sandblasting* Sand from Foundry Casting*

*Special waste as defined in Title 22, Section 66740.

2.2.4 Chemical Listings

The definitions above provide inadequate guidance in the practical world. More useful to hazardous waste planners would be a list of specific chemicals which are considered hazardous when disposed of as wastes.

The current DHS list of hazardous materials has approximately 750 chemicals. The Federal government also provides lists of hazardous substances, much of which would be considered hazardous as wastes. There are at least 50,000 chemicals subject to the reporting requirements in Sections 311 and 312 of SARA (Superfund Amendments and Reauthorization Act, 1986) Title III. These hazardous chemicals, for which material safety data sheets (MSDS) are required, are officially identified as hazardous by the federal government.

California Underground Storage Tank Regulations (CAC Title 23, Subchapter 16) defines "hazardous substance" as all of the following liquid and solid substances, unless DHS in consultation with RWQCB, determines that the substance could not adversely affect the quality of the waters of the State:

1. Substances on the list prepared by the Director of

Industrial Relations pursuant to Section 6382 of the Labor Code.

2. Hazardous substances, as defined in Section 25316.

3. Any substance or material which is classified by the National Fire Protection Association (NFPA) as a flammable liquid, a Class II combustible liquid, or a Class III-A combustible liquid.

2.2.5 Hazardous Waste Groups For County Hazardous Waste Planning

For purposes of preparing county hazardous waste plans, DHS has grouped the various types of waste into related, useful, and logical units. This section outlines these waste categories as used throughout this plan. Appendix B contains the correspondence between these groups and the EPA hazardous waste manifest categories.

In order to simplify the waste classification system (as identified in the back of the uniform hazardous waste management manifest), DHS has converted the 80 California manifest waste categories into 17 broad waste groups, and has recommended that all hazardous waste generation data in the CHWMPs be organized by using these waste groups. The 17 waste groups, selected because they closely represent the DHS's actual level of knowledge of the hazardous waste stream composition in California, and the corresponding 80 manifest categories, are listed in Table 2-3.

Currently, there are no uniform state-wide criteria for classifying designated waste (or its equivalent). In the absence of uniform criteria, the RWQCB of the Lahontan and Central Valley Regions, which have jurisdiction over El Dorado County, determine designated waste classification on a case-by-case basis.

2.3 GENERATORS OF HAZARDOUS WASTE

In the course of normal and ongoing household and business activities, individuals, businesses, institutions, industries, and public agencies potentially are "generators" of hazardous waste. Other activities, such as clean-up of a site contaminated with hazardous materials, may produce a one-time generation of hazardous waste. The generators of hazardous waste include:

- Industries
- Businesses
- Private institutions, such as hospitals
- Agencies of El Dorado County and the two incorporated cities
- State and Federal agencies
- Households

- o General public

This plan includes only hazardous waste physically produced by a generators within the boundaries of El Dorado County. Wastes from both public and private activities are accounted for in the plan, regardless of the capability or jurisdiction of El Dorado County to regulate or influence actual management practices.

Table 2-3
DHS WASTE GROUPS - ORGANIC

Form	DHS Waste Group	Manifest Category
Liquids	Waste Oil	Waste oil and mixed oil Unspecified oil-containing waste
	Halogenated Solvents	Halogenated solvents Liquids with halogenated organics > 1000 mg/l
	Nonhalogenated Solvents	Oxygenated solvents Hydrocarbon solvents Unspecified solvent mixture
	Organic Liquids	Aqueous solutions with total organics > 10% Aqueous solutions with total organics < 10%
	Pesticides	Pesticide rinse water Pesticides, pesticide production waste
	PCBs and Dioxins	PCBs Liquids with 50 mg/l PCB concentration > 5g/l Waste potentially containing dioxins
Sludges & Solids	Oily Sludges	Oil/water separation sludge Other organic solids Tetraethyl lead sludge
	Halogenated Organic Sludges and Solids	Still bottoms with halogenated organics Organic solids with halogens Degreasing sludge Solids with halogenated organic content > 1000 mg/kg

Table 2-3 (continued)
DHS WASTE GROUPS - ORGANIC

Form	DHS Waste Group	Manifest Category
Sludges & Solids (cont'd)	Nonhalogenated Organic Sludges and Solids	Tank bottom waste Other still bottom waste Sewage sludge Paper/pulp sludge Unspecified sludge waste Fly ash, bottom ash and retort ash
	Dye and Paint Sludges and Resins	Organic monomer waste Polymeric resin waste Adhesives Latex waste Paint sludge
	Miscellaneous Waste	Off-spec, aged or surplus organics

DHS WASTE GROUPS - NONORGANIC

Form	DHS Waste Group	Manifest Category
Liquids	Metal-Containing Liquids	Acids with metals Alkaline with metals Aqueous with metals Liquids with arsenic concentration > 50 mg/l Liquids with cadmium concentration > 100 mg/l Liquids with chromium concentration > 500 mg/l Liquids with lead concentration > 500 mg/l Liquids with mercury concentration > 20 mg/l Liquids with nickel concentration > 134 mg/l Liquids with selenium concentration > 100 mg/l Liquids with thallium concentration > 130 mg/l
	Cyanide and Metal Liquids	Liquids with cyanide concentration > 1000 mg/l

Table 2-3 (continued)
DHS WASTE GROUPS - NONORGANIC

Form	DHS Waste Group	Manifest Category
Liquids (cont'd)	Nonmetallic Inorganic Liquids	Acids without metals Unspecified acid Alkaline without metals Aqueous with reactive anions Unspecified aqueous solution Liquids with pH value less than 2
Sludges & Solids	Metal-Containing Sludges	Metal sludge
	Nonmetallic Inorganic Sludges	Alum and gypsum sludge Lime sludge Phosphate sludge Sulfur sludge Drilling mud contaminated
	Soil	Contaminated soil
	Miscellaneous Waste	Off-spec, aged, or surplus inorganics Asbestos-containing waste Fluid catalytic cracker waste Other spent catalyst Metal dust Other inorganic solid waste Pharmaceutical waste Biological waste other than sewage sludge Empty pesticide containers > 30 gal. Other empty containers > 30 gal. Chemical containers < 30 gal. Photochemical/photoprocessing waste Laboratory waste chemicals Detergent and soap Gas-scrubber waste Baghouse waste Household hazardous waste

Table 2-4

CATEGORIZATION OF GENERATORS BY MANAGEMENT AND WASTE CHARACTERISTICS

Disposal Practices

- Off-site disposal (manifested waste)
  - -Ongoing - results from ongoing industrial or business activity
  - -One-time - results from one-time activity, such as cleanup
- On-site disposal (permitted or exempt - see Section 2.8)
- Illegal disposal

Size of Wastestream

- Large quantity generator (LQG) - greater than 1000 kg per month
- Small quantity generator (SQG) - less than 1000 kg per month

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Generators can be categorized according to their disposal practices, whether the waste generation is ongoing or occurs one time only, and the size of their wastestream (see Table 2-4). For purposes of this planning study, a producer of hazardous waste generating more than 1000 kg (i.e., about 2200 pounds or 300 gallons) per month is considered to be a large quantity generator. A household is a unique type of small quantity generator and is regulated less stringently under California law. This section will discuss the following hazardous waste management system elements in turn:

- Hazardous waste shipped off-site by LOGs, SQGs and one-time generators; i.e., manifested wastes (Section 2.4)
- Wastes from small quantity generators other than households (Section 2.5)
- Household hazardous waste (Section 2.7)
- Waste disposed on-site (Section 2.8)
- Wastes from contaminated sites (Section 2.9)
- Pretreatment sludges from industries (Section 2.10)
- Designated wastes (Section 2.11)

2.4 HAZARDOUS WASTES SHIPPED OFF-SITE

El Dorado County's businesses, institutions, and public agencies produce a wide variety of hazardous wastes that are removed from the point of generation to an off-site facility for treatment, storage or disposal. An off-site facility is an operation involving handling, treatment, storage or disposal of a hazardous waste in one or more of the following situations: (1) the hazardous waste is transported via a commercial railroad, a public road or public waters, where adjacent land is not owned by, or leased to, the producer of the waste; (2) the hazardous waste is at a site which is not owned by, or leased to, the producer of the waste; (3) the hazardous waste is at a site which receives hazardous waste from more than one producer. (Section 66140, Title 22, California Administrative Code). Generators that ship wastes off-site are required to comply with the Uniform Hazardous Waste Manifest system as administered by California Department of Health Services (intrastate transport). The manifest is the tracking document for monitoring the flow of hazardous wastes from point of generation to point of disposal and is the principle source of data concerning hazardous waste shipped off-site. Hazardous waste generators are required by law to complete a manifest when hazardous waste leaves the site of generation and to submit these records to DHS. The Department of Health Services reviews each manifest received for accuracy. Currently, El Dorado County generators manifesting their wastes ship it all out of the county.

2.4.1 Quantities of Hazardous Waste by Manifested Generators

DHS ha recommended the use of 17 hazardous waste groups to categorize the approximately 80 possible types of waste by California Waste Category. Associated with each waste group are seven preferred Generalized Treatment Methods assigned by DHS. For purposes of this report, this categorization of waste group and treatment will be used. However, it should be noted that the DHS assignment is only a preference and deviations in waste treatment assessment may occur when or if wastes are actually treated differently than suggested.

Adjustments to the 1985 and 1986 manifested data were made to obtain the best representation of El Dorado County manifested hazardous waste possible. The method of adjustment or averaging was as follows: any generator represented in both years was averaged; any generator represented in 1985 and not in 1986 was discarded and not counted; any generator represented in 1986 and not in 1985 was fully counted in the data. This method resulted in a base year 1986 manifested hazardous waste quantity for the County.

In this framework, an inventory of total quantity of manifested hazardous waste in El Dorado County for the base year 1986 is provided in Table 2-5. According to the data provided by the DHS in the base year 1986, El Dorado County generated approximately 170 tons of hazardous waste, all of it shipped off-site. This total also includes DHS manifest estimates for route services collecting non-halogenated and halogenated solvents.

During September, 1988, in accordance with DHS direction, a number of waste oil route service haulers including Reno Drain Oil, Inc., California Oil Recyclers, Inc., and Ramos Oil Co. were contacted to obtain their El Dorado County specific manifest information. All companies were cooperative but were unable to provide this information because they do not maintain generation records by county. Therefore, manifest data for waste oil could not be quantified in Table 2-5 (DHS Table A).

Quantities from household waste sources, most small quantity generators, and waste oil route operations are not currently included within the manifested waste because of specific regulations addressing these wastes or because the generators may fail to use the manifest system or dispose of their wastes illegally or improperly.

Table 2-5
ADJUSTED QUANTITIES OF HAZARDOUS WASTE SHIPPED OFF-SITE (b) BY GENERATORS IN EL DORADO COUNTY IN 1986 (DHS TABLE A)

Waste Group	Total Quantity of Waste Shipped Off-site & Manifested by Generator (tons)	Total Quantity of Waste Off-site & Manifested by Route Services (tons)	DHS Preferred Generalized Treatment Method
Waste Oil	13.39	(a)	Oil Recovery
Halogenated Solvents	1.90	5.4	Solvent Recovery
Nonhalogenated Solvents	4.39	53.9	Solvent Recovery
Organic Liquids	1.66	0	Other Recycling
Pesticides	0.00	0	Aqueous Treatment Organic
PCBs & Dioxins	10.52	0	Incineration
Oily Sludges	0.00	0	Oil Recovery
Halogenated Organic Sludges/Solids	0.00	0	Incineration
Nonhalogenated Organic Sludges/Solids	0.00	0	Incineration
Dye & Paint Sludges & Resins	0.00	0	Incineration

(a) This information is not available but will be inserted into future revisions of the CHWMP following a small quantity generator survey.
(b) El Dorado County exports out of county all of its manifested hazardous waste.

Table 2-5 (continued)
ADJUSTED QUANTITIES OF HAZARDOUS WASTE SHIPPED OFF-SITE (b) BY GENERATORS IN EL DORADO COUNTY IN 1986 (DHS TABLE A)

Waste Group	Total Quantity of Waste Shipped Off-site & Manifested by Generator (tons)	Total Quantity of Waste Off-site & Manifested by Route Services (tons)	DHS Preferred Generalized Treatment Method
Metal Containing Liquids	0.00	0	Aqueous Treatment Metals/ Neutralization
Cyanide & Metal Liquids	0.00	0	Aqueous Treatment Metals/ Neutralization
Nonmetallic Inorganic Liquids	0.46	0	Aqueous Treatment Organic
Metal-Containing Sludges	0.00	0	Stabilization
Nonmetallic Inorganic Sludges	0.00		Stabilization
Contaminated Soil	75.8	0	Incineration
Miscellaneous Wastes	2.61	0	See Detailed Breakdown
Subtotal	**110.78**	**59.30**	
*** * * Total * * ***	**170.08**		

(FOR MISCELLANEOUS WASTES ONLY)

Empty Containers	0.38	Other Recycling
Off-Spec, Aged or Surplus Inorganics	0.00	Stabilization
Asbestos-Containing Waste	0.17	Stabilization
FCC Waste	0.00	
Other Spent Catalyst	0.00	Stabilization
Metal Dust	0.00	Other Recycling
Other Inorganic Solid Waste	0.59	Other Recycling
Pharmaceutical Waste	0.00	Stabilization
Bio Waste Other Than Sewage Sludge	0.00	Aqueous Treatment Organic
Off-Spec, Aged or Surplus Organics	1.21	Other Recycling

Table 2-5 (continued)
ADJUSTED QUANTITIES OF HAZARDOUS WASTE SHIPPED OFF-SITE (b) BY GENERATORS IN EL DORADO COUNTY IN 1986 (FOR MISCELLANEOUS WASTES ONLY)
(DHS TABLE A)

Waste Group	Total Quantity of Waste Shipped Off-site & Manifested by Generator (tons)	Total Quantity of Waste Off-site & Manifested by Route Services (tons)	DHS Preferred Generalized Treatment Method
Chemical Toilet Waste		0.00	Stabilization
Photochem/Photoprocessing Waste		0.00	Other Recycling
Laboratory Waste Chemicals		0.26	Other Recycling
Detergent and Soap		0.00	Other Recycling
Gas Scrubber Waste		0.00	Aqueous Treatment Metals/ Neutralization
Baghouse Waste		0.00	Stabilization
Household Wastes		0.00	Other Recycling
Other		0.00	- -
* * * Total * * *		2.61	

In 1986, DHS listed 12 hazardous waste generators shipping waste off-site under the Manifest System in El Dorado County. One is a large quantity generator (LQG) generating over 1000 kg (or about one ton) of hazardous waste per month. The remaining eleven were small quantity generators (SQG) generating less than 1000 kg of waste per month. Much of the hazardous waste from SQGs within the County, however, is not manifested. Section 2.5 addresses these nonmanifested quantities.

2.4.2 Local Survey of Manifested Generators

The State Department of Health Services Toxic Substances Control Division provided the following information on El Dorado County for 1985 and 1986: summary information on manifested generators, summary information by waste category, and a categorical manifested wastes were examined to determine the nature of each generator's waste, e.g., one-time generation vs. regular generation of waste. One-time generation may include disposal of contaminated soil, PCB-laden electrical components, disposal of surplus chemicals, or other similar situations.

During October, 1987, four manifested generators were selected to be interviewed for more detailed information on their waste generation. Though only one (Michigan-California) of these meets

the criterion for large quantity generators, it was decided to interview all four to obtain information on their waste management practices. Table 2-6 presents these generators and their manifested waste quantities for 1985 and 1986. Table 2-7 gives a breakdown of the generators' waste by category.

The manifested generators not selected for interviews were excluded because their wastes were generated from cleanup activities or one-time disposal of material, or their waste quantities were too small. However, these waste quantities are not excluded in the overall plan.

2.5 HAZARDOUS WASTES FROM SMALL QUANTITY GENERATORS OTHER THAN HOUSEHOLDS

2.5.1 Introduction

Of the total hazardous waste that a county generates, the majority of waste which is not manifested originates from small quantity generators. For purposes of distinguishing between a large quantity generator and a small quantity generator, this plan defines a small quantity generator (SQG) as businesses, households or institutions that generate less than 1000 kg (about 1 ton) of hazardous waste per month. California and Federal regulations are less stringent regarding storage and transport of household hazardous wastes but, nonetheless, households are not exempt from California's disposal restrictions. For purposes of estimating quantities and discussing the rather distinct types of program requirements, households and small businesses are typically viewed separately.

Table 2-6
MANIFESTED GENERATORS INTERVIEWED

Generator	Manifested Quantity 1985, tons	Manifested Quantity 1986, tons
Michigan California Lumber	6.50	83.93
Dimetrics, Inc.	2.74	2.72
PG&E	0.00	6.68
Certainteed Corp. (currently PW Pipe)	0.7	0.31

The types of small quantity generators appear to cut across many of the industrial sectors (see Table 2-8). Paint shops and printing stores, gasoline stations and medical laboratories, dry cleaners and exterminating services, are all examples of businesses which potentially are small quantity generators. Many small quantity generators tend to be small businesses which

lack the resources, technical expertise, or staffing to effectively manage their hazardous waste. Their general knowledge of existing hazardous waste regulations may be limited and hazardous waste management may be considered low priority in operating a small business. The result of this may lead to improper disposal of hazardous wastes.

Table 2-7

CATEGORICAL BREAKDOWN OF WASTE GENERATED BY INTERVIEWED MANIFESTED GENERATORS

Generator	Waste Category	Amount Produced tons 1985	1986
Michigan California Lumber	Waste oil and mixed oil	0.0	8.08
	Contaminated soils	0.0	75.85
	Empty containers > 30 gallons	6.5	0.00
Dimetrics, Inc.	Halogenated solvents	0.0	0.34
	Waste oil and mixed oil	1.14	1.70
	Off-spec, aged, or surplus organics	1.60	0.68
P G & E	Unspecified acid solution	0.0	0.45
	Asbestos-containing waste	0.0	0.17
	Other inorganic solid waste	0.0	0.09
	Waste oil and mixed oil	0.0	1.68
	Unspecified oil-containing waste	0.0	2.92
	PCBs and materials with PCBs	0.0	0.44
	Off-spec, surplus or aged organics	0.0	0.07
	Unspecified organic liquid	0.0	0.41
	Empty containers > 30 gallons	0.0	0.24
	Empty containers < 30 gallons	0.0	0.14
	Laboratory waste chemicals	0.0	0.07
Certainteed Corp. (currently PW Pipe)	Unspecified acid solution	0.0	0.01
	Unspecified solvent mixture	0.70	0.30

2.5.2 National EPA Survey of Small Quantity Generators

In an attempt to assess the types and quantities of hazardous waste generated by small quantity generators, in 1985 the EPA conducted a nationwide survey which identifies 22 industrial groups which potentially generate hazardous waste. The survey determined by industry an average waste generation factor for broad waste categories, excluding waste oil. These categories do not correspond to the DHS system, thus, DHS developed a conversion table to convert the 28 EPA survey Waste Types (Table 2-9)

into the DHS Preferred 17 Waste Groups (Table 2-10). The generation factors provided by EPA for each of the 22 industrial categories were converted from metric tons to tons by multiplying by 1.102. While particular businesses identified by the EPA survey may in fact not generate any hazardous waste, it is believed that this effect is counteracted by generators which generate far larger quantities than predicted by the survey. DHS has recommended the use of this survey for determining quantities and types of hazardous waste generated by small businesses within a county.* To determine the number of potential generators within El Dorado County, as indicated in the survey, a review of El Dorado County business licenses was conducted and compared to the 1985 County Business Patterns listing (U.S. Bureau of Census). This data was further refined and updated by reviewing Standard Industrial Code (SIC) listings available from the El Dorado County Chamber of Commerce.

As a result of this research, in 1986, El Dorado had approximately 1,011 small quantity generators identified under the EPA survey. The breakdown by SIC Code, number of potential generators and generation factors are listed in Table 2-8. The breakdown by EPA waste type and percentage generation by group is identified in Table 2-9. Approximately 1,316 tons of hazardous waste, not including waste oil, was generated from small quantity generators in El Dorado County.

2.5.3 County Survey of Small Quantity Generators

The characteristic nature of El Dorado County's small quantity generators were not determined from the national EPA survey alone. To better understand the magnitude and local habits of small quantity generators within El Dorado County, a survey was conducted during October, 1987, which addressed the hazardous waste characteristics of four significant industrial sectors within El Dorado County. These industrial sectors include (1) vehicle maintenance; (2) dry cleaners; (3) photofinishing laboratories; and (4) commercial printing.

The survey design involved initiating telephone contacts with randomly selected businesses within each group and arranging for a telephone interview with a representative of the firm being surveyed. The person performing the interview was trained to be familiar with the basic operations and the types of hazardous waste used in each business category.

The primary objective of the local survey was to identify hazardous waste type and quantities generated through daily business operations. Businesses were also asked about the storage and eventual disposal of these wastes. To better develop management strategies for small quantity generators, businesses were questioned about their perceptions and opinions on regulations, emergency response and education.

For the industries interviewed, there was reasonable similarity in the types of wastes identified in the EPA survey. The relative quantities reported did not warrant modification of the

*Technical Reference Manual, Part F, Attachments A-C, Department of Health Services, 1986.

EPA generation factors. Waste oil generation, not addressed in the national survey, was resolved, as discussed in the next section.

Table 2-8

INDUSTRIAL GROUPS IN EL DORADO COUNTY (1986)
POTENTIALLY CONTAINING SMALL QUANTITY GENERATORS

SIC CODES & TITLES		NO. OF GENERATORS
Category #1	PESTICIDE END USERS	Total Volume Production Factor per Generator .7*
7992	Public Golf Courses	7
	Total	**7**
Category #2	PESTICIDE APPLICATION SERVICES	Total Volume Production Factor per Generator .9
0711	Soil Preparation Services	3
0721	Crop Planting, Cultivating & Production	2
0782	Lawn & Garden Services	16
0783	Ornamental Shrub & Tree Services	8
7342	Disinfecting & Extermination Services	24
	Total	**53**
Category #3	CHEMICAL MANUFACTURING	Total Volume Production Factor per Generator .3
2819	Industrial Inorganic Chemicals	1
	Total	**1**
Category #4	WOOD PRESERVING	Total Volume Production Factor per Generator 3.5
	NONE	
Category #5	FORMULATORS	Total Volume Production Factor per Generator 3.7
	NONE	
Category #6	LAUNDRIES	Total Volume Production Factor per Generator .9
7216	Dry Cleaning Plants	11
7212/7217	Carpet & Upholstered Cleaning	16
7218	Industrial Laundries	1
	Total	**28**

Table 2-8 (continued)
INDUSTRIAL GROUPS IN EL DORADO COUNTY (1986)
POTENTIALLY CONTAINING SMALL QUANTITY GENERATORS

SIC CODES & TITLES		NO. OF GENERATORS
Category #7	OTHER SERVICES	Total Volume Production Factor per Generator .7
7260	Funeral Services & Crematoriums	4
7349	Cleaning & Maintenance Services	26
	Total	**30**
Category #8	PHOTOGRAPHY	Total Volume Production Factor per Generator 1.9
7332	Blueprinting & Photocopying	6
7333	Commercial Photocopying Services	12
7395	Photofinishing Laboratories	8
8411	Museum & Art Galleries	2
	Total	**28**
Category #9	TEXTILE MANUFACTURING	Total Volume Production Factor per Generator 2.4
	NONE	
Category #10	VEHICLE MAINTENANCE	Total Volume Production Factor per Generator 1.9
1600	Construction other than Building Construction - General Contractors	39
1794	Excavating & Foundation Work	32
4210	Trucking, Local & Long Distance	32
4459	Water Transportation Services	1
5270	Mobile Home Dealers	1
5500	Automotive Dealers & Service Stations	115
7512	Passenger Car Rental & Leasing	4
7519	Utility Trailers & RV Rentals	4
7530	Automotive Repair Shops	78
0919	Miscellaneous Marine Products	3
4119	Taxi Services	3
4100	Local & Suburban Highway Passenger Transportation	5
5171	Bulk Petroleum Product Delivery	5
7699	Repair Shops not Elsewhere Classified	10
9221	Police Protection	3
9224	Fire Protection	17
1600	U. S. Postal Service	2
	Total	**354**

Table 2-8 (continued)
INDUSTRIAL GROUPS IN EL DORADO COUNTY (1986)
POTENTIALLY CONTAINING SMALL QUANTITY GENERATORS

SIC CODES & TITLES		NO. OF GENERATORS
Category #11	**EQUIPMENT REPAIR**	**Total Volume Production Factor per Generator .5**
4800	Communications	10
7260	Electrical Repair Shops	10
	Total	**20**
Category #12	**METAL MANUFACTURING**	**Total Volume Production Factor per Generator 1.7**
3400	Fabricated Metal Products except Machinery & Transportation Equipment	5
3500	Machinery except Electrical	4
3600	Electrical & Electronic Machinery	6
3800	Measuring, Analyzing & Controlling Instruments	5
3993	Sign & Advertising Display	2
	Total	**22**
Category #13	**CONSTRUCTION**	**Total Volume Production Factor per Generator .4**
1711	Plumbing, Heating & Air Conditioning	40
1721	Painting, Paper Hanging & Decorating	24
1743	Terrazo, Tile, Marble & Mosaic Work	11
1752	Floor Laying & other floor work not elsewhere classified	6
1761	Roofing & Sheet Metal Work	14
1793	Glass & Glazing Work	14
1500	General Building Contractors	156
1742	Plastering, Drywall, Acoustical & Insulation Works	18
1771	Pabing	16
	Total	**799**
Category #14	**MOTOR FREIGHT**	**Total Volume Production Factor per Generator 1.1**
	NONE	
Category #15	**FURNITURE/WOOD MANUFACTURING & REFINISHING**	**Total Volume Production Factor per Generator 1.1**
2534	Wood Kitchen Cabinets	26
2511	Wood Household Furniture	4
7611	Reupholstery & Furniture Repair	16
2499	Wood Products not Elsewhere Classified	2
	Total	**48**

Table 2-8 (continued)
INDUSTRIAL GROUPS IN EL DORADO COUNTY (1986)
POTENTIALLY CONTAINING SMALL QUANTITY GENERATORS

SIC CODES & TITLES		NO. OF GENERATORS
Category #16	PRINTING/CERAMICS	Total Volume Production Factor per Generator .7
2700	Printing & Publishing	23
3253	Ceramic Wall & Floor Tile	2
7331	Direct Mail Advertising Services	2
	Total	**27**
Category #17	CLEANING AGENTS/DOMESTIC MANUFACTURING	Total Volume Production Factor per Generator 2.9
2842	Specialty Cleaning, Polishing, Sanitizing Preparation	1
2844	Perfumes, Cosmetics & other Toilet Preparation	1
	Total	**2**
Category #18	OTHER MANUFACTURING	Total Volume Production Factor per Generator 2.1
3079	Miscellaneous Plastic Products	5
3100	Leather & Leather Products	1
	Total	**6**
Category #19	PAPER INDUSTRIES	Total Volume Production Factor per Generator 3.0
	NONE	
Category #20	ANALYTICAL & CLINICAL LABORATORIES	Total Volume Production Factor per Generator 1.1
7391	Research & Development Laboratories	2
7397	Commercial Testing Laboratories	2
8062	General Medical & Surgical Hospitals	2
8071	Medical Laboratories	4
8072	Dental Laboratories	4
8220	Colleges, Universities, Professional Schools & Junior Colleges	2
8081	Outpatient Care Facilities	3
9641	Regulation of Agriculture Marketing & Commodities	3
	Total	**22**

Table 2-8 (continued)
INDUSTRIAL GROUPS IN EL DORADO COUNTY (1986)
POTENTIALLY CONTAINING SMALL QUANTITY GENERATORS

SIC CODES & TITLES		NO. OF GENERATORS
Category #21	EDUCATIONAL & VOCATIONAL SHOPS	Total Volume Production Factor per Generator .3
8221	Elementary & Secondary Schools	17
8331	Job Training & Vocational Rehabilitation	2
9223	Correctional Institutions	1
	Total	**20**
Category #22	WHOLESALE & RETAIL SALES	Total Volume Production Factor per generator .7
5191	Farm Supplies	7
5230	Paint, Glass & Wallpaper Stores	27
5310	Department Stores	8
5399	Miscellaneous General Merchandise	2
	Total	**44**
TOTAL NO. OF POTENTIAL SMALL QUANTITY GENERATORS		**1,011**

*This factor is expressed in metric tons and was multiplied by 1.102 for conversion to tons.

TABLE 2-9
1985 EPA SMALL QUANTITY GENERATOR SURVEY
BREAKDOWN OF WASTE TYPE AND PERCENTAGE GENERATION BY CATEGORY NO.

EPA SURVEY WASTE TYPE	EPA SURVEY CATEGORY # (Percentage Generation in Parenthesis)
Arsenic Wastes	18-(2)
Cyanide Wastes	3-(<1), 12-(2.5), 16-(<1)
Dry Cleaning Filtration Residues	6-(99.8)
Empty Pesticide Containers	1-(25), 2-(34.8)
Heavy Metal Dust	3-(2.9), 17-(<1)
Heavy Metal Solutions	---
Heavy Metal Waste Materials	3-(5.2), 18-(8)
Ignitable Paint Wastes	8-(<1), 10-(<1), 11-(<1), 12-(1.9), 13-(48), 15-(44), 20-(2.3),21-(15), 23-(8.6)
Ignitable Wastes	3-(18), 7-(6.6), 8-(<1), 10-(<1),11-(14), 12-(<1), 13-(9.2), 15-(19), 16-(1.5), 17-(16), 18-(21), 20-(24), 21-(27), 22-(<1)
Ink Sludges Containing Chromium or Lead	16-(<1)
Mercury Waste	20-(<1)
Other Reactive Wastes	3-(1.4), 12-(<1), 20-(12), 21-(13)
Paint Wastes Containing Heavy Metals	10-(<1), 12-(<1)
Pesticide Solutions	1-(69), 2-(55), 17-(24)
Photographic Wastes	8-(49), 16-(52)
Solvent Still Bottoms	3-(2.1), 12-(2.5), 15-(3.5), 17-(<1), 18-(<1)
Spent Plating Wastes	12-(7.3), 16-(5.6)
Spent Solvents	3-(48), 7-(1.3), 8-(2.5), 10-(10.6), 11-(78),12-(61.6), 13-(30), 15-(27), 16-(24), 17-(27), 18-(66), 20-(48), 21-(23), 22-(13)
Solutions or Sludges Containing Silver	8-(48)

TABLE 2-9 (continued)
1985 EPA SMALL QUANTITY GENERATOR SURVEY
BREAKDOWN OF WASTE TYPE AND PERCENTAGE GENERATION BY CATEGORY NO.

EPA SURVEY WASTE TYPE	EPA SURVEY CATEGORY # (Percentage Generation in Parenthesis)
Strong Acids or Alkalies	3-(20), 7-(<1), 8-(<1), 10-(3), 11-(3.8), 12-(19.5), 13-(1.4), 16-(6), 17-(31), 20-(14), 21-(19), 22-(7.4)
Used Lead - Acid Batteries	10-(86)
Waste Formaldehyde	7-(83)
Waste Inks Containing Flammable Solvents or Heavy Metals	16-(8.5)
Waste Pesticides	1-(4.6), 2-(9.6), 23-(4.7)
Wastewater Containing Heavy Metals	12-(3.7)
Wastewater Containing Wood Preservatives	---
Waste Containing Ammonia	7-(3.4)
Other	1-(<1), 2-(<1), 3-(2.1), 6-(<1), 7-(5.4), 8-(<1), 10-(<1), 11-(4), 12-(<1), 13-(11.1), 15-(6.4), 16-(1.6), 17-(<1), 18-(1.8), 20-(<1), 21-(3.9), 22-(66)

TABLE 2-10
EPA WASTE TYPE TO DHS WASTE GROUP
CONVERSION TABLE

EPA WASTE TYPE	DHS WASTE GROUP
1) Arsenic Wastes	Metal Containing Liquids
2) Cyanide Wastes	Cyanide & Metal-Containing Liquids
3) Dry Cleaning Filtration Residues	Non-Halogenated Organic Sludges & Solids
4) Empty Pesticide Containers	Miscellaneous Wastes
5) Heavy Metal Dust	Miscellaneous Wastes
6) Heavy Metal Solutions	Metal-Containing Liquids
7) Heavy Metal Waste Materials	Metal-Containing Liquids
8) Ignitable Paint Wastes	Dyes, Paint Sludges & Resin Wastes
9) Ignitable Wastes	Halogenated & Non-Halogenated Solvents
10) Ink Sludges Containing Chromium or Lead	Metal-Containing Sludges
11) Mercury Waste	Metal-Containing Liquids
12) Other Reactive Wastes	Non-Metallic Inorganic Liquids
13) Paint Wastes Containing Heavy Metals	Metal-Containing Sludges
14) Pesticide Solutions	Pesticides
15) Photographic Wastes	Miscellaneous Wastes
16) Solvent Still Bottoms	Halogenated or Non-Halogenated Sludges & Solids
17) Spent Plating Wastes	Metal Containing Liquids
18) Spent Solvents	Halogenated or Non-Halogenated Solvents
19) Solutions or Sludges Containing Silver	Metal-Containing Liquids & Sludges
20) Strong Acids or Alkalies	Non-Metallic Inorganic Liquids

TABLE 2-10 (continued)
EPA WASTE TYPE TO DHS WASTE GROUP
CONVERSION TABLE

EPA WASTE TYPE	DHS WASTE GROUP
21) Used Lead-Acid Batteries	Miscellaneous Wastes
22) Waste Formaldehyde	Organic Liquids
23) Waste Inks Containing Flammable Solvents or Heavy Metals	Metal-Containing Liquids & Sludges
24) Waste Pesticides	Pesticides
25) Wastewater Containing Heavy Metals	Metal-Containing Sludges
26) Wastewater Containing Wood Preservatives	PCBs and Dioxins
27) Waste Containing Ammonia	Non-Metallic Inorganic Wastes
28) Other	Miscellaneous Wastes

2.5.4 Waste Oil

Waste oil originates from many different small quantity generators in El Dorado County. The more significant generators of waste oil are largely vehicle maintenance and manufacturing industries. Waste oil includes not only used motor oil, but crankcase oil, lubricating oils and oils used in various metal working industries. Waste oil, in itself, under State law, is considered hazardous.

Depending on the process using oil, the waste product may contain a variety of contaminants, such as metals (e.g., lead) or organics (e.g., PCBs). The appearingly large quantity of waste oil among industry typically will not be manifested. Commercial recycling businesses or "waste services" will pick up waste oil at the site of generation and transport the oil to recycling centers. Many small businesses participating in such practices are exempt from manifesting their waste oil, provided that the waste oil is not stored for more than 90 days (CAC, Title 26).

The national EPA survey did not address waste oil generation among small businesses. To quantify waste oil generation among small quantity generators, DHS has provided a supplement to the TRM which summarized used oil factors in gallons per year per generator for 25 business types.[a] Although the table was incomplete, it does indicate the types of small businesses which generally generate waste oil. There may in fact be additional types of businesses generating waste oil. However, the DHS identification of waste oil generators classified into one of two groups: automotive-related businesses and industry-related industries.

Waste oil quantities revealed through the local survey were less than half of DHS recommended estimates and, thus, were utilized in this Plan. Although the local survey did not address waste oil generation among manufacturing (industry-related), an average of 5.9 tons per year per generator was determined over the several types of vehicle maintenance businesses interviewed. This factor was used for all potential generators suspect to waste oil generation.

There exists approximately 369 small businesses which potentially generate waste oil in El Dorado County in 1986. Of these, gasoline service stations were the largest with approximately 115 establishments. Automotive repair shops were the second largest waste oil generators with approximately 78 shops. These two industry types accounted for 679 and 460 tons of waste oil in 1986, respectively.

2.5.5 Small Quantity Generator Results

Small quantity generators (less than 1,000 kg or 1.1 tons) produce approximately 3,495 tons of hazardous waste annually. The principal small quantity generators found in the County are in the vehicle maintenance group of which there are a total of

[a] "Determining Used Oil Volumes Generated by Selected Small Quantity Generators," DHS 1987

354 facilities. Construction operators, including plumbing, painting, carpentry, cement, tile, papering and plastering contractors in the County amount to 299 small quantity generators. The photographic industry including photo finishing, photo reproduction, etc., includes 28 firms. Small metal working shops including plating operations, and other metal working have 22 operations; dry cleaners in El Dorado County amount to 11 operations.

Waste oil including crankcase oil, lubricating oil and other oils used in various metal working industries account for the largest volume of hazardous waste from small quantity generators produced in El Dorado County. Waste oil generation, based on surveys conducted throughout El Dorado County, amounted to 2,178 tons in 1986. The next largest amount of hazardous waste was 759 tons of miscellaneous wastes, primarily waste sulfuric acid lead batteries. There are approximately 637 tons of waste batteries generated annually in El Dorado County.

2.6 TOTAL INDUSTRIAL HAZARDOUS WASTE

Industrial contributions, both manifested and nonmanifested together provide a total estimated picture of the industrial hazardous wastestream in El Dorado County. It is possible to characterize industrial generators with a 2-digit Standard Industrial Classification (SIC) code and produce an accounting of the types of industries generating the 17 DHS waste categories. Identification of all generators by SIC code (Table 2-11) then allows a breakdown of waste groups over all industrial sectors (Table 2-12). Since one-time generators do not provide an accurate indication of a county's constant wastestream, one-time quantities were removed from this table. Therefore, Table 2-12 represents a snapshot of the 1986 hazardous waste generated by industry, as a product of existing economic and technological conditions. Noncontinuous wastestreams, such as cleanup sites, will be addressed in a subsequent section.

In 1986, approximately 3,495 tons of hazardous waste resulted from the continuous industrial wastestream in El Dorado county. Of this amount, 170 tons (5%) was manifested. The largest group, Waste Oil, which amounts to 2,178 tons (62%), largely remains nonmanifested as the result of oil route services. The category of Miscellaneous Waste ranked second with a generated quantity of 759 tons (22%). This category consists primarily of waste car batteries.

Two major industrial groups account for one-half of the County's industrial hazardous waste. Automotive dealers and gas stations (SIC 55), and automobile repair and services (SIC 75) together generated about 1,623 tons in 1986.

2.7 HOUSEHOLD HAZARDOUS WASTES

A household hazardous waste is any waste produced by a household which contains an ingredient listed in the Code of Federal Regulations (CFR) Chapter 40 [Part 261.33(e) or 261.33(f)] or exhibits characteristics of ignitability, corrosivity,

Table 2-11

STANDARD INDUSTRIAL CLASSIFICATIONS (SIC)

SIC Codes Major Group	Description
01	Agricultural production - crops
02	Agricultural production livestock and animal specialties
07	Agricultural services
08	Forestry
09	Fishing, hunting, and trapping
10	Metal mining
12	Coal mining
13	Oil and gas extraction
14	Mining and quarrying of nonmetallic minerals, except fuels
15	Building construction - general contractors and operative builders
16	Heavy construction other than building construction - contractors
17	Construction - special trade contractors
20	Food and kindred products
21	Tobacco products
22	Textile mill products
23	Apparel and other finished products made from fabrics and similar materials
23	Lumber and wood products, except furniture
25	Furniture and fixtures
26	Paper and allied products
27	Printing, publishing, and allied industries
28	Chemicals and allied products
29	Petroleum refining and related industries
30	Rubber and miscellaneous plastics products
31	Leather and leather products
32	Stone, clay, glass, and concrete products
33	Primary metal industries
34	Fabricated metal products, except machinery and transportation equipment
35	Industrial and commercial machinery and computer equipment
36	Electronic and other electrical equipment and components, except computer equipment
37	Transportation equipment
38	Measuring, analyzing, and controlling instruments; photographic, medical and optical goods; watches and clocks
39	Miscellaneous manufacturing industries
40	Railroad transportation
41	Local and suburban transit and interurban highway passenger transportation
42	Motor freight transportation and warehousing
43	United States Postal Service
44	Water transportation
45	Transportation by air
46	Pipelines, except natural gas
47	Transportation services

Table 2-11 (continued)
STANDARD INDUSTRIAL CLASSIFICATIONS (SIC)

48	Communications
49	Electric, gas, and sanitary services
50	Wholesale trade - durable goods
51	Wholesale trade - nondurable goods
52	Building materials, hardware, garden supply, and mobile home dealers
53	General merchandise stores
54	Food stores
55	Automotive dealers and gasoline service stations
56	Apparel and accessory stores
57	Home furniture, furnishing, and equipment stores
58	Eating and drinking places
59	Miscellaneous retail
60	Depository institutions
61	Nondepository credit institutions
62	Security and commodity brokers, dealers, exchanges, and services
63	Insurance carriers
64	Insurance agents, brokers, and service
65	Real estate
67	Holding and other investment offices
70	Hotels, rooming, houses, camps, and other lodging places
72	Personal services
73	Business services
75	Automotive repair, services and parking
76	Miscellaneous repair services
78	Motion pictures
79	Amusement and recreation services
80	Health services
81	legal services
82	Educational services
83	Social services
84	Museums, art galleries, and botanical and zoological gardens
86	Membership organizations
87	Engineering, accounting, research, management, and related services
88	Private households
89	Miscellaneous services
91	Executive, legislative, and general government, except finance
92	Justice, public order, and safety
93	Public finance, taxation, and monetary policy
94	Administration of human resource programs
95	Administration of environmental quality and housing programs
96	Administration of economic programs
97	National security and international affairs
99	Nonclassifiable establishments

TABLE 2-12
MAJOR INDUSTRY GROUPS OF HAZARDOUS WASTE
GENERATED WITHIN EL DORADO COUNTY IN 1986
INCLUDING SMALL QUANTITY GENERATIONS (Tons/yr)
(DHS TABLE J)

	SIC 7	SIC 9	SIC 15	SIC 16	SIC 17	SIC 24	SIC 25	SIC 27	SIC 28	SIC 30	SIC 31	SIC 32	SIC 34	SIC 35	SIC 36	SIC 38	SIC 39	SIC 41	SIC 42	SIC 43
Waste Oil	0.00	17.70	0.00	230.10	0.00	20.60	0.00	0.00	0.00	29.50	5.90	0.00	0.00	23.60	37.10	0.00	0.00	29.50	188.80	11.80
Halogenated Solvents	0.00	0.03	13.48	4.74	16.24	0.56	8.37	2.66	1.16	5.04	1.01	0.20	2.98	2.35	3.86	2.98	1.17	0.98	3.89	0.24
Nonhalogenated Solvents	0.00	0.03	13.48	4.74	16.24	0.56	8.37	2.66	1.16	5.04	1.01	0.20	2.98	2.35	3.52	2.98	1.17	0.98	3.89	0.24
Organic Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pesticides	18.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCB's & Dioxins	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oily Sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halogenated Organic Sludges/Solids	0.00	0.00	0.00	0.00	0.00	0.04	0.66	0.89	0.04	0.06	0.01	0.00	0.12	0.10	0.14	0.12	0.05	0.00	0.00	0.00
Nonhalogenated Organic Sludges/Solids	0.00	0.00	0.00	0.00	0.00	0.04	0.66	0.89	0.04	0.06	0.01	0.00	0.12	0.10	0.14	0.12	0.05	0.00	0.00	0.00
Dye & Paint Sludges & Resins	0.00	0.06	33.00	0.00	30.93	1.07	16.00	0.00	0.00	0.00	0.00	0.00	0.09	0.07	0.21	0.09	0.07	0.17	0.67	0.04
Metal-Containing Liquids	0.00	0.67	0.00	0.00	2.12	0.00	0.00	1.17	0.18	1.16	0.24	0.16	0.68	0.55	0.82	0.68	0.27	0.00	0.00	0.00
Cyanide & Metal Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.04	0.00	0.00	0.02	0.23	0.19	0.28	0.23	0.09	0.00	0.00	0.00
Nonmetallic Inorganic Liquids	0.00	0.19	0.96	2.45	2.89	0.00	0.00	1.25	0.76	0.01	0.00	0.09	1.91	1.53	2.30	1.91	0.77	0.50	2.01	0.13
Metal-Containing Sludges	0.00	0.06	0.00	0.82	0.67	0.00	0.00	0.21	0.00	0.00	0.00	0.09	0.44	0.28	0.53	0.44	0.18	0.17	0.67	0.04
Nonmetallic Inorganic Sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Contaminated Soil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous Waste	10.29	5.46	7.63	71.05	65.29	0.16	2.33	11.16	0.17	0.21	0.04	0.82	0.09	0.07	0.79	0.09	0.04	14.58	58.29	3.64
TOTALS	28.37	24.20	68.55	313.90	134.38	23.03	36.39	21.10	3.55	41.08	8.22	1.58	9.64	31.19	49.69	9.64	3.86	46.88	258.22	16.13

TABLE 2-12 (Continued)
MAJOR INDUSTRY GROUPS OF HAZARDOUS WASTE
GENERATED WTHIN EL DORADO COUNTY IN 1986
INCLUDING SMALL QUANTITY GENERATIONS (Tons/yr)
(DHS TABLE J)

	SIC 44	SIC 48	SIC 51	SIC 52	SIC 53	SIC 54	SIC 55	SIC 72	SIC 73	SIC 75	SIC 76	SIC 79	SIC 80	SIC 82	SIC 83	SIC 84	SIC 91	SIC 92	SIC 96	TOTAL INDUSTRY
Waste Oil	5.90	60.78	29.50	5.90	0.00	0.00	679.35	0.00	0.00	507.40	59.00	0.00	0.00	100.30	0.00	0.00	0.00	118.00	17.70	2178.43
Halogenated Solvents	0.12	2.54	0.98	1.58	0.54	0.00	13.97	2.56	3.68	10.45	5.68	0.00	5.67	1.66	0.17	0.07	0.00	2.52	1.31	125.44
Nonhalogenated Solvents	0.12	2.54	0.98	1.58	0.54	0.00	13.97	2.56	3.68	10.45	5.68	0.00	5.67	1.66	0.17	0.07	0.00	2.52	1.31	125.10
Organic Liquids	0.00	0.41	0.00	0.00	0.00	1.25	0.00	2.56	16.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.87
Pesticides	0.00	0.00	0.25	0.98	0.36	0.00	0.00	0.00	15.38	0.00	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.03
PCB's & Dioxins	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.08	0.00	0.00	10.52
Oily Sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halogenated Organic Sludges/Solids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.52
Nonhalogenated Organic Sludges/Solids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.71	0.00	0.00	2.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.23
Dye & Paint Sludges & Resins	0.02	0.06	0.56	1.81	0.66	0.00	2.41	0.26	0.65	1.80	8.74	0.00	0.36	0.99	0.10	0.04	0.00	0.47	0.08	101.48
Metal-Containing Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.27	0.00	0.00	0.00	0.16	0.02	0.00	1.01	0.00	0.00	0.04	23.20
Cyanide & Metal Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31
Nonmetallic Inorganic Liquids	0.06	0.66	0.71	1.60	0.57	0.00	7.22	0.29	2.44	5.40	0.75	0.63	4.10	2.12	0.22	0.04	0.00	1.36	0.95	48.78
Metal-Containing Sludges	0.02	0.10	0.02	0.00	0.00	0.00	2.41	0.00	13.13	1.80	0.21	0.00	0.00	0.00	0.00	1.01	0.00	0.42	0.00	23.72
Nonmetallic Inorganic Sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.34	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72
Contaminated Soil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous Waste	1.82	0.93	12.66	15.57	5.09	0.00	209.49	0.67	36.68	156.66	26.91	1.40	0.16	0.26	0.03	2.09	0.00	36.52	0.04	759.18
TOTALS	8.06	68.46	45.66	29.02	7.76	1.25	928.82	36.67	105.92	694.28	111.55	6.01	16.12	107.01	0.69	4.33	10.08	161.81	21.43	3494.53

reactivity, or toxicity. Table 2-13 shows common household hazardous wastes. Containers retaining a residue of these hazardous materials may also be considered hazardous waste.

The purpose of this section is to attempt to estimate the amount of hazardous wastes generated by the 40,810 households in El Dorado County. This information was not collected for El Dorado County, as no County-specific data was available. The resulting estimate is approximate, but sufficient for planning purposes.

Few householders undertake the effort and expense of delivering hazardous waste to adequate treatment and disposal facilities. Improper disposal methods used by El Dorado County residents could include disposing of hazardous materials in the trash, pouring them into sinks, toilets, or storm sewer, and dumping them on the ground. Many households store hazardous materials for months or years, but unless they use them up or recycle these materials, households must eventually discard these wastes. Pesticides and other chemicals over thirty years old have been encountered in refuse during waste characterization studies. Storage cannot be considered a disposal option because any waste stores, unless it is completely used, eventually enters the wastestream.

The general public is uninformed about the degree of hazard presented by different materials. A survey conducted in Albuquerque, New Mexico indicates that, whereas seven percent of those surveyed believed that pesticides are not hazardous or only slightly hazardous, five percent indicated that sawdust is very or extremely hazardous.(1) Survey data collected by the association of Bay Area Governments (ABAG) indicate that many households dispose of hazardous materials in the trash (see Table 2-14). Certain hazardous materials are also discarded into the sewer, or dumped on the ground. Except for motor oil and occasional cleaning products, no household surveyed recycles these materials. A survey conducted at a 1985 household hazardous waste collection day indicated that most of the participating households had stored materials such as those brought to the collection.(2) Collection project figures differ substantially from ABAG results, possibly because people participating in the collection program were unusually aware of the hazards their wastes would pose if tossed into the trash, and therefore chose to store them. In addition, the collection project survey answers apparently refer only to the wastes such as those brought to the collection day, rather than the broader range of potentially harmful materials used and discarded by households every day.

Estimated quantities for typical household hazardous wastes generated in El Dorado County for 1986 appear in Table 2-15. As noted above, these figures are based on research performed outside of El Dorado County and represent an approximation. The methodology used to develop this estimate is presented in Appendix C. A conservative estimate of 287 tons is divided among

(1)U. S. Environmental Protection Agency, A Survey of Household Hazardous Wastes and Related Collection Programs, 1986.
(2)Lorene Jackson Russell, Emy Chan Meiorin, The Disposal of Hazardous largest Waste by Small Quantity Generators: Magnitude of the Problem.

Table 2-13

COMMON HOUSEHOLD HAZARDOUS WASTES

Pesticides	Household Cleaners
Garden	Floor
Indoor insects (e.g. flea spray)	Furniture
Outdoor insects	General purpose
Fertilizer/pesticide mixtures	Rug
Herbicides	Upholstery
Fungicides (e.g. wood preservative)	Window
	Laundry (e.g. bleach, spot remover)
	Drain cleaner
Polish	**Automotive Products**
Automobile	Motor oil
Furniture	Transmission fluid
Floor	Hydraulic fluid
Shoe	Carburetor cleaner
Leather	Radiator cleaner
Metal	Antifreeze
	Engine cleaner
Adhesives and Sealants	Lubricant
Caulk	Used oil filters
Solvent-based adhesives	Waste oil in containers
Batteries	**Paint and Coatings**
Household (alkaline)	Solvent and thinner
Rechargeable	Oil based paint
Automotive	Water-based paint
Other	Varnish and stain
	Spray paint
	Auto Paint

Source: SRI International, Waste Characterization Study: Assessment of Recyclable and Hazardous Components, Second Semiannual Progress Report, August 1987.

Table 2-14

DISPOSAL METHODS USED FOR HOUSEHOLD HAZARDOUS WASTES

Substance	Disposal Method (Percent of Households Using Method)					
	Sewer	Trash	Ground or Street	Recycle	Storage	Other
ABAG Study						
Chemical drain opener	1	94	0	0	5	0[a]
Paints/thinners	6	75	5	0	5	9
Motor oil	1	31	19	36	6	7
Wood preservatives	2	97	0	0	0	1
Pesticides	1	80	0	0	3	17
Herbicides	0	100	0	0	0	0
Gasoline/engine cleaner	5	95	0	0	0	0
Household cleaners	10	84	0	6	0	0
Auto/furniture polish	1	88	15	0	0	11
Antifreeze	3	82	0	0	0	0
Radiator flush	6	11	83	0	0	0
Other chemicals	6	94	0	0	0	0
San Francisco						
All substances	13	21[b]	5	5	67	NS

(a) Totals in rows may not equal 100, due to rounding errors in the ABAG study and multiple disposal methods used by single households in the Sanitary Fill survey.
(b) Includes 20% who put material in the trash, and 1% who took it to the dump.
NS: Not surveyed.

Figures adapted from Lorene Jackson Russel, Emy Chan Meiorin, The Disposal of Hazardous Waste by Small Quantity Generators: Magnitude of the Problem, Association of Bay Area Governments, 1985, and data provided by Sanitary Fill Company.

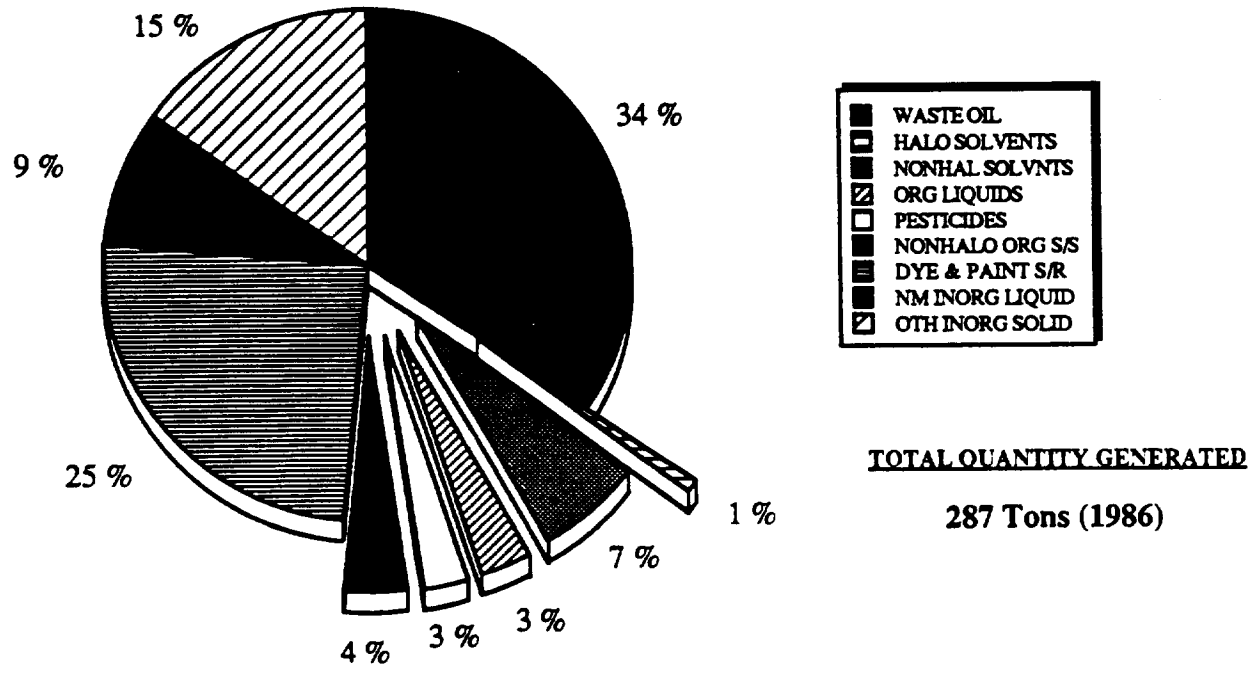
Table 2-15
ESTIMATED HOUSEHOLD HAZARDOUS WASTE GENERATION WITHIN EL DORADO COUNTY FOR 1986

Waste Group	Quantity Generated (Tons)	(Percentage)*
Waste Oil	99	34
Nonhalogenated Solvents	19	7
Halogenated Solvents	2	1
Organic Liquids	9	3
Pesticides	8	3
Nonhalogenated Organic Sludges/ Solids	11	4
Dye and Paint Sludges/Resins	71	25
Nonmetallic Inorganic Liquids	25	9
Other Inorganic Solid Wastes	43	15
TOTAL	**287**	

*Percentages do not add up to 100% due to rounding.

Figure 2-2

HOUSEHOLD HAZARDOUS WASTE GENERATION IN EL DORADO COUNTY FOR 1986



nine DHS waste groups. The group of Waste Oil qualifies as the largest quantity with 99 tons (34%). Figure 2-2 graphically represents the breakdown of household wastes.

2.8 WASTES DISPOSED ON-SITE

An alternative to transporting hazardous waste for treatment is for the generating industry to treat and dispose hazardous wastes on-site. This may include installing a permanent treatment system near the site of generation or utilizing mobile units on a periodic basis. Techniques are similar to actual TSDs, but on a smaller scale.

The majority of on-site activity requires permitting from DHS. The exception is on-site recycling and pretreatment before discharge, yet these practices are often regulated under local programs. Annual reports on on-site treatment are submitted to DHS. Additionally, should an industry elect to dispose of residuals on-site, monthly reports are also submitted to DHS.

There exist several economic and legal incentives for a generator to choose on-site treatment for handling hazardous wastes. The liability with regard to the transportation to and use of existing TSD facilities is becoming an increasing burden for generators to bear. Also, the rising cost for transportation and off-site treatment may favor on-site treatment. An industry may currently be managing its hazardous wastes through on-site storage (e.g., lagoons, containers, impoundments). Future regulations eliminating these practices may soon be enacted and create a long-term need for business to handle these wastes.

The impact of on-site activity becomes of concern should an on-site generator lose its permit or close. In the event of this happening, the existing CHWMP must be adjusted to include this previously managed need. Similarly, as industry shifts toward on-site treatment, the current county's needs assessment must include this trend.

DHS has notified El Dorado County that no annual reports on on-site disposal have been submitted by facilities within the County. As a result, a table summarizing on-site capacity is not applicable to El Dorado County, but is provided in the form of Table 2-16 (DHS Table H) as required by DHS.

Table 2-16
ON-SITE TREATMENT/DISPOSAL OF HAZARDOUS WASTE IN EL DORADO COUNTY (1986)
(DHS TABLE H)

Generalized Treatment Method	Quantity Treated/Disposed On-Site	Capacity of Treatment Method	% of Capacity Used
Aqueous Treatment - Organic	0	0	0
Aqueous Treatment - Metals/Neutralization	0	0	0
Incineration	0	0	0
Solvent Recovery	0	0	0
Oil Recovery	0	0	0
Other Recycling	0	0	0
Stabilization	0	0	0
Residuals Disposal	0	0	0
TOTAL	**0**	**0**	**0**

2.9 CONTAMINATED SITES

Hazardous wastes, or materials which ultimately became a hazardous waste (e.g. soil contaminated by leaking underground fuel storage tanks), have been potentially identified at 55 different sites with El Dorado County. Table 2-17 summarizes the listing agencies, list or program and number of sites on each list. Note that a number of sites are repeated on another agency's list. MAP 1 on page 2-55 identifies the general location of the sites. Identification of known contaminated sites vs. potential contaminated is dependent on what agency is listing the individual site. For further information on any specific site, readers should contact the listing agency and the El Dorado County Division of Environmental Health.

Table 2-17
SUMMARY OF POTENTIAL CONTAMINATED SITES IN EL DORADO COUNTY

Responsible Agency	Table	List or Program	Number of Listed Sites
EPA	--	National Priorities List (CERCLA)	0
	2-18	CERCLIS (CERCLA)	8
DHS	--	Bond Expenditure Plan (California Health & Safety Code)	0
	2-19	Abandoned Site Program Information System (California Health & Safety Code)	25
OPR	2-20	Hazardous Waste & Substance Site List (California Government Code)	22
SWRCB	2-21	Solid Waste Disposal Site List (California Water Code)	14
DEH	2-22	Active Leaking Underground Tank Sites (California H&S Code & Administrative Code)	15
TOTAL NUMBER OF LISTED SITES:			**84**
TOTAL NUMBER OF DIFFERENT SITES:			**55**

2.9.1 Identification and Listing of Contaminated Sites in El Dorado County by the U. S. Environmental Protection Agency (EPA)

Federal "Superfund" legislation created national policy and procedures to identify cleanup sites contaminated by releases of hazardous substances and to finance these remedial activities. The basic Superfund law is the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), which was amended and strengthened by the Superfund Amendments and Reauthorization Act of 1986 ("SARA").

The first step in the Superfund process involves identification of sites that may be contaminated with hazardous substances, by one of three general mechanisms. First, all past/present owners and operators of hazardous substance treatment, storage, or disposal facilities were required to report the existence of these facilities to EPA by June 11, 1981. Second, Superfund requires owners and operators of facilities that release hazardous substances to report any releases larger than specific "reportable quantities" ("RQ"), established by EPA, to the National Response Center. This center then notifies other appropriate agencies and begins any necessary response or cleanup actions.

The second step in Superfund is to set priorities for cleanup. This priority-setting process involves the "National Oil and Hazardous Substances Pollution Contingency Plan" ("NCP"). This plan was originally authorized by the Clean Water Act for oil spills, but its functions were greatly expanded by CERCLA. EPA rates NCP sites according to a quantitative Hazard Ranking System. Those sites deemed most hazardous are placed on the National Priority List (NPL), and given priority for cleanup under Superfund. El Dorado County does not contain any NPL sites. How- ever, the EPA Superfund database "CERCLIS" does contain eight sites in El Dorado County that are identified as potentially containing uncontrolled hazardous waste (Table 2-18).

The third step in Superfund is cleanup. EPA and state agencies seek to identify Potentially Responsible Parties ("PRP") and ultimately Responsible Parties ("RP"), who can be required to finance cleanup activities, either directly or through reimbursement of federal Superfund expenditures. To facilitate private funding of cleanups, Superfund provides for strict, joint, and several liability among RPs. This means that the original hazardous waste generator, the site or facility operator and the land owner all remain potentially liable for the ultimate cleanup costs, <u>even</u> if all procedures were followed at the time of their disposal. Each RP which contributed any portion of site contamination is potentially liable for the entire cost of cleanup.

TABLE 2-18
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)
CERCLIS LISTING OF ACTIVE EL DORADO COUNTY
POTENTIAL CONTAMINATED SITES

Map ID#	Site Location	EPA Status	Potential Contaminant
E-1	Chili Bar Power House off Hiway 49 Placerville, CA	Active	PCB's and Others
E-2	El Dorado Disposal 3940 Hiway 49 Diamond Springs, Ca	Active	Waste/mixed oil, solvent mix waste, organic liq. w/metals
E-3	El Dorado Nat'l Forest R-14-T14N,R10E-T13N, R19E-T9N El Dorado, CA	Active	Unknown
E-4	Old Caldor Lumber Co. Missouri Flat Road Diamond Springs, CA	Referred to State/Local government for action	Waste potentially containing dioxin, contaminated
E-5	Oxygen Service & Supply 13 China Garden Road Diamond Springs, CA	Active	Unspecified acid solution
E-6	SMUDEA Campground Ice House Road @ Union Valley Lake Fresh Pond, CA	Active	Unspecified oil waste, PCB's
E-7	SMUD: El Dorado Co. Valve House Rd/others White Rock Power HSD Placerville, CA	Referred to State/Local government for action	Unspecified oil waste, PCBs
E-8	Tahoe Basin Nat'l Forest (Meyers Landfill) 870 Emerald Bay Road South Lake Tahoe, CA	Active	Unknown

2.9.2 Identification and Listing of Contaminated Sites by the California Department of Health Services (DHS)

DHS identifies potentially contaminated sites by one of three mechanisms. One mechanism is via the Department's Rural County Survey Program. In this program, DHS staff identify sites within 28 rural counties that have the potential for hazardous materials contamination. Identification of sites is accomplished through research of past and present industry in the area; county and state agency record searches; and interviews with local officials, employees, and residents. Secondly, potential sites have been identified by past survey programs in the remaining industrial and agriculture counties. These sites are referred to as "backlog" sites and are contained, along with information generated from the Rural County Survey, in a database known as "ASPIS" (Abandoned Site Program Information System). Thirdly, sites are identified through "walk-in business", which primarily consists of referrals from citizens, other agencies, and responsible parties seeking oversight for cleanup activities.

Once a potential site has been identified by any of the three mechanisms, it enters a series of assessment phases. The first step in this process is a site screening in which the current status of the site is determined primarily by checking DHS files. Sites that have been mitigated to the satisfaction of DHS and sites that are determined not to present a threat to public health or the environment, are given a "no further action" recommendation. Sites may also be referred to a more appropriate state or local agency, or referred to the Surveillance and Enforcement Unit of DHS for further action. All recommendations for further assessment are prioritized using the DHS Toxic Triage Priority Setting Document and the Site Mitigation Priority Setting Process. These documents are used to provide consistent criteria for prioritizing future work into low, medium and high priority categories.

If a site is recommended for further assessment, it enters the Preliminary Assessment ("PA") phase, which consists of historical research of site activities, including types and quantities of wastes produced, disposal and storage methods, legal history (permits, violations, etc.), and research of geological, hydrological, climatic, and other on-site environmental conditions. The PA is an assessment of the site to determine if a threat to public health or the environment exists.

The result of the PA may be a recommendation for further assessment in the form of a site inspection ("SI"). The goal of the SI is to verify through the collection and analysis of samples that the site is contaminated. If no contamination is found, and there are no other data indicating the need for a more intensive SI, the site is assigned a "no further action" recommendation. If contamination is found, the site is ranked using EPA's Hazard Ranking System which is a scoring process intended to assess the relative public health and environmental threat presented by all sites. This assessment is done as soon as sufficient environmental and analytical data has been collected. All scoring sites are then placed on the California State Hazardous Substances Cleanup bond Act Expenditure Plan (State "Superfund") for future mitigation activities. Remedial Action Plans ("RAPs") are prepared for each site by DHS, the

local regional water quality control board and/or that the potentially responsible parties associated with the site. These are to analyze site characteristics and contamination, the environment, and the cost effectiveness of alternative remedial measures. (El Dorado County does not contain any sites on the State Superfund List - 3/88). Any State Superfund site scoring above EPA's cutoff of 28.5 via the Hazard Ranking System are also listed on the EPA National Priority List (NPL), more commonly known as the Federal Superfund. This is because these sites will qualify the federal funding of cleanup.

TABLE 2-19
CALIFORNIA DEPARTMENT OF HEALTH SERVICES (DHS)
ABANDONED SITE PROGRAM INFORMATION SYSTEM
LIST OF EL DORADO COUNTY CONTAMINATED SITES

Map ID#	Site Location	DHS Status	Potential Contaminant
D-1	A & A Truck Repair Main & Oriental El Dorado, CA	Preliminary Assessment Required - low priority	Waste/mixed oil with lead, contaminated soil
D-2	Adams Auto Center 2080 Jewell Road South Lake Tahoe, CA	Pending action	Waste/mixed oil, PCB's, lead, contaminated soil
D-3	Bonanza Auto Dismantlers 5700 Bonanza Auto Rd. Placerville, CA	Preliminary Assessment Required - low priority	Waste/mixed oil, PCB's, lead, contaminated soil
D-4	Cornett Lumber Co. 2821 Jacquier Road Placerville, CA	Preliminary Assessment Required - medium priority	Waste potentially containing dioxin
D-5	El Dorado Disposal Service, Inc. 3940 Hiway 49, Diamond Springs, CA	Inspection Required - medium priority	Waste/mixed oil, solvent mix waste, org.liq.with metals
D-6	El Dorado Limestone Limestone Road Shingle Springs, CA	Unresolved Sites	Unknown
D-7	Hazel Creek Mine Hazel Creek Road Pollock Pines, CA	Inspection Required - medium priority	waste/mixed oil, acid solution w/metals, liquid w/ lead & nickel, inorganic solid waste, contam. soil
D-8	L & P Truck Dismantlers 7468 Forni Road El Dorado, CA	Preliminary Assessment required - low priority	waste/mixed oil, liquid w/lead & PCB's, unspecified oil waste

TABLE 2-19 (continued)
CALIFORNIA DEPARTMENT OF HEALTH SERVICES (DHS)
ABANDONED SITE PROGRAM INFORMATION SYSTEM
LIST OF EL DORADO COUNTY CONTAMINATED SITES

Map ID#	Site Location	DHS Status	Potential Contaminant
D-9	Michigan-Cal Lumber 3950 Carson Road Camino, CA	Inspection Required - medium priority	waste/mixed oil, waste potentially containing dioxin, unspecified sludge waste
D-10	Mother Lode Salvage & Antiques 2080 Smith Flat Road Smith Flat, CA	Inspection Required - low priority	Unknown
D-11	Old Caldor Lumber Co. Yard Hwy 49 & Mo. Flat Diamond Springs, CA	Inspection Required - medium priority	Transformer oil, PCB's
D-12	Old Diamond Springs Lime Co. Lime Plant Rd & Dimetrics Diamond Springs, CA	Unresolved sites	Unknown
D-13	Oxygen Serv.& Sply 13 China Garden Rd Diamond Springs, CA	Preliminary Assessment Required - low priority	Unspecified acid solution
D-14	Oxygen Service & Supply (closed) (now an appliance store) 2900 Cold Springs Road Placerville, CA	Unresolved Sites	Unknown
D-15	PVC Fire 3430 North Canyon Rd. Placerville, CA	Preliminary Assessment required - low priority	waste potentially containing dioxin contaminated soil
D-16	Phillips Oil Bulk Plant (now an auto body shop) 701 Forni Road Placerville, CA	Preliminary Required - low priority	waste/mixed oil, contaminated soil
D-17	Shell Oil Bulk Plant (now dental offices) 699 Main Street Placerville, CA	Preliminary Assessment required - low priority	waste/mixed oil, contaminated soil
D-18	SMUD - El Dorado County Roads Valve House Road/Others White Rock Power HSD, CA	Unresolved Sites	Unknown

TABLE 2-19 (continued)
CALIFORNIA DEPARTMENT OF HEALTH SERVICES (DHS)
ABANDONED SITE PROGRAM INFORMATION SYSTEM
LIST OF EL DORADO COUNTY CONTAMINATED SITES

Map ID#	Site Location	DHS Status	Potential Contaminant
D-19	SMUDEA Campground Ice House Road @ Union Valley Lake Fresh Pond, CA	Inspection Required - medium priority	Unspecified oil waste, PCB's
D-20	Socony/Mobil/Exxon Bulk Plants (closed) (now Lutz Lincoln-Mercury) 715 Main Street Placerville, CA 95667	Preliminary Assessment Required - low priority	waste/mixed oil, contaminated soil
D-21	Standard/Chevron Bulk Plants (closed (now Lutz Body Shop) 1125 Broadway Court Placerville, CA	Preliminary Assessment Required - low priority	waste/mixed oil, contaminated soil
D-22	Tahoe Auto Recyclers 2709 Lake Tahoe Blvd. South Lake Tahoe, CA	Pending status	unspecified oil waste, liquid w/lead & PCB's, & PCB's, contaminated soil
D-23	Teters Auto Wreckers 4487 Missouri Flat Rd Placerville, CA 95667	Preliminary Required - low priority	unspecified oil waste, liquid w/lead & PCB's, contaminated soil
D-24	Union Mine Landfill Union Mine Road off Highway 49 El Dorado, CA	Pending status	Household & industrial waste, contaminated soil
D-25	Wetsel-Oviatt Lumber Latrobe Road, 2 miles So./El Dorado Hills El Dorado Hills, CA	Preliminary Assessment Required - medium priority	waste potentially containing dioxins

NOTE: According to DHS, potential contaminants are suspect and have not necessarily been confirmed at all sites.

2.9.3 Listing of Contaminated Sites in El Dorado County by the California Office of Planning & Research (OPR)

California Government Code, Section 65962.5 (AB 3750, 1986) requires OPR to compile at least annually information of hazardous waste and substance sites, and forward to each city and county in which sites on the lists are located. The data for the list is obtained from the State Water Resources Control Board, California Department of Health Services, and the California Waste Management Board. The primary purpose of the list is to provide the applicant of a development project within a local jurisdiction, the knowledge of these sites. In turn, this applicant is required to submit a signed statement to the local jurisdiction indicating whether the project is located on any of the listed sites. Table 2-20 reflects the March, 1988 list of OPR hazardous waste and substance sites in El Dorado County.

TABLE 2-20
CALIFORNIA OFFICE OF PLANNING AND RESEARCH(OPR)
LIST OF IDENTIFIED HAZARDOUS WASTE SITES
WITHIN EL DORADO COUNTY

Map ID#	Site/Location	OPR Source of Listing
OPR 1	Cal-Trans Echo Summit Highway 50, Echo Summit	SWRCB
OPR 2	Cal-Trans May Station Highway 50, So. Lake Tahoe	SWRCB
OPR 3	Chevron Service Station Ski Run Blvd., So. Lake Tahoe	SWRCB
OPR 4	El Dorado Disposal Service, Inc. 3940 Hiway 49, Diamond Springs	DHS
OPR 5	El Dorado Limestone Limestone Road, Shingle Springs	DHS
OPR 6	Fresh Pond Pollock Pines	SWRCB
OPR 7	Gold Oak School 3171 Pleasant Valley Road, Placerville	SWRCB
OPR 8	Lake Tahoe Yellow Cab Inc. 948 Link Road, So. Lake Tahoe	SWRCB
OPR 9	Mobil Service Station 3433 Lake Tahoe Blvd., So. Lake Tahoe	SWRCB
OPR 10	Oasis Petroleum Corp. Fuel Farm Highway 89, So. Lake Tahoe	SWRCB
OPR 11	Oasis Service Station 1040 Highway 50, So. Lake Tahoe	SWRCB
OPR 12	Pacific Bell 281 Industrial Drive, Placerville	SWRCB
OPR 13	7-Eleven Store 2203-15047 2620 Lake Tahoe Blvd., So. Lake Tahoe	SWRCB
OPR 14	Shell Service Station 3960 Lake Tahoe Blvd., So. Lake Tahoe	SWRCB
OPR 15	Sierra Pacific Power Co. 2129 Dunlap St., So. Lake Tahoe	SWRCB
OPR 16	Sierra Petroleum Inc. 2885 Mosquito Road, Placerville	SWRCB
OPR 17	SMUDEA Campground Icehouse Road, Union Valley Lake	DHS

TABLE 2-20 (continued)
CALIFORNIA OFFICE OF PLANNING AND RESEARCH (OPR)
LIST OF IDENTIFIED HAZARDOUS WASTE SITES
WITHIN EL DORADO COUNTY

Map ID#	Site/Location	OPR Source of Listing
OPR 18	Terrible Herbst Gas Station 2762 Lake Tahoe Blvd., So. Lake Tahoe	SWRCB
OPR 19	Texaco 3698 Lake Tahoe Blvd., So. Lake Tahoe	SWRCB
OPR 20	Unocal Service Station 3708 Lake Tahoe Blvd., So. Lake Tahoe	SWRCB
OPR 21	Unocal Bulk Plant 1145 Broadway Court, Placerville	SWRCB
OPR 22	Unknown Icehouse Road @ Hiway 50, Riverton	SWRCB

NOTE: This list was compiled by the California Office of Planning & Research and did not contain information of potential contaminants or current status.

2.9.4 Listing of Ranked Solid Waste Disposal Sites In El Dorado County by the State Water Resources Control Board (SWRCB)

California Water Code, Section 13273 (AB 3525/3374, 1984) requires the SWRCB to rank all solid waste disposal sites based upon the threat which they pose to water quality. On or before July 11, 1987, the operators of the first priority ranking (150 sites statewide) shall submit a Solid Waste Assessment Test (SWAT) to the appropriate regional water quality control board for review. On or before July 1 of each succeeding year, the operators of the next 150 sites ranked on the list shall submit a SWAT report to the appropriate regional board. The reports are to generally contain:

- An analysis of the surface and groundwater on, under, and within one mile of the site to provide a reliable indication of whether there is any leakage of hazardous waste, and
- A chemical characterization of the soil-pore liquid in areas likely to be affected if there is leakage from the site, as compared to geologically similar areas near the site which have not been affected by leakage or waste discharge.
- A description of the wastes accepted and disposed of at the site, particularly those that are potentially hazardous, and
- Siting, construction and monitoring characteristics of the site in accordance with the State Board's regulations governing the discharges of waste to land (23 CAC, Section 2500-2601).

El Dorado County has a total of 14 sites on the state list. Table 2-21 contains a listing of these sites along with their respective ranking and SWAT report due date.

Table 2-21

**CALIFORNIA WATER RESOURCES CONTROL BOARD
LIST OF RANKED SOLID WASTE DISPOSAL
SITES WITHIN EL DORADO COUNTY**

MAP ID#	SITE	RANK	REPORT DEADLINE
L1	Union Mine Landfill	1	July 1, 1987
L2	Closed Coloma-Lotus Landfill	4	July 1, 1990
L3	Closed El Dorado Hills Landfill	5	July 1, 1991
L4	Closed Georgetown Landfill	5	July 1, 1991
L5	Closed Meeks Bay Landfill	11	July 1, 1997
L6	Closed Meyers Landfill	11	July 1, 1997
L7	Closed Omo Ranch Landfill	13	July 1, 1999
L8	Closed Outingdale Landfill	13	July 1, 1999
L9	Closed Park Creek Landfill	13	July 1, 1999
L10	Closed Pilot Hill Landfill	13	July 1, 1999
L11	Closed Silver Lake Landfill	13	July 1, 1999
L12	Closed Willow Landfill	13	July 1, 1999
L13	Closed Kyburz Landfill	14	July 1, 2000
L14	Closed Wright's Lake Landfill	14	July 1, 2000

2.9.5 Listing of Active Leaking Underground Tank Sites by the El Dorado County Division of Environmental Health (DEH)

California Health & Safety Code, Section 25283, requires by January 1, 1986, every county implement the "California Underground Storage Tank Regulations and Related Health & Safety Code Sections." The DEH is the delegated agency in El Dorado County. At the start up of the tank program, there were approximately 900 underground storage tanks reg- tered with DEH, but with many tanks since taken out of service only approximately 650 inventoried tanks remain in operation. This total does not include tanks which are exempt from regulation including certain tanks storing pesticides, home heating fuel and motor vehicle fuel for farm equipment. To date (9/88) there have been 28 leaking tank sites identified within El Dorado County. Of these, 15 sites have not been remediated, i.e., cleaned up -- Table 2-22 reflects the identify and status of these active sites.

Underground storage tanks are identified as leaking by either a visual inspection of an excavated tank and pit; tank integrity test; surfacing of the leaking substance; analysis of groundwater/soil samples collected beneath the surface; or by soil vapor studies. Upon confirmation of a tank leak, the owner/operator of the leaking tank is directed by DEH to initiate an investigation to determine the concen- ations, and vertical and area extent of petroleum products and/or related constituents in the soil and groundwater beneath and in the vicinity of the site. On a case-by-case evaluation made by DEH, this investigation can range from a "scoop and run" removal of minor contamination to a thorough on- and off-site evaluation and clean-up of a contaminated site. Cases of confirmed contamination of ground- water by either visual inspection or analysis are referred to the appropriate regional water quality control board for additional action. All interpretation of laboratory results and protocal for soil/groundwater investigation and cleanup are conducted utilizing guidance documents issued by the State Water Resources Control Board, regional water quality control boards, and the California Department of Health Services. This includes the latest edition of the Leaking Underground Fuel Tank (LUFT) Field Manual.

Table 2-22

EL DORADO COUNTY ACTIVE LEAKING TANK SITES

MAP ID#	SITE LOCATION	DATE REPORTED	CONTAM-INANT	REMOVAL	TREATED ON-SITE	STATUS	LIKELY REMEDIAL ACTION
T-1	Caltrans Echo Summit	8/87	WO	TBD	TBD	I	ED, ET
T-2	Caltrans 3065 Blair Lane Placerville	8/87	D/WO	TBD	TBD	I	ED, ET
T-3	Calif. State Parks Sugar Pine Point State Park, Tahoma	6/88	WO	TBD	TBD	I	U

Table 2-22 (continued)

EL DORADO COUNTY ACTIVE LEAKING TANK SITES

MAP ID#	SITE LOCATION	DATE REPORTED	CONTAM-INANT	REMOVAL	TREATED ON-SITE	STATUS	LIKELY REMEDIAL ACTION
T-4	Lake Tahoe Yellow Cab 948 Link Road So. Lake Tahoe	8/8	G	--	200TSO	A	ET
T-5	Mobil Oil Co . 3433 Lake Tahoe So. Lake Tahoe	4/87	G	405TSO 83.3TGW	270TSO	P	ED, ET
T-6	Nat'l Car Rental 1101 Emerald Bay So. Lake Tahoe	9/88	G	--	40TSO	I	ET
T-7	Sierra Petroleum 2885 Mosquito Rd Placerville	1/87	MVF	1846TSO	TBD	P	ED,ET,FP
T-8	Silver Fork Schl 130102 Sugar Loaf Ave. Kyburz	8/88	G	U	U	I	ET
T-9	Terrible Herbst 2762 Blue Lake Ave. So. Lake Tahoe	unknown	MVF	TBD	TBD	I	U
T-10	Texaco 3698 Lake Tahoe So. Lake Tahoe	6/87	G	TBD	TBD	I	ED, ET
T-11	Texaco 1390 Broadway Placerville	12/87	G	TBD	TBD	I	ET
T-12	UNOCAL 1145 Broadway Court Placerville	3/87	MVF	TBD	TBD	I	ET. EC
T-13	UNOCAL 3708 Lake Tahoe So. Lake Tahoe	9/87	G	20.8TGW	175TSO	P	ED, ET
T-14	UNOCAL 4115 Lake Tahoe	8/88	G	TBD	TBD	I	ET
T-15	U. S. Post Ofc 3045 Sacramento St. Placerville	7/88	D	TBD	TBD	I	U

STATUS	REMEDIAL ACTION	MISCELLANEOUS
A = Active	ED = Excavate & Dispose	MUF = Miscellaneous Motor Vehicle Fuels
I = Investigating	ET = Excavate & Treat	
P = Post Remedial Monitoring	FP = Remove Free Product	G = Gasoline
	U = Unknown	D = Diesel
	TBD = To be determined	WO = Waste Oil
	EC = Encapsulation	GW = Groundwater
		SO = Soil
		T = Tons

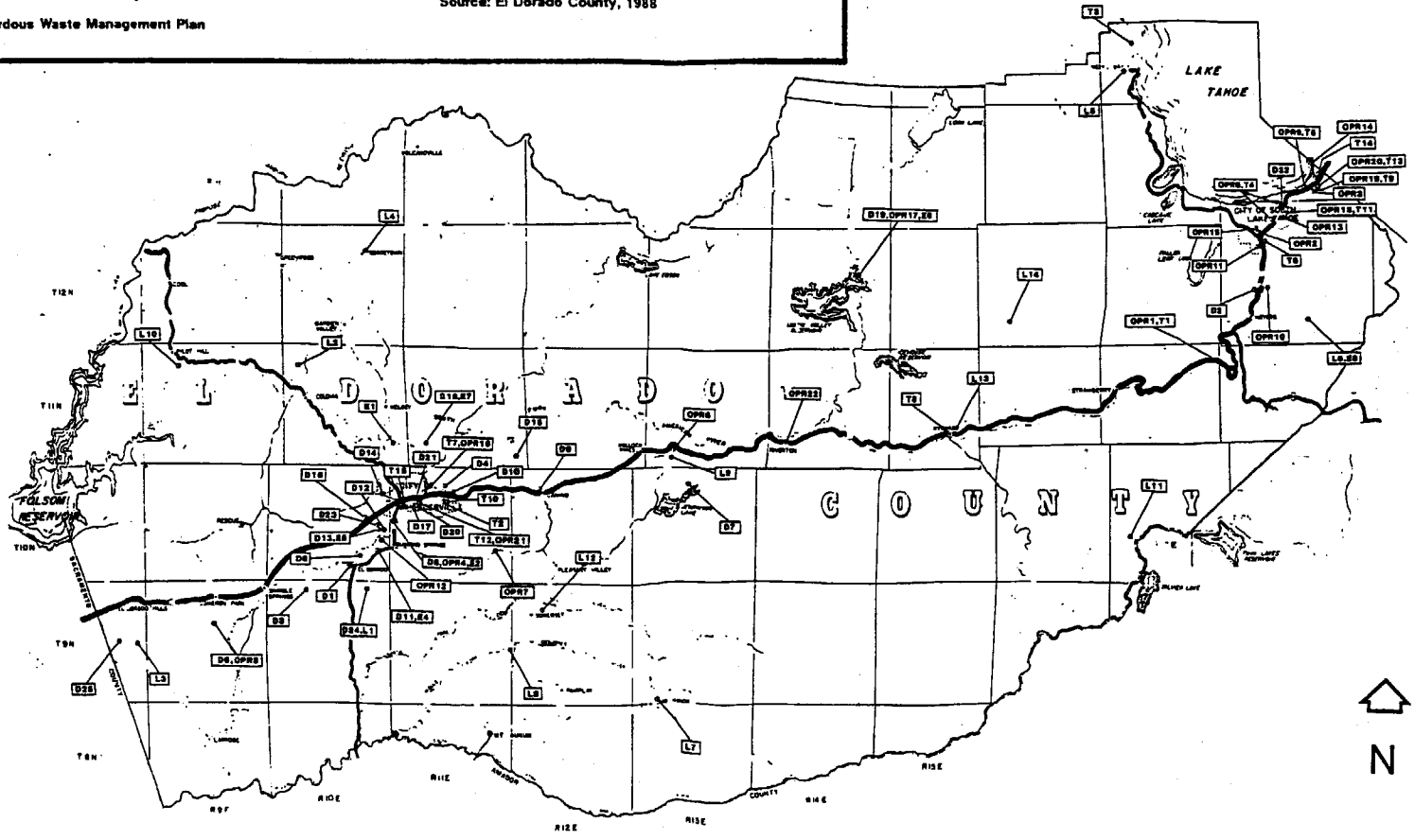
Map 1: Contaminated Sites

E1-E8	EPA (CERCLIS) Contaminated Sites (Table 2-18)
D1-D25	DHS (ASPIS) Contaminated Sites (Table 2-19)
OPR1-OPR22	OPR Contaminated Sites (Table 2-20)
L1-L14	SWRCB Contaminated Sites (Table 2-21)
T1-T15	DEH Contaminated Sites (Table 2-22)

El Dorado County

Hazardous Waste Management Plan

Source: El Dorado County, 1988



2.9.6 Asbestos-Containing Waste in Buildings

Asbestos-containing waste (ACW) in buildings may pose a significant public health and environmental problem when disturbed or removed during such operations as building maintenance, repair, or renovation. ACW typically is found in sprayed or troweled-on surfacing materials, insulation on pipes, boilers, and ducts, wallboard, ceiling tile, and floor tiles. Buildings constructed during and after World War II prior to 1984 may have significant quantities of ACW. ACW poses a potential public health hazard only if present in friable form, that is, a dry powder or a dust.

EPA and the Department of Labor, Occupational Safety and Health Administration have published regulations to monitor asbestos exposure in new and remodeled buildings[a] and in schools. The Federal regulations require that prior to major asbestos abatement activities, advance notice be filed with the regional EPA office and the local air district that approved removal/abatement methods be used; that personnel conducting removal and abatement be properly trained and certified; and that no visible emissions of dust be allowed during removal/abatement work. In California, a special asbestos removal contractor's license is also required. A final rule for asbestos containing materials in schools became effective on November 30, 1987. This regulation requires all school buildings to complete an air sampling accreditation inspection by October 12, 1988.[b]

DHS has classified friable ACW with more than one percent asbestos by weight as being hazardous. Asbestos wastes which are transported to a disposal site must be accompanied by Uniform Hazardous Waste Manifest. ACW, however, may be disposed of at a nonhazardous disposal site, provided the site has a permit or variance to accept such waste and provided the wastes are suitably stabilized or packaged. Typically, wetted ACW is double wrapped in 6 mil minimum poly bags and placed in sealed bins.

Currently, there is inadequate landfill (nonhazardous) space Statewide to receive asbestos waste. Some landfill operators are reluctant to accept the wastes because they are high bulk and low revenue waste, and because facilities may not be equipped to handle asbestos containers. As a result, some ACW may be disposed of at hazardous waste sites. The state currently is reviewing alternative disposal technologies (other than landfilling), although none have been commercially proven (Butler, 1987).

The County Division of Environmental Health has no figures on quantities of asbestos to be removed or already removed. Initial efforts toward an asbestos abatement program are starting. Recently 4.4 tons of ACW have been generated by the removal of asbestos from all schools in South Lake Tahoe. The Placerville School District has initiated an assessment and proposed plan of

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[a] U.S. EPA National Emission Standards for Hazardous Air Pollutants Asbestos Regulations, 40 CFR 61, Subpart M; Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite, 29 CFR Parts 1910 and 1926.

[b] Asbestos Hazard Emergency Response Act (AHERA), October 1987.

action for abatement (removal). No quantity estimates are available at this time. The other school districts are arranging for inspections followed by abatement procedures. These estimates should be completed by October 12, 1988. The quantity estimates will be revised after this date.

2.10 PRETREATMENT SLUDGE

2.10.1 Definition of Pretreatment Sludge

An industry which generates wastewater containing hazardous waste may choose to pretreat and separate nonhazardous from hazardous material, and discharge the former into local sewage systems. Under the Clean Water Act, such an activity requires permitting by the Regional Water Quality Control Board. The National Pretreatment Program was established to regulate pretreatment activity, specifically the discharge of pretreated effluents into Publicly Owned Treatment Works (POTWs).

Sanitary agencies are responsible for identifying and monitoring industries which participate in pretreatment activity. These "categorical" industries are periodically tested for effluent concentration and volume. The summary of these results appear in quarterly and yearly reports produced by the respective agencies.

On the industrial end, the result of pretreating wastewater is a residual sludge which may be considered hazardous. Further treatment is required to manage the sludge to eliminate the potential environmental threat of the pretreated sludge waste.

2.10.2 Assessment of Pretreatment Activity in El Dorado County

There are no industries in El Dorado County classified as categorical industries under Federal EPA standards. The three sanitary districts within the County handle primarily residential sewage. This includes El Dorado Irrigation District, Placerville City, and the South Tahoe Public Utilities District. None of these public utilities have identified industries which generate pretreatment.

2.11 DESIGNATED AND SPECIAL WASTE

The following categories of designated and special wastes could be generated within the County: (1) contaminated soils from clean-up sites (see Section 3.4.1); (2) ash from combustion processes; (3) wastes associated with mining; and (4) sewage septage/dewatered sewage sludge. These categories are described below.

2.11.1 Ash from Combustion Processes

Sawmill wastes such as sawdust or wood pieces are typically burned in boilers for energy production. This eliminates the need for handling large quantities of uneconomical bulk product, while recovering valuable energy as a product. The residue from this process is usually in the form of an ash product. Depending on the nature of the combustible products, the resultant ash may be classified as designated. For example, wood chips soaked with solvents or resins, once burned, may be considered contaminated.

The Air Pollution Control District has jurisdiction and monitoring authority over the resultant emission. In El Dorado County no incinerator is reported as producing this or any form of hazardous waste.

2.11.2 Wastes Associated with Mining

Mining of precious metals, particularly gold, was important to the early growth of El Dorado County. Mining activities can cause the release of arsenic, heavy metals, and other toxics, and processing poses the potential for generation of mercury, cyanides and other wastes. Best management practices (BMP's) can be employed to minimize this risk.

Currently, there are no large scale active commercial mines in operation in El Dorado County. Numerous small claims are being worked, and are unlikely to generate hazardous waste. If a large mining and processing operation were to commence in El Dorado County in the future, potential hazardous waste generation must be considered. This concern would be addressed by the Planning Division, California Conservation Department and the Regional Water Quality Control Board through the special use permit process.

2.11.3 Sewage Septage/Dewatered Sewage Sludge

El Dorado County's rural and low density character establish septic sewer service as a feasible method for handling residential and some commercial sewage wastes outside the Lake Tahoe basin and higher density areas such as Placerville, Cameron Park, and El Dorado Hills. Concern initially arises when chemicals are added to septic tanks as pretreatment prior to collection. Since there exist only three municipal sanitary districts in El Dorado County, a significant amount of sewage septage is generated in the County (approximately 1,995,000 gallons in 1986).[1]

The Department of Environmental Health issues annual permits to sewage pumping services operating within the County. In the past, the Union Mine sanitary landfill accepted sewage septage, yet leachate problems forced closure of this operation. As a result, El Dorado currently ships all of its sewage septage, which is not required to be manifested, to nearby Sacramento County. An investigation under County supervision is being

[1] From Owens Engineering El Dorado County Septage Study, 1988

conducted to locate a possible new County site to handle this waste. Within El Dorado County one site, the Union Mine Landfill, will accept ACW if properly containerized.

2.12 ESTIMATES OF IMPROPERLY AND ILLEGALLY DISPOSED WASTES

Many people dispose of hazardous wastes improperly and illegally by putting them in the trash, pouring them down sewers and storm drains or onto the ground, or by abandoning them on public or private property. Some people discarding wastes improperly know that what they are doing is wrong, but most probably do not understand the legal and environmental implications of their acts. Others may want to attempt to dispose of their hazardous wastes properly but do not know the correct practices. Because El Dorado County has few large industrial hazardous waste generators, and therefore a comparatively small manifested hazardous wastestream, illegally disposed wastes may make up a relatively large fraction of the County's hazardous wastes.

There is little valid data on improper disposal of hazardous wastes in El Dorado County. A number of studies have been performed in other locales to measure the amounts of hazardous wastes in refuse; data assessing other modes of disposal is scarce. As discussed above, the Association of Bay Area Governments (ABAG) surveyed households in several communities, not including El Dorado County, and discovered that almost all household hazardous wastes are improperly discarded. ABAG also surveyed a number of small businesses (although none in El Dorado County) and found that most use improper disposal methods for some or all of their wastes (see Table 2-23). Most of the businesses surveyed were insufficiently familiar with hazardous waste disposal regulations (see Table 2-24).

The ABAG study demonstrates the prevalence of improper hazardous waste disposal, but covers too few types of businesses to support any specific conclusions about small generators even in the communities surveyed. In addition, ABAG did not include any large companies in its survey. Without more detailed information, no reliable estimate can be made of the amount of waste illegally disposed. Any determination regarding the sources of illegally-disposed wastes (e.g. small businesses versus households or large businesses, dry-cleaners versus car repair shops or painting contractors) or the reasons for improper disposal lack of facilities, insufficient public education, or willful negligence) is impossible without better information.

Table 2-23

SUMMARY OF IMPROPER DISPOSAL PRACTICES

Type of Business	SIC Code	No. of Companies Surveyed	Improper Disposal Total	Improper Disposal Per Waste	Type of Hazardous Waste	Gallons Per Month	Disposal Method
Painting, Decorating	1721	5	5	5	Paint residue[a]	0.1-35	Landfill
				3.5	Spent thinner	2-5	Landfill 57% Spread on ground 43%
				1	Motor oil	1	Landfill
Roofing	1761	3	2	2	Solvents	0.4-1.7	Sewer, ground
Sheet metal work	1761	3	1	1	Adhesive residues/ enamel coatings	Unknown	Landfill
Commercial printing	2751/52	8	4	3	A&B developer, fixer, activator,	0.4-20	Sewer[b]
				2	Ink, solvent, alcohol sludge	0.4-30	Landfill
				1	Formaldehyde	50	Sewer
				1	Acid rinse	Trace	Sewer[b]
Electroplating and metal finishing	3471	9	2	1	Grinding coolant oil	25	Sewer
				1	Shipping tank sludge and spent plating baths	Unknown	Sewer
Machine shops	3599	10	6	1	Metal chips and way oil	Unknown	Landfill
				3.5	Mixed waste oil	0.5-15 Unknown 0.6	Sewer 43% Landfill 28% Indefinite storage 28%
				1	Solvents	0.6	Indefinite storage
				1	Rust inhibitor	40	Sewer
				3	Cleaning and rust inhibitor sludge	Unknown	Landfill
				1	Paint	Unknown	Landfill
Electronic components	3679	4	1	1	Bleach	25	Sewer[b]
Gas stations	5540	8	7	7	Antifreeze, radiator flush	6-80	Storm drain 68%
				1.5	Brake fluid	1-2	Sewer
Exterminating services	7342	5	0	-	--	--	--
General suto repair	7538	5	8	8	Antifreeze, radiator flush	6-36	Storm drain 75% Sewer 13% Ground 13%
				1	Solvents	5	Sewer
				1	Brake fluid	1	Landfill
				1	Motor oil	Unknown	Storm drain
Medical laboratories	8071	4	0	-	--	--	--
TOTAL		67	38 (57%)				

[a] Leftover residues and cleaning sludges from paint, stains and finishes, excluding dried non-lead based paints.
[b] May be appropriate disposal option if authorized by local sanitation district pretreatment program.

From: Lorene Jackson Russell and Emy Chan Meiorin, The Disposal of Hazardous Waste by Small Quantity Generators: Magnitude of the Problem, Association of Bay Area Governments, 1985.

Table 2-24

KNOWLEDGE OF FEDERAL AND STATE HAZARDOUS WASTE REGULATIONS: SMALL BUSINESS GENERATORS

Type of Business	Number of Businesses Familiar	Somewhat Familiar	Not Familiar
Painting, decorating	0	4	1
Roofing/sheet metal work	3	2	1
Commercial printing	1	0	7
Electroplating/metal finishing	4	3	2
Machine shops	1	2	7
Electronic components	0	2	2
Gasoline service stations	2	0	6
Exterminating services	4	1	0
General auto repair	0	1	7
Medical laboratories	3	0	1
TOTAL	**27%**	**22%**	**51%**

From: Lorene Jackson Russell and Emy Chan Meiorin, The Disposal of Hazardous Waste by Small Quantity Generators: Magnitude of the Problem, Association of Bay Area Governments, 1985.

2.12.1 Hazardous Wastes Disposed in County Sewer Systems

Contaminants in sewage such as metals and hydrocarbons potentially indicate improper waste disposal practices. It is rarely possible to distinguish hazardous wastes per se from other sources of contamination such as washwater. It is difficult to discover any violations of hazardous waste laws through sewage monitoring, and impossible to derive any numerical estimate of the rate of illegal disposal into sewage. The ABAG surveys discussed above, however, indicate substantial disposal of hazardous wastes into sanitary and storm sewers.

2.12.2 Hazardous Wastes Disposed on Land

Little data exists on hazardous waste disposal on land within El Dorado County. Some wastes may be poured out onto the ground, and may eventually reach groundwater, surface water or storm sewers. Others remain as contaminants in soil, or evaporate.

Wastes abandoned on private, State, or Federal land become the responsibility of the property owner; presumably, they are managed in whatever manner these property owners handle their own hazardous wastes.

2.12.3 Hazardous Wastes Disposed Through Municipal Solid Wastestream

Waste characterization studies have found a wide variety of hazardous materials in municipal solid waste (MSW), including household hazardous wastes and hazardous materials discarded by small and large commercial and industrial firms. No exemption allowing disposal of small amounts of hazardous wastes exists under California law for any generator, although the laws are rarely enforced against households or small businesses.

The results of studies detailing the presence of hazardous wastes in MSW are outlined below. These studies recorded only the residue found in each container of potentially hazardous waste, whereas EPA regulations consider the containers to be hazardous as well.

Los Angeles county Sanitation Districts Studies

In a study performed in 1979, approximately thirty loads of residential, commercial, and mixed-waste loads were selected at random and hand-sorted for hazardous wastes. Survey results indicated that 107 gallons of hazardous liquid were found in 185 tons of solid waste, equaling 0.24% of the weight of sample waste. Nonliquid potentially hazardous materials, such as lead and other heavy metals in batteries, were not surveyed. Residential wastes contained 0.0045%, and commercial wastes 0.28% hazardous liquids.

In 1984 and 1985, the Los Angeles County Sanitation Districts inspected 5 to 6 refuse trucks per day in an effort to detect commercial violators of hazardous waste laws. Some 15,000 tons of waste searched in 1984 contained only 0.00147% hazardous waste. Although direct comparison of this data to the 1979 sorting implies a tremendous reduction in improper disposal of hazardous materials, such a conclusion would likely be incorrect. The 1984-85 program was intended to detect commercial violations, and concentrated on containers larger than one-gallon size, therefore likely missing essentially all household hazardous wastes and indeed many commercial/industrial hazardous wastes.

University of Arizona Studies

The Anthropology Department of the University of Arizona has counted containers of hazardous waste found in residential refuse in Tucson, Arizona, New Orleans, Louisiana and Marin County, California. The Arizona researchers have found that hazardous residues comprise 0.3-0.4% of residential waste; wastes plus containers comprise 0.4 to 0.5% of household garbage. They also estimate that a typical household discards up to 100 hazardous waste items per year. The results are further discussed in Appendix C covering methodology for estimating household hazardous wastes.

Cal Recovery Systems Studies

A private contractor, Cal Recovery Systems, Inc. (CRS), has performed several waste-sorting studies. In 1985, CRS examined nearly 35 tons of waste in the Seattle area, including residential, commercial, and industrial wastes, and refuse brought by householders and small contractors to waste management facilities ("self-haul" wastes). Sixteen categories of potentially hazardous residues found in solid waste were projected to comprise approximately one percent of the Puget Sound waste stream, or over 11,000 tons annually. Most prevalent were caustic materials, paints, solvents, oil and grease, adhesives, batteries, cleaning products, inks, and pesticides. Although self-haul wastes comprised only 14% of the Puget Sound waste stream, they contributed approximately 40% of the hazardous waste found in MSW; industrial wastes were the second major contributor.

In San Francisco, Cal Recovery Systems examined 200 samples of mixed solid waste collected by refuse haulers. Self-haul wastes were not examined. Potentially hazardous materials most prominent in MSW included adhesives and asphalt patch, cosmetics, inks and dyes, pesticides, and a large number of unclassified materials. Most potentially hazardous items found were later judged as not hazardous under California law. These items included containers that were nearly empty or filled with relatively benign materials such as detergent, and other, potentially harmful items such as PCB-filled fluorescent light ballasts, which are not considered hazardous unless they leak. The material judged hazardous under law, including containers, comprised 0.5% of the weight of sampled solid waste.

Cal Recovery Systems also conducted a waste characterization at the Red Wing, Minnesota garbage incinerator. Potentially hazardous wastes found in mixed refuse, including self-haul waste, comprised approximately 1.5% of the weight of sampled waste. One self-haul load delivered to the site contained hundreds of pounds of paint that contributed most of the hazardous material found in this study. More information on the CRS studies may be found in Appendix C on the methodology for estimating household hazardous wastes.

The kinds of hazardous materials found in these studies varied substantially. In general, residential wastes contained the largest amount of cleaners, cosmetics, and other products used inside the home. Many containers were empty. Commercial wastes contained office products such as ink and copier toner. Industrial wastes contained solvents, paint, and demolition wastes such as thermostats and fluorescent light tubes containing mercury. Self-haul wastes contain large amounts of paints, solvents, automotive products, and pesticides, i.e., items that might be discarded in a general cleanup of basement, garage, or storeroom by households and small businesses. There is substantial variability among studies in the quantities of some potentially hazardous wastes found. These variations are substantially due to single large unusual contributions to the hazardous-waste load in MSW. Extrapolations of hazardous materials present in MSW based on the studies outlined above may therefore be accurate in terms of the total load of hazardous material, but less dependable in terms of specific materials.

Although hazardous waste in refuse is an important problem, it is not clear whether such wastes are a major source of toxic chemicals in landfill leachate or in waste-incinerator air emissions. Hazardous chemicals are used or generated by many industrial processes, and as a result are common components of paper, plastics, and other materials. Paper, for example, may contain heavy metals from ink, and traces of dioxins and furans from chemical bleaching processes. PCBs were once used in the manufacture of carbonless carbon paper. Plastics may be the source of phthalates that are often found in landfill leachate; these chemicals give many plastics their flexibility, but leach and evaporate readily. No amount of care in the management of hazardous substances can completely prevent the escape of these materials into the environment. Only changes in industrial processes and consumer choices that eliminate the need for hazardous materials can guarantee protection of the environment from chemical pollution.

2.13 SUMMARY OF ESTIMATED QUANTITIES OF HAZARDOUS WASTE FOR 1986

Based on the data in Sections 2.4 through 2.9, a total estimated quantity of hazardous waste generated in El Dorado County can be made. This total contained in Table 2-24 is a "planning estimate" which will be the basis for projecting future wastes.

Wastes from site clean-ups (76 tons) are subtracted from the total quantities of manifested wastes (170 tons) to yield 94 tons. Varianced or exempted on-site wastes (0 tons) and adjusted waste quantities from SQGs (3,401 tons) are added to yield a total of 3,495 tons of hazardous waste from business and industrial generators. Adding the wastes from household (287 ton estimate) to this amount produces **an estimate for all ongoing waste generation in El Dorado County of about 3,782 tons for 1986.**

Table 2-25

MULTI-YEAR PLANNING ESTIMATE OF
QUANTITIES OF HAZARDOUS WASTE GENERATED
WITHIN EL DORADO COUNTY (Tons/Year)
[DHS Table I]

Waste Group	Total Quantity of Manifested Waste from County (from Table 2-5)	Wastes from Site Clean-ups	Wastes from Transfer Station	Column 1 Minus Columns 2 and 3	Varienced/ Exempted Wastes	Wastes from Small Quantity Generators	TOTAL	Household Wastes
Waste Oil	13.39	0.00	0.00	13.39	0.00	2,165.04	2,178.43	99
Halogenated Solvents	7.30	0.00	0.00	7.30	0.00	118.14	125.44	2
Nonhalogenated Solvents	58.29	0.00	0.00	58.29	0.00	66.81	125.10	19
Organic Liquids	1.66	0.00	0.00	1.66	0.00	19.21	20.87	9
Pesticides	0.00	0.00	0.00	0.00	0.00	38.03	39.03	8
PCBs & Dioxins	10.52	0.00	0.00	10.52	0.00	0.00	10.52	0
Oily Sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Halogenated Organic Sludges/Solids	0.00	0.00	0.00	0.00	0.00	4.52	4.52	0
Nonhalogenated Organics Sludges/Solids	0.00	0.00	0.00	0.00	0.00	32.23	32.23	11
Dye & Paint Sludges & Resins	0.00	0.00	0.00	0.00	0.00	101.48	101.48	71
Metal-Containing Liquids	0.00	0.00	0.00	0.00	0.00	23.20	23.20	0
Cyanide & Metal Liquids	0.00	0.00	0.00	0.00	0.00	1.31	1.31	0
Nonmetallic Inorganic Liquids	0.46	0.00	0.00	0.46	0.00	48.32	48.78	25
Metal Containing Sludges	0.00	0.00	0.00	0.00	0.00	23.72	23.72	0
Nonmetallic Inorganic Sludges	0.00	0.00	0.00	0.00	0.00	0.72	0.72	0
Contaminated Soil	74.85	75.85	0.00	0.00	0.00	0.00	0.00	0
Miscellaneous Waste	2.61	0.17	0.00	2.44	0.00	756.74	759.18	43
TOTAL	170.08	76.02	0.00	94.06	0.00	3,400.47	3,494.53	287

Section 3.0

ESTIMATED FUTURE QUANTITIES OF HAZARDOUS WASTE

SECTION 3.0
ESTIMATED FUTURE QUANTITIES OF HAZARDOUS WASTES

3.1 OVERVIEW

The estimates of hazardous waste quantities for 1986 represent a snapshot of the current situation in the El Dorado County. To develop an understanding of future facility and program needs, waste management planners must make a best effort at projecting future trends. The amount of hazardous waste generated depends primarily on three factors:

- Economic activity
- Amount of hazardous waste generated per unit (i.e., per capita, per employee, per ton of solid waste, per unit of industry output)
- Population growth

This section makes estimates of projected quantities of hazardous wastes by these categories:

- Large and small generator waste
- Wastes from contaminated site clean-ups
- Wastes from households

Each category of projected waste requires a different approach for making estimates. The remainder of this section summarizes the approaches and presents estimated future quantities, where possible.

3.2 INDUSTRIAL AND SMALL QUANTITY GENERATORS

3.2.1 Projection Methodology and Assumptions

The generation of hazardous waste typically parallels the economic climate of the County. It is reasonable to assume that with economic growth there will be a proportional increase in the quantities of hazardous waste generated. In decaying sectors of industry, a decline in the amounts of hazardous waste can be anticipated.

Since El Dorado County industry largely remains service-oriented, population projections from the Department of Finance were used as an indicator for economic growth. From this source, it is reported that El Dorado County should experience an annual growth rate of 3.4%, into the year 2000. Hazardous waste generation quantities, which typically parallel economic output or growth, therefore, should increase by the same amount. Expectations on source reduction or improvements in technology will be taken into account in the final needs assessment for the County.

The projection values obtained do nto include the possibility of technological changes, resulting in waste reduction. Source

reduction, the product of economic or legal incentives, are included in later sections addressing actual needs assessment. Future waste generation from site cleanup activities (i.e., contaminated soil) are handled differently and therefore are developed in Section 3.4.

3.2.2 Future Industrial and Small Quantity Generation

El Dorado County can expect an increase in hazardous waste generation over all DHS waste groups existing in the base year 1986 as identified in Table 3-1. In 2000, an estimated 5581 tons of hazardous waste will be generated from industry, including small quantity generators. Of this total wastestream, Waste Oil will remain as the largest quantity by waste group with a projected amount of 3479 tons (62.3%). The second largest waste group is Miscellaneous Waste with an amount of 1212 tons (21.7%). Most of this waste is comprised of waste car batteries. The remaining waste groups contain quantities of 200 tons or less each.

From 1986 to 2000, the types of industry generating hazardous wastes will not change drastically in proportion to one another. The gasoline service stations (SIC 55) continue to dominate industrial generation totals with an estimate of 1483 tons (26.6%) in 2000. Automotive repair shops (SIC 75) will generate 1109 tons (19.9%) of hazardous waste. These two industries are significant generators, as a result of waste oil generation.

TABLE 3-1
PROJECTED QUANTITIES OF HAZARDOUS WASTE GENERATION WITHIN
EL DORADO COUNTY FOR 2000 BY MAJOR INDUSTRY GROUP (Tons)
(DHS TABLE K)

	SIC 7	SIC 9	SIC 15	SIC 16	SIC 17	SIC 24	SIC 25	SIC 27	SIC 28	SIC 30	SIC 31	SIC 32	SIC 34	SIC 35	SIC 36	SIC 38	SIC 39	SIC 41	SIC 42	SIC 43
Waste Oil	0.00	28.27	0.00	367.45	0.00	32.90	0.00	0.00	0.00	47.11	9.42	0.00	0.00	37.69	59.25	0.00	0.00	47.11	301.50	18.84
Halogenated Solvents	0.00	0.05	21.53	7.60	25.93	0.89	13.37	4.25	1.85	8.05	1.61	0.32	4.76	3.75	6.16	4.76	1.87	1.56	6.21	0.38
Nonhalogenated Solvents	0.00	0.05	21.53	7.60	25.93	0.89	13.37	4.25	1.85	8.05	1.61	0.32	4.76	3.75	5.62	4.76	1.87	1.56	6.21	0.38
Organic Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pesticides	28.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCB's & Dioxins	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oily Sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halogenated Organic Sludges/Solids	0.00	0.00	0.00	0.00	0.00	0.06	1.05	1.42	0.06	0.10	0.02	0.00	0.19	0.16	0.22	0.20	0.08	0.00	0.00	0.00
Nonhalogenated Organic Sludges/Solids	0.00	0.00	0.00	0.00	0.00	0.06	1.05	1.42	0.06	0.10	0.02	0.00	0.19	0.16	0.22	0.20	0.08	0.00	0.00	0.00
Dye & Paint Sludges & Resins	0.00	0.10	52.70	0.00	49.39	1.71	25.55	0.00	0.00	0.00	0.00	0.00	0.14	0.11	0.34	0.14	0.11	0.27	1.07	0.06
Metal-Containing Liquids	0.00	1.07	0.00	0.00	3.39	0.00	0.00	1.87	0.29	1.85	0.38	0.26	1.09	0.88	1.31	1.09	0.43	0.00	0.00	0.00
Cyanide & Metal Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.06	0.00	0.00	0.03	0.36	0.30	0.47	0.37	0.14	0.00	0.00	0.00
Nonmetallic Inorganic Liquids	0.00	0.30	1.53	3.91	4.62	0.00	0.00	2.01	1.21	0.02	0.00	0.09	3.05	2.44	3.67	3.05	1.23	0.80	3.21	0.21
Metal-Containing Sludges	0.00	0.10	0.00	1.31	1.07	0.00	0.00	0.34	0.00	0.00	0.00	0.14	0.70	0.48	0.85	0.70	0.28	0.27	1.06	0.06
Nonmetallic Inorganic Sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Contaminated Soil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous Waste	16.43	8.72	12.18	113.46	104.26	0.26	3.72	17.82	0.27	0.34	0.06	1.31	0.14	0.11	1.26	0.14	0.06	23.28	93.09	5.81
TOTALS	45.30	38.66	109.47	501.33	214.59	36.77	58.11	33.71	5.65	65.62	13.12	2.47	15.38	49.83	79.37	15.41	6.15	74.85	412.35	25.74

TABLE 3-1 (Continued)
PROJECTED QUANTITIES OF HAZARDOUS WASTE GENERATION WITHIN
EL DORADO COUNTY FOR 2000 BY MAJOR INDUSTRY GROUP (Tons)
(DHS TABLE K)

	SIC 44	SIC 48	SIC 51	SIC 52	SIC 53	SIC 54	SIC 55	SIC 72	SIC 73	SIC 75	SIC 76	SIC 79	SIC 80	SIC 82	SIC 83	SIC 84	SIC 91	SIC 92	SIC 96	TOTAL INDUSTRY
Waste Oil	9.42	97.06	47.11	9.42	0.00	0.00	1084.87	0.00	0.00	810.29	94.22	0.00	0.00	160.17	0.00	0.00	0.00	188.44	28.27	3478.81
Halogenated Solvents	0.19	4.06	1.56	2.52	0.86	0.00	22.31	4.09	5.88	16.69	9.07	0.00	9.05	2.65	0.27	0.11	0.00	4.02	2.09	200.32
Nonhalogenated Solvents	0.19	4.06	1.56	2.52	0.86	0.00	22.31	4.09	5.88	16.69	9.07	0.00	9.05	2.65	0.27	0.11	0.00	4.02	2.09	199.78
Organic Liquids	0.00	0.65	0.00	0.00	0.00	2.00	0.00	4.09	26.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.33
Pesticides	0.00	0.00	0.40	1.56	0.57	0.00	0.00	0.00	24.57	0.00	0.00	6.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.33
PCB's & Dioxins	0.00	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.10	0.00	0.00	16.80
Oily Sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halogenated Organic Sludges/Solids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.22
Nonhalogenated Organic Sludges/Solids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.25	0.00	0.00	3.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.47
Dye & Paint Sludges & Resins	0.03	0.10	0.89	2.89	1.05	0.00	3.86	0.42	1.04	2.87	13.96	0.00	0.57	1.58	0.16	0.06	0.00	0.75	0.13	162.05
Metal-Containing Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.18	0.00	0.00	0.00	0.26	0.03	0.00	1.61	0.00	0.00	0.06	37.05
Cyanide & Metal Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.09
Nonmetallic Inorganic Liquids	0.10	1.05	1.13	2.56	0.91	0.00	11.54	0.46	3.91	8.63	1.20	1.00	6.56	3.40	0.35	0.06	0.00	2.17	1.52	77.90
Metal-Containing Sludges	0.03	0.16	0.03	0.00	0.00	0.00	3.85	0.00	20.97	2.87	0.34	0.00	0.00	0.00	0.00	1.60	0.00	0.67	0.00	37.88
Nonmetallic Inorganic Sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.54	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15
Contaminated Soil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous Waste	2.91	1.49	20.22	24.86	8.13	0.00	334.54	1.07	58.58	250.18	42.97	2.24	0.26	0.42	0.05	3.34	0.00	58.32	0.06	1212.36
TOTALS	12.87	109.33	72.90	46.33	12.38	2.00	1483.28	58.57	169.17	1108.73	178.15	9.60	25.75	170.90	1.10	6.89	16.10	258.39	34.22	5580.54

3.3 HOUSEHOLD HAZARDOUS WASTES

DHS recommends that future generation of household hazardous waste be projected as the product of current generation and future population growth. Solid waste generation, however, increases faster than population, and there is no reason to believe that household hazardous waste would not also increase faster than population. In order to develop a more prudent planning estimate of household hazardous waste generation, current generation is here multiplied by the estimated increase in residential solid waste generation of 1% per capita per year. Estimates of both current generation rates and future increases are based on incomplete information, much of which refers to other locales. Estimates of future household hazardous waste generation presented in this Plan are therefore approximations only. Table 3-2 shows that the projected total household hazardous waste in the year 2000 is about 488 tons per year with Waste Oil, and Dyes, Paint Sludges and Resins remaining the largest categories of household hazardous wastes.

Table 3-2

ESTIMATED HOUSEHOLD HAZARDOUS WASTE GENERATION WITHIN EL DORADO COUNTY FOR 2000

Waste Group	Quantity Generated (Tons)	(Percentage)*
Waste Oil	169	35
Nonhalogenated Solvents	32	7
Halogenated Solvents	3	1
Organic Liquids	15	3
Pesticides	13	3
Nonhalogenated Organic Sludges/Solids	19	4
Dye and Paint Sludges/Resins	121	25
Nonmetallic Inorganic Liquids	42	9
Other Inorganic Solid Wastes	74	15
TOTAL	**488**	

*Percentages do not add up to 100% due to rounding.

3.4 CONTAMINATED SITES

3.4.1 Contaminated Sites and Leaking Underground Tanks

The contaminated sites identified in Section 2.9 and Map 1 have not been sufficiently characterized to estimate the amount of hazardous waste to be managed on- or off-site. However, in accordance with DHS direction, the proper methodology for estimating the volume of contaminated soil at leaking underground tank (LUST) sites, is to assume all existing single-walled underground storage tanks leak or will leak by the year 2000.

There are approximately 545 single-walled tanks with an average volume of 4500 gallons which are permitted by the El Dorado County Division of Environmental Health. The contents of these tanks is limited to leaded or unleaded gasoline, diesel, heating oil, kerosene and waste oil. For planning purposes, it is estimated that removal of the original backfill or about four (4) feet of the surrounding soil will be required for each tank. Using a tank length to diameter ratio of 2.5 to 1, the surrounding four feet of soil has a volume of approximately 145 cu.yds. (based on a saturated weight of 126 lbs/cu.ft)[1] or 246.5 tons/tank[2].

Historically, within El Dorado County, approximately 75% of soil generated from leaking underground tanks has been successfully treated on-site. It is the policy of the Division of Environmental Health to allow on-site treatment (e.g., aeration) of petroleum contaminated soil. This authorization is subject to the limitations of the treatment method and site constraints. Therefore, all approvals for on-site treatment are on a case-by-case basis. According to Vern Peterson, El Dorado County Deputy Director of Emergency Services (and Air Pollution), his office does not currently restrict the aeration of contaminated soils. Therefore, for planning purposes, only 25% of the contaminated soil generated from the 545 single-walled tanks will require off-site treatment. This amounts to 33,585.6 tons over the ten-year planning period recommended by DHS or 3,358.6 tons per year as reflected in Table 3-3 (DHS Table L). Please note that these figures are estimated in accordance with DHS direction. The actual need for the off-site disposal of El Dorado County's petroleum- contaminated soil will likely be much less. In addition, the State permit for the Union Mine Landfill, as approved by the Solid Waste Management Board (et al), may at a later date be amended to allow for the disposal and/or treatment of some low concentration petroleum contaminated soil at this site. Thus, the true facilities need assessment may be significantly overstated.

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[1] From Figure 18-1, Fundamentals of Geotechnical Analysis, Dunn, Anderson, & Kiefer

[2] $\frac{145 \text{ cu.yds.}}{\text{tank}} \times \frac{1.7 \text{ tons}}{\text{cu.yds.}} = 246.5 \text{ tons}$

TABLE 3-3
PROJECTED QUANTITIES OF CLEANUP WASTES
(Sugested Table L)

Waste Group	Underground Tanks	Old Disposal Sites	Closed Toxic Pits	Other Cleanup Wastes	Total
Waste Oil	0.00	0.00	0.00	0.00	0.00
Halogenated Solvents	0.00	0.00	0.00	0.00	0.00
Non-Halogenated Solvents	0.00	0.00	0.00	0.00	0.00
Organic Liquids	0.00	0.00	0.00	0.00	0.00
Pesticides	0.00	0.00	0.00	0.00	0.00
PCBs & Dioxins	0.00	0.00	0.00	0.00	0.00
Oily Sludges	0.00	0.00	0.00	0.00	0.00
Halogenated Organic Sludges & Solids	0.00	0.00	0.00	0.00	0.00
Non-Halogenated Organic Sludges & Solids	0.00	0.00	0.00	0.00	0.00
Dye & Paint Sludges & Resins	0.00	0.00	0.00	0.00	0.00
Metal-Containing Liquids	0.00	0.00	0.00	0.00	0.00
Cyanide & Metal Liquids	0.00	0.00	0.00	0.00	0.00
Non-Metallic Inorganic Liquids	0.00	0.00	0.00	0.00	0.00
Metal-Containing Sludges	0.00	0.00	0.00	0.00	0.00
Non-Metallic Inorganic Sludges	0.00	0.00	0.00	0.00	0.00
Contaminated Soil	3,358.60	0.00	0.00	0.00	3,358.60
Miscellaneous Wastes	0.00	0.00	0.00	0.00	0.00
TOTAL	**3,358.60**	**0.00**	**0.00**	**0.00**	**3,358.60**

3.4.2 Asbestos Containing Material

Future production of asbestos waste in the El Dorado County is inevitable as part of an increasing national and statewide momentum for its removal. Structures built prior to 1972-73 may contain asbestos material. In the El Dorado County the concern lies not within the industrial sector but rather with small businesses, public and residential buildings. Plans for the demolition or insulation of these structures may necessitate the removal and treatment of asbestos containing waste.

Some 45 school buildings within El Dorado County will be inspected for asbestos abatement as the result of State and federal mandates. It is not known how many schools will require a removal campaign. Current assessment is being conducted by the school district superintendents in Placerville and the unincorporated county, so the extent of this removal cannot yet be accurately estimated.

Modification of the existing CHWMP with respect to El Dorado County's wastestream would follow a proposed plan of action.

3.5 NEW WASTESTREAMS

New wastestreams include those wastes from pretreatment sludges, new industries and designated and special wastes. As indicated in the following subheadings, El Dorado County is currently unable to project new wastestream quantities. As a result, Table 3-4 (DHS Table M) is not applicable to El Dorado County, but is included as required by DHS.

TABLE 3-4

PROJECTED QUANTITIES OF NEW HAZARDOUS WASTE STREAMS
(DHS Table M)

Waste Group	Additional Pretreatment Sludges	Other New Wastes	TOTAL
Waste Oil	0.00	0.00	0.00
Halogenated Solvents	0.00	0.00	0.00
Non-Halogenated Solvents	0.00	0.00	0.00
Organic Liquids	0.00	0.00	0.00
Pesticides	0.00	0.00	0.00
PCBs & Dioxins	0.00	0.00	0.00
Oily Sludges	0.00	0.00	0.00
Halogenated Organic Sludges & Solids	0.00	0.00	0.00
Non-Halogenated Organic Sludges & Solids	0.00	0.00	0.00
Dye & Paint Sludges & Resins	0.00	0.00	0.00
Metal-Containing Liquids	0.00	0.00	0.00
Cyanide & Metal Liquids	0.00	0.00	0.00
Non-Metallic Inorganic Liquids	0.00	0.00	0.00
Metal-Containing Sludges	0.00	0.00	0.00
Non-Metallic Inorganic Sludges	0.00	0.00	0.00
Contaminated Soil	0.00	0.00	0.00
Miscellaneous Wastes	0.00	0.00	0.00
TOTAL	**0.00**	**0.00**	**0.00**

3.5.1 Pretreatment Sludges

Under the National Pretreatment Program (NPP), a list of "categorical industries" defined those industries which must comply with specific effluent discharge limits resulting from pretreatment activity. The EPA is currently reassessing this list and will probably augment the list to include new industries.

El Dorado Irrigation District, South Tahoe Public Utility District, and the City of Placerville have recently completed NPP plans but, as of September 1988, no existing or known proposed industries are planning to dispose of pretreatment sludges into any of these three public sewage treatment facilities in El Dorado County. The contact individuals regarding this information were Ron Jones, Bob Bear and Mike Foster, respectively. Should an existing or new industry propose to do so, modification of the existing CHWMP would follow a proposed and permitted disposal.

3.5.2 Wastes from New Industries

According to local government, El Dorado County should not experience an influx of new industry that would subsequently modify the County's hazardous wastestream. The present local economy is currently dominated by tourism, retail trade and services. While growth can be anticipated in these markets, the likelihood of new industries is minimal.

3.5.3 Designated and Special Wastes

As discussed in previous sections (Sections 2.2 and 2.11), the changing status of designated wastes, possibly to "hazardous," by regulatory agencies would have a significant impact on the County's hazardous wastestream. While the direction of this reclassification cannot be surmised at this time, some conclusions can be drawn on the existing wastes in El Dorado County which currently remain designated:

Contaminated Soils from Cleanup Sites

Accidental spillage of hazardous materials resulting from overturned vehicles, train derailments or container leakage (other than leaking underground tanks) are events whose frequency and magnitude cannot be predicted. Such occurrences should be anticipated in the form of emergency response plans to expedite the containment and clean-up for these sites.

Waste Associated with the Lumber Industry

Burning wood waste in boilers could increase with the operation of additional wood industries in El Dorado County. Future generation could lead to contaminated ash if wood chips are soaked with solvents or resins. Again, a change in the reclassification of hazardous wastes could include wastes of this type and including future cogeneration wastes, sawmill wastes, and treated wood wastes.

Wastes Associated with Mining

Economic changes, exploratory activities, and other factors may stimulate the mining industry in El Dorado County to the point of proposed opening of a previously active or new precious metals mining site and processing operation. Mining operations could potentially generate arsenic, mercury, cyanide, and other heavy metal discharge and/or contaminated wastes. El Dorado County would need to review newly proposed mining activities and update its CHWMP accordingly.

Wastes Associated with Septic Sewage/Dewatered Sludge

Septic sewage service, which remains largely residential, should experience an increase with the rise of population in unincorporated areas of El Dorado County. In 1986, an estimated 77,000 people resided in unincorporated areas of the County. The Department of Finance predicts a 3.4 percent average increase per year in population for El Dorado County through 2000. This would mean an increase of over 46,000 residents from 77,000 in 1986 to 123,000 by the year 2000. Unless new and growing areas develop new or join existing sanitary districts, El Dorado County can expect a rise in production of these wastes.

Consequently, a redefinition of septage as hazardous would increasingly affect the County's ongoing hazardous wastestream. As discussed in Section 2.11.3, dewatered sludge is currently being incinerated by the South Tahoe Public Utilities District and the resultant ashes disposed of at the municipal landfill in Gardnerville, Nevada. In addition, dewatered sludge generated by sewage treatment plants operated by the City of Placerville and the El Dorado Irrigation District is disposed of at the Union Mine Landfill. As a result, this wastestream is not anticipated to impact the facilities needs assessment.

3.6 TOTAL PROJECTED HAZARDOUS WASTE GENERATION

The total projected hazardous waste generation (9427 tons) can be determined by combining figures generated for industrial wastes (5581 tons), cleanup wastes (3359 tons), household (488 tons), wastes and new wastestreams (0 tons). This total projected hazardous waste generation for El Dorado County is summarized in Table 3-5.

TABLE 3-5

TOTAL PROJECTED HAZARDOUS WASTE GENERATION IN EL DORADO COUNTY FOR THE YEAR 2000 (Tons/yr) (DHS TABLE N)

Projected Wastes	Projected Industrial Waste Group Wastes	Projected Cleanup Wastes	Projected New Wastes	Projected Household Wastes	Total
Waste Oil	3,478.81	0.00	0.00	169.00	3,647.81
Halogenated Solvents	200.32	0.00	0.00	3.00	203.32
Non-halogenated Solvents	199.78	0.00	0.00	32.00	231.78
Organic Liquids	33.33	0.00	0.00	15.00	48.33
Pesticides	62.33	0.00	0.00	13.00	75.33
PCBs & Dioxins	16.80	0.00	0.00	0.00	16.80
Oily Sludges	0.00	0.00	0.00	0.00	0.00
Halogenated Organic Sludges/Solids	7.22	0.00	0.00	0.00	7.22
Non-Halogenated Organic Sludges/Solids	51.47	0.00	0.00	19.00	70.47
Dye & Paint Sludges & Resins	162.05	0.00	0.00	121.00	283.05
Metal-Containing Liquids	37.05	0.00	0.00	0.00	37.05
Cyanide & Metal Liquids	2.09	0.00	0.00	0.00	2.09
Nonmetallic Inorganic Liquids	77.90	0.00	0.00	42.00	119.90
Metal-Containing Sludges	37.88	0.00	0.00	0.00	37.88

TABLE 3-5 (continued)
TOTAL PROJECTED HAZARDOUS
WASTE GENERATION IN EL DORADO COUNTY
FOR THE YEAR 2000 (Tons/yr)
(DHS TABLE N)

Projected Wastes	Projected Industrial Waste Group Wastes	Projected Cleanup Wastes	Projected New Wastes	Projected Household Wastes	Total
Nonmetallic Inorganic Sludges	1.15	0.00	0.00	0.00	1.15
Contaminated Soil	0.00	3,358.60	0.00	0.00	3,358.60
Miscellaneous Waste (see next page)	1,212.36	0.00	0.00	74.00	1,286.36
TOTAL	**5,580.54**	**3,358.60**	**0.00**	**488.00**	**9,427.14**

Section 4.0
SOURCE REDUCTION/WASTE MINIMIZATION and OTHER HAZARDOUS WASTE MANAGEMENT OPTIONS

SECTION 4.0

SOURCE REDUCTION AND OTHER HAZARDOUS WASTE MANAGEMENT OPTIONS

4.1 OVERVIEW

This section of the plan describes the options for management, of El Dorado County's hazardous waste including source reduction, treatment methods, residuals disposal and the characteristics of hazardous waste facilities. Sections 2.0 and 3.0 established the current and future quantities of hazardous wastes. Section 4.2 reviews source reduction options and assesses the local potential for source reduction by waste type. These figures are used to reduce future capacity needs assessment quantities projected in Section 5. Section 4.3 summarizes waste treatment methods that can be used at both on-site and off-site TSD facilities and Section 4.4 covers the placement of treated wastes in residual repositories. The physical characteristics of representative TSD facilities are summarized in Section 4.5.

Figure 4-1 depicts the physical components of a total hazardous waste management system. One broad division separates activities and facilities according to their physical location: those that occur at the point of generation, or "on-site", and those that occur at facilities separate from the point of generation, or "off-site". The figure also highlights those types of activities that fall under the broad heading of waste reduction, as distinct from source reduction and from disposal of hazardous wastes. A particular hazardous waste management facility may carry out more than a single function, e.g., a facility may treat waste prior to disposal of residues.

Summaries, in the form of tables, are presented throughout this section to allow for presentation of the material in a condensed form.

4.1.1 The Waste Management Hierarchy

A "waste management hierarchy" guides state and federal hazardous waste management decision making, and provides the framework for this Plan. The hierarchy consists of a set of preferred waste management options (see Table 4-1) in descending order of priority. Please note that incineration and stabilization/solidification are forms of treatment.

"Source reduction" involves steps to reduce the quantity and toxicity of wastes generated at the source. If the generation of wastes cannot be avoided, then "waste reduction", the use of recycling and treatment techniques on-site at the source of generation, is the preferred method of management.

Figure 4-1

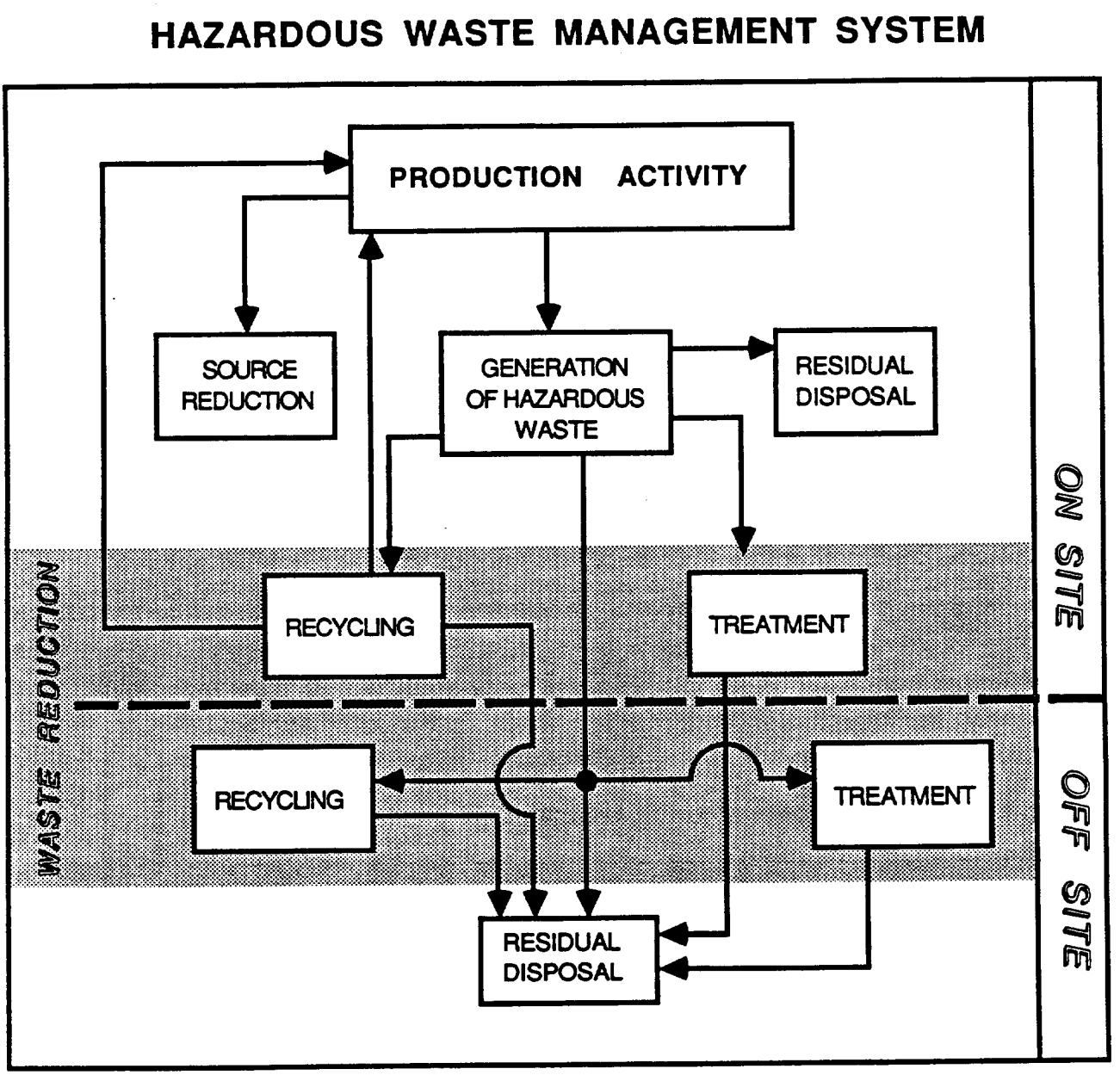

HAZARDOUS WASTE MANAGEMENT SYSTEM
PRODUCTION ACTIVITY
SOURCE REDUCTION
GENERATION OF HAZARDOUS WASTE
RESIDUAL DISPOSAL
RECYCLING
TREATMENT
RECYCLING
TREATMENT
RESIDUAL DISPOSAL
WASTE REDUCTION
ON SITE
OFF SITE

TABLE 4-1

HAZARDOUS WASTE MANAGEMENT HIERARCHY
ORDER OF PRIORITIES

Management Option	Advantages	Disadvantages
Source Reduction	Shifts emphasis from end-of-pipe to prevention Broad spectrum support Chemical resource conservation Avoided costs Eliminate risk of human exposure Eliminate risk of environmental release Eliminate liability	Institutional inertia Overcoming end-of-pipe emphasis Small quantity generators need assistance
Recycling	Broad spectrum support Chemical resource conservation Reduced costs for new materials On-site recycle avoids transport risk Reduce liability	Residue disposal Increased inspection/ enforcement costs for on-site recycle Potential air emissions
Treatment	Reduces/eliminates toxic or hazardous properties On-site treatment avoids transport risk Reduce liability	Residue disposal Increased inspection/ enforcement costs for on-site treatment Potential air emissions Siting difficulties
Example: Incineration, Thermal Destruction	Handles broad range of wastes Only feasible technique for some wastes Potential energy recovery Reduce liability	High expense Ash disposal Air emissions Large economies of scale-lack of flexibility High energy input Wastes potentially burned that could have been recycled or treated On-site incineration not viable for small generators Siting difficulties

TABLE 4-1 (continued)
HAZARDOUS WASTE MANAGEMENT HIERARCHY
ORDER OF PRIORITIES

Management Option	Advantages	Disadvantages
Example: Stabilization, Solidification	Isolates residues from environment	Unproven long-term isolation capability Uncertain effect on long-term liability Generally increases capacity (volume) needed for residual disposal
Residuals Repository	Isolates residues No liquids accepted Potential future materials recovery Local government can define role of facility	No definition of facility in state or federal law No defined relationship to present landfill design and operation Stabilization/solidification may physically preclude materials recovery Siting difficulties Uncertain effect on long-term liability Lack of state criteria regarding whether facility accepts untreated wastes below ban threshold Lack of state criteria regarding whether facility accepts all cleanup wastes
Land Disposal of Untreated Wastes	Low cost (historically) Convenient	Banned in May 1990 Potential for releases to air, water, soil Potential for human exposure Very high long-term cost High long-term liability

An on-site hazardous waste management facility is one "at which a hazardous waste is produced and which is owned by, lease to, or under the control of the producer of the waste" (Health and Safety Code Section 25117.12). An "off-site hazardous waste facility" is simply defined in the Health and Safety Code (Section 25117.11) as "a hazardous waste facility that is not an on-site facility." Put another way the wastes leave the point of generation in properly licensed vehicles and are delivered to a separate permitted treatment, storage, or disposal facility. Despite the overall guidance that is provided by the hierarchy, there are specific instances in which off-site management may be preferable to on-site management (see Table 4-2).

Table 4-2

ON-SITE vs. OFF-SITE -- WHICH IS BETTER?

There are legitimate differences of opinion as to whether on-site treatment is necessarily preferable to off-site treatment, or for that matter to off-site recycling.

With regard to treatment, there is a trade-off between the transport risk that is eliminated through on-site treatment and the technical complexity of some treatment processes that may preclude on-site use.

On-site treatment and off-site recycling also entail certain trade-offs. The former reduces transportation risk. The latter leads to greater conservation of resources.

Even simple treatment processes work most effectively and safely when they are well maintained. Operational maintenance will generally be done more safely and effectively by larger off-site facilities than by most small businesses. Poorly operated equipment may not adequately reduce the hazardous properties of the wastes being treated.

The waste hierarchy reflects the general preference for on-site management versus off-site management. The hierarchy also reflects the role of the state and federal land disposal restrictions in driving the need for alternative means of managing, or better yet preventing the generation of waste.

The hierarchy's highest priorities are source reduction and waste reduction, two activities that are conducted on-site. The primacy of source reduction can be viewed from several perspectives:

- From a **physical perspective**, the generation of hazardous waste represents a waste of resources.
- From an **economic perspective**, the generation of hazardous waste represents an inefficiency, the manufacture of a product at what may be an

unnecessarily high material cost. Conversely, waste management is a cost that does not contribute directly to the value of a product.

- From a **health perspective**, the use of hazardous materials and the generation of hazardous wastes represents an increased risk of exposure to workers in agriculture and industry and to the public with the potential result of acute and chronic health effects.

- From an **environmental perspective**, regardless of the degree of caution that is exercised, the greater the use of hazardous materials and the generation of hazardous wastes, the greater the probability that more of these substances will find their way into the environment. Some of these substances remain hazardous or toxic indefinitely.

Physical laws dictate that some waste will always be associated with the use of hazardous materials to produce products and services, but this waste should be reduced as far as possible. But, in general, the greater the use of source reduction and waste reduction techniques, the smaller and less toxic the quantity of wastes that must be managed off-site, and the lower the probability of hazardous waste transportation spills, released to the air, the soil and to surface and groundwaters. The lower risk of releases translates into a lower overall risk of exposure for the general public. Similarly, although proper use of pesticides per se does not represent a form of waste generation, techniques analogous to source reduction can reduce the need for pesticides and resulting environmental contamination.

4.2 SOURCE REDUCTION OPTIONS

This section introduces the hazardous waste management options at the source of generation. On-site source reduction activities could be practiced by businesses both large and small, public agencies, and institutions in El Dorado County.

4.2.1 Strategies for Source Reduction

"Waste reduction", "source reduction", and "waste minimization" are three phrases that have bee used to describe a range of activities that affect the amount and type of off-site facility capacity needed to manage hazardous wastes. Different authors use different definitions for these terms. In this relatively new policy area, set definitions are not yet in wide use.

The Guidelines developed by the Department of Health Services for preparation of the County plans define "waste reduction" to include:

> "on-site practices that reduce, avoid or eliminate the need for off-site hazardous waste facilities. It involves source reduction, recycling and treatment."

Thus, the Department considers source reduction to be a subset of waste reduction activities. Because of the importance and value of source reduction, this Plan gives the phrase its own separate identity.

The guidelines do not specifically define "source reduction", but the term itself encompassses a hierarchy of options, starting with the simplest and least expensive. Housekeeping is usually the first step, but beyond that a mixture of the other techniques may be pursued simultaneously.

The component steps of source reduction are detailed in Table 4-3. Waste reduction audits, the first step in identifying reduction opportunities, are the subject of Table 4-4.

Table 4-3

THE SPECIFICS OF SOURCE REDUCTION

---

1. Housekeeping changes such as waste segregation and modification of cleaning and rinsing procedures.

   - Wastestreams are almost always easier to manage if kept separate. If wastes are segregated, for instance, they are easier to recycle. Even in small operations, it may be feasible to use a closed-loop system to recycle materials within the production process.

   - In processes that require multiple rinsings, a review of rinsing procedures can lead to ways to reduce the use of solvents, substitute water for solvents, or return spent solvent to a production process.

2. Modifications of work processes or hardware to reduce the volume of the wastestream entirely.

   - Production and service process changes that reduce hazardous materials use and hazardous waste generation may save materials or provide other efficiencies. Changes may be easiest to institute when equipment is shut down for maintenance or is not presently needed.

   - Businesses such as agriculture that depend on direct application of toxic substances may replace existing application equipment or procedures to increase efficiency of contact between chemicals and their target while reducing waste.

3. Substitutions of raw materials or of the manufactured products.

   - Perhaps the same product can be grown or manufactured or service be performed using the same process, but less hazardous materials. A company may find ways to carry out its regular business using safer materials and generating a less hazardous wastestream.

Table 4-3 (continued)
The Specifics of Source Reduction

4. External reduction opportunities such as a waste exchange.

   - Although it may not take place on-site, the use of waste exchanges is a form of source reduction. A waste exchange takes advantage of the fact that one company's waste may be a raw material for another company. Many companies have lower specifications for the purity of solvents, and can profitably use the solvents that an electronics company would consider a waste. A business or farm changing its products may exchange chemicals it no longer needs.

Source reduction options reduce both the volume or quantity and the toxicity of waste generated. Dewatering is a practice that reduces the overall volume of the waste but concentrates the toxic components, and is **not** source reduction.

Table 4-4

WASTE REDUCTION AUDITS

A waste reduction audit examines existing production and hazardous materials use practices within a business and provides a road map for developing a source reduction and waste reduction strategy.

The importance of a good audit cannot be overemphasized. An audit can identify a menu of options and provide the generator with a sense of what reductions can be achieved at what cost, or perhaps even at a savings. By removing some of the unknowns, a good audit builds confidence in the efficacy of the reduction process.

The State Department of Health Services is developing self-audit checklists for a variety of industry sectors that are largely comprised of smaller businesses. The Department recognizes that although reduction techniques must fit the circumstances of the individual firm, many smaller businesses use substantially the same processes and that, at least to some degree, generic solutions are applicable. Waste audits can perform important educational functions for smaller businesses in applying generic solutions and finding specific ones appropriate to each firm.

The production processes used by larger firms are more likely to vary. Larger companies use a proportionately higher percentage of proprietary techniques, and thus the reduction potentials will be more site-specific than is the case for smaller businesses. Here, the function of waste audits is to assess the specific circumstances of the firm, rather than apply generic solutions.

Table 4-4 (continued)
Waste Reduction Audits

Private engineering contractors are also now offering audits, which may range in cost from several hundred dollars for a small facility with simple production techniques, to several tens of thousands of dollars for a large and complex facility such as a petroleum refinery or a chemical manufacturing facility.

4.2.2 The Importance of Source Reduction and On-site Waste Management in El Dorado County

The waste management hierarchy, with its emphasis on on-site management, is of importance to El Dorado County. The lack of adequate off-site waste management facilities within the County means that El Dorado County businesses will continue to rely on the availability of off-site options in other counties. Reducing off-site management needs reduces the transportation of waste along El Dorado County streets and highways.

Using the data from Tables 2-8 and 2-12, the major industries in El Dorado County generating hazardous waste can be identified and their primary and associated wastes determined. Several sources were used to identify recommended reduction practices for industry and waste type. Percentage reduction figures were estimated using the same sources. This information is summarized in Table 4-5. This table should be used by the County as a goal in its source reduction and waste minimization efforts. Significant amounts of contaminated site wastes (soil and water) may also be generated from time to time in El Dorado County. These cleanup wastes can not be significantly reduced.

4.2.3 Role of Local Government in Source Reduction and On-site Waste Management

Promotion of source reduction and waste reduction is an activity that is well suited to a local government approach. The highly site-specific and often wastestream specific nature of successful source reduction argues for a public-private partnership approach that utilized the knowledge and experience of the private sector. Much like solid waste recycling or energy conservation, waste reduction is most successful when tailored to local needs.

Table 4-5

MAJOR HAZARDOUS WASTE INDUSTRIES, WASTE TYPES
AND POTENTIAL REDUCTION PRACTICES IN EL DORADO COUNTY

SIC	Industries	1986 Quantity (Tons)	Waste Types		Reduction Practice	Potential Reduction Percentage
			Primary Wastes	Associated Wastes		
55 & 75	Auto Dealers, Service Stations,	1623.10	Waste Oil	Used Batteries Solvents	o Use aqueous solvents o Maintain solvent quality by decantation of solids from good, usable solvents	2-9%
16	Heavy Construction	313.90	Waste Oil	Used Batteries Solvents	o Use aqueous solvents o Maintain solvent quality by decantation of solids from good, usable solvent o Reuse oil in-house by filtering lubricating oil and reusing	2-9%
42	Motor freight, transportation and warehousing	258.22	Waste Oil	Used Batteries Solvents	o Use aqueous solvents o Maintain solvent quality by decantation of solids from good, usable solvent o Reuse oil in-house by filtering oil and reusing	2-9%
92	Justice, Public order, and Safety	161.80	Waste Oil	Used Batteries Solvents	o Use aqueous solvents o Maintain solvent quality by decantation of solids lubricating oil and reusing	2-9%
17	Construction/	134.38	Paint Wastes	Solvents	o Use dry stripping of paint o Use aqueous solvents o Maintain solvent quality by decantation of solids from good, usable solvent	5-9%
76	Miscellaneous Repair Services	111.55	Waste Oil	Paint Wastes	o Use dry stripping of paint o Use aqueous solvents o Maintain solvent quality by decantation of solids from good, useable solvent o Increase use of materials efficiently o Reuse oil in-house by filtering lubricating oil and reusing	5-8%
82	Educational Services	107.01	Waste Oil	Solvents Strong acids and alkalies	o Use dry stripping of paint o Use Aqueous solvents o Maintain solvent quality by decantation of solids from good, useable solvent o Increase use of materials efficiency o Reuse oil in-house by filtering lubricating oil and reusing	2-9%

Table 4-5 (continued)

MAJOR HAZARDOUS WASTE INDUSTRIES, WASTE TYPES
AND POTENTIAL REDUCTION PRACTICES IN EL DORADO COUNTY

SIC	Industries	1986 Quantity (Tons)	Waste Types: Primary Wastes	Waste Types: Associated Wastes	Reduction Practice	Potential Reduction Percentage
73	Business Services	105.92	Photographic Wastes	Metal-containing sludges Formaldehyde wastes	o Use water-based inks and solvents o Reduce excess ink in printing systems o Recover excess ink and silver control ink inventory	10-25%

Sources: Department of Health Services, Technical Reference Manual, 1987.
Jacobs Engineering Group, Hazardous Waste Minimization Potential Workbook, 1987
Exceltech, Development of a Local Hazardous Waste Minimization Program, 1987
Local Government Planning Commission, "Reducing Hazardous Wastes Workshop," 1987

Table 4-6

SOURCE REDUCTION AND WASTE REDUCTION: STATE AND FEDERAL POLICY

Federal. The 1984 amendments to the Federal Resource Conservation and Recovery Act (RCRA) require that:

- **Generators**. In completing a manifest for off-site management of hazardous waste, the generator must check a box certifying that the generator has instituted a waste minimization program and is reducing generation to the degree economically feasible. Defining "waste minimition" and "economic feasibility" is left to the generator.

- **Generators**. The biennial report that must be submitted by each generator must include a statement regarding efforts to reduce waste volumes and must document actual reductions achieved.

- **On-site Treatment, Storage, and Disposal Facilities**. As a permit condition for storing, treating, or disposing of wastes at the site of generation, the permittee must annually certify that a program is in place to "reduce the volume or quantity and toxicity to the degree determined by the generator to be economically practicable..." and that the proposed method "...is that practicable method currently available to the generator which minimizes the threat to human health and the environment." (Resource Conservation and Recovery Act, Section 3005(h).)

California. California statute contains explicit provisions related to the waste management hierarchy, but does not contain specific waste reduction requirements in addition to those in federal law. The California provisions thus provide guidance to regulators without putting specific requirements on generators.

There is one important exception, however. California law identifies a list of "recyclable wastes". Listed wastes must be recycled or, if managed in another manner, the generator must justify why the waste is not recycled. (In addition, California law requires incineration of certain high-BTU hazardous wastes, which can act as a form of resource recovery.)

In addition, pending legislation (Roberti-SB714) would establish a regulatory waste reduction program with specific generator requirements. Similar legislation is also in early stages of consideration at the federal level.

The appropriate role of the state and federal government in encouraging or mandating the use of source reduction and waste reduction techniques is currently a subject of debate in Sacramento and Washington, D.C. In order to meet tight state and federal land disposal restriction schedules, as well as to reduce cost and liability, generators nationwide will need to make significant increases in the rates of source reduction and waste

reduction. Table 4-6 contains a synopsis of the debate at the state and federal level.

This plan proposes that the County of El Dorado not wait for the resolution of the debate regarding state and federal policy. A local government role is especially appropriate for El Dorado County because of the proportionately large role of small generators. El Dorado County government can serve as a catalyst to private sector action, working directly with larger generators, and directly with approximately 1,011 small generators or indirectly through contacts with business and trade associations. The County can also work to enforce State and Federal requirements to ensure that generators are seeking available reduction opportunities.

4.2.4 Barriers to Reduction

Waste generators face several types of barriers to successful source reduction. Identification of the barriers is an important component of this Plan. The presence of barriers indicates gaps in the ability of the private sector to achieve source reduction, and hence areas in which government assistance may be needed. Institutional, financial, technical, and regulatory barriers may be highest for smaller generators, but understanding them is also important to the success of large generator programs.

Institutional Barriers

Strong source reduction and waste reduction efforts in industry require involvement across the range of company personnel. Institutional barriers inherent in corporate hierarchy may be the most important and the least obvious hindrance to some reduction by large generators.

For smaller companies, however, institutional questions are of less importance. In smaller businesses, employee responsibilities are frequently not well differentiated. Here successful source reduction is less inhibited by a hierarchical structures, than it is by a lack of time and resources to address the problem at all. These problems are common to industrial and agricultural small businesses alike.

Agricultural efforts at reducing the use of toxic pesticides encounter other barriers. Unlike industry, farmers have not yet generally accepted the need for pesticide reduction nor have they developed an adequate body of experience to draw on in alternative methods of pest control, safe treatment methods or less toxic substitutes. Perhaps most importantly, government agencies that regulate agriculture have put little emphasis on research geared toward reducing the use of pesticides.

Financial Barriers

Lack of capital and staff, both to conduct waste audits and to identify and implement source reduction strategies, is the largest single barrier for smaller industrial generators. Although source reduction is often a long-term money-saver, even

a rapid payback period is of relatively little value for a business that does not have capital for initial investments. Larger generators usually fund reduction efforts from current capital.

Similarly, farmers lack resources to explore reduction in toxics use. Marketing pressures on fruit crops, such as those grown primarily on the western slope of El Dorado County, put an extreme premium on product appearance that makes reduction in pesticide use very risky.

Informational Barriers

Perhaps the most significant technical obstacles to source reduction relate to access to and transfer of information. Such obstacles exist between industries, between firms within a given industry, and even within individual firms.

The larger and more decentralized the company, the greater the need for specific in-house measures to encourage information flow and exchange. Technical assistance for smaller generators may be supplied most successfully through trade associations, with assistance and encouragement from local government. Trade associations may also be instrumental in setting up multi-generator pest management on farms. Some types of source reduction require multi-generator efforts.

As discussed in the section on future programs, facilitating technical assistance and the flow of information can be a key role of local government. Information clearinghouses, conferences and workshops all help to focus attention on the importance of source reduction. In the agricultural sphere, the role of local government in providing education and technical assistance is made more crucial, given that most pest control advisors licensed by the state are employees of pesticide manufacturers.

Regulatory Barriers

State and federal regulatory requirements inadvertently may be barriers to waste and source reduction. In an effort to address this problem, the state recently developed a separate permitting system for "resource recovery" facilities with somewhat less stringent permit requirements than required for other facilities. For instance, concern about past problems related to recycling facilities means that until recently recycling facilities had to undergo a permitting process similar to that for other hazardous waste facilities. Because recycling is presumed to be a desirable activity that involves less risk to public health and to the environment than other forms of waste management, recycling facilities should be simpler to permit.

The development of local programs, as discussed elsewhere in this report, provides an important mechanism for identifying and correcting regulatory impediments to reduction.

4.2.5 Institutional Elements of Successful Source Reduction

Top-level commitment to a visible program and to follow-through is equally important for small and large generators. The identification and implementation of reduction opportunities requires leaving behind the "end-of-pipe" mentality that is traditional to pollution control, both for government regulators and for the regulated community. If source reduction is built into production processes at the initial stages of construction, greater reductions can often be achieved at far lower costs than through later retrofits. For existing operators, equipment maintenance and replacement, chemical purchases, and housekeeping improvements can be made with an eye to reducing waste generation. But this kind of effort requires commitment that starts at the top levels of small or large businesses. Employees must be provided an atmosphere of positive encouragement for identifying and implementing opportunities for source reduction.

Large and small companies that have instituted successful reduction programs have used different management techniques in an effort to accustom employees to the concept of reduction. The best methods will depend largely on the way in which the firm has operated historically. Some of the elements that tend to be common to successful programs include:

- Means for ensuring communication between personnel in the company that may not normally have much contact, including employees involved in all stages of company operations.
- Incentives for encouraging every employee to look for, and to be rewarded for identifying, reduction opportunities.
- Methods for setting and meeting reduction, including incorporating source reduction as a central part of company planning, and instituting ways of measuring reduction improvements.

Eventually, as the application of source reduction techniques becomes more sophisticated and the "easy" steps have been taken, whether in broad programmatic terms or at the level of the individual firm, additional reduction options will become both less effective and increasingly expensive. But this stage is far in the future. As a society we are on the early stages of a learning curve that can take us to increasingly greater reductions.

4.3 ON-SITE AND OFF-SITE WASTE TREATMENT METHODS

By May 1990 a ban on land disposal of untreated hazardous waste will take effect in California. A variety of treatment methods now are in use for treating hazardous wastes both at the source of generation and at separate off-site treatment facilities. Recycling and various treatment processes that reduce the volume or the toxicity of hazardous wastes, including aqueous treatment, incineration, and stabilization, fall below source reduction in the waste management hierarchy. Most of these techniques reduce waste volume; stabilization, however, increases the volume of hazardous waste. This section summarizes the major recycling and

treatment techniques available for El Dorado County's waste-stream. These technologies are presented in greater detail in Appendix D.

4.3.1 Recycling

Recycling of hazardous wastes, on-site or off-site, is second to source reduction in the hierarchy of preferred waste management methods. Recycling reduces the quantity of waste requiring treatment or destruction while conserving materials, energy, and often money. Unlike source reduction, however, recycling does not reduce worker exposure to hazardous materials, and often leaves residues that must be managed as hazardous wastes. Off-site recycling my entail risks to the general public during transportation and handling. Recycling must be carefully managed and regulated; a number of state and federal Superfund sites in California formerly hosted recycling operations. The different classes of recycling and important recycling technologies are discussed below.

Waste Exchange and Other DHS Programs

A waste exchange connects waste generators with persons who may be able to use wastes as raw materials for their own businesses. An electronics firm, for example, may be able to sell or give relatively clean spent solvents to other firms that do not need pure solvents. DHS publishes the California Waste Exchange, which includes listings of available wastes and a newsletter covering new programs and regulatory changes. In addition to this program, DHS publishes a directory of waste recyclers. to further encourage recycling, DHS routinely checks manifests for recyclable wastes, and reminds generators disposing of such materials of their legal requirement to attempt to recycle their wastes. Finally, the Department sponsors conferences and seminars, provides direct technical assistance to generators, and promotes regulatory reform to encourage recycling. These issues are discussed further in the section of this report covering future programs.

Used Oil Recycling

Over 100 million gallons (380,000 tons) of used oil are generated in California annually. Waste oil is the largest category of hazardous waste generated in El Dorado County - currently 2,178 tons per year are generated. Waste oil includes used motor oil, spent industrial lubricants, industrial engine oils, and oils for working metal. In 1986, El Dorado County generated about 11 tons of PCB contaminated liquid wastes. Oils contaminated with PCBs may often be recycled through PCB removal.

Most waste oil generated by small businesses is picked up by private waste oil recovery operations which provide a collection service. About 60% of waste oil shipped off-site in California is burned as fuel, but this process is coming under increased federal restrictions. Approximately 40% is recycled as a lubricant. Recycling is becoming more economical as technology improves and other disposal options dwindle.

The steps required in oil recycling depend on the degree of contamination by heavy metals, halogenated organics, and other materials. A comprehensive treatment system would include chemical precipitation of metals, settling and filtration of solids, thermal dehydration or distillation, and solvent treatments. Some contaminants require special treatments: several PCB dechlorination processes, for example, have been developed. Sludges generated in the recycling process must often be managed as hazardous wastes. Oil recycling is carried out both on-site and off-site. Mobile treatment systems are available for customers who would not find it practical to install permanent on-site facilities. Commercial recyclers provide off-site services to small and large generators. Waste oil is often collected from gas stations by so-called "milk-run" services, which act as the generator under a modified manifesting procedures.

Solvent Recovery

Distillation -- the separation of chemicals according to their vapor pressure -- is the major process used in solvent recovery. Processes used include simple, fractional, extractive and vacuum distillation. Physical solvent-recovery processes include filtration, sedimentation, and centrifugation. Solvent-recovery processes generate residual wastes (filter cartridges, still-bottoms and sludges) that are often contaminated with toxic organics or heavy metals. These residues must be managed as hazardous wastes.

Off-site solvent recycling is often carried out by solvent-leasing companies. Solvent leasing is particularly important to small businesses, who are often unable to properly manage these wastes on their own. The solvent-leasing company retains ownership of the solvent, picking up spent material and replacing it on a regular basis. Rather than renting solvent or seeking other means of off-site recycling, some generators have installed small stills for on-site solvent recovery.

Mercury and Lead Recycling

Spent batteries, such as auto batteries, contain heavy metals and other toxic materials. Metals can be recovered by crushing the batteries and separating the components. Battery recycling has its hazards: one federal Superfund site in California was created by a badly-managed auto battery recovery operation.

Liquid mercury, found in fluorescent light bulbs, thermostats, and scientific instruments, requires special handling. Commercial recyclers purify the metal by distillation in a sealed, low pressure apparatus. Solids contaminated with mercury can be crushed and heated to vaporize and recover the metal.

Container Recycling

Used containers that once held hazardous materials may be considered hazardous. Containers that are thoroughly cleaned can

be returned to use. Examples of recyclable containers include transformers formerly contaminated with PCBs, many pesticide containers, and steel drums. Container recycling reduces the volume of hazardous waste requiring treatment and disposal, but it is not free from environmental hazards. For example, previous drum-cleaning operations in other parts of California have become Superfund sites. As an example, abandoned containers at the SMUDEA Campground near Union Valley Lake have led to this site being placed on the EPA list of potentially contaminated sites.

Recovery of Dissolved Metals

A wide range of industries generate liquid wastes and sludges contaminated with dissolved metals. Often these wastes also contain cyanides, strong acids, and other toxic substances. Generators of metal-containing liquid wastes fall under strict regulations preventing both sewering and land disposal of these wastes.

Most metals recovery occurs on-site. Off-site recycling is limited to reuse of slightly contaminated electronics wastes by less demanding metal finishers, additions of micronutrients such as zinc to fertilizers, and some precious-metals recovery.

Many metals-recovery processes operate on the same principles: contaminated solutions and rinses are concentrated and their metal content returned to fresh solutions. Prevalent recovery technologies include: evaporation, electrolytic metal recovery, reverse osmosis, crystallization, ion exchange, and electrodialysis.

Recovery of Photographic Chemicals

The photographic industry has long recovered silver from spent processing solutions for resale off-site. Ferrocyanide bleach, which is reduced to ferrocyanide during film processing, can be rejuvenated through ozonation or other methods.

Recovery of Acid Wastes

Spent acids that are relatively free of dissolved metals can be commercially recycled. Sulfuric acid recovery is the most important class of acid recycling, and is exempt from many state and federal hazardous waste management requirements. Process residues include acidic washwaters from purification processes.

4.3.2 Aqueous Treatment of Organic and Inorganic Wastes

Aqueous treatment facilities remove or detoxify organic and inorganic contaminants in wastewaters by means of physical, chemical, and biological unit processes. Treated wastewaters are usually discharged to municipal sewage treatment plants. Aqueous treatment methods can be used for in-situ treatment of contaminated soils: contaminants are in effect rinsed from soil and the contaminated rinsewater is treated. Treatment falls below source reduction and recycling in the waste management

hierarchy insofar as wastes are destroyed rather than recovered for reuse.

Aqueous treatment facilities can be designed for continuous or batch treatment. The selection of treatment methods depends on the characteristics of the incoming wastestream and on the quality of the desired effluent. Major processes include mixing and storage, batch reactions, steam stripping, solvent extraction, dewatering, biological treatment, carbon absorption, and monitoring for discharge. These processes are discussed more fully in Appendix D.

4.3.3. Thermal Destruction Technologies

Thermal oxidation methods can destroy a broad range or organic wastes by exposing them to high temperatures in the presence of air. Thermal destruction mostly entails incineration, but also includes flameless methods such as wet air oxidation and pyrolytic destruction using infrared radiation. Some inorganic wastes can be treated by heat destruction. For some highly hazardous organic wastes, such as PCBs and dioxins, incineration may prove to be the only practical treatment method.

The major advantage of incineration is that it can be applied to a wide range of wastestreams and thus in theory requires siting of a limited number of off-site facilities; in practice, however, most wastes now incinerated are burned on-site. The major disadvantages are the potential conversion of wastes into the air and water pollutants and the consumption of resources, including potentially recyclable wastes and the energy needed to burn wastes and that incinerating high-BTU wastes can generate net energy. At the same time, however, it should be noted that chlorinated hydrocarbons can be burned to produce industrial-grade acids.

Rotary kiln incineration is the best-developed thermal destruction technology. Centralized, full-service treatment facilities in Europe employ rotary kilns as their major treatment unit. In the U.S., on-site rotary kilns have been in operation since before the promulgation of hazardous waste disposal regulations, and EPA has developed specifications for a mobile rotary kiln suitable for cleanup activities at remote sites.

A well designed and operated facility can achieve destruction efficiencies greater than 99.99%. During the combustion process, however, air and water pollutants and residual ash are created. The incomplete combustion of certain organics is a potential source of dioxins, furans, and other extremely toxic chemicals. Heavy metals and toxic organics may be major contaminants of incinerator ash.

Rotary kilns used in cement manufacture are particularly appropriate for hazardous-waste destruction because of high operating temperatures and the dry-scrubber action of cementitious materials. General Portland, Inc. of Lebec, California burns high-BTU, low-chlorine solvent wastes to provide up to 25% of its heating requirements. This facility is the only off-site incinerator currently operating in California.

Other incineration technologies include fixed-hearth incineration, liquid injection, fluidized-bed incineration, and infrared incineration. Flameless thermal destruction includes wet-air oxidation, supercritical water, and advanced electrical reactors.

4.3.4 Stabilization

Waste stabilization techniques are designed to reduce the mobility of contaminants and their potential for release into the environment. Stabilization employs both physical and chemical techniques to:

- o reduce the solubility of wastes
- o detoxify contaminants
- o decrease the surface area of the wastes
- o improve handling and physical characteristics.

No form of stabilization can eliminate hazardous waste; indeed the quantity of waste is often increased by 100% or more, adding to transportation costs and the consumption of landfill volume. Although all stabilized materials should pass standardized leachate tests before placement in landfills, it remains unknown whether wastes so treated will remain stable forever, or whether the stabilizing media can eventually deteriorate, releasing environmental contaminants.

Stabilization is also known as solidification or fixation. Wastes are mixed with cementitious materials, plastic resins, or other media, depending on the type of waste. The final products of stabilization range from loose, soil-like materials to solid monolithic blocks to plastics, depending on the technology used.

DHS recommends stabilization for management of asbestos wastes. Typically this involves wetting the material and sealing with an impermeable wrapping. The importance of asbestos wastes will increase over the next few years as pipe insulation and other materials are removed from El Dorado County schools and public buildings. El Dorado County is currently updating its permit for the Union Mine landfill to allow for the long-term disposal of asbestos at this Class III landfill.

4.3.5 Differences Between On-Site and Off-Site Waste Treatment

Treatment and recylcing can be carried out on-site or off-site. On-site options are generally preferred because they reduce the expense, management problems, and risks related to waste transport. Many on-site methods, such as treatment and re-use of rinsing solutions, approach source reduction. Off-site recycling and treatment, however, can take advantage of specialized processes and equipment not available on a smaller scale, and may reduce environmental risks such as releases due to poorly maintained equipment.

On-site and off-site recycling and treatment use most of the same major processes, such as filtration, sedimentation, distillation, and chemical treatments such as acid neutralization and incineration. Some technologies are restricted in practice to

on-site application, such as recovery and re-use of plating solutions; others lend themselves to off-site application, such as recylcing of used motor oil and auto batteries. Mobile units for recycling, treatment and incineration are becoming increasingly available.

4.4 RESIDUALS REPOSITORIES

Almost all hazardous waste treatment and destruction technologies produce sludges, ash, cementitious blocks, or other residual wastes. These materials are often themselves irreducible, yet still retain some toxitity. DHS expects that these treatment residuals will be placed in highly secure landfills known as residuals repositories. DHS suggests that these facilities would be much safer than existing secure hazardous waste landfills because the wastes they would contain would have much-reduced toxicity and toxic components would be immobilized.

Currently, there are no facilities in California licensed as residuals repositories and there is some question as to the form these facilities will ultimately take. However, SB 38, Boatwright, 1986, defines a "residual repository" as a permitted hazardous waste management facility that accepts for storage or disposal, in or on land, only treated hazardous waste or a solid hazardous waste produced as a result of any removal or remedial action approved by DHS. The technical description of a repository in the DHS Guidelines includes suggested features that are controversial among hazardous waste experts such as retrieval of wastes for recycling and a mobile roof to keep precipitation off active deposition areas.

4.5 CHARACTERISTICS OF TSD FACILITIES

The foregoing sections have described the recycling and treatment processes available for the El Dorado County wastestream. Storage and treatment activities are housed typically in structures with an industrial appearance. Such facilities are typically located in industrial zones though not necessarily in densely populated areas. This section takes a look at the physical characteristics of six typical so-called TSD facilities.

A TSD facility is one which provides any one or combination of treatment, storage, or disposal of hazardous waste. It may be an on-site or off-site hazardous waste facility: an on-site facility is owned by, leased to, or under the control of the generator of the waste; an off-site facility treats, stores, or disposes of wastes not generated on-site.

In a TSD facility providing **treatment** of hazardous wastes, treatment residues may or may not be hazardous. Examples of treatment processes include chemical neutralization, evaporation, land farming, aqueous treatment, and incineration.

In a DHS-permitted TSD facility providing **storage** of hazardous wastes, wastes may be stored for greater than 90 days. On-site facilities which store hazardous wastes for a period not exceeding 90 days, and off-site facilities which store hazardous wastes for a period not exceeding 96 hours would not be considered TSD

facilities and do not require a DHS permit. However, facilities storing for any period of time quantities of hazardous waste exceeding 5,000 gallons or 45,000 pounds, whichever is greater, must possess a DHS permit. Wastes may be stored in waste piles, containers, or liquid management tanks. Storage facilities may vary in size, depending on the types of materials stored and the methods for containment.

In a **transfer station**, hazardous wastes are loaded, unloaded, pumped, or packaged for further treatment or disposal at a TSD facility, which may be off-site. A transfer station is technically a TSD facility. However, if wastes accepted from an individual generator are less than 5 gallons or 50 pounds, the transfer station is not subject to the more restrictive requirements of a larger TSDF.

In a **resource recovery** facility, hazardous waste or substances from hazardous waste may be redirected or recovered (recycled) for further use. Materials listed in Health and Safety Code Section 25127.5 would be exempted from recycling.

A hazardous **waste disposal** facility provides for disposal of hazardous wastes on or into the land, through landfilling of solids or surface impoundment of liquids. A **residuals repository**, according to DHS Guidelines, is a hazardous waste disposal facility which accepts only solid materials resulting from the treatment of hazardous wastes under standards established by DHS; or accepts hazardous organic waste which is stabilized, solidified, or encapsulated. No waste consisting of free liquids may be accepted at a residuals repository.

The fact sheets contained in Tables 4-7 through 4-12 give specific characteristics of each of six major types of TSD facilities. The Tables were prepared utilizing various sources, the most important of which are the **DHS Guidelines** and **Technical Reference Manual**. Only off-site facilities are included here. Appendix D discusses in more detail the chemical, thermal, physical and biological treatment processes that are typically used.

Table 4-7

OFF-SITE FACILITY FACT SHEET: TRANSFER STATION

FUNCTION	Transfer of wastes from small vehicles to fewer, larger ones for long-distance transport. May entail some treatment, e.g., acids neutralization.
TYPES OF WASTES ACCEPTED	All types, but especially small-quantity wastes, e.g., household wastes, small-quantity generator wastes.
ADVANTAGES	Overall reduction in the number of vehicles carrying wastes and the cost of waste transported over long distances.
DISADVANTAGES INCLUDING POTENTIAL ENVIRONMENTAL IMPACTS	Possible spills; air emissions.
APPEARANCE	Warehouse-style building with trucks entering to transfer material and storage tanks surrounded by dikes.

SIZE -DEPENDENT ASPECTS:

	Facility Size (Typical)	Small[a]	Large
o	Annual Quantity (in thousands of tons)	10-20	20-40
o	Land Required (acres)	1-5	5-10
o	Number of Employees	2-5	5-10
o	Minimum Number of Incoming Trucks per Week[b]	6-23	18-75

(a) Specialized facilities, e.g., household hazardous waste collection sites and transfer stations for small-generator wastes could be even smaller.

(b) Assumes 4,000 gallons per truckload. Rail cars would typically carry 8,000 gallons each.

Table 4-8

OFF-SITE FACILITY FACT SHEET: RECYCLING FACILITY

FUNCTION	Uses a variety of processes to recover valuable materials from waste: distillation of organics (solvents, used oil) and metallic mercury; cleaning and reconditioning of drums; recovery of lead from batteries; many other processes.
TYPES OF WASTES ACCEPTED	Many waste types accepted.
ADVANTAGES	Conservation of chemical resources; reduces economic and environmental cost of producing new materials. Reduces wastes requiring disposal.
DISADVANTAGES INCLUDING POTENTIAL ENVIRON-MENTAL IMPACTS	Air emissions and other possible environmental releases. Facilities may be specialized by wastestream. Unrecyclable residuals may require management as hazardous wastes.
APPEARANCE	Organics Recycling Facility - Appearance of small refinery: distillation towers, pipelines, and many storage tanks; industrial buildings; visible dikes surrounding tank storage areas; occasional visible venting of steam from distillation equipment, and warehouse-style building with trucks entering to transfer material. Other Facilities - Depends on equipment required.

SIZE-DEPENDENT ASPECTS:

Facility Size (Typical)	Small	Large
o Amount Annually (in thousands of tons)	10-20	20-40
o Land Required (acres)	1-5	5-10
o Number of Employees	15-25	25-60
o Minimum Number of Incoming Trucks per Week [a]	6-28	18-75

(a) Assumes 4,000 gallons per truckload. Rail cars would typically carry 8,000 gallons each.

Table 4-9

OFF-SITE FACILITY FACT SHEET: AQUEOUS TREATMENT FACILITY

FUNCTION	Uses physical, chemical, and biological processes to remove chemicals from wastewater and/or reduce their toxicity. Largely similar to sewage treatment technology.
TYPES OF WASTES ACCEPTED	Wastewaters containing organic and inorganic containments.
ADVANTAGES	Reduces or eliminates toxic or hazardous properties of waste. Some recovery of valuable materials possible, using extra equipment. Reduces volumes requiring disposal. Can produce water suitable for other uses.
DISADVANTAGES INCLUDING POTENTIAL ENVIRON-MENTAL IMPACTS	Requires high burn temperatures; air emissions or other possible environmental releases. Potential lost of recoverable materials unless needed equipment installed. Residual biological, organic and inorganic sludges may require management as hazardous wastes.
APPEARANCE	Raised pools or holding basins with storage tanks near a few buildings; surface aerators operating in open tanks and basins; and warehouse-style building with trucks entering to transfer material.

SIZE - DEPENDENT ASPECTS:

Facility Size (Typical)	Small	Large
o Amount Annually (in thousands of tons)	10-12	100-200
o Land Required (acres)	3-5	10-30
o Number of Employees	15-20	35-40
o Minimum Number of Incoming Trucks per Week[a]	12-14	120-230

(a) Assumes 4,000 gallons per truckload. Rail cars would typically carry 8,000 gallons each.

Table 4-10

OFF-SITE FACILITY FACT SHEET: INCINERATOR

FUNCTION	Burns wastes at high temperatures to effect complete combustion. Related technologies include flameless oxidation and thermal destruction in the absence of oxygen.
TYPES OF WASTES ACCEPTED	Wide range of organics wastes; contaminated soil and some other inorganic wastes.
ADVANTAGES	Handles broad range of wastes. Some energy recovery possible if high-energy wastes are burned. May be only viable option for some highly toxic organic wastes. Reduces volumes requiring disposal.
DISADVANTAGES INCLUDING POTENTIAL ENVIRON-MENTAL IMPACTS	Air emissions potentially including highly toxic products of incomplete combustion. Loss of resources if recoverable wastes are burned. Some wastes may require large inputs of fuel to effect complete combustion. Process is expensive; small facilities may not be economically feasible. Residual ash may contain heavy metals and refractory organics and may be considered hazardous.
APPEARANCE	Tall smokestack which mostly emits steam; visible storage tanks for waste; and warehouse-style building with trucks entering to transfer material.

SIZE-DEPENDENT ASPECTS:

Facility Size (Typical)	Small	Large
o Amount Annually (in thousands of tons)	5-10	60-70
o Land Required (acres)	4-6	8-10
o Number of Employees	2-3	2-12
o Minimum Number of Incoming Trucks per Week [a]	3-20	35-130

(a) Assumes 4,000 gallons per truckload. Rail cars would typically carry 8,000 gallons each.

Table 4-11

OFF-SITE FACILITY FACT SHEET: STABILIZATION AND SOLIDIFICATION FACILITY

FUNCTION	Wastes combined with other materials (e.g., cement, resins, asphalt) to form solid blocks, plastics, or other materials for final disposal.
TYPES OF WASTES ACCEPTED	Wide range of organic and inorganic wastes, especially residues from recycling, treatment, and incineration.
ADVANTAGES	Isolates waste from environment and renders some chemicals insoluble to reduce potential for air emissions, soil and water pollution.
DISADVANTAGES INCLUDING POTENTIAL ENVIRONMENTAL IMPACTS	Increases volume of waste requiring disposal. Stabilized wastes may be difficult to recover for recycling. Some processes use hazardous chemicals as solidification agents; long-term stability of solidified wastes is unproven.
APPEARANCE	Industrial building with silos nearby for storage of dry chemicals; and warehouse-style building with trucks entering to transfer material.

SIZE-DEPENDENT ASPECTS:

Facility Size (Typical)	Small	Large
o Amount Annually (in thousands of tons)	5-15	50-100
o Land Required (acres)	1-2	5-10
o Number of Employees	5-10	26-30
o Minimum Number of Incoming Trucks per Week [a]	4-12	40-78

[a] Assumes 4,000 gallons per truckload. Rail cars would typically carry 8,000 gallons each.

Table 4-12

OFF-SITE FACILITY FACT SHEET: RESIDUALS REPOSITORY

FUNCTION	Highly secure landfill for solid or stabilized wastes. (No definition of facility yet exists in state or federal law.)
TYPES OF WASTES ACCEPTED	Stabilized residues from recycling, treatment, and incineration that are not otherwise manageable.
ADVANTAGES	No liquids or untreated wastes accepted. Isolates residues from environment.
DISADVANTAGES INCLUDING POTENTIAL ENVIRONMENTAL IMPACTS	Dedicated land use. No defined relationship to existing landfill design and operation. Potential escape of wastes into environment.
APPEARANCE	Area surrounded by five-foot-high landscaped berm partially covered by Quonset-hut shaped moveable roof.

SIZE-DEPENDENT ASPECTS:

Facility Size (Typical)	Small	Large
o Amount Annually (in thousands of tons)	10-20	40-60
o Land Required (acres)	50-100	200-300
o Number of Employees	15-20	20-25
o Minimum Number of Incoming Trucks per Week [a]	9-18	36-54

(a) Assumes 4,000 gallons per truckload. Rail cars would typically carry 8,000 gallons each.

PART C

PLANNING DOCUMENT

Section 5.0

EXISTING TREATMENT, STORAGE AND DISPOSAL FACILITIES AND FUTURE NEEDS

SECTION 5.0

EXISTING TREATMENT, STORAGE AND DISPOSAL FACILITIES AND FUTURE NEEDS

5.1 OVERVIEW

Section 5.2 describes the existing in- and out-of-County treatment, storage or disposal facilities serving El Dorado County. Section 5.3 provides an assessment of the treatment, storage or disposal (TSD) capacity needed, currently and through the year 2000, to manage El Dorado County's hazardous wastestream. TSD facilities considered in this assessment which fulfill treatment/disposal capacity needs include small business/household hazardous waste transfer stations, industrial treatment facilities, and a residuals repository. The term industrial treatment facilities includes those facilities which treat, store, recycle, incinerate, neutralize, stabilize and dispose of hazardous wastes. Figure 5-1 shows the existing relationship between the county's hazardous waste generation and three alternative industrial treatment/disposal facility types.

5.2 EXISTING TSD FACILITIES SERVING EL DORADO COUNTY

5.2.1 Treatment, Storage and Disposal Facilities Within El Dorado County

Existing treatment/disposal facilities are defined by the DHS as those that are now in operation and are permitted or have submitted application forms to EPA and DHS for proposed activity in hazardous waste treatment, storage and/or disposal.

DHS reports that no hazardous wastes were imported into El Dorado County in 1986. DHS records indicate that the Certainteed Corporation of Shingle Springs has a "hazardous waste facility that has received a permit or grant of interim status." However, in late 1986 this Certainteed facility was sold to PW Pipe, Inc.. According to James Barber, PW Pipe plant manager, his operation does not produce or utilize similar manufacturing components as that of Certainteed and therefore, does not require a DHS permit. Mr. Barber indicated that DHS was contacted on January 16, 1987 regarding this issue.

DHS reported no other treatment/disposal facilities located in El Dorado County. DHS Tables E (Table 5-1) and G (Table 5-2) do not list manifested waste imported into El Dorado County and commercial hazardous waste storage capacity within the County. Therefore, these two tables are not applicable to El Dorado County, but are provided within this plan as required by DHS.

Figure 5-1

El Dorado County Off-Site Waste Flow Alternatives

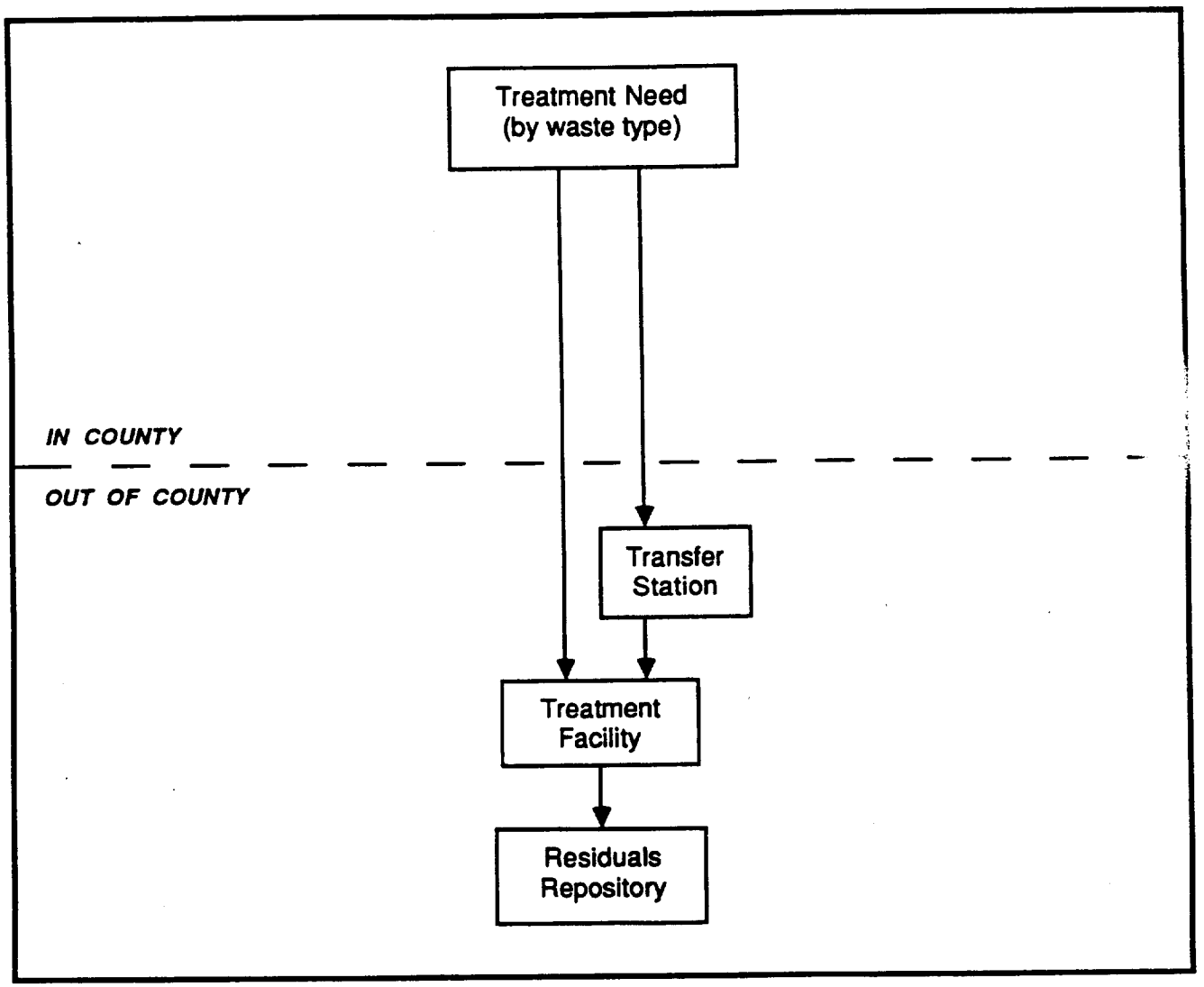


Table 5-1

QUANTITIES OF HAZARDOUS WASTE IMPORTED INTO EL DORADO COUNTY IN 1986 (DHS Table E)

Waste Group	County of Generation	Quantity of waste received from County	Total quantity handled by facility
Waste Oil	0.00	0.00	0.00
Halogenated Solvents	0.00	0.00	0.00
Non-Halogenated Solvents	0.00	0.00	0.00
Organic Liquids	0.00	0.00	0.00
Pesticides	0.00	0.00	0.00
PCBs & Dioxins	0.00	0.00	0.00
Oily Sludges	0.00	0.00	0.00
Halogenated Organic Sludges & Solids	0.00	0.00	0.00
Non-Halogenated Organic Sludges & Solids	0.00	0.00	0.00
Dye & Paint Sludges & Resins	0.00	0.00	0.00
Metal-Containing Liquids	0.00	0.00	0.00
Cyanide & Metal Liquids	0.00	0.00	0.00
Non-Metallic Inorganic Liquids	0.00	0.00	0.00
Metal-Containing Sludges	0.00	0.00	0.00
Non-Metallic Inorganic Sludges	0.00	0.00	0.00
Contaminated Soil	0.00	0.00	0.00
Miscellaneous Wastes	0.00	0.00	0.00
TOTAL	**0.00**	**0.00**	**0.00**

Table 5-2

COMMERCIAL HAZARDOUS WASTE STORAGE CAPACITY AND ACTIVITY WITHIN EL DORADO COUNTY IN 1986 (DHS Table G)

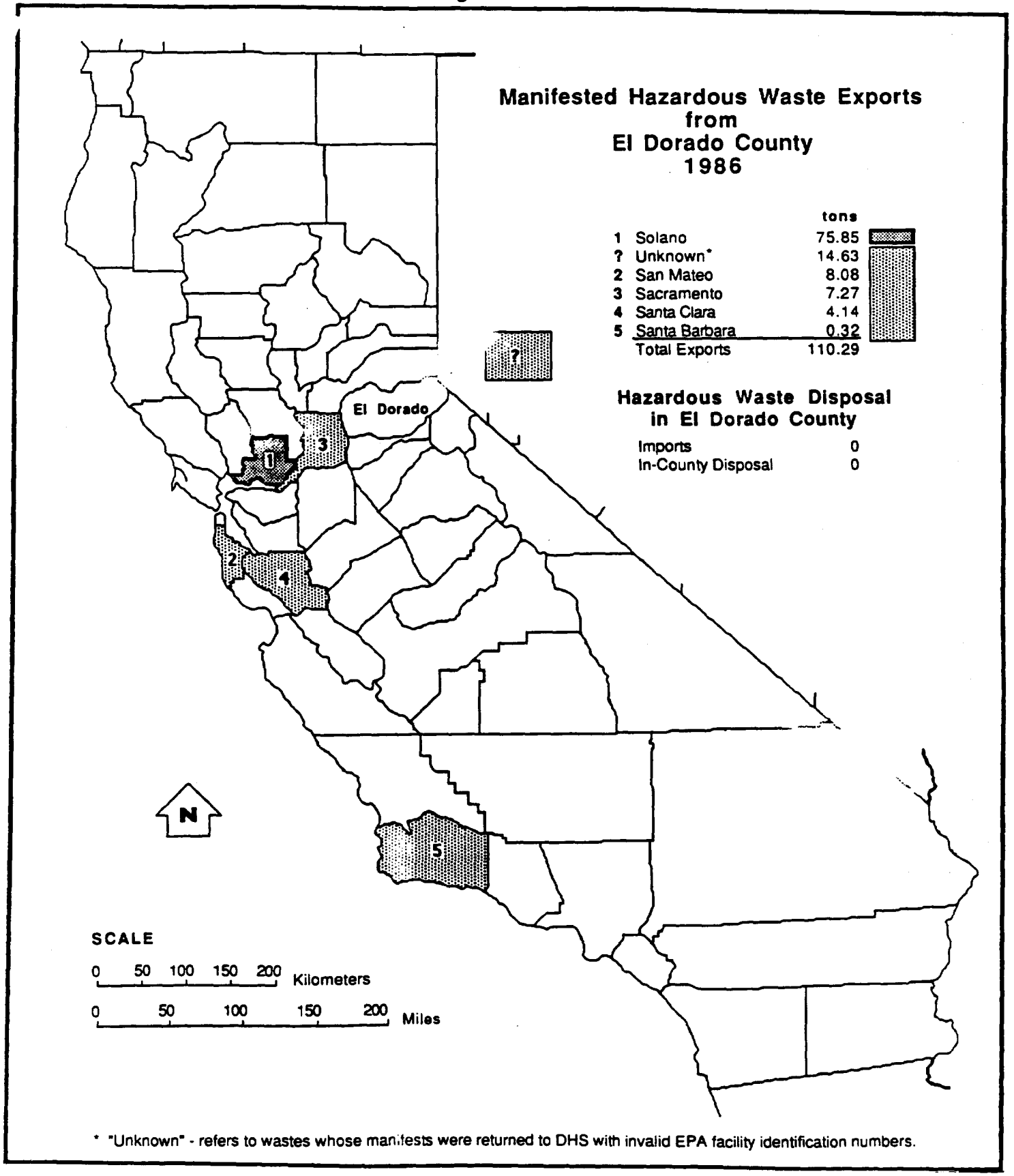
Storage Method	Average Monthly Quantity of Wastes in Storage for Over 90 Days	Storage Capacity	% of Storage Capacity Used
SO1 Container	0.00	0.00	0.00
SO2 Tank	0.00	0.00	0.00
SO3 Waste Pile	0.00	0.00	0.00
SO4 Surface Impoundment	0.00	0.00	0.00
SO5 Other	0.00	0.00	0.00
TOTAL	**0.00**	**0.00**	**0.00**

5.2.2 Treatment, Storage and Disposal Facilities Out-of-County Serving El Dorado County

All 12 manifested hazardous waste generators in El Dorado County sent their waste off-site in 1986. The manifested waste was exported to five out-of-County or out-of-State facilities for treatment and/or disposal. According to DHS 1986 manifest data, El Dorado County exported 110.29 tons of waste to out-of-County and out-of-State facilities that year. Figure 5-2 illustrates the destinations of El Dorado County's exported manifested wastes. Two maps illustrating the locations of permitted treatment, storage or disposal facilities in California are presented in Appendix E.

DHS has provided data on the five TSD facilities located outside of El Dorado County which received waste generated within El Dorado County. Table 5-3 quantifies, by waste group, the distribution of El Dorado County's manifested wastes to out-of-County facilities. These totals were from actual 1986 manifest data and were not adjusted as discussed in Section 4.1 or identified in Table 2-5. In the case of approximately 15 tons, or 13 percent, of these wastes, the receiving facilities were incorrectly identified on the manifest shipping document; these wastes are therefore indicated as "unknown" in Table 5-3.

Figure 5-2



* "Unknown" - refers to wastes whose manifests were returned to DHS with invalid EPA facility identification numbers.

Table 5-3

QUANTITIES OF MANIFESTED HAZARDOUS WASTE EXPORTED FROM EL DORADO COUNTY IN 1986 (DHS Table F)

Waste Group	Facility Receiving Wastes	County of Receipt	Quantity (tons)
Waste Oil	American Envirn Mgmt Corp	Sacramento	4.46
	Calif. Oil Recyclers Inc	San Mateo	8.08
	Unknown	Unknown	2.69
Subtotal			**15.23**
Halogenated Solvents*	American Envirn Mgmt Corp	Sacramento	0.34
Non-Halogenated Solvents*	American Envirn Mgmt Corp	Sacramento	0.34
	Solvent Service Co Inc	Santa Clara	3.89
Subtotal			**4.19**
Organic Liquids	Unknown	Unknown	1.66
PCBs & Dioxins	American Envirn Mgmt Corp	Sacramento	0.44
	Unknown	Unknown	10.08
Subtotal			**10.52**
Non-Metallic Inorganic Liq.	American Envirn Mgmt Corp	Sacramento	0.46
Contmnated Soil	IT Corp - Panoche Facility	Solano	75.85
Empty Containers	American Envirn Mgmt Corp	Sacramento	0.18
	Unknown	Unknown	0.20
Subtotal			**0.38**
Asbestos-Containing Waste	American Envirn Mgmt Corp	Sacramento	0.17
Other Inorganic Solid Waste	American Envirn Mgmt Corp	Sacramento	0.09
	Casmalia Disposal	Santa Barbara	0.25
	Solvent Service co Inc	Santa Clara	0.25
Subtotal			**0.59**
Off-Spec Aged or Surplus Organics	American Envirn Mgmt Corp	Sacramento	0.75
Laboratory Waste Chemicals	American Envirn Mgmt Corp	Sacramento	0.08
	Casmalia Disposal	Santa Barbara	0.07
Subtotal			**0.15**
TOTAL			**110.29**

*Does not include waste solvents manifested by route service haulers which were identified in Table 2-5 (DHS Table A) as per DHS August 28, 1987 memo.

5.3 CURRENT AND FUTURE NEEDS ASSESSMENT

5.3.1 Overview

This subsection provides estimates of hazardous wastes generated in El Dorado County which require treatment, storage, or disposal. Two sets of estimates are made: the first is based on an assessment of hazardous wastes being generated currently (1986); the second is based on the projected stream of hazardous wastes in the year 2000. This assessment accomplishes three purposes:

- Assessed current and future need for treatment/disposal facility capacity(Section 5.3.3)
- Evaluates three availability scenarios for in-County and out-of-County facilities (Section 5.4.3)
- Describes the need for individual types of waste management facilities (Section 5.5)

5.3.2 DHS Assessment Methodology

The DHS methodology used to assess the need for current treatment capacity at hazardous waste facilities considers only those hazardous wastes which are manifested (based on an average of 1985 and 1986 quantities). However, the assessment methodology for future capacity needs also incorporates year 2000 quantity estimates for nonmanifested small quantity generators and household hazardous wastestreams. Sections 2.5 and 3.2 present the methodology used to estimate nonmanifested quantities of hazardous waste.

El Dorado County's need for current and future hazardous facility capacity is provided by an analysis of:

- Existing (1986) and projected (year 2000) hazardous waste quantity estimates
- Existing in- and out-of-County hazardous waste facilities, their capacities, waste collection, and processing capability by treatment method
- Facility contingency analysis using three DHS scenarios for on-site/off-site facility capacity
- Potential for source reduction and waste minimization of hazardous wastes
- Industry/County geographic and economic constraints to new facility feasibility.

For each waste group generated in El Dorado County, such as waste oil, there may be more than one technology available for its treatment. For example, waste oil may be treated by recovery or incineration. For planning purposes, DHS has assigned each waste group to one of seven primary waste treatment methods, termed "generalized treatment methods."

The determination of capacity needs is based on waste quantity estimates associated with each generalized treatment method. Subtracted from this total is the current in-county facility capacity by treatment method. The result is the excess or shortfall of in-County treatment capacity.

DHS-provided data on existing manifested wastes which is the source of information on current hazardous waste generation in El Dorado County. Current and future manifested waste quantities, estimates of quantities from small quantity generators, and estimates of household hazardous waste provide the quantitative basis for facility capacity need. Current treatment, storage and disposal management practices, biophysical constraints (presented in Section 6), and treatment/disposal facilities' economies of scale provide a qualitative basis for determining if current and future in-County capacity needs will be met by El Dorado County's existing collection and processing facilities and programs.

5.3.3 Assessment of Treatment Capacity Needs

Current Capacity Needs

"Current capacity needs" refers to the need for treatment capacity. This need is created by the generation of hazardous waste shipped off-site in El Dorado County in 1986, the base year for this plan. For planning purposes, the base year is synonymous with existing conditions.

El Dorado County's manifested waste total is composed primarily of site cleanup (contaminated soils) waste. Contaminated soils, which account for approximately 76 tons or 45 percent of the total manifested waste, are one-time wastes requiring incineration as the primary waste treatment process. Table 5-4 presents the current capacity needs assessment in El Dorado County for manifested- waste only. The totals utilized for required treatment capacity (tons/yr) are from Table 2-5 (DHS Table A).

In addition to contaminated soils, PCB cleanup activities from one large generator account for 12 percent of the incineration treatment capacity needs and 10 percent of the total manifested waste. PCB cleanup activities are mostly complete, and significant additional PCB waste quantities are not likely to be generated through the year 2000.

Using DHS methodology, the generation of manifested hazardous wastes (170 tons) in El Dorado County creates a treatment capacity need of an equal amount, due to the lack of in-County treatment facilities. In 1986, virtually all of this capacity need was managed by out-of-County facilities.

Manifested data do not include the majority of small quantity generator or household hazardous waste. An estimated 3,495 tons and 287 tons respectively, were generated from these sources. As a group, household hazardous wastes are significant because surveys indicate the majority of such wastes are disposed of improperly. Future programs, discussed in Section 8 of this plan, are aimed at eliminating improper and illegal disposal of hazardous waste.

Table 5-4

CURRENT EL DORADO COUNTY NEEDS ASSESSMENT FOR COMMERCIAL MANIFESTED HAZARDOUS WASTE TREATMENT/DISPOSAL CAPACITY (Totals from Table 2-5) (DHS TABLE B)

Generalized Treatment Method	Required Treatment Capacity (Tons/Yr)
Aqueous Treatment - Organic	0.00
Incineration	86.37
Solvent Recovery	65.59
Oil Recovery	13.39
Other Recycling	4.10
Stabilization	0.17
TOTAL	**170.08***

* Note: The Needs Assessment is based on 1985 and 1986 manifested waste quantities.

Future Capacity Needs

"Future capacity needs" refers to the quantity of hazardous waste generated in El Dorado County in the year 2000 and the corresponding need for treatment capacity. The lack of existing or proposed treatment/disposal facilities in El Dorado County limits projections of future in-County treatment capacity. Consequently, future capacity needs are equal to the projected waste generation for the year 2000. Tables 2-12 (Section 2) and 3-5 (Section 3) provide detailed information on the total current and projected waste. Future capacity needs include projections of waste from industry, small quantity generators, households, cleanup activities (underground tanks, old disposal sites, closed toxic pits, etc.), and new wastes (pretreated sludges and other new wastes).

An EPA-required assessment for asbestos is to be completed by July 1988 in El Dorado County. An assessment for asbestos has been conducted by the South Lake Tahoe School District; however, the remaining school districts in the County have not yet completed their assessments. Quantities of asbestos associated with the removal program are unknown at this time.

An important factor in estimating the need for future facility capacity is reduction in future waste quantities due in part to source reduction and waste minimization programs. Reduction of the quantity of hazardous wastes which require treatment, storage or disposal involves a variety of technologies and varies for each waste type. Specific percentages for the potential reduction of hazardous waste at each generating facility have not been quantified. In the absence of local data, DHS reduction potentials (Table 5-5) were utilized and applied to the generalized treatment methods identified in Table 5-8 (DHS Table P) and Table 5-9 (DHS Table Q).

The estimated quantity of hazardous waste generated in El Dorado County equals the total unadjusted or gross capacity requirement. Subtracted from the gross capacity totals are the potentials for on-site source reduction and waste minimization of those wastes which require off-site treatment or disposal. The remaining quantity of hazardous waste requiring treatment/ disposal represents the total future capacity needs.

Assuming no waste reduction, the total projected El Dorado County capacity needs assessment is approximately 9,427 tons in the year 2000. Table 3-5 (Section 3) presents a summary of projected waste generation by waste group (DHS Table N). The largest projected treatment method need will be incineration for approximately 3,736 tons or 40 percent of the total treatment capacity needs. The next largest treatment method need is for oil recovery which accounts for an estimated 3,648 tons, or 39 percent, of the total projected treatment capacity need.

Table 5-5

POTENTIAL FOR SOURCE REDUCTION BY DHS WASTE GROUP

Waste Group	Potential Reduction Percentage
Waste Oil	8
Halogenated Solvents	9
Non-halogenated Solvents	1
Organic Liquids	4
Pesticides	2
PCBs & Dioxins	0
Oily Sludges	8
Halogenated Organic Sludges/Solids	9
Non-halogenated Organic Sludges/Solids	1
Dye & Paint Sludges & Resins	5
Metal-Containing Liquids	25
Cyanide & Metal Liquids	2
Non-metallic Inorganic Liquids	2
Metal-Containing Sludges	25
Non-metallic Inorganic Sludges	2
Contaminated Soil	0
Miscellaneous Waste	Varies
Inorganic Solid Waste	2

SOURCES:
1. Department of Health Services, Technical Reference Manual, 1987
2. Jacobs Engineering Group, Hazardous Waste Minimization Potential Workbook, 1987

The projected generation of 488 tons of household hazardous waste is potentially significant because if not properly managed, these wastes may be environmentally significant and thereby compromise one of the purposes of the County Hazardous Waste Management Plan.

5.4 CURRENT AND FUTURE FACILITY CAPACITY ASSESSMENT

5.4.1 Current Facility Needs

El Dorado County currently depends on out-of-County facilities to accept all of its manifested off-site hazardous waste. However, the treatment/disposal needs of El Dorado County are less than one percent of the State's total needs. Table 5-6 lists the current facility needs assessment by treatment method for manifested waste. Table 5-6 combines DHS facility needs assessment Tables C and D.

Table 5-6

EL DORADO COUNTY COMMERCIAL HAZARDOUS WASTE TREATMENT/DISPOSAL FACILITY CAPACITY REQUIREMENT FOR MANIFESTED WASTE TREATED IN 1986 (Totals from Table 5-5) (DHS Tables C & D)

Generalized Treatment Method	Required Treatment Capacity (Tons)	Existing TSD Treatment Capacity	Quantity of Waste Treated or Disposed	Capacity Excess(+) or Deficiency(-)	% of TSD Capacity Used
Aqueous Treatment-Organic	0.46	0.00	0.00	- 0.00	0.00
Aq Trtmnt-Metals/ Neutralztn	0.00	0.00	0.00	- 0.46	0.00
Incineration	86.37	0.00	0.00	-86.37	0.00
Solvent Recovery	65.59	0.00	0.00	-65.59	0.00
Oil Recovery	13.39	0.00	0.00	-13.39	0.00
Other Recycling	4.10	0.00	0.00	- 4.10	0.00
Stabilization	0.17	0.00	0.00	- 0.17	0.00
Residuals Disposal	0.00	0.00	0.00	- 0.00	0.00
TOTAL	**170.08**	**0.00**	**0.00**	**-170.08**	**0.00**

Table 5-7

PROJECTED COMMERCIAL HAZARDOUS WASTE TREATMENT DISPOSAL CAPACITY IN THE COUNTY (DHS Table O)

Generalized Treatment Method	Capacity from Existing Facilities	Capacity from Proposed Facilities	Loss of Capacity from Closing Facilities	Total Projected County Capacity
Aqueous Treatment - Organic	0.00	0.00	0.00	0.00
Aqueous Treatment - Metals/Neutralization	0.00	0.00	0.00	0.00
Incineration	0.00	0.00	0.00	0.00
Solvent Recovery	0.00	0.00	0.00	0.00
Oil Recovery	0.00	0.00	0.00	0.00
Other Recycling	0.00	0.00	0.00	0.00
Stabilization	0.00	0.00	0.00	0.00
Residuals Disposal	0.00	0.00	0.00	0.00
TOTALS	**0.00**	**0.00**	**0.00**	**0.00**

TABLE 5-8

PROJECTED NEEDS ASSESSMENT FOR COMMERCIAL HAZARDOUS WASTE TREATMENT FACILITIES IN EL DORADO COUNTY (TONS) (DHS Table P)

Generalized Treatment Method	Projected County Capacity	Projected County Capacity (No Reduction)		Projected County Capacity (with Reduction from Table 5-5)	
		Requirement	Excess(+) or Deficiency	Requirement	Excess(+) or Deficiency
Aqueous Treatment-Organic	0.00	75.33	-75.33	73.82	-73.82
Aqueous Treatment-Metals/ Neutralization	0.00	159.04	-159.04	147.34	-147.34
Incineration	0.00	3,736.11	-3,736.11	3,720.60	-3,720.60
Solvent Recovery	0.00	435.10	-435.10	414.48	-414.48
Oil Recovery	0.00	3,647.81	-3,647.81	3,355.99	-3,355.99
Other Recycling	0.00	1,334.69	-1,334.69	1,320.01	-1,320.01
Stabilization	0.00	39.03	- 39.03	29.54	- 29.54
TOTAL	**0.00**	**9,427.11**	**-9,427.11**	**9,061.78**	**-9,061.78**

5.4.3 Contingency Analysis of Existing Treatment Facilities

For facilities which currently manage El Dorado County's hazardous wastes, DHS methodology requires a contingency analysis of those facilities to assess their future availability to accept and process El Dorado County's hazardous wastestream. This analysis is an assessment of the potential for such facilities to meet rules and regulations and continue to operate. The three scenarios required for the contingency analysis are:

1. Existing facilities meet rules and regulations.

2. Existing facilities do not meet rules and regulations and choose not to modify, or are denied a permit and close.

3. Existing facilities are modified to meet rules and regulations on an unknown time schedule. Thus, assumptions as to probability of modification must be included along with time frames.

TABLE 5-9

PROJECTED QUANTITIES OF RESIDUALS GENERATION IN EL DORADO COUNTY FOR 2,000 (TONS) (DHS Table Q)

Generalized Treatment Method	Residual Generation Multiplier	Projected County Capacity (No Reduction)		Projected County Capacity (with Reduction from Table 5-5)	
		Requirement	Residuals	Treatment Requirement	Residuals
Aqueous Treatment-Organic	0.1	75.33	7.53	73.82	7.38
Aqueous Treatment-Metals/ Neutralization	0.5	159.04	79.52	147.34	73.67
Incineration	0.1	3,736.11	373.61	3,720.60	372.06
Solvent Recovery	0.2	435.10	87.02	414.48	82.90
Oil Recovery	0.2	3,647.81	729.56	3,355.99	671.20
Other Recycling	1.0	1,334.69	1,334.69	1,320.01	1,320.01
Stabilization	1.2	39.03	46.84	29.54	35.45
TOTAL		**9,427.11**	**2,658.77**	**9,061.78**	**2,562.61**

Five commercial hazardous waste handling facilities, listed in Table 5-1, manage 97 tons or 87% of El Dorado County's exported manifested waste. However, these five facilities, and other facilities not currently receiving El Dorado County's waste, also manage hundreds of thousands of tons of hazardous waste for other generators.

Quantitative data is not available on each of the facilities which has the potential to accept El Dorado County's treatment/ isposal capacity needs. Therefore, a comprehensive quantitative contingency analysis of facility availability is not feasible.

Another approach to assessing future out-of-County facility availability is by qualitatively assessing the effects on El Dorado County if one or more facilities currently managing County hazardous waste were no longer to accept such wastes.

The following three DHS scenarios (as required by the DHS Guidelines) are used to assess qualitatively the availability of future treatment capacity at facilities currently receiving El

Dorado County's hazardous waste. The scenario analysis presented below is qualitative and based on these DHS scenarios.

Scenario 1. Existing facilities meet rules and regulations

Facility capacity for each of the six needed treatment methods should be readily available at either facilities currently accepting hazardous waste from the County or other facilities in California. This assessment would be possible only through 1990 at which time facilities currently employing surface impoundments and landfilling of liquid hazardous waste would be required to discontinue these methods of disposal.

Waste oil recycling and incineration of contaminated soil/PCBs would not be affected by the 1990 deadline. Therefore, it is reasonable to estimate that the two treatment capacity needs requiring the bulk of facility capacity would be met. Quantities of waste for each of the four other treatment/disposal capacity needs area not sufficient to justify construction and operation of TSD facilities, because of the economies of scale associated with such facilities.

Waste reduction and on-site pretreatment would help to minimize transportation costs and the danger to the public and the environment of potential waste accidents. Alternate treatment methods would likely be employed for each waste group, e.g., using incineration for waste oil, rather than waste oil recovery.

Scenario 2. Existing facilities do not meet the rules and regulations and choose not to modify, or are denied a permit and close

This scenario is essentially a worst-case scenario and would drastically affect every county in California. Each of the five facilities which manage El Dorado County waste also receive larger quantities of hazardous waste from other counties. The construction and operation of small treatment facilities in each county serving only one county is also not feasible. Consequently, for counties which produce small quantities of hazardous waste, one of the few alternatives is to construct treatment/disposal facilities which serve several counties through inter-County agreements.

Each of El Dorado County's six treatment capacity needs would be similarly affected. Treatment capacity demand would likely outpace supply for any remaining California facilities for the near term. The treatment/disposal problem would likely be acute. Vigorous waste reduction, waste minimization, and on-site pretreatment of hazardous waste would be necessary. Alternate treatment methods would likely be employed for each waste group, e.g., utilizing incineration for waste oil rather than waste oil recovery.

Scenario 3. Existing facilities are modified to meet rules and regulations on an unknown time schedule. Thus, assumptions as to probability of modification, including time frames, must be included.

This scenario is the most likely to occur; however, it is also the most difficult to assess. The timing of closure for facilities seeking modifications and the treatment methods affected are essential to the assessment of availability of future facility capacity. However, the basic assumption of this scenario, that the closure of a facility would be temporary, is discussed herein. The anticipation of the availability of a facility, particularly for a specific treatment method, would have a greater effect on near term rather than long term planning.

Generators in El Dorado County would be forced either to treat waste on-site to the level that they could meet landfill disposal requirements in a Class II site, or to utilize other treatment/ disposal facilities not affected by a particular closure. Certain treatment methods will no longer be permissible by 1990, thereby creating a Statewide need for other treatment/disposal technologies.

5.5 SUMMARY OF LOCAL NEEDS FOR HAZARDOUS WASTE FACILITIES

5.5.1 Transfer Station

An alternative to hauling household and commercial wastes from El Dorado County directly to out-of-County treatment, storage and disposal facilities is to direct wastes to household hazardous waste transfer stations near the populated areas which are major sources of the wastestream; i.e., the Western Slope and South Lake Tahoe areas. A permitted transfer-storage facility would be allowed to store certain wastes on-site for up to one year. A transfer station for El Dorado County could serve three purposes:

- Consolidation and storage of wastes prior to long distance hauling to treatment facility
- Provision of cost savings in transport of hazardous wastes
- Provision of a facility for wastes from small quantity generators and households -- either brought by the generators in amounts under the 5 gallon/50 pound limit, or by licensed collection services

El Dorado County has need for two transfer stations. One transfer station should be located in the South Lake Tahoe area, the second station should be located in the western slope. In addition to the review of a special use permit, a more focused environmental analysis (including meeting CHWMP siting criteria) would be required before these transfer stations could be established.

The need for a transfer station depends to a large extent on its economic feasibility compared to that of a direct haul system (to an out-of-County treatment facility). For example, the establishment of a transfer station may fulfill other hazardous waste management objectives not related to economics. For example, providing a household and commercial hazardous waste collection center for the southern Lake Tahoe Basin would lessen the amount

of improper disposal and ultimately improve water quality.

Policy issues aside, transfer station economics will depend on:

- Quality of wastes
- Types of waste
- Proximity of generators
- Distance to the TSD facilities used for ultimate treatment or disposal
- Cost of site acquisition and of facility construction to meet State standards

The economics may appear stronger if a regional facility were sited to serve El Dorado County and adjacent counties. For example, a South Lake Tahoe transfer station may serve the Douglas County, Nevada, and El Dorado County portions of the Lake Tahoe Basin.

5.5.2 Other Large TSD Facilities

Current and future needs assessments indicate that quantities of hazardous waste requiring treatment and disposal are relatively small. However, it is possible that existing or new hazardous waste generators in El Dorado County may at some point in the future generate enough waste to consider siting of an in-County industrial TSDF. It may accept out-of-County wastes if ~~mutually binding~~ effective interjurisdictional agreements are established (see Section 8.8). The proposed facility must be economically, environmentally and geographically warranted and meet the siting criteria discussed in Section 6.

Once wastes have gone through the treatment process, a residual waste is left over. For most types of treatment, the residue is a small fraction of the original volume. One exception includes the solidification process which actually increases the amount of waste.

An in-County residuals repository does not appear to be currently needed or economically justified to handle the relatively small quantities of hazardous waste generated in El Dorado County. The current private sector system, which relies primarily on collection and transfer services to regional TSD facilities, should be continued.

SECTION 6.0

SITING ANALYSIS FOR FUTURE HAZARDOUS WASTE FACILITIES

6.1 OVERVIEW

6.1.1 Purpose

A primary objective for El Dorado County's future hazardous waste management system is to reduce the quantities generated by its business and household activities. Source reduction programs described in Section 4.2 could alter the rate of production of hazardous waste in the future; i.e., decrease the quantities of El Dorado County's hazardous wastes requiring management at off-site facilities. Yet, El Dorado County could still be generating an estimated 9,427 tons of hazardous waste annually by the year 2000. As described in Section 5.1, El Dorado County has no TSD facilities within the County to manage any of its hazardous waste.

To comply with state-wide objectives for comprehensive management of hazardous waste, the El Dorado CHWMP identifies criteria for selecting sites for new treatment, storage, and disposal facilities. The Plan also designates areas where TSD facilities could potentially be located within the County. Specific sites are not identified. An actual facility proposal will require a risk assessment or environmental impact evaluation in accordance with the California Environmental Quality Act (CEQA).

Recommended siting criteria are contained in the Guidelines for the Preparation of Hazardous Waste Management Plans (DHS, 1987). In Section 6.3, this siting criteria is presented, and the County's application of the criteria is described. The siting criteria is applied to the County, and the maps provided describe the geographic areas which may potentially meet the siting criteria for new TSD facilities in El Dorado County. Each of the maps and the criteria are described and explained in text form. **The maps are for general planning purposes, and in all cases, more detailed maps should be consulted to ensure compliance of specific sites prior to permitting.** For several of the criteria, generalized data is not available. Analysis of site specific criteria is not within the scope of this report - they should be evaluated by appropriately certified professionals on a site-specific basis prior to permitting. (Consult CHWMP EIR) Specific criteria which will require professional evaluation are indicated in the discussion of each criteria.

New TSD facilities must be reviewed by the appropriate regulatory agencies. Appendix G briefly describes the siting process and major changes that occurred under the Tanner bill.

6.1.2 Land Requirements of TSD Facilities

The needs assessment in Section 5.4 was used to estimate those facilities needed to serve El Dorado County. The assessment was based on El Dorado County's needs as DHS sees it; it does not take into account the possibility that a TSDF could be sited in

the County that would meet multi-county needs. As indicated in Objective 10, the County recognizes its collective responsibility to cooperate with other governments in the region and the State in planning for the effective management of hazardous waste generated in the region and the State in accordance with the hazardous waste management hierarchy.

Table 6-1 summarizes the different types of facilities and their approximate land requirements including buffer zones where required by the state. With the exception of transfer stations, El Dorado County's wastestream alone does not appear to be sufficiently large enough to support most of these facilities, in particular a residuals repository, however, this is ultimately determined by the private sector.

Table 6-1

SUMMARY OF LAND REQUIREMENTS FOR TSD FACILITIES

Type of Facility	Land Requirement (acres)*	Buffer Zone (radius in feet)
Transfer Station	1-5	---
Recycling	1-5	---
Aqueous Treatment	3-5	---
Incinerator	4-6	---
Stabilization	1-2	---
Residuals Repository	50-100	2,000

*Requirements for small facilities with 5-15,000 tons per year of wastes accepted.

6.2 CATEGORIES OF TSD FACILITIES POTENTIALLY SITED IN EL DORADO COUNTY

The intent of the siting criteria as outlined in the DHS Guidelines is to accommodate projected needs for the treatment, storage, and disposal of hazardous waste in California. Each county in the state must adopt a set of siting criteria and identify potential areas or specific sites within its boundaries "to which the site selection criteria might be applicable." The DHS siting criteria as described in the Guidelines are in Appendix F. In the absence of a specific facility proposal, the objective of this Plan is to identify general areas which might be suitable for a TSD facility in accordance with the siting criteria.

Not all TSD facilities have the same degree of potential environmental or public safety related impacts. Residuals repositories, the permanent home for treated hazardous waste, require the maximum care in locating to eliminate possible harm to people, natural resources, air and water. All other TSD facilities are way stations for hazardous wastes as they are temporarily stored, recycled, or treated. Therefore, the potential for environmental impacts is generally less. Engineering solutions which mitigate some environmental problems can often be incorporated into the design of a hazardous waste

facility. Household/Small Business Transfer Stations are used for short-term storage and transfer of small quantities of hazardous waste. The actual amount limit on such wastes is either a maximum volume of 5 gallons or a maximum weight of 50 pounds per generator. Such small quantities of hazardous waste are not subject to State manifest requirements. Therefore small quantities transfer stations should be located convenient to waste generators to encourage their use. Because they handle only small quantities of waste,the potential for environmental impacts is less, and thus the siting criteria are less stringent.

For the purposes of siting criteria application, the three general categories of facilities shall be defined as follows:

Household/Small Business Transfer Station - Hazardous waste management facility for transfer and short-term storage of hazardous waste from generators sufficiently small to be exempt from manifest requirements as described in California Health and Safety Code, Division 20, Chapter 6.5, Article 6. Wastes from any given generator must not exceed a total volume of five gallons or a total weight of fifty pounds.

Industrial Transfer/Storage/Treatment Facility - Any hazardous waste management facility which is not a household/small business transfer station or a residuals repository; including but not limited to the following:

- Manifested waste transfer station
- Recycling facility
- Aqueous treatment facility
- Stabilization and Solidification Facility
- Incinerator

Residuals Repository - A hazardous waste disposal facility for collection of residuals from hazardous waste treatment facilities and other irreducible stabilized or detoxified hazardous wastes.

6.3 APPLICATION OF SITING CRITERIA TO EL DORADO COUNTY

The objectives of this section are to identify general areas suitable for Household Hazardous Waste Transfer Stations, and to identify general areas which may be suitable for siting of industrial TSD facilities and residuals repositories.

6.3.1 Flood Plains: Map 2

Hazardous materials can be distributed over large areas by flooding waters. This map includes areas subject to flooding by dam or levee failure and natural causes such

as river flooding, rainfall or snowmelt, tsunamis and seiches.

Repositories: Repositories may not be located in areas subject to 100-year events, even with protection [Code of Federal Regulations (CFR), Title 40, Section 264.18(b); and CAC Title 22, Section 66391(a)(11)(b)].

All Other Facilities: May be built in areas subject to 100-year flooding if protected by engineered solutions, such as berms, raising above flood levels, etc.

6.3.2 Unstable Soils: Map 2

All Facilities: Facilities located within these areas should have engineered design features to assure structural stability. This category includes steep slopes and areas subject to liquification and subsidence due to natural causes.

6.3.3 Seismicity: Map 4

All Facilities: No facilities should be placed within 200 feet of an active or recently active fault (California Administrative Code (CAC), Title 22, Section 66391 (a)(11) A(1) and (2).

Within the foothills fault system two levels of earthquake potential are recognized: a magnitude 6-1/4 event on those segments of the fault system believed capable or possibly capable on the basis of geologic investigations (often quite detailed) of late Cenozoic strata, (Bear Mountains BMFZ and Melones MFZ) and a magnitude 5-3/4 event on all other parts of the fault system.*

6.3.4 Habitat of Endangered Species: Maps 5a and 5b

All Facilities: No facilities should be located within critical habitat areas as adopted by general, regional or State plans. A critical habitat is defined as an area that if impacted could critically impact the survival of the designated species in that area.

El Dorado County contains regions designated as critical deer migration zones as indicated on Map 5b. These zones were derived from Department of Fish and Wildlife data. Map 5a indicates areas where endangered plant and animal species are located. These species are described in greater detail in Appendix O.

*Source: Bechtel report for SMUD - Seismicity and Seismic Potential for several sites of the upper American River Project - August 1983.

6.3.5 Wetlands:

All Facilities: No facilities shall be located in wetlands such as salt water, fresh water, and brackish marshes, swamps and bogs inundated by surface or ground water with a frequency to support, under normal circumstances, a prevalence of vegetative or aquatic life which requires saturated soil conditions for growth and reproduction, as defined in adopted general, regional or state plans.

6.3.6 Major Aquifer Recharge Areas:

El Dorado County does not have "true" recharge areas like Sacramento Valley; most of the geologic formations exposed in El Dorado County are part of the "basement complex." These basement complex rocks comprise the slate and meta-sandstone of the Mariposa Formation, greenstone, schist and assorted metavolcanics of the Logtown Ridge Formation and intrusive "Granitic rocks."

All of these rock types are consolidate and of low permeability: most of them do not have primary openings large enough to allow an appreciable movement of groundwater. Groundwater contained in these rock types exists largely in secondary openings formed by fractures, joints, shear zones, and faults. The secondary openings provide minimal storage space and avenues for movement of groundwater. This explains the ability of rocks of this group to provide small quantities of water to wells. Because secondary openings are not present uniformly in any given rock type, the ability of the rock to yield water to wells is variable and is dependent largely on local conditions. The hydrologic importance of the rocks lies primarily in their ability to yield small amounts of groundwater to springs, thus providing perennial flow in many streams draining the highland that would otherwise by dry in summer. The most permeable rocks in the county would be the extrusive Valley Springs and Mehrten volcanics. These young volcanics are found on most of the east-west ridges within the central part of the county. Rain water falling in these surfaces would percolate down through these formations upon encountering the relating impermeable underlying "basement complex," the water would tend to migrate laterally and then surface at the contact of the volcanics and the underlying bedrock.

Repositories: Repositories should be prohibited within areas known or suspected to be supplying principal recharge to a regional aquifier. These areas are those covered with either Valley Springs or the Mehrten Formation. Repositories should also be prohibited from contact zones of these formations with the underlying "basement complex" rocks.

All Other Facilities: Facilities should be discouraged from being located in such areas. If located in these areas, facilities should provide properly engineered spill containment features, inspection measures and other environmental protection controls.

6.3.7 Distance from Residences: Map 6

This map indicates the populated areas in the county.

Repositories: A buffer zone of 2,000 feet is required for any hazardous waste residual repository [Health and Safety Code, Section 25202.5(b) and (d)], unless the owner proves to the Department's satisfaction that a 2,000 foot buffer zone is not required to protect public health and safety.

All Other Facilities: Risk assessments shall be made when permitting a facility. This should consider the physical and chemical characteristics of the specific type of wastes that will be handled, the design features of the facility, and any need for buffering residential areas or other sensitive areas from adverse emissions from a proposed facility.

6.3.8 Distance from Immobile Populations:

All Facilities: Risk assessments, performed at time of permitting, shall be used to determine the need for buffer zones between the facility and immobile populations. This risk assessment will consider the physical and chemical characteristics of the specific types of wastes which will be handled and the design features of the facility and proximity to immobile populations. Immobile populations include schools, hospitals, convalescent homes, prisons, facilities for the mentally ill, etc.

6.3.9 Proximity to Major Transportation Routes: Map 7

Repositories: Repositories should have good access to major transportation routes, but may have to be more distant from waste generation sites than other types of facilities because of their need for larger land areas.

All Facilities: Road networks leading to major transportation routes should not pass through residential neighborhoods, should minimize residential frontages in other areas, and should be demonstrated to be safe with regard to road design and construction, accident rates, excessive traffic, etc. Facilities other than repositories should be located so as to minimize distances to major transportation routes and designed to accommodate heavy vehicles.

It should be noted in the site specific facility review, that certain highway segments have been determined to have above normal accident rates. These segments are:

High Accident Rates (>5.50 acc/mvm*)

Route	Segment
49	Route 50 to Route 193 north

Medium Accident Rates (3.64 acc/mvm - 5.50 acc/mvm)

49	Pleasant Valley to Route 50 Placerville north to 153 in Coloma Route 193 west to Placer County line

Route	Segment
50	Pyramid Creek Bridge to Camp - Sacramento
89	Fallen Leaf Lake to Rubicon Point

*million vehicle miles

These figures were taken from the 1987 Caltrans Route Segment Report. These segments should be taken into account when designating transportation routes for hazardous waste. (See Appendix L)

6.3.10 Permeable Strata and Soils:

Soil permeability must be evaluated in determining the effects of a hazardous waste spill.

Repositories: Repositories shall conform to the requirements of the State Water Resources Control Board.

All Other Facilities: All aboveground facilities should have engineered structural design features common to other types of industrial facilities. These features would include spill containment and monitoring devices.

6.3.11 Nonattainment Air Areas:

All Facilities: Siting should not be precluded from these areas unless risk assessments performed as a part of permitting, considering the physical and chemical characteristics of the specific types of wastes that will be handled and design features of the facility, show that emissions will significantly contribute to nonattainment of standards, that such emissions cannot be mitigated and that the emissions from such facilities are significantly greater than those associated with transportation of hazardous wastes out of this area.

The western slope of El Dorado County is currently designated as a non-attainment area for ozone (1978 Non-Attainment Plan, State Air Resources Board).

6.3.12 Agricultural Preserves: Map 8

This map shows all the agricultural preserves which are currently under Williamson Act* contract. A Williamson Act contract is a contract between the county and the owner of agricultural land requiring that the owner will use his land, which has been designated prime agricultural land, only for the production of commercial food or fiber for a period of years. The owner may also have certain compatible uses on the land defined in the Act as those uses compatible with the agricultural, recreational, or

*See California Land Conservation Act of 1965 (Williamson Act)

open space use of the land. (Government Code Section 51123 or 51238.)

To utilize these lands for non-agricultural or non-compatible uses, the owner would file a notice of non-renewal. This roll-out period takes 9-19 years. The owner may also apply for immediate cancellation. In order to grant an immediate cancellation, the Board of Supervisors must make specific findings allowing the change in land use. (See Appendix N)

Map 8 does not show all the prime agricultural land, however maps showing such areas have been completed by the Soil Conservation Service, and are available in the Planning Division.

All Facilities: Prime agricultural lands, under California law, may not be used for urban purposes unless an overriding public need is served. When siting hazardous waste management facilities in these areas, overriding public service needs must be demonstrated.

6.3.13 Depth to Groundwater:

Repositories: Repositories shall meet siting requirements of the State Water Resources Control Board.

All Other Facilities: Other facilities may be located in high groundwater areas if the engineered design of the containment structure is capable of withstanding failure because of geologic or soil failures which may arise.

6.3.14 Proximity to Public Facilities:

All Facilities: Potential adverse impacts which could occur because of proximity of the facilities to places where large numbers of people may gather shall be determined as a part of the risk assessment conducted in the permitting process.

This should consider the physical and chemical characteristics of the wastes that will be handled and the design features of the facility. Proximity to other public facilities such as corporation yards, utilities, roads, and state school lands in remote areas may be acceptable.

Repositories: Self-sufficient services may be necessary.

Transfer/Storage Facilities: Self-sufficient services may be appropriate, where these facilities are necessary to serve remote rural areas. In urban areas, public services should be available.

All Other Facilities: Public water and sewer services and emergency services should be readily available.

6.3.15 Proximity to Waste Stream Generators:

Repositories: Repositories may be located more distant from waste generation sources than other facilities because of their need for larger land areas.

All Other Facilities: These should be located close to waste generation sources to minimize the risks of transportation. (See Section 2)

6.3.16 Zoning

Industrial TSD Facilities: All such facilities including a residual repository shall be located in areas zoned industrial. Industrial zones are favorable because they attract other land uses that are compatible with waste facility operations. Close proximity of generators to waste facilities can reduce safety hazards involved in transportation and handling.

Household/Small Business Transfer Station: This type of facility may be located in commercial zones along with existing small quantity generators. Within the South Lake Tahoe City Limits, this type of facility shall be located in General Commercial Industrial (GCI) Zone only.

6.3.17 Recreational, Cultural or Aesthetic Areas: Map 9

Cultural Areas include historic preservation or other areas of significant cultural interest.

Aesthetic Areas are those with a scenic quality designation in state or locally adopted general plans.

Low-Volume Transfer and Storage Facilities: Such facilities may be allowed in these areas if necessary to handle hazardous wastes generated by visitors, workers or residents in these areas.

6.3.18 Mineral Resource Areas: Map 10

The availability of mineral resources is vital to the economy of the State. Yet for most types of minerals, economic deposits are rare, isolated occurrences which are difficult to find. These circumstances limit the options available for locating mine sites. However, access to favorable geologic terrains for purposes of mineral exploration and mine development is now difficult because of ever increasing land-use competition in California. Local, state, and federal agencies are faced with difficult land-use decisions as needs for the land are being made with little, if any, knowledge of possible mineral occurrences. If we are to continue to supply the mineral needs of our society, it is essential to identify those areas having high mineral resource potential.

In 1975, the State took a major and innovative step towards resolving the conflict between mining and competing land uses by enacting the Surface Mining and Reclamation Act (SMARA). This law provides for reclaiming mined lands and classifying lands within the State according to the presence, absence, or likely occurrence of significant mineral resources. This information is provided by the State Geologist under policies of the State Mining and Geology Board (1983). The Board transmits the mineral land classification information to appropriate lead agencies who

are required to incorporate it in their general land use plans. The primary objective of mineral land classification is to assure that the mineral resource potential of land is recognized and considered before land-use decisions that could preclude mining are made.

The Division of Mining and Geology have completed MRZ studies within the following 15' Quadrangle maps in El Dorado County:

1.	Placerville	-	OFR 82-1	SAC 1982
2.	Georgetown	-	OFR 83-35	SAC 1983
3.	Auburn	-	OFR 83-37	SAC 1984
4.	Folsom	-	OFR 84-50	SAC 1987
5.	Camino & Mokelumne Hill	-	OFR 87-25	SAC 1987

(See index map for the location of these quadrangles in Appendix Q)

The California Mineral Land Classification System is detailed in Appendix Q.

The two areas shown in the El Dorado County MR 2 map are identified as MRZ-2 which represents areas that contain identified mineral resources and MRZ-3 which represents areas in which undiscovered mineral resources of economic significance are likely to occur. (See Appendix Q for MRZ classification.)

> **All Facilities**: No facilities should be sited so as to preclude extraction of minerals necessary to sustain the economy of the State.

6.3.19 Other State and Federal Lands:

These lands shall not be considered for establishment of public hazardous waste management facilities. The County does not have the right to provide for the siting of TSD facilities without a formal agreement with the appropriate government agency.

6.4 SITING EVALUATION SUMMARY FOR INDUSTRIAL TSD FACILITIES AND RESIDUALS REPOSITORIES

Maps 1-10 illustrate the application of individual criteria to El Dorado County. All of these maps were overlaid to create Map 11, "Areas Least Constrained for Siting Hazardous Waste Facilities." All maps showing criteria which were exclusionary for all types facilities were overlaid and those areas were deleted from selection. The remaining maps were overlaid, and those areas least encumbered were selected for Map 11.

The sites designated on Map 11 are considered to be the least constrained. However, site specific analysis may reveal environmental or other factors that will require mitigation or even prevent the development of a proposed TSD facility. The environmental information in Section 6 should be consulted during the CEQA analysis. Each site should also be evaluated according to its best use, i.e., what type of facility may be best accommodated on the proposed site.

Map 2: Flood Hazards

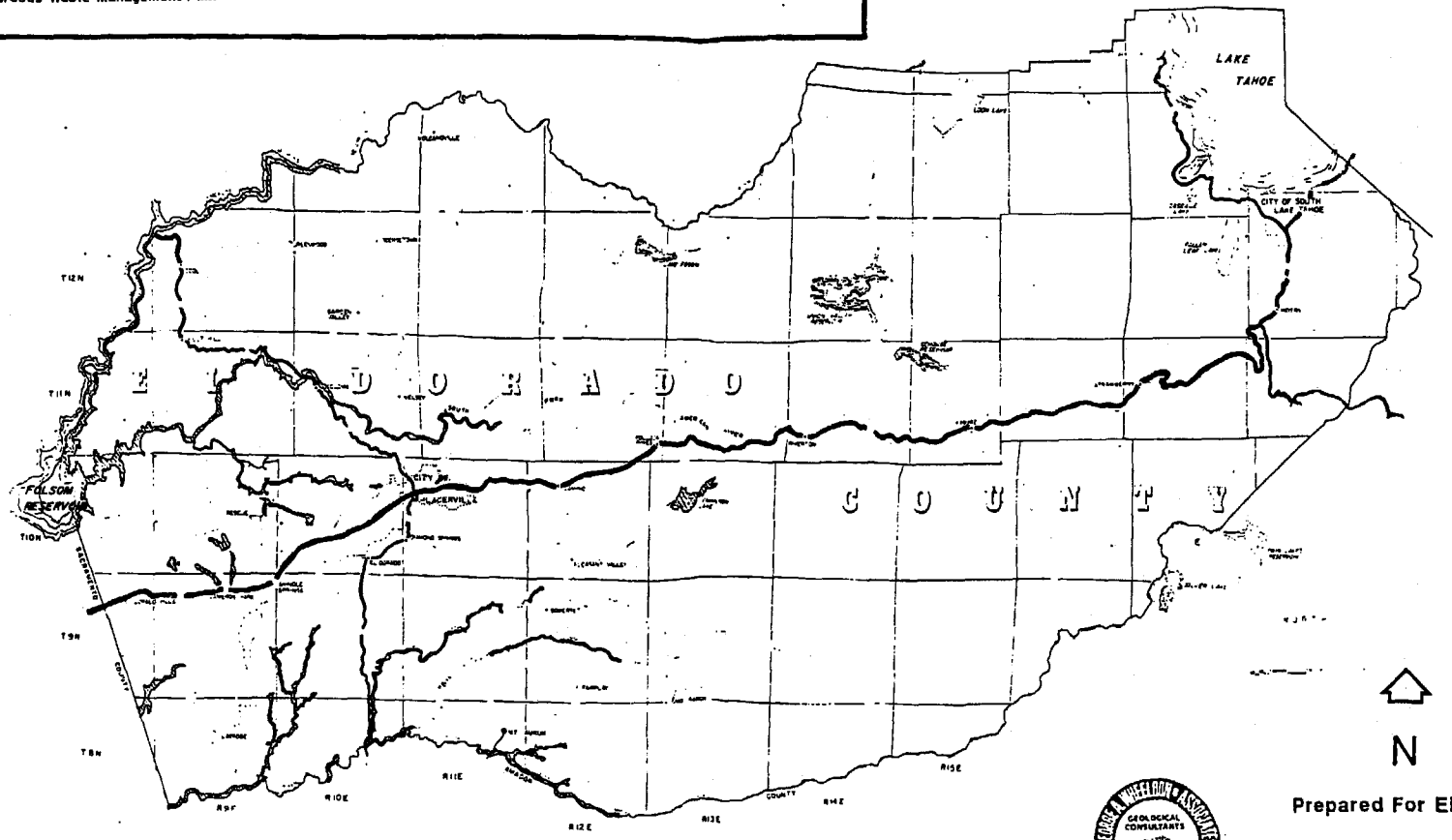
100 Year Floodplain

Zone A

El Dorado County

Hazardous Waste Management Plan

Source: Federal Emergency Management Agency
Flood Insurance Rate Maps
Effective Date: October 18, 1983.



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Prepared For El Dorado County

By Wheeldon & Associates, 1988.

Map 3: Slope Map

- 0 – 5 %
- 5 – 15 %
- 15 – 25 %
- 25 % – OVER

El Dorado County

Hazardous Waste Management Plan

Source: El Dorado County, 1971

Map 4: Foothills Fault System

Fault, Dashed Where Approximate & Dotted Where Concealed

Source: Geologic Map Of California - Sacramento Sheet. 1981. Chico Sheet - 1962. California Division Of Mines & Geology.

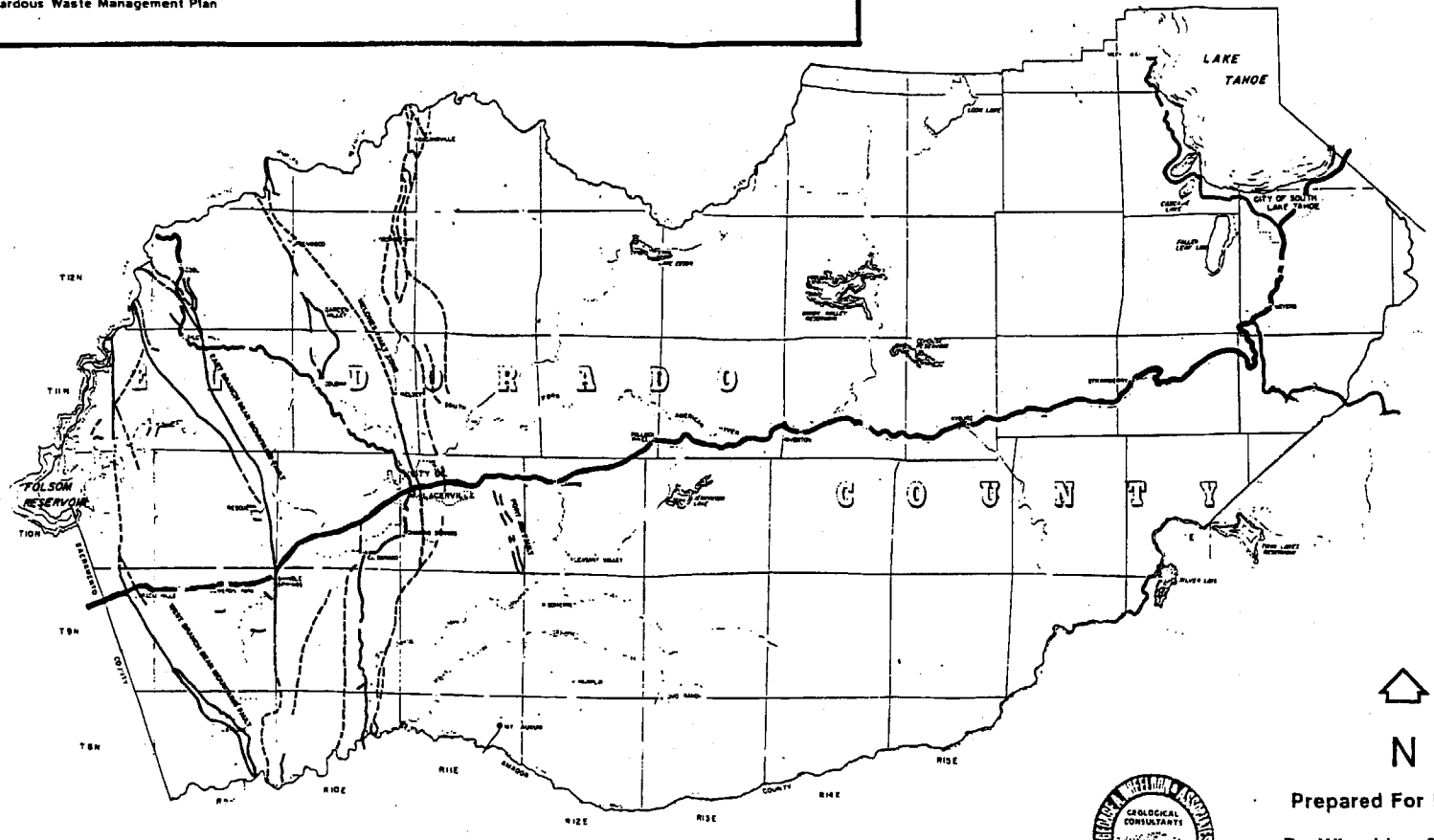
Real,C.R., Toppozada. T.R. & Park, D.L.,1978. Earthquake Catalog Of California, Jan. 1900 - Dec. 1974, California Division Of Mines & Geology Special Publication 52.

Toppozoda,T.R., Real,C.R. & Pierzinski. Seismicity Of California. Jan. 1975 - Mar. 1979,California Geology, V.32,#7.

Toppozada,T.R., Real,C.R. & Parke,D.L. Preparation Of Isoseismal Maps & Summaries Of Reported Effects For Pre-1900 California Earthquakes, California Division Of Mines & Geology Open File Report 81-11 Sac.

El Dorado County

Hazardous Waste Management Plan



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By Wheeldon & Associates, 1988.

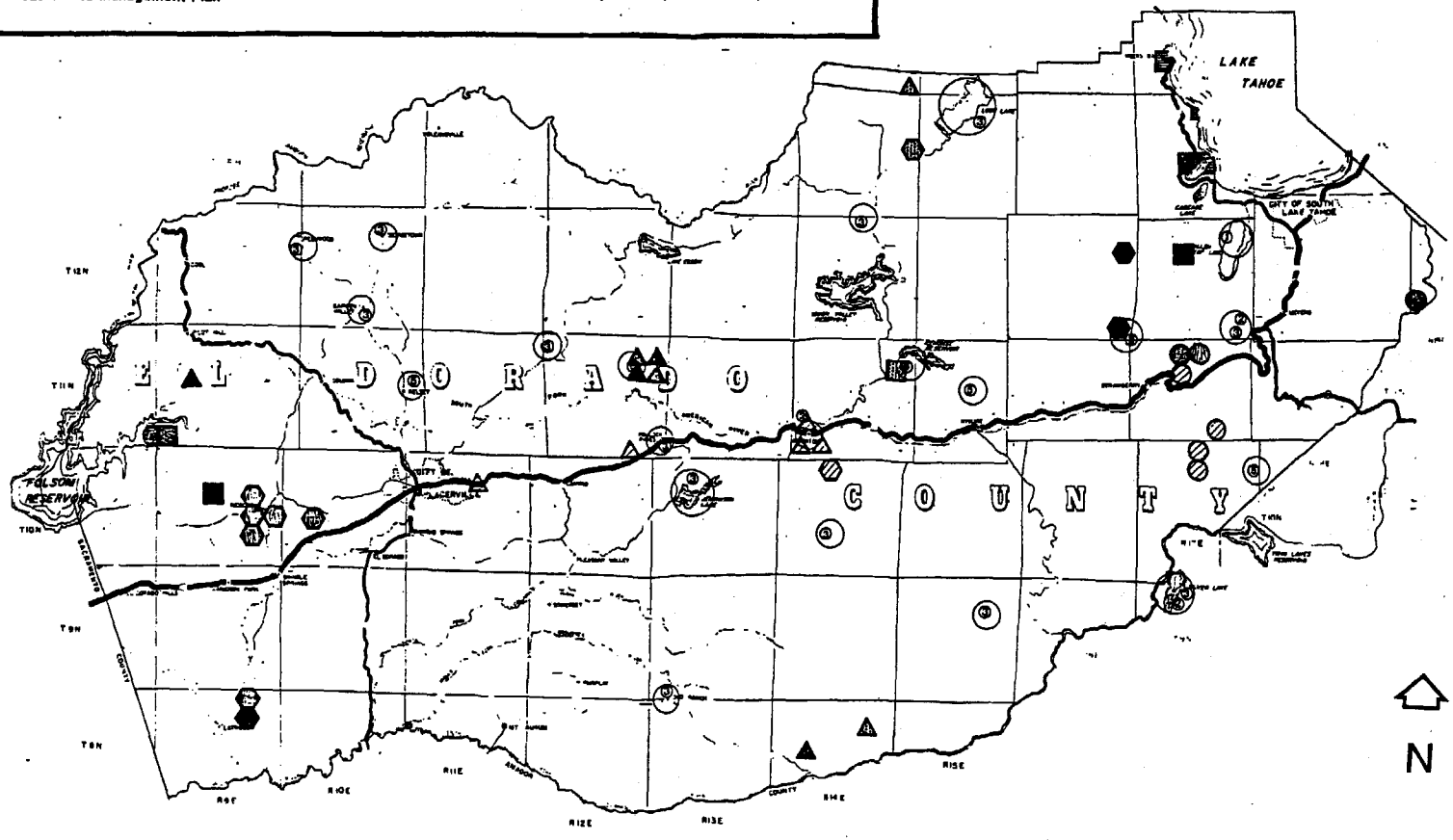
Map 5a: Rare & Endangered Species

See Appendix O

El Dorado County

Hazardous Waste Management Plan

Source: El Dorado County Open Space Element, 1984



Map 5b: Deer Migration Zones

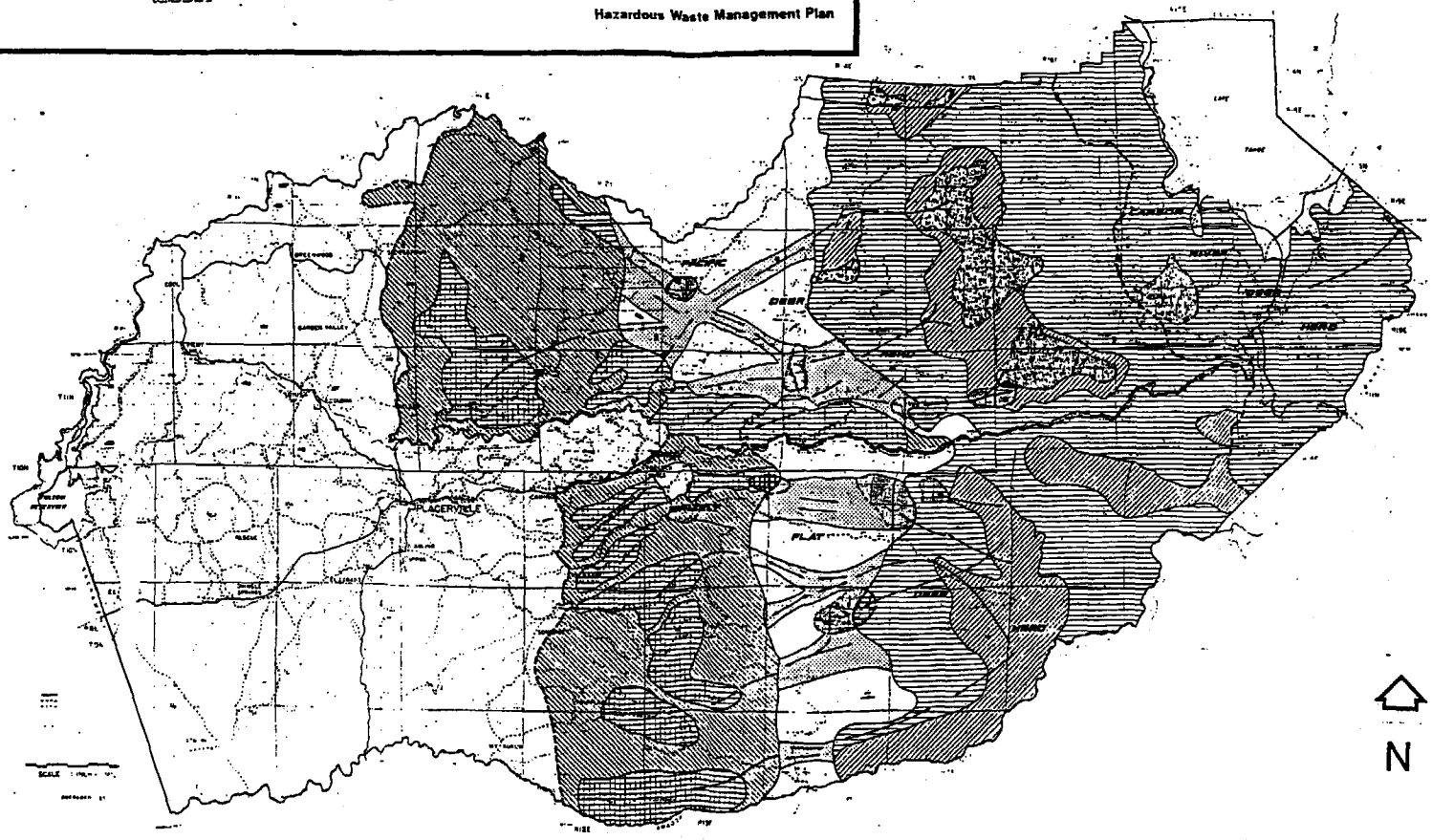
- Herd Boundary
- Winter Range
- Critical Winter Range
- Summer Range
- Critical Summer Range
- Major Migration Corridor
- Known Critical Fawning Area
- Known Holding Area

Source: California Department Of Fish & Game - Deer Migration Data, The 1987 Annual Report On the Status Of California's State Listed, Threatened & Endangered Plants & Animals

/ El Dorado County Open Space Element, 1984.

El Dorado County

Hazardous Waste Management Plan

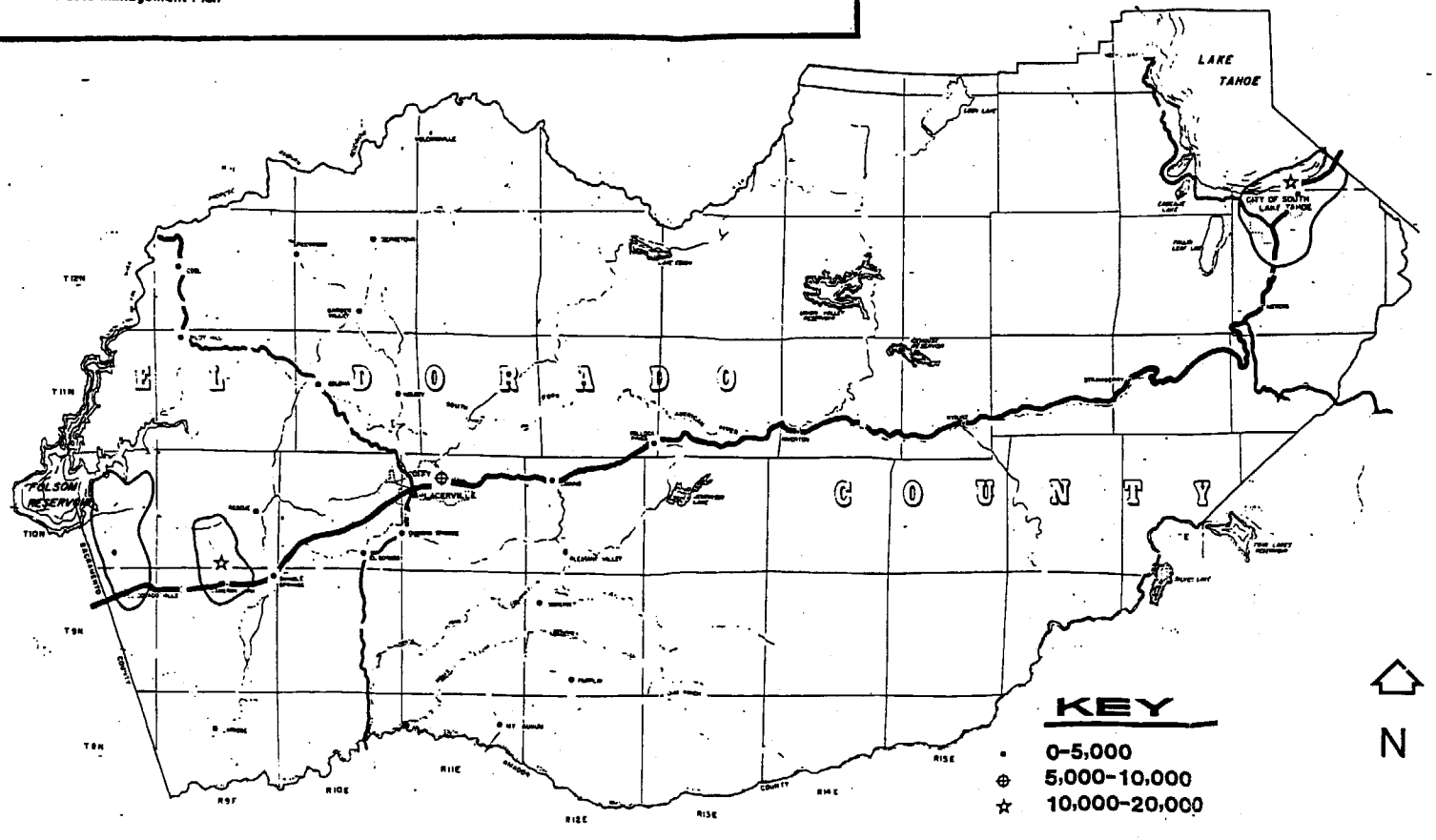


Map 6: Population Centers

- 0 - 5,000
- ⊕ 5,000 - 10,000
- ☆ 10,000 - 20,000

El Dorado County
Hazardous Waste Management Plan

Source: 1980 Federal Census



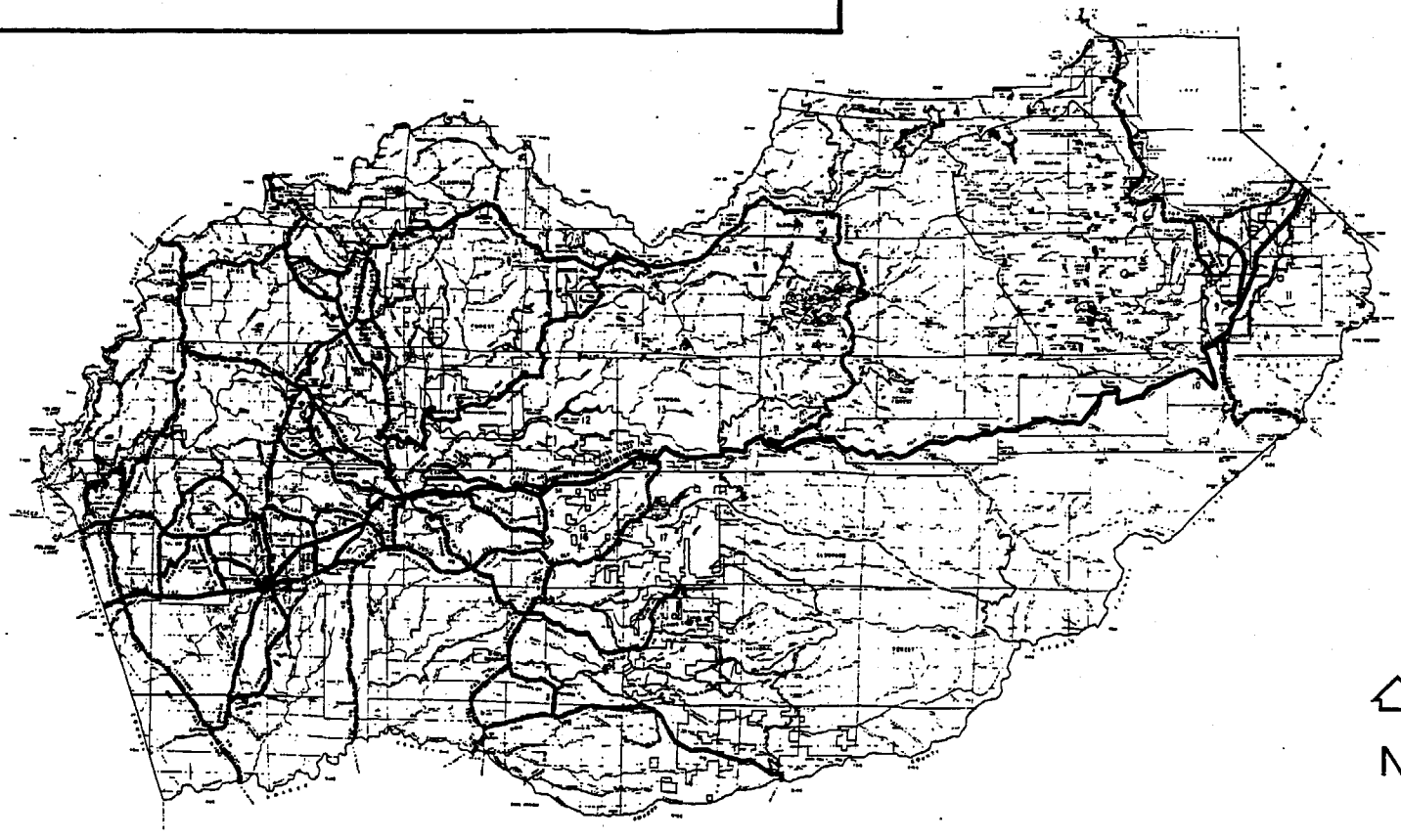
Map 7: Transportation Routes

RURAL	URBAN
Interstate & Other Principal Arterials	Interstate & Other Freeway & Expressway
Minor Arterials	Other Principal Arterials
Major Collectors	Minor Arterials
Minor Collectors	Collector Street

El Dorado County

Hazardous Waste Management Plan

Source: El Dorado County



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Map 8: Agricultural Preserves

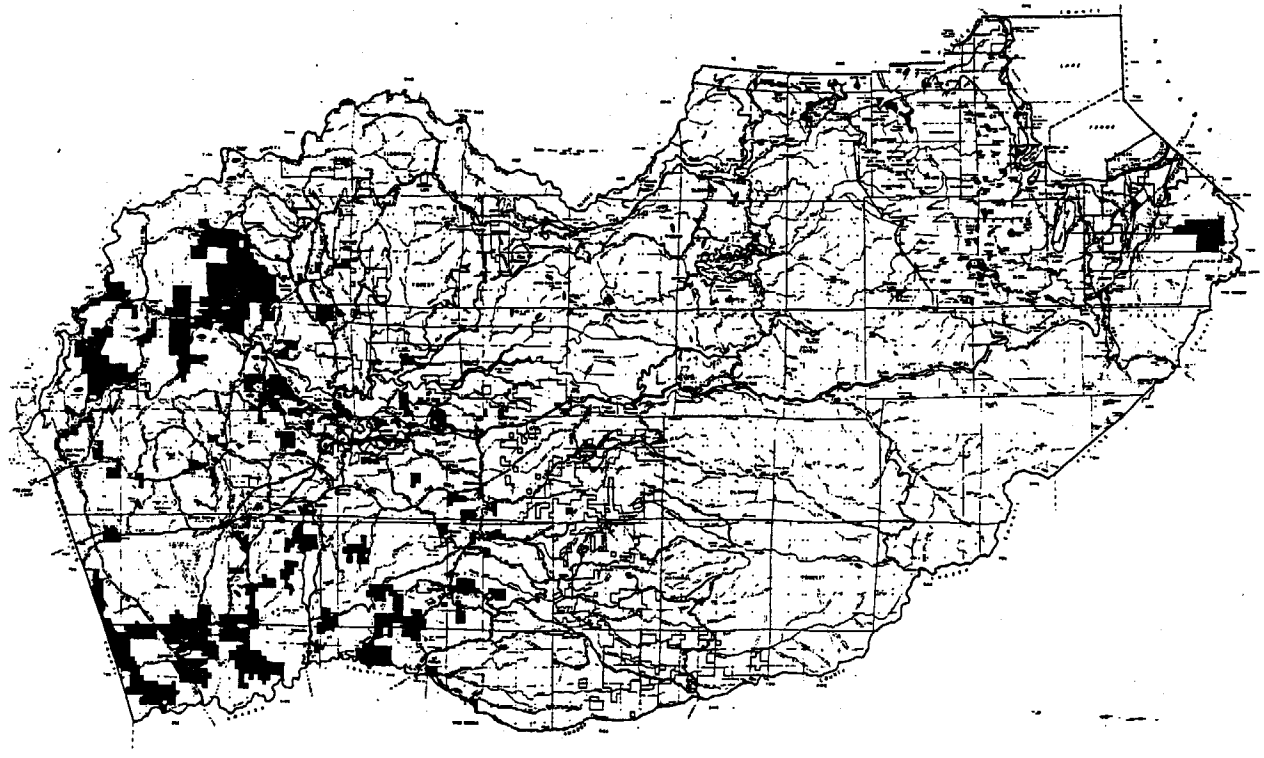
Rural Restrictive Zoning Use Code - 25

Non-Renewal Rural Restrictive Use Code - 26

El Dorado County

Hazardous Waste Management Plan

Source: El Dorado County, 1987



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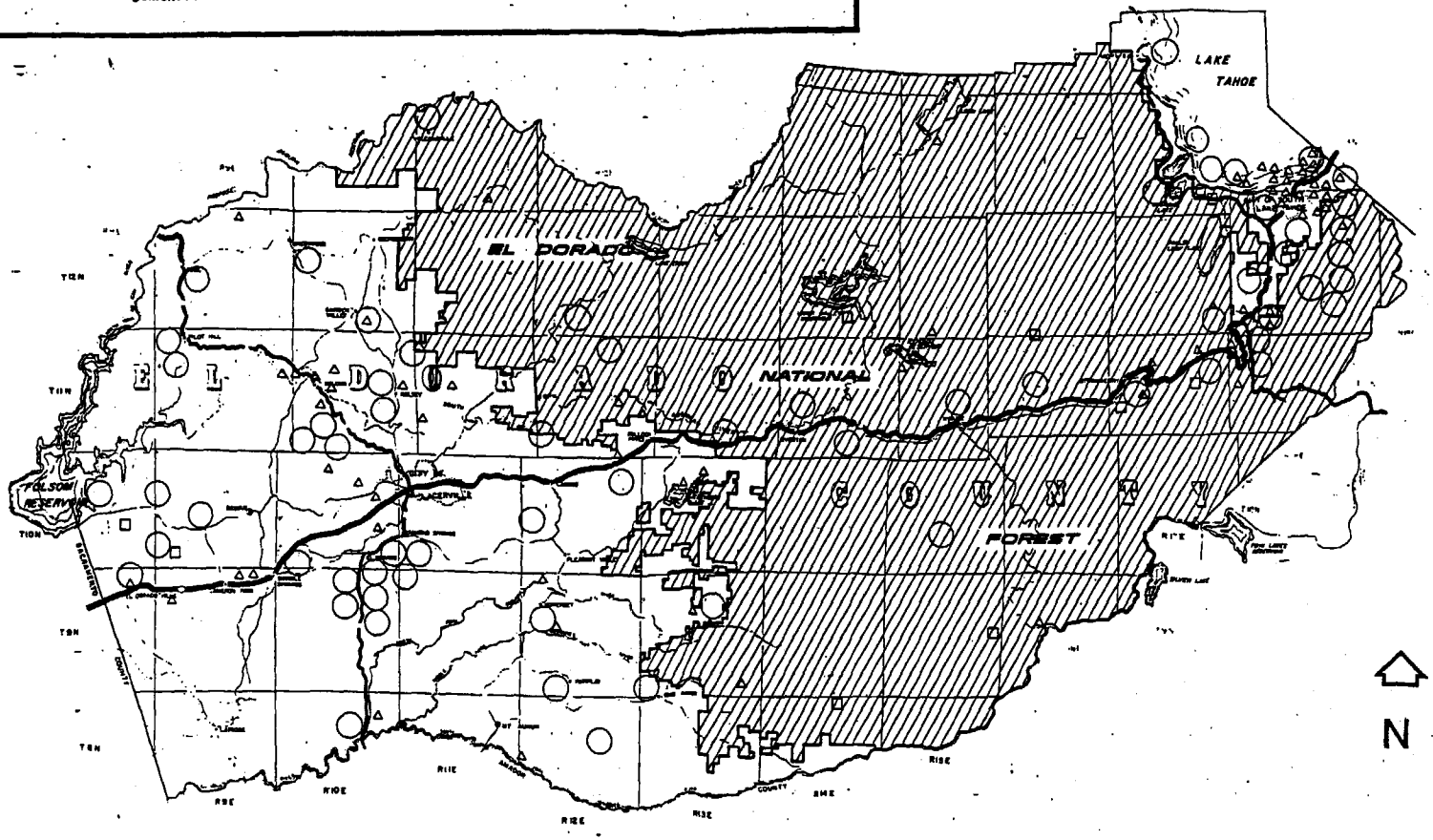
Map 9: Recreation, Historic & Aesthetic Sites

National Forest Land
Historic Areas
Recreation Areas

El Dorado County

Hazardous Waste Management Plan

Source: El Dorado County Open Space Element, 1984



Map 10: Mineral Resource Zones

MRZ - 2a
MRZ - 2b

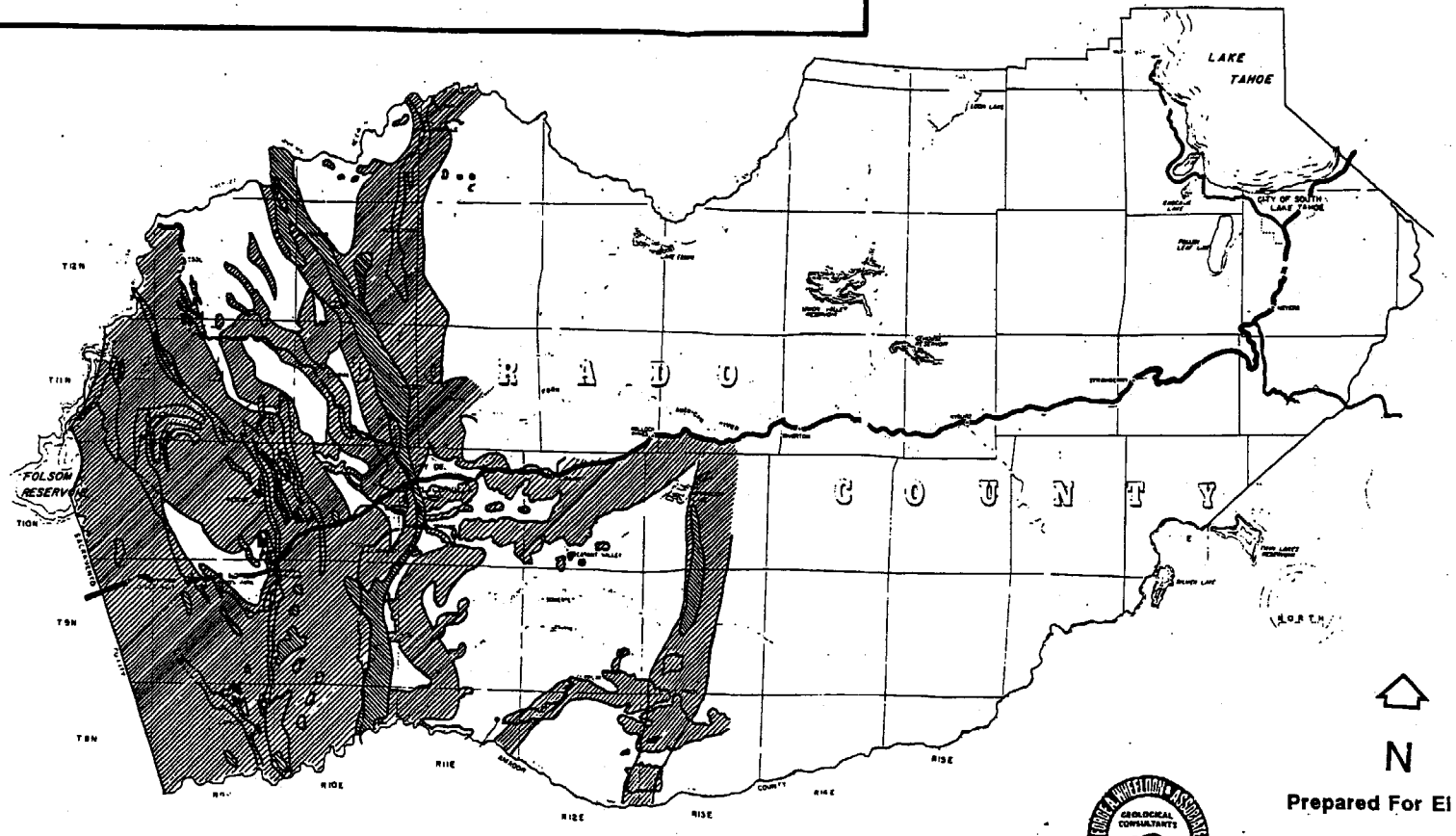
MRZ - 3a
MRZ - 3b

Source: California Department Of Conservation
- Division Of Mines & Geology -
OPEN FILE REPORTS - MINERAL LAND CLASSIFICATION MAPS.

1. 82-1 SAC, 1982. Placerville 15 Minute Quadrangle.
2. 83-35 SAC, 1983. Georgetown 15 Minute Quadrangle
3. 83-37 SAC, 1984. Auburn 15 Minute Quadrangle
4. 84-50 SAC, 1984. Folsom 15 Minute Quadrangle
5. 87-2 SAC, 1987. Camino & Mokelumne Hill 15 Minute Quadrangles

El Dorado County

Hazardous Waste Management Plan



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Prepared For El Dorado County

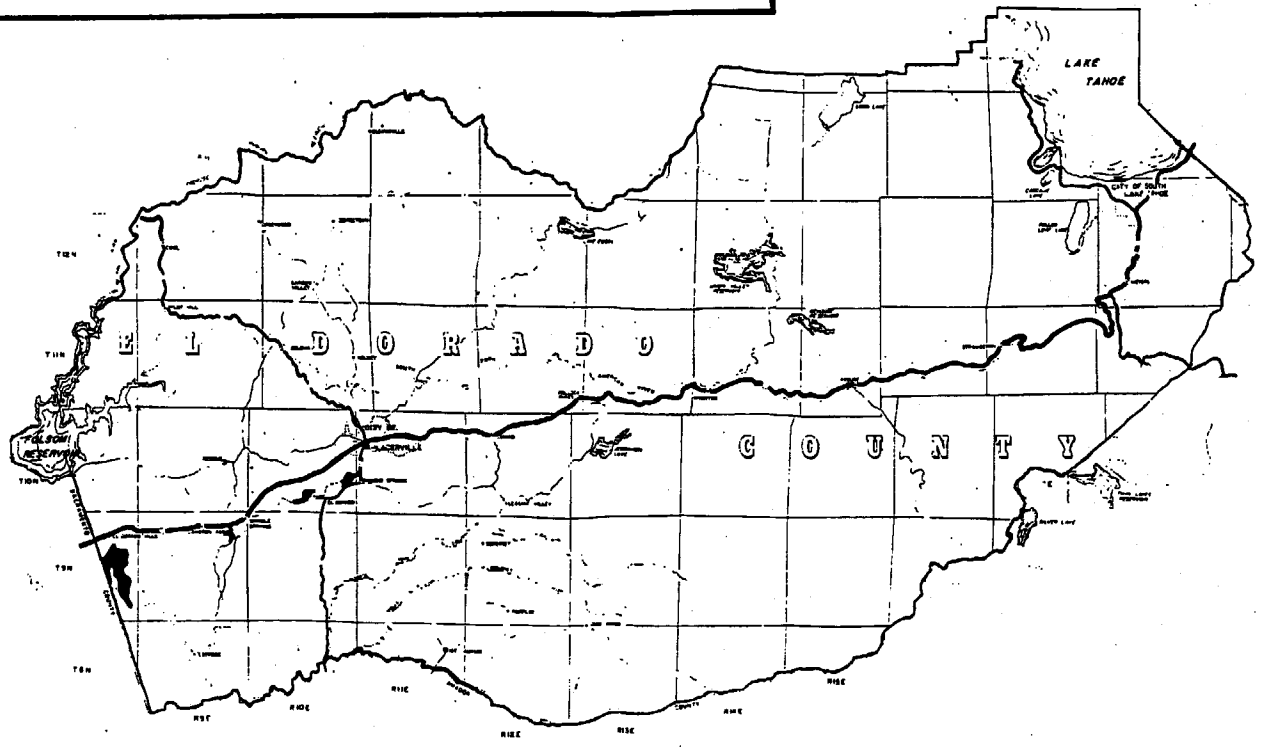
By Wheeldon & Associates, 1988.

Map 11: Areas Least Constrained For Siting Hazardous Waste Facilities

CONSTRAINED ☐

LEAST CONSTRAINED ■

El Dorado County
Hazardous Waste Management Plan



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Section 7.0

EXISTING MANAGEMENT PROGRAMS

SECTION 7.0

EXISTING AUTHORITY, REGULATIONS AND PROGRAMS FOR HAZARDOUS MATERIALS AND WASTES

7.1 OVERVIEW

This section looks first at the broad Federal and State regulatory context of hazardous waste management that has emerged over the last 15 years. Federal and State laws and regulations for the management of hazardous materials and hazardous waste and the cleanup of contaminated sites are summarized in Section 7.2. Local management authority and existing programs in El Dorado County are described in Section 7.3. The Federal and State regulatory framework and current status of local hazardous waste management programs are the basics from which future management program recommendations are made in Section 8.0.

7.2 HAZARDOUS MATERIALS AND WASTE MANAGEMENT LAWS AND REGULATIONS

7.2.1 Introduction

The management of hazardous materials and hazardous waste in El Dorado County occurs within the context of a complex interaction of federal, state and local legal requirements developed principally over the past 15 years. Most of the resulting programs have been developed in the past five to ten years, but few of these are yet fully implemented.

Depending on the circumstances pertaining to the specific issue, hazardous materials and hazardous waste management requirements have first found expression at either the federal, state or local level. Many issues are addressed at two or at all three levels of governmental response. For instance:

- Hazardous materials disclosure or "right-to-know" ordinances originated at the local level in the early 1980's but similar requirements did not appear in the federal law until 1987. The ordinances were developed in response to citizen concern regarding the presence of hazardous materials in their communities.

- The hazardous waste land disposal ban concept originated with the State of California and later became federal law. The states are the level of government most directly involved in regulating land disposal facilities and in observing the problems they can develop.

- The Superfund effort, because of its large cost and technical complexity originated as federal law, with the states later developing their own programs governing the cleanup of contamination.

The overall framework of regulation may appear to be somewhat chaotic, but some generalizations can be made about divisions of responsibility. Historically, local governments have been forced

to take the lead for the management of hazardous materials and for emergency response programs; State governments have overseen the "cradle-to-grave" management of hazardous wastes which is based on the Federal Uniform Manifest System, and the federal government has taken the lead role in cleanup of contamination.

But these simplified divisions of responsibility are changing as programs move from early implementation towards maturity, and as local governments take on a greater share of the responsibility in the management of hazardous materials and hazardous wastes.

The following summary tables discuss major Federal, State and local statutes and regulations under four headings: hazardous materials management, hazardous waste management, cleanup of contamination, and emergency response.

7.2.2 Federal Laws and Regulations

Federal statute seeks to ensure uniform nationwide requirements in a variety of areas. Federal statutes such as the Resource, Conservation and Recovery Act permit development of state or local requirements of equivalent or greater stringency. Other statutes, such as the Federal 'Superfund' require development of state laws in order for the state to obtain full access to federal funding. Depending on the statue, implementation and enforcement is principally delegated to the states. (See Summary Tables 7-1 to 7-4.)

7.2.3 State Laws and Regulations

State statutes provide for state and local programs for areas for which Federal requirements do not exist, for which Federal statute provides for delegation to the states, or for which Federal statute does not preclude more stringent state programs. These statutes are discussed in Summary Tables 7-5 to 7-8.

7.2.4 Local Laws and Regulations

El Dorado County has chosen to implement the Federal and State regulations at the county level through the implementation of the programs described in Section 7.3. The El Dorado County General Plan and zoning ordinances and the County Solid Waste Management Plan do not have, at this time, any ordinances specifically dealing with hazardous waste management or facility siting. The County has, however, adopted ordinance No. 3628, Chapter 8.40 UNDERGROUND STORAGE TANKS. This ordinance adopts California Underground Storage Tank Regulations (CAC Title 23, Ch. 3-16) through a permit and inspection program described in Section 7.3.

7.3 EXISTING MANAGEMENT RESPONSIBILITIES AND PROGRAMS IN EL DORADO COUNTY

7.3.1 Responsible Agencies

The Federal and State programs discussed in Section 7.2 often mandate program implementation at the county level. Counties may then, in turn, designate program authority at the City level.

County and City agencies and local interagency committees responsible for hazardous materials/waste management are discussed in Section 7.3.1. Brief descriptions of the major regional and State responsible agencies are also included. In El Dorado County, by mutual city and County consent, the County has local responsibility for hazardous materials/waste management. The cities of South Lake Tahoe and Placerville are represented on the Hazardous Waste Advisory Committee.

The current status of Local Hazardous Materials and Waste Programs is described in Section 7.3.2. In El Dorado County several programs have recently been developed in response to recent Federal and State program mandates. Where appropriate, the program or intended program is described, including the following details: any inspection, monitoring or permitting program, compliance, and enforcement history, current staffing, fee schedules or other funding mechanism, and implied program needs.

City/County Agencies

The El Dorado County Board of Supervisors has primary responsibility over hazardous waste/hazardous materials policy and planning at the county level. The Board assigns implementation of specific programs to County agencies.

City/County agencies having primary and ongoing responsibilities over hazardous waste/material management include: Division of Environmental Health (DEH), Office of Emergency Services (OES), The Planning Division, and the Agricultural Commission. The following agencies are also involved in hazardous waste issues: the District Attorney and county, local fire districts, and local utilities (i.e., El Dorado Irrigation District, City of Placerville, South Tahoe Public Utility District) Sheriff's Department, and the Placerville and South Lake Tahoe police.

Division of Environmental Health

The DEH is the primary agency in El Dorado County with jurisdiction over hazardous waste/material regulations and programs. The DEH has sole responsibility for the following: the underground tank program AB 1362, implementation of the household hazardous waste program AB 1809, implementation of Proposition 65, control of infectious wastes, and drinking water monitoring for 60 small water systems. It also coordinates hazardous waste spill responses with the State. The DEH, in conjunction with the Planning Division, is responsible for development of the County Hazardous Waste Management Plan AB

2948. The DEH has responsibility with the Office of Emergency Services for monitoring solid waste landfills. Currently the only fee collected by the DEH is a $55 per year permit fee for underground storage tanks. DEH currently has one staff member for implementing these programs and for compliance and enforcement.

Office of Emergency Services and Air Pollution Control District

The OES has sole responsibility for implementation of AB 2185 and AB 2187 concerned with hazardous materials stored and used by commercial and industrial businesses, and AB 3777 that deals with emergency response planning for hazardous materials. The OES also has the responsibility for the monitoring of air emissions at the Union Mine Landfill. Currently OES does not collect any permit fees, although a $75 per business permit fee is under consideration for hazardous materials inspections.

OES also functions as the local Air Pollution Control District (APCD). El Dorado County is within two air quality basins, the Mountain Counties and Lake Tahoe Air Basins. OES has one staff member for inspections.

Planning Division

The County Planning Division is currently involved with the DEH in developing the County Hazardous Waste Management Plan. The Planning Division is responsible for land use planning and permitting and is responsible for monitoring industries with special use permits. Special use permits may be required of any industry that has the potential for a release (e.g., odor, fumes, noise, heat, radioactivity, etc.) beyond the industries' property. Zoning and permit enforcement has consisted primarily of issuing letters of violation in order to correct deficiencies, and forwarding of files to the District Attorney's office for prosecution proceedings.

If a special use permit is required, the County fees include a $250 file fee and a $25 environmental document fee. If an environmental impact report (EIR) is required, a fee for processing is also collected.

Agriculture Commissioner

The Agriculture Commissioner is responsible for implementation of the Pesticide Contamination Prevention Act and Restricted Materials Act, which deals with pre-use registration of pesticides. The Agriculture Commission serves as the County Weights and Measures inspection group in addition to its agricultural responsibilities. Eight agricultural programs (e.g., pest detection and control, fruits and vegetable quality) and six weights and measures programs are implemented by the Commission. The Commission also has similar responsibilities for Alpine County, although the needs in Alpine County are less significant than in El Dorado County. In the past, the Commission has collected waste household pesticides and chemicals for disposal, but this service is no longer provided. The

Commission has five staff biologists for both agricultural and weights and measures inspections. The Commissioner stated that the current staff is adequate for their present workload.

Other County Groups

Fire Districts

The 17 fire districts are in charge of regulation of hazardous materials storage. According to the DEH and OES, some of the districts do inspect and regulate the storage of hazardous materials, while others do not. Approximately 3-5 districts have inspected businesses for hazardous material storage in conjunction with annual fire prevention inspections. However, the districts are waiting for the establishment of inspection procedures and training prior to implementing hazardous waste inspections.

Local Utilities

Local utilities are responsible for the monitoring of drinking water systems with greater than 200 connections for the chemical constituents required to be tested as per AB 1803. Some examples of the larger districts are El Dorado Irrigation District (EID), City of Placerville, and the South Tahoe Public Utility District (STPUD).

EID, STPUD, and City of Placerville also operate wastewater treatment facilities and are responsible for industrial waste pretreatment programs, although none of these utilities have pretreatment programs currently in place. EID is, however, preparing a toxics control plan. This plan will include future testing of business discharges for toxic components.

District Attorney, County Counsel and Risk Management Offices

The District Attorney would be involved in the criminal prosecution for hazardous waste violations. DEH, OES, and Agricultural Commissioner are not aware of any hazardous waste/material situations that had been referred to the District Attorney for prosecution.

The County Counsel and Office of Risk Management review the County's liability and offer assistance with the implementation of hazardous waste/material programs and contracts for service.

Local Interagency Committees

Hazardous Spill Response Committee

The committee is comprised of staff from County DEH, OES,

Department of Transportation and the Agricultural Commissioner. State and local fire and law enforcement agencies and State OES are also involved. The committee is responsible for assessment and development of the county-wide spill response capabilities under AB 2185 but not the inspection and disclosure program part of the bill. This responsibility has been assigned to OES. The emergency response plan has been drafted and is described in Section 7.3.2. The County has received funds to purchase an emergency spill response vehicle. Operation of this vehicle will be shared by DEH and OES. Staffs are investigating training requirements for use of this vehicle.

Regional and State Agencies

The State government consults with local agencies to ensure regulatory consistency statewide and to provide resources that would not otherwise be available to the County. The primary State agencies with jurisdiction over hazardous materials and wastes are the Regional Water Quality Control Board (RWQCB) and Department of Health Services (DHS). Other state agencies involved in toxics include the Department of Fish and Game, Department of Food and Agriculture, Department of Forestry, and the Office of Planning and Research.

Regional Water Quality Control Board

El Dorado County falls within two RWQCB regions. The California side of the Lake Tahoe Basin is the responsibility of the Lahontan Board. The remainder of the County is under the jurisdiction of the Central Valley Board.

The RWQCBs have jurisdiction in situations that involve the threat of contamination to surface or groundwaters of the State. Among such incidents are leaking underground tank sites, spills, or accidental releases of hazardous substances. To protect the ground and surface waters of the state, the RWQCBs work with local enforcement agencies when such incidents occur. Currently the major concerns of both the Central Valley and Lahontan Boards in El Dorado County are the cleanup of leaking underground storage tanks. The RWQCB is also involved in monitoring, inspecting, and enforcing direct and indirect discharge permits covering conventional sanitary, industrial wastewater discharges and the Union Mine Landfill operation. The RWQCB may become involved with State or Federal Superfund sites, if potential or known contamination of underground aquifers is identified.

Department of Health Services

The DHS has jurisdiction over the majority of State toxic-related programs. Most of the DHS resources are currently committed to Statewide, State-level concerns. Most of the DHS health and toxic functions within El Dorado County are carried out by the County DEH and by the OES. The DEH consults with DHS as necessary. The DHS would be involved in permitting any future treatment, storage and disposal (TSD) facilities in El Dorado County, and has been involved in contaminated site assessment and mitigation.

DHS is responsible for approval of this County Hazardous Waste Plan as well as those written for all other counties in the State. From these DHS will coordinate State-wide hazardous waste management efforts. Specific DHS responsibilities include: hazardous waste manifest data base compilation and the classification of hazardous waste.

7.3.2 Local Hazardous Materials and Waste Programs

El Dorado County is just beginning to establish a number of hazardous waste/material management programs including the adoption of the CHWMP. Several of these area still in the design stages or are not funded or staffed yet. This subsection describes the current status of these programs..

AB 1362 Underground Storage Tanks -- This law sets performance and monitoring requirements for existing and new underground storage tanks. When the program began in 1985, the County had approximately 1,000 tanks registered with the State in 1985. Currently this number is down to around 600 as the result of tank closures. From closures and annual integrity inspections, 28 leaking tanks were identified. Of these, 13 have been signed off. The remainder are active. No fines have been issued. The law requires initial inspections of the tank facilities and then repeat inspections at three-year intervals. DEH has one staff member working on the tank program. Since most staff time is spent observing tank closures and leaking tank repair and cleanup, little time is available to complete initial and followup inspections or further implementation of the program.

Proposition 65: Safe Drinking Water and Toxic Enforcement Act of 1986 -- The County DEH is currently serving as a clearing house for Proposition 65. DEH maintains a file of information submitted by various agencies to the public and the news media.

AB 1803 Safe Drinking Water Act -- DEH has applied for a grant from the State to fund the testing of some 60 small (i.e., less than 200 connections) potable water systems within the county for toxic constituents (i.e., organics and heavy metals). Staff time will be necessary to collect samples and coordinate analyses.

Infectious Wastes -- DEH is responsible for the monitoring of generators and to respond to complaints concerning infectious or "red bag" wastes. The DEH staff has identified the need to develop an inventory of producers of these wastes and their quantities, as no such data currently exists.

AB 2185 Emergency Response Plan -- The plan describes the chain of responsibility and the response scenario in the event of a hazardous material/wastespill. The plan also covers evacuation, media relations, information responsibilities, operating concerns, post-emergency procedures, and response agency responsibilities. Resources and support systems, communications,

available equipment, hazardous waste disposal facilities, enforcement, recovery of damages, plan review, and joint field exercises and training are discussed. The draft plan has been completed and has been distributed to appropriate agencies for their review. The interagency committee responsible for plan implementation is currently determining how their staffs will be able to complete the responsibilities described in the plan. DEH recently received grant funding from DHS for the purchase of a hazardous materials response vehicle and equipment.

Agencies that may have responsibilities in emergency response operations involving hazardous materials/wastes are listed below:

Local Agencies:

- Local Law Enforcement Agencies
- Local Fire Agencies/Districts
- County Division of Environmental Health
- County Office of Emergency Services
- Emergency Medical Services
- County Department of Transportation/Public Works
- County Agriculture Commission
- City Public Works Departments
- County Health Department

State Agencies:

- California Highway Patrol
- State Department of Fish and Game
- State Office of Emergency Services
- CalTrans
- State Water Resources Control Board
- State Regional Water Quality Control Boards
- State Department of Water Resources
- State Department of Food and Agriculture
- State Department of Forestry
- State Department of Parks and Recreation
- State Department of Industrial Relations

- State Air Resources Board
- State Attorney General
- State Department of Health Services
- State Office of Planning and Research

Federal Agencies

- Environmental Protection Agency
- United States Forest Service
- United States Coast Guard
- Department of Energy
- Bureau of Land Management

Nongovernmental Agencies:

- Radio Amateurs
- Red Cross
- Civil Air Patrol
- Salvation Army

Hazardous Substance Bond Act -- This Act (State "Superfund"), includes provisions to fund the cleanup of hazardous waste spills or incidents such as midnight dumping. El Dorado County, DEH, OES, and the Sheriff's Department, with pre-approval from DHS have utilized funds provided for this Act to pay for the services of emergency response companies.

AB 2185/3777 Hazardous and Extremely Hazardous Materials Inventory -- Businesses are required to develop an inventory of hazardous materials they have on-site. The inventory should include information about the physical layout of each facility, the types of hazardous materials stored on-site, and the location of materials in relation to population centers. These plans are required to be submitted to OES and copies are to be made available to the public and all first response emergency management agencies. OES is currently developing an implementation strategy and an information packet and questionnaire for local businesses. OES plans to develop a computer data base of inventory information. Staff will be needed either to inspect businesses or to train fire district personnel for inspections.

Air Quality -- The Air Pollution Control District (APCD) is responsible for inspections of industries and businesses concerning air emissions. Such businesses are permitted and

inspected yearly. Other inspections occur in response to citizens complaints. The APCD will work with the violator to correct the problem. The District Office is currently in the process of developing minimum standards for air pollutants. APCD will coordinate enforcement with TRPA to assure consistency in air quality programs between the western slope and Tahoe basin.

Pesticide Contamination Prevention and Restricted Materials Act -- The Agriculture Commission oversees the program in which permits are issued for the use of pesticides which are listed as hazardous materials. Permits are available at no cost. After reviewing the user permit application, staff determine whether inspections will be required before, during or after application of the pesticide. The staff is required to inspect 5% of the use permits. Approximately 300 permits per year are approved in El Dorado County and four to five permits in Alpine County. If permit violations area found, the staff work with the user to correct violations rather than issue fines.

The Commissioner believes that the amount of pesticide used in the County is average for rural mountain counties. The Commission encourages the use of less toxic, short-lived pesticides. Pesticide containers are required to be triple rinsed into the final application tank. Most of the plastic, glass or metal pesticide containers that are disposed probably end up in the County landfill. Paper containers area required to be burned within the area where the pesticide was applied.

AB 1809 Household Hazardous Waste -- The County currently does not have a household hazardous waste collection program, although interest has been expressed in initiating a program as a consequence of this plan. Residents who inquire about hazardous waste disposal options are referred to an adjacent county or to private hazardous waste handling companies. Without a program in El Dorado County, many residents are probably improperly disposing household hazardous wastes by placing them into garbage.

Summary Table 7-1

FEDERAL LAWS AND REGULATIONS
HAZARDOUS MATERIALS*

Principal Federal requirements related to hazardous materials include:

Statute	Requirements
Toxic Substances Control Act (TOSCA) of 1976	- Pre-marketing research and testing - Regulation of the manufacturer - Distribution in commerce - Processing - Use and disposal of chemical substances or mixtures that may pose "unreasonable" risk of injury to health or the environment.
Federal Insecticide, Fungicide and Rodenticide Act (RIFRA) of 1977	- Pesticide registration - Suspension of pesticide regulation - Use of pesticides - Farm worker safety issues related to pesticide use.
Federal Food, Drug and Cosmetic Act	- Detection and control of pesticides in food.
Hazardous and Solid Waste Amendments (HSWA) of 1984	- Notification of the presence of underground tanks. - Requirements for prevention, detection and correction of leaks. - Tank inspection monitoring and testing.
Superfund Amendments and Reauthorization Act (SARA), Title III of 1986	- Hazardous materials inventory, storage and disclosure. - Monitoring detection and reporting of hazardous materials releases occurring in the normal course of business.
Federal Hazardous Material Transportation Act of 1974	- Regulation of the packaging and transport of hazardous materials.
Federal Safe Drinking Water Act of 1972, and Amendments of 1986	- Development of standards for safe levels of contaminants in drinking water.
Clean Air Act Amendments of 1974	- Identification and regulation of toxic air contaminants.

*Includes hazardous wastes.

Summary Table 7-2

FEDERAL LAWS AND REGULATIONS
HAZARDOUS WASTE

Principal Federal requirements related to hazardous materials include:

Statute	Requirements
Federal Occupational Safety and Health Act of 1970	- Regulation of workplace health and safety, including exposure to hazardous materials.
Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Solid Waste Amendments (HSWA) of 1984	- Requirements and permitting for the storage, handling, transportation, treatment and disposal of hazardous wastes.
Hazardous and Solid Wastes Amendments (HSWA) of 1984, The provisions of the ban are discussed in Summary Table 7-2-1.	- Ban on the land disposal of specified hazardous wastes.
Federal Water Pollution Control Act (Clean Water Act) of 1972	- Standards for maximum concentrations of "conventional" and toxic pollutants in discharges directly to navigable waters, or in sewage sludge.
Superfund Amendments and Reauthorization Act (SARA), Title III of 1986	- Monitoring, detection and reporting of hazardous waste releases occurring in the normal course of business.
National Environmental Policy Act (NEPA) of 1969	- Environmental review of hazardous waste projects.

Table 7-2-1

FEDERAL LAND DISPOSAL RESTRICTION PROGRAMS

Section 3004 of the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), prohibits the continued placement, except for underground injection, of RCRA-regulated hazardous wastes in or on the land. The California restricted wastes, part of the first restriction program in the nation are incorporated in the Federal program as the "California list." The HSWA amendments specify dates by which these prohibitions are to take effect for specific hazardous wastes. However, the Environmental Protection Agency (EPA) may extend these effective dates for up to 2 years nationwide, following determination that there is insufficient treatment capacity.

The statute requires EPA to set, "...levels or methods of treatment, if any, which substantially diminish the toxicity of the waste...so that short- and long-term threats to human health and the environment are minimized." After the effective date of a prohibition, wastes may be land disposed in permitted hazardous waste facilities if they comply with treatment standards developed by the Agency, or the Agency has approved a site-specific petition demonstrating, to a reasonable degree of certainty, that there will be no migration from the disposal unit for as long as the waste remains hazardous.

Federal Land Disposal Restriction Schedule

Date	Restricted Waste Category
May 8, 1985	Bulk liquids in landfills; even if absorbents have been added.
November 8, 1986	Solvent Waste - Twenty-seven commonly used organic solvents and solvent mixtures which result from use of solvents with 10 percent or more of solvent material. The solvents include both spent halogenated, non-halogenated solvents, and still bottoms from the recovery of these solvents. Lab packs containing these solvents are also subject to the prohibition.
July 8, 1987	"The California List" - Effective July 8, 1987 categories identified as January 1, 1984 California Land Disposal Restrictions also include liquids with halogenated organic compounds in total concentrations greater than 1 percent. All other wastes identified as "California wastes" postponed to July 8, 1989.
August 8, 1988	First third of all RCRA-listed waste. EPA decision on continued underground injection of hazardous wastes.

Table 7-2-1(continued)
FEDERAL LAND DISPOSAL RESTRICTION PROGRAMS

Federal Land Disposal Restriction Schedule

Date	Restricted Waste Category
	Clean up wastes subject to restrictions.
November 8, 1988	Specified dioxin-containing wastes.
	All solvent wastes which received categorical extensions form November 8, 1986 date.
June 8, 1989	Second third of all RCRA listed waste.
July 8, 1989	All "California wastes" not restricted on July 8, 1987.
May 8, 1990	Last third of all RCRA listed waste.
Within six months of date of new listing	Any hazardous waste newly listed or identified after November 8, 1984.

Summary Table 7-3

FEDERAL LAWS AND REGULATIONS
CLEANUP OF CONTAMINATION

Principal Federal requirements related to hazardous materials include:

Statute	Requirements
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and Superfund Amendments and Reauthorization Act (SARA) of 1986	- Identification, characterization, cleanup, and cost recovery, directly by Federal or state government or by responsible parties, for contaminated sites, Federal agency sites and uncontrolled releases.
Resource Conservation and Recovery Act (RCRA) of 1976 and Hazardous and Solid Waste Amendments (HSWA) of 1984	- "Corrective actions," or cleanups at permitted hazardous waste facilities.
Superfund Amendments and Reauthorization Act (SARA) of 1986	- Identification and cleanup of leaks from underground tanks.

Summary Table 7-4

FEDERAL LAWS AND REGULATIONS
EMERGENCY RESPONSE

Principal Federal requirements related to hazardous materials include:

Statute	Requirements
Superfund Amendments and Reauthorization Act (SARA), Title III of 1986	- Prevention of hazardous materials releases, and emergency response to releases
Superfund Amendments and Reauthorization Act (SARA) of 1986	- Detection, notification and emergency response to "unauthorized releases" of hazardous substances.

Summary Table 7-5

STATE LAWS AND REGULATIONS
HAZARDOUS MATERIALS

Principal State requirements related to hazardous materials include:

Statute	Requirements
Health and Safety Code amended in 1985 by AB 2185	- Hazardous materials inventory
California Occupational Health and Safety Act of 1973 and Hazardous Substances Information and Training Act (Worker Right-to-Know) of 1981	- Occupational health and safety. Development and use of material safety data sheets (MSDS) and other provisions of worker "right-to-know."
California Agricultural Code	- Registration, regulation of use by permit, and regulation of commercial use through licensing, of agricultural and structural pesticides.
Safe Drinking Water and Toxic Enforcement Act of 1986, or "Proposition 65"	- Releases of known carcinogens and teratogens to drinking water supplies and warnings regarding exposure. The provisions and implementation of Prop. 65 are discussed in Summary Tables 7-5-1 and 7-5-2. The Governor's list of chemicals known to cause cancer or reproductive toxicity is provided in Appendix H.
California Safe Drinking Water Act	- Establishing, and monitoring for, maximum allowed levels of 'conventional' and toxic contaminants in public drinking water supplies.
Health and Safety Code amended in 1983 by AB 1362, "the Sher Bill"	- Installation, monitoring and leak detection for underground tanks.
California Health and Safety Code	- Establishment of standards for toxic air contaminants and of local rules regulating air emissions. - Maintenance of cancer and birth defect registries.

Table 7-5-1

THE PROVISIONS OF THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986

"Proposition 65," approved by the voters in the November 1986 election, adds Chapter 7.6 to the Health and Safety Code. The Act was purportedly developed in reaction to the perception that State and Federal agencies are doing too little to protect citizens from chemical exposure.

The principal provisions of Proposition 65 include:

- Requires that by March 1, 1987, the Governor publish a list of chemicals known to the State to cause cancer and to pose the threat of reproductive toxicity (birth defects and other poor birth outcomes).

- Prohibits any person in the course of business from knowingly and intentionally exposing any individual to a listed chemical without first giving clear and reasonable warning to such individual. Warnings of exposure to listed chemicals must be made beginning twelve months subsequent to listing, or beginning March 1, 1988.

- Prohibits businesses with ten or more employees from knowingly releasing any significant amount of a listed chemical into drinking water, or in any way that it may pass to a supply of drinking water. Releases to water of listed chemicals are prohibited twenty months subsequent to the listing of a chemical, or beginning December 1, 1988.

Other provisions include:

- Violation of either of the two above prohibitions may result in a civil penalty of up to $2,500 for each day of violation.

- Any person may bring action against a violation of either of the above prohibitions if the action is commenced more than sixty (60) days after notice is given to law enforcement officials and to the alleged violator, and no city attorney or district attorney, nor the State Attorney General has in that period brought action.

- Any designated state government employee (generally a subset of exempt employees) who obtains information regarding actual or potential discharge of hazardous waste must notify the County Board of Supervisors and local health officials within 72 hours. The local Health Officer must then notify local media and make the information public. (Note: By referring to "hazardous waste" this provision is broader than the two prohibitions which relate only to specific listed chemicals.)

- Doubles existing fines and jail terms for serious violations such as midnight dumping. Provides that 25% of penalties go to the prosecuting public attorney's office. Creates a new penalty for toxics violations that "cause great bodily injury

Table 7-5-1 (continued)

THE PROVISIONS OF THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986

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or cause substantial probability that death could result" of up to three years and $250,000 for each day of violation.

Proposition 65 specifies several exemptions, including:

- Government Agencies are exempt from the two prohibitions specified above.
- Releases are permitted if not greater than a "significant amount." Burden of proof is on the discharger.
- Warnings are not required if there is no "significant risk" for chemicals that are carcinogens or less than one-one thousandth the level of a substance known to cause birth defects.

Table 7-5-2

THE IMPLEMENTATION OF THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986

Proposition 65 requires the Governor to identify and consult with "the State's qualified experts" in establishing a list of chemicals which are known to the State to cause cancer or reproductive toxicity and in identifying chemicals that are required by State or Federal law to have been tested for potential to cause cancer or reproductive toxicity but that have not been adequately tested. The Governor established the Safe Drinking Water and Toxic Enforcement Scientific Advisory Panel to assist in determining chemicals to be listed.

Proponents of the proposition intended that the initial list of chemicals developed by the Governor would include, by reference to the appropriate legal citations, about two hundred chemicals contained on recognized national and international lists of carcinogens.

It is general scientific practice to assume that substances that are known to cause cancer in animals will also cause cancer in humans. But the Governor chose to initially include on the list only 28 substances that are known, from direct human data, to cause cancer or birth defects in humans. The scientific panel has since added additional substances for a total as of October 1, 1987 of about eighty chemicals. The panel is reviewing the established lists referenced in the Act to determine on a case-by-case basis what substances should be added to the State's list.

Proposition 65 is in the early stages of implementation. Decisions made over the next few months, both in the public and private sectors, will do much to determine how the initiative will be implemented. Proposition 65 provides the Governor with a great deal of discretion. The only direct requirement for the State is development and updating of the list. Two possible paths for State implementation area for:

- The State to provide little guidance, allowing industry litigation to force the courts to define terms such as "clear and reasonable warning" (of exposure), "insignificant risk" (of developing cancer), and "knowingly" (expose a person or persons).

- The State to take an active role in defining any ambiguous terms, and in determining how the requirements will apply in specific situations.

The Governor has chosen the latter course and the Health and Welfare Agency has defined its role to include:

- Adopting regulations defining a process for individuals or businesses to obtain formal rulings on the requirements of Proposition 65.

Table 7-5-2 (continued)

THE IMPLEMENTATION OF THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986

- o Developing "interpretive guidelines" to define terms that appear, but that are not defined, in the Proposition.
- o Issue "safe use determinations" to individuals or businesses who petition with regard to how the requirements of the proposition affect their specific situation. The determinations are advisory only, and do not absolve the affected party form liability for any subsequent action.
- o Issue "information letters" to notify interested parties of a general interpretation of the proposition without applying it to a specific situation.

Ongoing issues related to the implementation of Proposition 65 include:

- o Should the two prohibitions be extended to government Agencies? Pending State legislation may address this issue.
- o Petitions by a variety of specific industries to be excluded from the provisions of the proposition, and in particular the warning requirements that take effect March 1, 1988.
- o The periodic addition of substances to the Governor's list.
- o The effect that the releases of listed substances (after November, 1988) will have on existing permits issued to individual firms by State and local Agencies.

Summary Table 7-6

STATE LAWS AND REGULATIONS
HAZARDOUS WASTES

California has authorization to administer most aspects of the Federal RCRA program. Thus, the State is responsible for the day-to-day management of hazardous wastes from "cradle-to-grave," including oversight of the manifest system, the inspection and enforcement requirements for hazardous waste treatment, storage and disposal facilities, and coordination of hazardous material and waste transport requirements. As the first such program in the nation, the 1972 California Hazardous Waste Control Act served as the model for the Federal RCRA.

Principal State requirements related to hazardous wastes include:

Statute	Requirements
California Hazardous Waste Control Act of 1972 and numerous amendments	- Hazardous waste management program of "RCRA-equivalency" plus additional requirements for specific land disposal techniques, recycling facilities, transportation and enforcement.
Health and Safety Code amended in 1986 by AB 2948	- Provisions for siting, local land use decisions, and partial State override of local siting decisions relating to hazardous waste facilities.
1982 Amendments to the California Administrative Code, and 1985 & 1986 amendments to the California Health and Safety Code	- California land disposal ban program. The provisions of the California land disposal ban program are discussed in Table 7-6-1.
Safe Drinking Water and Toxic Enforcement Act of 1986, or d"Proposition 65"	- Notification of public regarding releases of hazardous wastes to the environment.
Water Code	- Regulation by permit of discharges to the land. Development and enforcement of local pretreatment standards, and groundwater monitoring for hazardous waste facilities.
Health and Safety Code	- Development of standards, and specification of permit conditions concerning air emissions from hazardous waste facilities.

Summary Table 7-6 (continued)

STATE LAWS AND REGULATIONS
HAZARDOUS WASTES

Statute	Requirements
Health and Safety Code	- Restrictions on the use of property within a specified distance of hazardous waste facilities, and soil testing of property prior to residential use.
State DHS State Water Resources Control Board	- Regulation of "non-RCRA" wastes considered to be of low hazard by the State, and not regulated as hazardous by the Federal government.
Health and Safety Code Water Code California Administrative Code	- Designated waste defined in State statute and regulation. - Special wastes and designated wastes are defined in statute and regulation.

Table 7-6-1

CALIFORNIA LAND DISPOSAL RESTRICTION PROGRAM

California's Land Disposal Restriction Program began in December of 1982 with the adoption by the State DHS of regulations specifying a schedule of land disposal restrictions for specific hazardous wastes. During the ensuing four years, five of the restrictions were implemented. The restrictions for solid halogenated organics were postponed until July 8, 1987, due to a lack of treatment capacity in California, and then again postponed to July of 1989.

SB 509 of 1985 (Carpenter) and SB 1500 of 1986 (Roberti) expanded the California land disposal restriction program and set a number of deadlines for future restrictions of hazardous waste from land disposal. The ultimate deadline for the restriction of land disposal of untreated hazardous wastes in California is May 1990. The State DHS will be developing treatment standards specifying levels for each class of waste above which land disposal will not be permitted without treatment.

California Land Disposal Restriction Schedule

Dates	Restricted Waste Category
June 1, 1983	Liquids containing free cyanides at concentration greater than or equal to 1,000 mg/l.
January 1, 1984	Liquid hazardous wastes containing any of eight specified dissolved metals or compounds of these metals above specified concentrations.
	Liquid hazardous wastes having a pH less than or equal to two (2.0).
	Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 mg/l.
January 1, 1985	Liquid hazardous wastes containing halogenated organic compounds in total concentrations greater than or equal to 1,000 mg/kg.
January 1, 1988	Waste with heat value of 3000 BTU/lb or more must be incinerated. (SB 509)
July 8, 1989	Solid hazardous wastes containing halogenated organic compounds in total concentrations greater than or equal to 1,000 mg/kg.
January 1, 1990	Waste with volatile organic concentrations of 1% to 7% to be set by the Department. (SB 509)
May 8, 1990	Deadline for land disposal of untreated hazardous wastes. (SB 1500)

Summary Table 7-7

STATE LAWS AND REGULATIONS
CLEANUP OF CONTAMINATION

Principal State requirements related to hazardous materials include:

Statute	Requirements
Hazardous Substances Act (HSA) of 1981 and amendments:	- State superfund program including shared funding for Federal sites, funding for State sites and victim's compensation fund.
Health and Safety Code	- "Corrective actions" for releases from permitted hazardous waste facilities.
Water Code	- Authority to require cleanup of underground tanks, groundwater contamination from solid waste landfills, and contamination of surface waters and groundwaters in violation of discharge requirements.
Health and Safety Code amended in 1986 by AB 3777	- Risk management and planning for prevention of accidental hazardous material and hazardous waste releases.

Summary Table 7-8

STATE LAWS AND REGULATIONS
EMERGENCY RESPONSE

Principal State requirements related to hazardous materials include:

Statute	Requirements
Health and Safety Code amended by AB 2185	- Hazardous materials emergency response planning by businesses and for geographic areas.

SECTION 8.0

IMPLEMENTATION

Section 8.0 IMPLEMENTATION

Implementation of this Plan will occur in two phases. First, within 180 days of the final approval of this Plan by the Department of Health Services (DHS), local governments in the County must:

1. Bring General Plans and land use controls into consistency with this Plan.

2. Develop a process for local review of hazardous waste facility proposals. Second, implementation will continue with ongoing programs that will be conducted throughout the period this Plan is in effect.

This section begins with a description of the responsibilities of state, city and county governments. Local land use controls must be brought into conformance with this Plan within 180 days of final approval by DHS. This section continues with a description of the Special Use Permit that will be used to review applications for hazardous waste facilities. Siting criteria which must be met by all facilities are included. These criteria must be incorporated either directly or by reference into each local zoning code. The remaining portion of this section outlines recommended changes or additions to existing hazardous waste programs.

8.1 REVIEW PROCESS FOR FACILITY APPLICATIONS

Figure 8-1, provided by the Office of Planning and Research, outlines the process for the review of hazardous waste facility applications. Applications for use permits will be subject to normal processes, requirements, hearings, and timelines. The single exception to this rule, is that normal time limits for local review may be extended for a reasonable length of time to account for pre-application and post-application conferences. The purposes of these conferences is to review a proposed facility for consistency with this Plan, including the siting criteria.

Special Use Permits will serve as the local review mechanism for all types of hazardous waste management facilities (transfer stations, treatment facilities, and incinerators and residual repositories), including mobile facilities and on-site facilities requiring a DHS permit. This review process will allow the local decision makers to assure a facility is consistent with this Plan and conforms to the siting criteria.

8.1.1 Pre-Application Period

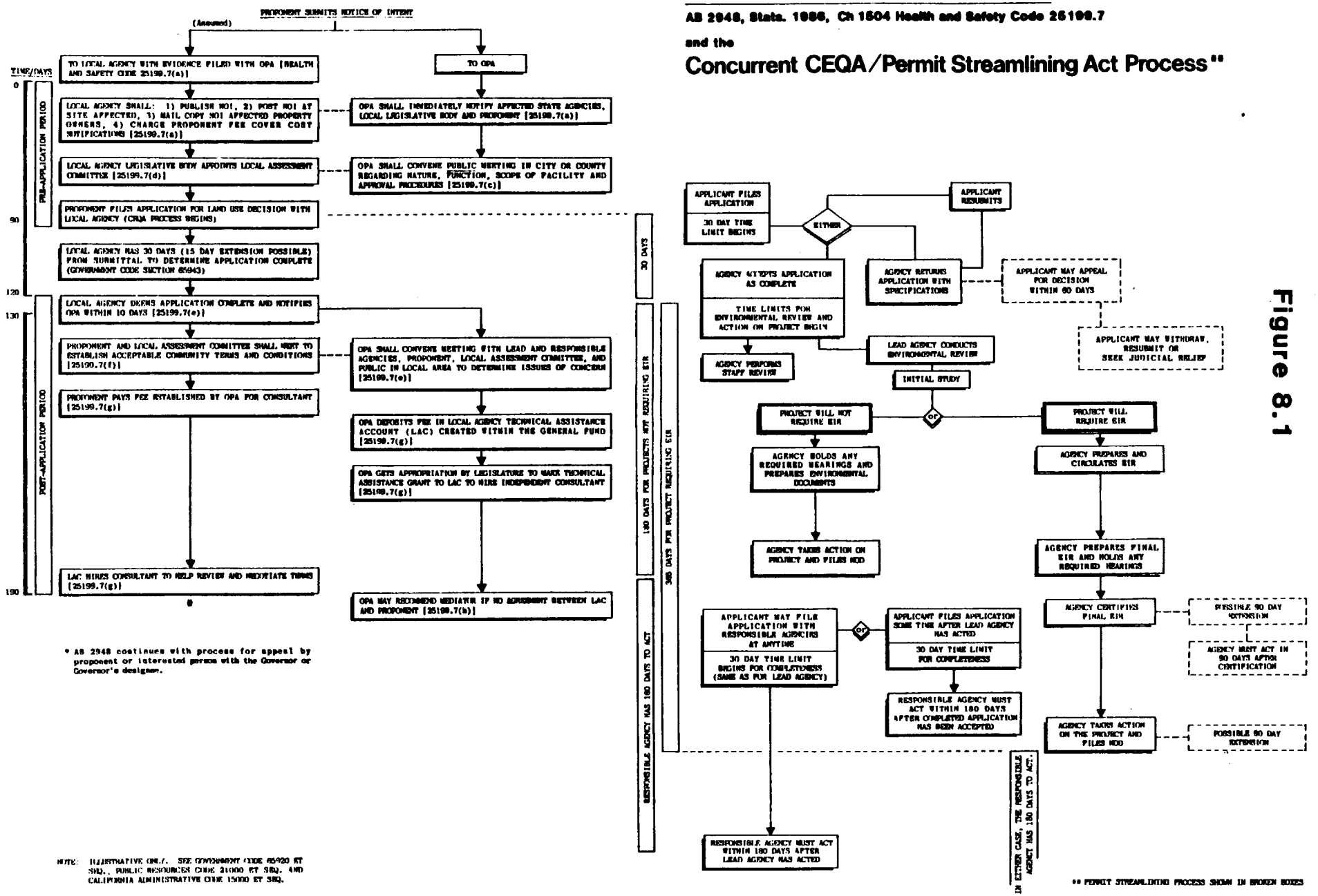
AB 2948 provides that a project proponent must file a "Notice of Intent" (NOI) with the California Office of Permit Assistance (OPA) at least 90 days prior to filing the application with the local agency. This time frame is the "pre-application period." Upon completion of the NOI, OPA will notify affected state agencies and the local agency of the proposed project [H & S Code, Section 25199.7(g)]. Within 90 days after receiving a notice of intent, the Board of Supervisors or City Council, if within the city limits, shall appoint a seven member Local

SPECIFIED HAZARDOUS WASTE FACILITY LAND USE DECISION FLOW CHART

AB 2948, Stats. 1986, Ch 1504 Health and Safety Code 25199.7

and the

Concurrent CEQA/Permit Streamlining Act Process**



* AB 2948 continues with process for appeal by proponent or interested person with the Governor or Governor's designee.

NOTE: ILLUSTRATIVE ONLY. SEE GOVERNMENT CODE 65920 ET SEQ., PUBLIC RESOURCES CODE 21000 ET SEQ. AND CALIFORNIA ADMINISTRATIVE CODE 15000 ET SEQ.

** PERMIT STREAMLINING PROCESS SHOWN IN BROKEN BOXES

Figure 8.1

Assessment Committee (LAC). The membership of the committee shall be broadly constituted to reflect the makeup of the community, and shall include three representatives of the community-at-large, two representatives of environmental or public interest groups. and two representatives of affected businesses and industries [H & S Code, Section 25199.7(d)]. After distribution of the NOI but within the pre-application period, OPA shall conduct and chair a "pre-application meeting" within the County or city, if applicable, for the express purpose of informing the public of the nature, function, and scope of the project and the procedures for approval [H & S Code, Section 25199.7i(d) and 25199.7(f)].

8.1.2 Post-Application Period

Upon completion of the 90-day pre-application period, the proponent may apply for a special use permit with the local agency. The California Environmental Quality (CEQA) or EIR process will then begin. Prior to the application of a Special Use Permit for a hazardous waste facility, the facility site must have the appropriate General Plan and zoning designations. If not, a rezoning and/or General Plan amendment application will be required to be processed concurrently with the Special Use Permit application.

Once the local agency has determined the proponent's application as complete, or the beginning of the "post application period," the local agency has 10 days to notify OPA. Within 60 days after receiving notification of a completed application, OPA must convene a "post-application meeting" [H & S Code, Section 25199.7(e)]. This meeting will involve the lead and responsible agencies for the project, the proponent, the Local Assessment Committee (LAC) and the interested public.

At the request of the applicant, the Board of Supervisors or City Council, as applicable, shall within 60 days after the local agency has determined that an application is complete, issue an initial written determination on whether the project is consistent with the General Plan and CHWMP [H & S Code, Section 25199.5(a-d)].

After the post-application meeting is held, the proponent and the LAC will meet to discuss the terms and conditions under which the project will be acceptable to the community. At this time, it is possible for the LAC or the local agency to charge the proponent a fee equal to the cost of hiring an independent consultant to review the project in accordance with procedures identified in H & S Code, Section 25199.7(g). The proponent shall reimburse all local agency costs including staff time not already recovered through processes delineated in H & S Code, Section 25199.7.

8.1.3 Appeals

All appeals for Special Use Permit applications which are originally approved, conditionally approved, or are denied by the local agency shall be administered in accordance with the appropriate agency's standard use permit appeal process.

Within 30 days after the date the local jurisdiction takes final action on the land use decision for a specific hazardous waste

facility, the proponent or any interested person may file an appeal with the Governor or Governor's designee in accordance with the H & S Code, Section 25199.9.

8.2 CRITERIA FOR SPECIAL USE PERMIT REVIEW

In order to evaluate proposed facilities for consistency with the policies and siting criteria outlined in the Plan, the County and Cities shall adopt the following Special Use Permit criteria. These requirements should be reviewed in conjunction with Section 6 where many of the siting criteria are addressed in greater detail.

1. **Flood plains: including areas subject to flooding by dam or levee failure, and natural causes such as river flooding, rainfall, or snow melt:** As shown on Map 2 in Section 6, these areas lie primarily along major drainage ways and rivers.

   Residual Repositories: Repositories shall be prohibited in areas subject to 100 year flooding.

   All Other Facilities: Facilities may be considered for development in these areas, subject to approval of engineering solutions such as berms, raising above flood levels, etc.

2. **Unstable Soils: including steep slopes, and areas subject to liquifaction due to natural causes.** Map 3 is a slope map for the County. Hazardous waste facilities will be subject to specific engineering requirements to insure structural stability.

   All Facilities: Facilities shall not be located within these areas unless engineered design features, assuring structured stability, are provided.

3. **Seismic Safety:** Map 4 indicates the major fault zones in the County.

   All Facilities: No facilities shall be located within 200 feet of an active or recently active fault.

4. **Habitat of Endangered Species:** Maps 5a and 5b, found in Section 6, show both critical and endangered species habitats. A critical habitat is defined by the Department of Fish and Game as an area that if negatively impacted will have a critical impact to the species located there. On Map 5b, the critical winter, summer, and fawning deer ranges are indicated. These areas area extremely sensitive to development.

   Endangered species locations are indicated on Map 5a, and further described in Appendix O. These areas are extremely sensitive to development and no facilities shall be located in these areas.

All Facilities: Facilities shall not be located within critical habitat areas.

5. **Wetlands: including saltwater, freshwater, and brackish marshes, swamps, and bogs inundated by surface or groundwater with a frequency to support, under normal circumstances, a prevalence of vegetative or aquatic life which requires saturated soil conditions for growth and reproduction.**

   All Facilities: Facilities shall not be located in any wetland areas.

6. **Major Recharge Areas for Aquifers: areas known or suspected to be supplying principal recharge to a regional aquifer, as defined in adopted general, regional, or state plans.**

   Although this information was not available to provide a map for this Plan, a site specific aquifer recharge analysis will be required.

   Residual Repositories: Repositories shall be prohibited within these areas.

   All Other Facilities: Other facilities should be discouraged from being located in such areas. If located in these areas, facilities shall provide properly engineered spill containment features, inspection measures, and other environmental protection controls.

7. **Distance from Residences:**

   Residual Repositories: Repositories shall be located a minimum of 2,000 feet from all residential zones and all residential zones and all isolated residences, unless the proponent proves to the Department and the County's satisfaction that a 2,000' buffer is not required to protect the public health, safety and welfare.

   All Other Facilities: Risk assessments shall be made when permitting a facility. This should consider the physical and chemical characteristics of the specific type of wastes that will be handled, the design features of the facility, and any need for buffering residential areas or other sensitive areas from adverse emissions from a proposed facility.

8. **Distance from Immobile Populations: including schools, hospitals, convalescent homes, prisons, facilities for the mentally ill, etc.**

   All Facilities: Risk assessments, performed at time of permitting, shall be used to determine the need for buffer zones between the facility and immobile populations. This risk assessment will consider the

physical and chemical characteristics of the specific types of wastes which will be handled and the design features of the facility and proximity to immobile populations.

9.a Transportation Route, Segments:

All Facilities: Special attention shall be given to those routes designated in Appendix L as having medium to high accident rates. These routes shall either be avoided or a traffic analysis be completed that includes measures to mitigate further transportation hazards. The transportation analysis shall also consider the fact that rural areas, especially on the Western Slope, are rapidly urbanizing. Therefore, routes with light traffic at the time of a study may become more heavily used in a relatively short span of time.

9.b Proximity to Major Transportation Routes:

Residual Repositories: Repositories shall have approved access to major transportation routes, but may have to be more distant from waste generation sites than other types of facilities because of their need for larger land areas.

All Other Facilities: All other facilities shall be located so that road networks leading to major transportation routes should not pass through residential neighborhoods, minimize residential frontages in other areas, and are demonstrated to be safe with regard to road design and construction, accident rates, excessive traffic, etc.

10. Permeable Strata & Soils: These areas are discussed in Section 6. As with aquifer recharge areas, a site specific analysis shall evaluate this soil and geologic characteristic. Map 3 describes the slope characteristics of the County. Slopes of 30% or greater are generally considered significant, and require mitigation measures.

Residual Repositories: Shall conform to the requirements of the State Water Resources Control Board, which include a soil permeability standard of 1 x 10-7 centimeters per second.

All Other Facilities: All aboveground facilities shall have engineered structural design features, common to other types of industrial facilities. These features shall include spill containment and monitoring devices.

11. Nonattainment Air Areas:

All Facilities: Siting shall not be precluded from these areas unless risk assessments performed as a part of permitting, considering the physical and chemical characteristics of the specific types of wastes that will be handled and design features of the facility,

show that emissions will significantly contribute to nonattainment of standards, that such emissions cannot be mitigated and that the emissions from such facilities are significantly greater than those associated with transportation of hazardous wastes out of this area.

12. **Prime Agricultural Lands:**

Map 8 in Section 6 indicates the lands in the County under Williamson Contract. The 1974 Soils Survey of El Dorado County should also be consulted in evaluating a facility proposal to determine if a site contains choice soils as designated by Soil Conservation Service.

All Facilities: Prime agricultural lands, under California law, may not be used for urban purposes unless an overriding public need is served. When siting hazardous waste management facilities in these areas, overriding public service needs must be demonstrated.

13. **Depth to Groundwater:**

Residual Repositories: Shall meet siting requirements of the State Water Resources Control Board.

All Other Facilities: Other facilities may be located in high groundwater areas if the engineered design of the containment structure is capable of withstanding failure because of geologic or soil failures which may arise.

14. **Proximity to Public Facilities:**

All Facilities: All facilities should be located and operated in a manner such that the facility imposes no significant adverse impact on public facilities.

15. **Proximity to Waste Generation Stream:**

Residual Repositories: Repositories may be located more distant from waste generation sources than other facilities because of their need for larger land areas.

All Other Facilities: All other facilities should be located close to waste generation sources to minimize the risks of transportation.

16. **Zoning:** If a proposed industrial TSD facility is not located in an industrial zone, or if a transfer station proposal is not located in a General Commercial or General Commercial Industrial Zone (South Lake Tahoe only), a rezoning request shall also be processed. The rezoning request, which also may require an amendment to the General Plan, may be processed concurrently with the Special Use Permit.

17. **Recreation, Cultural, or Aesthetic Areas:** Map 9 indicates the principal recreation, cultural and aesthetic areas. These are distributed throughout the County and described in greater detail in the 1984 Open Space Element.

Low-Volume Transfer and Storage Facilities: Such facilities may be allowed in these areas if necessary to handle hazardous wastes generataed by visitors, workers or residents in these areas.

All Other Facilities: Facilities shall be prohibited in areas of recreation, cultural, or aesthetic viability.

18. **Mineral Resource Areas:** The principal resource zones are described on Map 10 in Section 6. These zones are discussed in detail in Section 6 and Appendix Q.

    All Facilities: No facilities shall be sited so as to preclude extraction of minerals necessary to sustain the economy of the state.

19. **State and Federal Lands:**

    All Facilities: These areas shall not be considered for establishment of public hazardous waste management facilities.

20. **Waste Reduction:**

    All Facilities: The County shall review use permit applications and address whether the new facility may undercut incentives for maximum source reduction.

8.3 ACTIONS REQUIRED WITHIN 180 DAYS OF FINAL DOHS APPROVAL - COUNTY AND CITY RESPONSIBILITIES

Sections 25135.7(c) and (d) of the Health and Safety Code (added by SB 477) require that local general plans and zoning controls be brought into conformance with an approved county hazardous waste management plan within 180 days of DOHS approval of the final Plan. This section outlines the steps that El Dorado County and the cities of South Lake Tahoe and Placerville within the County must take to achieve this conformance.

8.3.1 Incorporate CHWMP into General Plans

El Dorado County and the two cities must perform each of the following functions to bring their local general plans into conformance with this Plan:

A. Incorporate this entire Plan by reference into the local general plan. The cities may choose to impose more stringent siting criteria.

B. Modify any policies in the existing general plan that are in conflict with this Plan.

C. Amend the local general plan text where appropriate by adding the objectives contained in Section 1 (Objectives 10-13 are directed at County programs).

8.3.2 Modify Zoning Codes to Regulate Hazardous Waste Facilities

With the development of a Countywide hazardous waste management system, it is necessary to develop uniform regulations. Within 180 days of DOHS approval of this Plan, both cities must be sure its Zoning Code contains the following provisions:

A. All hazardous waste facilities require a Special Use Permit, as described in Section 8.1 and 8.2.

B. All hazardous waste facilities must meet the siting criteria described in Section 6.3 and criteria contained in the Special Use Permit application.

C. Appropriate zoning designations allow for the following types of facilities:

- Household/small business transfer station allowed with Special Use Permit approval in Industrial or General Commercial zones only. Such a facility shall only be allowed in an area zoned General Commercial Industrial (GCI) when sited within the City of South Lake Tahoe.

- All other facilities allowed in areas zoned Industrial with Special Use Permit approval.

8.3.3 Proposed Zoning Ordinance Amendment

The following ordinance is proposed to be added to El Dorado Zoning Ordinances to implement the goals, objectives and policies of the CHWMP as they apply to establishment and siting of new facilities, and to require conformance of new facilities with all CHWMP siting criteria:

> **Purpose.** The purpose of this chapter is to ensure that safe, effective, and economical facilities for management of hazardous wastes are available when they are needed, and that these facilities are of a type, and are operated in a manner, which protects public health and environment consistent with the intent of AB 2948 (Tanner, 1986).
>
> **Hazardous Waste Management Goals, Objectives and Policies.** The goals, objectives, and policies imposed by this chapter are contained in the County Hazardous Waste Management Plan (CHWMP) adopted by the County on _____ and approved by California Department of Health Services on _____.
>
> **Regulations.** The following regulations shall be applied to the proponent of any new hazardous waste management facility at the time of facility proposal:
>
> A. The establishment of the new hazardous waste management facility must be consistent with the goals, objectives, and policies of El Dorado CHWMP.
>
> B. Siting of a new household/small business

hazardous waste transfer station facility may be considered in an industrial or commercial zone. However, such a facility shall only be allowed in an area zoned General Commercial Industrial (GCI) when sited within the City of South Lake Tahoe.

C. Siting of a new industrial transfer/storage/ treatment facility or residual repository may only be considered in industrial zones. Areas may be rezoned Industrial, General Commercial Industrial, or General Commercial if consistent with all the siting criteria and other development policies contained in the General Plan and approved by the local governing body.

D. Establishment of the new hazardous waste management facility shall be allowed only after obtaining a special use permit therefore from the local governing body.

Definitions. Those terms stated below, when referred to in this chapter, shall be defined, for the purposes of this chapter, as the terms that are defined in the El Dorado County CHWMP Sections 2 and 6.

A. Hazardous waste management facility

B. Household/small business transfer station

C. Industrial transfer/storage/treatment facility

D. Residuals repository

8.3.4 Plan Update

This first hazardous waste management plan for El Dorado County will serve as a strong foundation for an ongoing process. The data contained herein represents the best available at this time; the programs reflect a first assessment of County needs and resources.

The CHWMP should be updated to reflect better knowledge of hazardous material/waste streams and experience gained in program development and implementation. Also, once this Plan is adopted by the County and approved by the State, and DHS's statewide plan is drafted, there will be a valuable opportunity to evaluate from a broader perspective the manner in which El Dorado County is planning for its hazardous wastes. The State plan will be updated on a triennial basis.

The CHWMP will be updated every three years. This review will assess the plan's adequacy in addressing facility siting and the effectiveness and priority of the new programs described in this plan. The entire plan is contained on IBM computer hard discs at both El Dorado County regional offices. This will allow staff to make periodic changes to the data and text, as needed.

8.4 IMPROVEMENTS TO EXISTING COUNTY MANAGEMENT PROGRAMS

A major challenge for El Dorado County is improving existing management programs and data systems in response to federal and state mandates. Most of the federal and state program requirements are new, and not fully developed or understood. However, with some reorganization, sufficient sources of funding, and better coordination and cooperation from the applicable local, state, and federal agencies, the existing County management programs can be more effectively implemented to assure compliance with federal and state regulations and meet CHWMP goals and objectives.

The proposed Comprehensive Hazardous Waste and Materials Inspection and Monitoring Program and Data Information System are the primary mechanisms for improving existing management. However, since they require integration of several existing programs into the comprehensive programs they have been treated as new programs and are discussed in Section 8.5.

8.4.1 Leaking Underground Storage Tank & Contaminated Sites

The existing underground tank program is not fully on-line in accordance with legal requirements under AB 1362. Recommended actions include:

- Review current risk assessment of tanks and establish priorities for both initial and follow-up inspections in accordance with the Leaking Underground Fuel Tank (LUFT) manual.
- Complete inspections and permitting of existing tanks in order to determine the magnitude of the contamination problem..
- Enlist the support of EPA, DHS, and the RWQCBs to assure timely and proper clean-up of leaking underground storage tank sites.
- Ensure that new tanks are in full compliance.
- Implement new fee structure or otherwise secure additional financing in order to fully cover the cost of an adequate inspection and monitoring program.
- Incorporate tank data into integrated hazardous material/waste data system.
- Coordinate the permit, inspection, and monitoring of underground tanks within the efforts of a single county agency.

As noted in Section 2.9, there may be as many as 55 contaminated sites in El Dorado County. Recommended actions include:

- Enlist the support of EPA, DHS, OPR, and the RWQCBs to assure proper identification and clean-up of contaminated sites.

- Notify property owners about their respective contaminated site listings.
- Offer consultation and assistance to the responsible parties and property owners of contaminated sites.
- Incorporate contaminated site data into integrated hazardous material/waste data system.
- Coordinate the monitoring of contaminated sites within the efforts of a single county agency.

8.4.2 Water Quality Including Proposition 65

The RWQCBs, Department of Fish and Game, and DEH have jurisdiction in situations where hazardous materials or wastes may potentially impact ground or surface waters. DHS and DEH will be administering AB 1803. DEH has primary responsibility for administering Proposition 65. In order to assure/improve the County's water quality, it is recommended, in addition to their current activities, that DEH:

- Work with local businesses to assure that they comply with provisions of Proposition 65.
- Disclose to the public information issued by the State relating to the implementation of Proposition 65.
- Secure financing to test the County's potable water systems for toxic constituents.
- Incorporate water quality data into integrated hazardous material/waste data system.
- Establish a mechanism to provide rapid data transmittal of Proposition 65 reports to the Board of Supervisors.

The Central Valley and Lahontan RWQCBs should:

- Assist the County in its efforts to inspect underground storage tanks and to clean up leaking tank sites.

8.4.3 Infectious Wastes

The County's current infectious waste program is limited to responding to complaints. In addition, it is recommended that DEH:

- Generate an inventory of all the infectious waste generators within El Dorado County.
- Survey small quantity infectious waste generators as to the most effective means of collecting these wastes.
- Develop education programs and/or information on waste minimization for hospital, clinic and veterinary personnel.

- Explore the possibility of forming an agreement between small quantity generators and hospitals for incinerating the wastes, in compliance with APCD regulations.

- Explore the possibility of utilizing the small business/ household collection services and transfer stations for infectious wastes that cannot be incinerated.

- Incorporate infectious waste data into hazardous material/ waste data information system.

8.4.4 Emergency Response

The County has developed an emergency response plan and will be by June, 1989 acquiring a hazardous materials response vehicle and equipment. The plan and the response vehicle lay the groundwork for an efficient and effective emergency response program. To ensure the best utilization of these resources, recommended actions include:

- Implement the emergency response plan.

- Conduct county-wide and local drills to test the response plan and the response vehicle.

- Develop an emergency response training program for both public and private responders, including regular training updates to cover response requirements for new or unfamiliar materials.

- Assist businesses in preparation of their emergency response plans.

- Compile AB 3777 registration data (pertaining to acutely hazardous materials) and review to determine whether detailed AB 3777 plans should be required from specific businesses.

- Incorporate business emergency response plans into the Comprehensive Hazardous Waste and Materials Inspection and Monitoring Program (CIMP).

8.4.5 Hazardous Material/Waste Inventory (AB 2185/3777)

OES is currently developing an implementation strategy and an information packet and questionnaire for local businesses, and plans to develop a computer data base of inventory information. It is recommended that these activities move forward. Additional recommended actions include:

- Establish a business permit fee to partially or wholly fund the inventory program.

- Incorporate inventory data into integrated hazardous materials/waste data system.

- Incorporate the hazardous materials inventory program into the new Comprehensive Hazardous Materials/Hazardous Wastes Inspection and Monitoring Program (CIMP).

- Coordinate the efforts of this program within a single county agency.

8.4.6 Air Quality

OES, which functions as the local Air Pollution Control District (APCD), conducts annual inspections of industries and businesses which generate air emissions, and is currently in the process of developing minimum standards for air pollutants. APCD should continue its inspections and complete development of pollutant standards. In addition, APCD should:

- Continue coordination with TRPA to monitor air emissions and enforce emission standards.
- Incorporate, where appropriate, elements of air quality management activities into the Comprehensive Hazardous Materials and Waste Inspection and Monitoring Program (CIMP).

8.4.7 Pesticide Contamination Prevention

The Agriculture Commissioner administers the current program, which appears to be generally effective. Suggested improvements to the program include:

- Monitoring of non-restricted pesticide use.
- Encourage recycling of restricted pesticides in the agricultural sector.
- Establishment of a transfer station for those restricted pesticides which are not recycled. This station could be coordinated with a station for small business and/or household hazardous wastes.
- Increase efforts to reduce pesticide use through research and education in integrated pest management.

8.5 NEW PROGRAMS

Many hazardous materials and waste management programs are just being initiated in El Dorado County in response to new Federal and State mandates. The County is therefore in a good position to develop a comprehensive approach and target generators or areas of concern. These "new" or "target area" programs will assure effective management of hazardous materials and wastes at the County level. The new management programs are:

- Comprehensive Hazardous Materials/Hazardous Wastes Inspection and Monitoring Program (CIMP);
- Small Business Hazardous Waste Program;
- Household Hazardous Waste Program;
- Integrated Hazardous Materials/Hazardous Waste Data Information System (DIS).

These new management efforts are described below. Together with the policies and existing program recommendations, they embody the core of the recommended local level plan for hazardous materials and waste management in El Dorado County.

8.5.1 Comprehensive Hazardous Materials and Hazardous Waste Inspection and Monitoring Program (CIMP)

The first recommended new management program is the "Comprehensive Hazardous Materials and Hazardous Waste Inspection and Monitoring Program" (CIMP). CIMP would address underground tanks, hazardous materials storage and use, and hazardous wastes. This comprehensive approach would follow recommendations in the DHS Model Plan for Development of a Local Hazardous Waste Management Program which sets forth three service levels for local programs. Level I (generally equalled by existing El Dorado County programs) includes hazardous and material waste management activities carried out along with more traditional health programs, such as response to complaints and limited public education; serious problems concerning hazardous materials and wastes are referred to the State. Expanded service (Level II) would increase County jurisdiction over permitting, inspections, enforcement and epidemiological surveillance, and may involve a memorandum of understanding (MOU) with DHS. El Dorado County envisions phasing in Level II service over several years. Full service (Level III) expands the County's role to all areas not legally reserved to DHS, under a contract with DHS to allow for County inspection of state-licensed TSD facilities, as well as an MOU. Phase III is not anticipated for El Dorado County. A detailed work plan for the CIMP can be prepared after the CHWMP is completed and presented to the Board of Supervisors for approval. The Interagency Hazardous Spills Response Committee could assist with the formulation of the CIMP.

Under the CIMP, management of the existing underground tank program, the AB 2185 program just being formulated, and hazardous waste generators would be conducted through a single inspection, one-permit process by the delegated agency. For the first time in El Dorado County, the full range of hazardous materials and hazardous wastes would be managed through a coordinated inspection and monitoring effort. This approach to program management can help keep costs down and maximize education and compliance.

The CIMP will consist of three subprograms:

- Hazardous Materials Release Response Plans and Inventory (AB 2185/2187)
- Hazardous Waste Generator Inspection
- Underground Storage of Hazardous Substances

The first two of these subprograms are described in more detail below.

Hazardous Materials Release Response Plans and Inventory

This program combines the existing response program administered by the El Dorado County Division of Environmental Health (DEH) and the Office of Emergency Services (OES) with the proposed County AB 2185 program into a more comprehensive and effective program. Administration of fees and business plan inspections would be performed by one delegated agency. The delegated agency would also prepare and administer the area-wide hazardous materials response plan. This program would include the following elements:

- Review of the area plan
- Review, updating, and inspection of businesses which file business plans
- Management of data, including providing business plan information to emergency response personnel
- Inspection of facilities
- Fee administration

The first four of these elements are described in more detail below.

Area-Wide Plan for Hazardous Material Management -- The purpose of this plan is to set forth the responsibilities of emergency response agencies, identify procedures to coordinate management of hazardous materials, and meet the requirements of CAC Title 19, Sections 2722-2728 as they relate to AB 2185/2187. Under this plan, all hazardous materials emergencies in El Dorado County requiring multi-agency response will fall under an Incident Command System. The first response agency arriving at the scene of an emergency will act as Incident Commander until the appropriate law enforcement agency (California Highway Patrol, Sheriff's Office, or City Police) arrives.

The Incident Commander will establish a command post in a safe area near the scene, direct activities to protect the public an secondary response agencies, and obtain support services throug O including regional and state agency help (e.g. Regional W r Quality Control Board), the hazardous materials response v , Red Cross, etc. The Incident Commander is also responsible for coordinating overall operations with OES to assure the return of the incident scene to normal, including arranging for cleanup operations and collection of evidence in cases involving illegal storage of hazardous materials or other violations. Whenever possible, the Incident Commander will identify the responsible party and encourage the party to take remedial action, or at least acknowledge its responsibility for cleanup. The Incident Commander also handles public information about the incident.

Implementation of the plan will require that all agencies having initial and support responsibilities in hazardous-materials emergencies identify their roles and capabilities and develop agency coordination plans covering protection of the public, evacuation procedures, training and public education.

Business Plans -- Business plans must be filed with the delegated agency by businesses which handle hazardous materials in quantities equal to or greater than 500 pounds, or 55 gallons, or 200 cubic feet at standard temperature and pressure for compressed gas, in the aggregate at any one time in a month.

Data Management -- During the initial phase of the CIMP, data will be handled in the existing "manual" management system. When the Data Information System is brought up to speed, it will replace the manual system. Staff from the delegated agency will review business plans as they are submitted and will develop a tracking system to follow up on businesses failing to certify that they have updated their plans every two years. Businesses storing acutely hazardous materials may be required to file risk management prevention program. The delegated agency will send a copy of each such program to OES and the Fire District and will perform all inspections, sending inspection reports to OES and to the appropriate Fire Departments.

Inspection Activities -- As noted above, the delegated agency will coordinate an initial inspection of each business filing a hazardous materials or acutely hazardous materials business plan. Staffing levels and other activities will determine frequency of inspections thereafter; minimum frequency will be every three years.

Hazardous Waste Inspections

Implementation of this program would begin after a Memorandum of Understanding between DHS and El Dorado County is signed.

Program element would include:

- Permitting and inspection of hazardous waste generators
- Inspecting State-permitted facilities
- Inspecting waste haulers
- Responding to complaints of illegal disposal
- Educational programs
- Fee administration

Hazardous Waste Generators -- This phase of the CIMP will be a program for businesses that generate hazardous waste and that do not require a hazardous waste facilities permit from DHS. A business must obtain a permit from the State to treat hazardous waste, store hazardous waste longer than 90 days, or dispose of hazardous waste on-site. Initially, generators will be notified that they must register with the delegated agency and that they will receive a permit following an inspection of their facilities. Thereafter, ongoing inspections will be performed at least once every three years. In addition, the facility will be inspected to determine compliance with the Hazardous Materials Incident Response Plan.

State-Permitted TSD Facilities -- Future facilities storing hazardous waste on-site for over 90 days, treating hazardous waste, or disposing of hazardous wastes on-site must obtain a permit from DHS. Under CIMP, staff from the delegated agency will conduct spot inspections of these facilities. (No TSD facilities currently exist in El Dorado County.) The frequency of these inspections will be dependent upon budgetary and staffing constraints. However, since most of these businesses may fall under the provisions of the Hazardous Materials Release Response Plan requirements, a minimum inspection frequency of three years would be anticipated.

8.5.2 Small Business Hazardous Waste Program

The second recommended new program is an appropriate and feasible small business hazardous waste program. Large generators have historically received more regulatory scrutiny in part because they are more visible to regulators and to the public. They play a major role in urban economies and the large size of their individual wastestreams provides for economies of scale in waste management. Large generators generally do not experience difficulty in obtaining information, and most larger businesses consider the expense of waste management to be a cost of doing business.

However, in El Dorado County small business generators make up more than 90% of the hazardous wastestream. Smaller commercial and industrial generators may often be more poorly informed than large generators about hazardous waste management. Many such businesses cannot afford to educate themselves on the legal requirements for proper waste management. These businesses enjoy few economies of scale in waste treatment and disposal. Options such as reliance on TSD facilities located hundreds of miles away can drive smaller businesses into bankruptcy. These problems differ more in scale than in kind, from problems facing many large generators. The economic burden of compliance on the County and on the businesses themselves must be minimized to the degree possible.

Small businesses also pose a management problem to the County since there are an estimated 1,011 estimated small quantity generators which generate a variety of waste types and are located in two widely separated urbanized areas or scattered throughout the western slope. Therefore, inspection, permitting, compliance, and enforcement actions are difficult and not totally effective.

However, a small business hazardous waste program can be cost effective and achieve desired waste management objectives if it is targeted at the important industry/waste types in the County and incorporates viable, effective program elements.

Data collected for Sections 2 and 3 of this Hazardous Waste Plan indicate that waste oil, miscellaneous wastes (e.g., asbestos-containing materials, resin-soaked wood, and other construction wastes), metal sludges, halogenated and nonhalogenated solvents, dyes, paints, and resins constitute the bulk of the small business hazardous waste, with waste oil being by far the largest category.

The following program elements are suggested as means to provide effective management of hazardous waste generated by small business in El Dorado County:

1. Identify Small Business Generators -- Using existing business license lists, permit information and data gathered in Section 2 of this report, identify small businesses generating hazardous wastes in the County.

2. Identify Treatment/Disposal Needs -- The Treatment/Disposal needs of service stations and auto repair shops should bel the major focus of small business waste management programs, with construction contractors, printers, photographers, and metal manufacturers receiving secondary attention. Treatment and disposal needs should be revised as new businesses and/or practices develop.

3. Education and Technical Assistance -- Prepare and distribute to each business information packets outlining:

   - o Regulatory requirements
   - o Basic materials and waste management practices such as the self-audit manuals being prepared by DHS, and the DHS waste classification service
   - o Listings of available Treatment/Disposal services, such as "milk run," solvent leasing companies, California Waste Exchange, TSD facilities, etc.

4. Non-enforcement Inspections -- Follow information distribution inspection and monitoring through the CIMP program:

   - o Fine-tune wastestream information
   - o Assess need for education, technical assistance and treatment/disposal
   - o Provide further information on regulatory requirements and materials and waste management options
   - o Assure efforts are undertaken for source reduction/waste minimization including recycling
   - o Assure businesses are utilizing available private waste management services

5. Determine Level of Private Sector Support:

   - o Large generators sponsorship
   - o Trade associations
   - o TSD facility proponents seeking to site facilities in the County

6. Explore County- or State-imposed labeling requirements on hazardous materials.

7. Provide County Support - evaluate desirability of the County

supporting small business generators through:

- o Regular collection of waste pesticides
- o Revolving fund to provide low interest loans for equipment or other management needs
- o Technical assistance by County
- o Treatment/disposal services oriented to small businesses, such as milk runs, solvent leasing and waste exchange
- o Support the private operation of small business/household transfer stations to serve the South Lake Tahoe and Placerville-US 50 Corridor areas.
- o Educational and technical workshops be conducted with trade associations, the Better Business Bureau, and the Chamber of Commerce.
- o Public and private sectors meeting regularly in the approval, implementation, and periodic review and revision of the Hazardous Waste Management Plan.

8.5.3 Household Hazardous Waste Program

The third recommended new program is an appropriate and feasible household hazardous waste management program. Households resemble small businesses in their lack of knowledge and lack of affordable disposal facilities. The household hazardous waste problem is compounded by the fact that many waste-generating businesses operate in people's homes. Because household hazardous wastes represent very small amount of diverse materials, they are most difficult to manage in environmentally benign ways. There is no evidence to conclude that household hazardous wastes are safer than their commercial/industrial counterparts. Virtually every product available to businesses is used in some form by householders and hobbyists.

Individual people are often both household generators and associated with small or large businesses that are generators. A good educational program would reach these citizens in their dual roles as householders and within small businesses.

In 1986, 40,810 households generated an estimated 287 tons of hazardous wastes. They are projected to generate an estimated 488 tons of hazardous waste in the year 2000. Management of hazardous wastes at the household level is primarily a local function. El Dorado county can most effectively develop the household program by targeting the primary waste types and generation areas and developing the appropriate program elements.

The principal household hazardous products, in descending order of volume/weight generated are:

- o waste oil and automotive products
- o paints, resins and dyes

- o batteries
- o household cleaners
- o pesticides
- o polish
- o adhesives and sealants

Educational efforts and support programs should take these target wastes into account, but should not ignore the risks posed by smaller quantities of high-risk hazardous wastes.

Recommendations for an effective household hazardous waste program include:

1. Education Program -- Prepare and implement a household hazardous waste education and technical assistance program. The following elements should be considered:
   - o Develop a comprehensive educational program regarding the use of safe substitutes and proper disposal methods
   - o Develop education and information materials, including those to be used in schools and in community group forums (See Appendix K for lists of existing educational materials)
2. Collection Services -- consider collection services such as monthly or seasonal collection days.
3. Transfer Stations -- support privately run household hazardous waste transfer stations in South Lake Tahoe and in the Placerville-US 50 corridor. Consider coordination with small business, and small quantity agricultural and infectious hazardous wastes.

8.5.4 Hazardous Materials and Hazardous Waste Data Information System (DIS)

The fourth new recommended program is an integrated system for the collection, storage, retrieval, and updating of hazardous materials and hazardous waste data. This system serves as both an inventory tool and a management tool. An integrated system is central to the overall success of the County's hazardous material/waste program, for the following reasons:

- o The County's overall hazardous material and hazardous waste plan describes several functionally distinct, but interrelated programs. Data collection in an individual program is not only required for the proper evaluation of that program but also for improving and evaluating the effectiveness of other programs. For example, efforts to improve water quality depend on the progress made in virtually every other program - underground tanks, infectious wastes, emergency response, hazardous materials inventory, and pesticide contamination prevention. Other programs are similarly interdependent. It is crucial that data be shared

between the respective programs.

- Responsibilities for implementing these programs will be distributed among different City, County, regional, State, and Federal agencies. Coordination between these different agencies will be crucial to the proper administration of the overall CHWMP. An integrated data system will greatly facilitate such coordination.

- the ability of CHWMP to adequately address the County's hazardous material and hazardous waste management problems depends ultimately on data that provide an overarching view of its respective programs. A potential concern in this regard is that improvements in one or more programs may result in increased management responsibilities in other program areas. For example, a successful small business and/or household hazardous waste program will create additional waste disposal responsibilities. Without an integrated data base to provide a collective picture of the County's hazardous waste management needs, it may be both more difficult and expensive to properly fulfill these needs.

- The CHWMP will require periodic revisions to ensure that its programs continue to be targeted to County concerns. An integrated data base will be instrumental in identifying emerging target areas, thus enabling CHWMP to be responsive to changing needs and priorities.

- An important hazardous materials concern is that the fire districts should be adequately informed when responding to fires regarding possible hazardous materials on the premises and in the vicinity. Significant improvements in the level of protection afforded to firefighters and others at risk during fires could be achieved by integrating the hazardous materials inventory with the fire departments' own data bases.

- As a current exporter of hazardous wastes, El Dorado County has a responsibility to importing counties to demonstrate that it is working to reduce its production of hazardous wastes. Importing counties also need such data to plan for future capacity needs. An integrated data base is needed to fulfill both of these needs.

- The state may eventually require comprehensive data on the performance of individual counties' hazardous materials and hazardous waste programs. Performance evaluations may also be tied to securing state funds for implementing additional county hazardous material/waste programs. Early development of an integrated data base system would ease the task of complying with state reporting requirements and may also increase the likelihood of acquiring funds needed to make program improvements.

In short, an integrated data base system lays the foundation for a hazardous material/waste program capable of serving the long-term goals of public safety and environmental protection in El Dorado County and the State.

El Dorado's Data Information System can and should be tailored to

these specific needs and resources of the County. For management reasons, DIS should be centralized in one County agency; at the same time, it is important that the system be set up such that other user agencies in the County can easily and quickly retrieve and enter information. It is also important that the system be compatible with systems used by regional and State agencies. In addition, new and updated information should be entered on a regular basis to keep the system current. Recommended steps to implement the system include:

1. Assign responsibilities for operation of Data Information System to one El Dorado County agency

2. Reorganize existing information system so that it serves as an interim management as well as an enforcement tool

3. Expand upon the existing system so that it includes information on hazardous materials and hazardous wastes used and generated by small businesses, households, public institutions, and farmers

4. Develop procedures for ongoing collection of data and for coordination of data collection efforts among County agencies

5. Design the new system in a flexible manner, to ensure that new sources of data can be fully integrated

6. Determine the forms of data correlation that will be of greatest use for CHWMP's wide variety of needs, including program evaluation, educational and technical assistance, and enforcement

7. Establish within the information system the means to estimate and track cross-media (land, water, sewage, air) transfer of wastes

8. Provide for regular review and update of the DIS

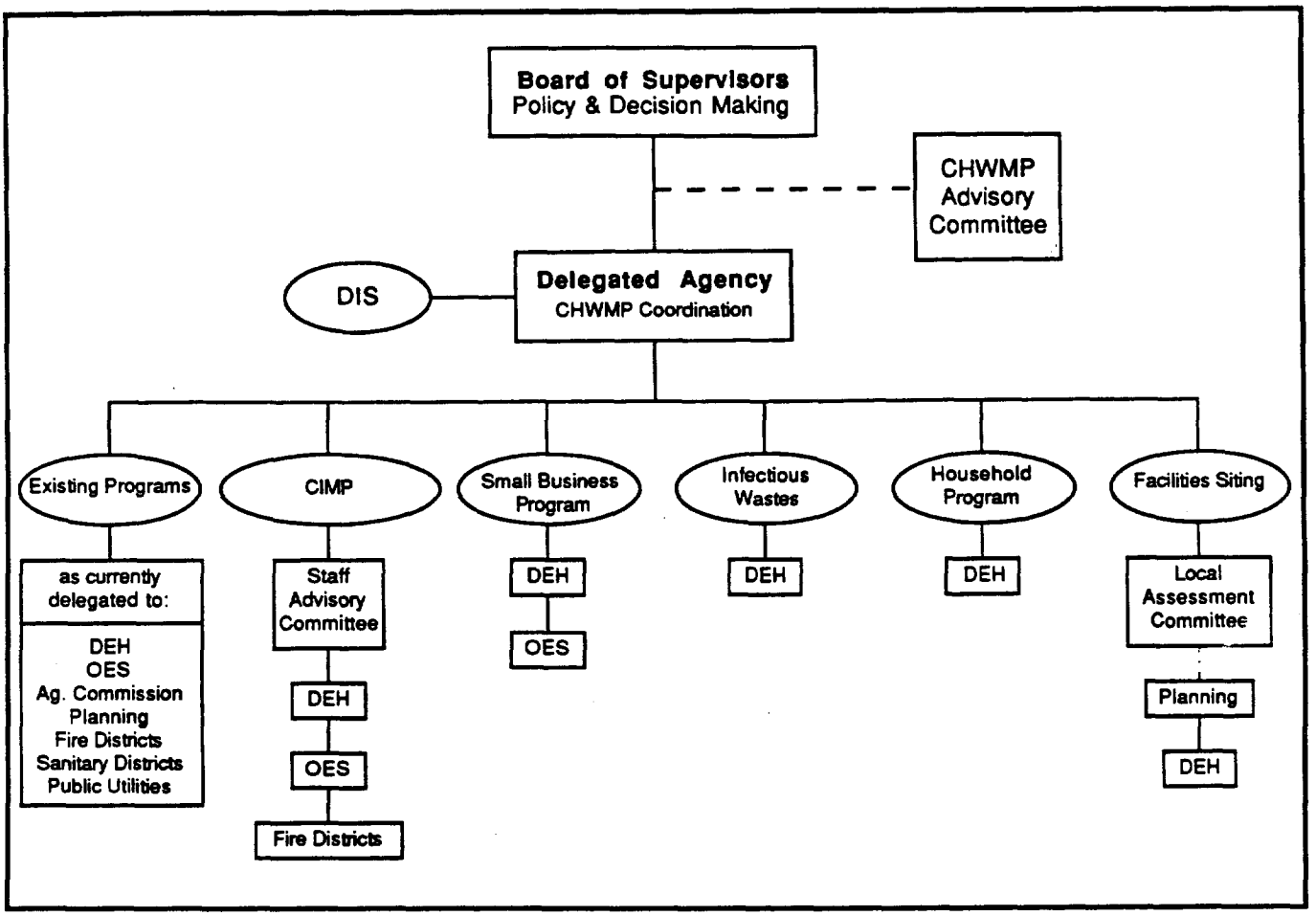
9. Coordinate County DIS with business and institution information systems

10. Develop means for County DIS to interface with regional and State information systems

8.6 ORGANIZATIONAL AND STAFFING REQUIREMENTS

For maximal cost and program efficiency, local coordination of hazardous materials, underground tanks, hazardous waste generator inspections and monitoring should be centralized under one El

El Dorado CHWMP Organizational Chart



Dorado County agency. Due to the complexity of hazardous waste legislation, the El Dorado County Hazardous Waste Management Plan Advisory Committee could not recommend an existing agency or staff levels needed to maintain the program requirements. It was their conclusion that final agency delegation and staffing should be evaluated and prioritized by County administration in reaction to State and federal mandates. Figure 8.1 represents the proposed organizational chart as prepared by the draft El Dorado CHWMP consultant, Brown, Vence and Associates and is only provided as a requirement of DHS.

El Dorado County faces the situation of having most of its population located in two distinct regions: the El Dorado County portion of the Lake Tahoe Basin (primarily South Lake Tahoe), and Placerville to the Sacramento County line- US 50 corridor. Accordingly, **access to permit and data files as well as staff should be made available at each of the two El Dorado County regional offices** (Placerville and South Lake Tahoe).

8.7 FUNDING SOURCES FOR FUTURE PROGRAMS

8.7.1 Financing Future Programs

This subsection discusses potential sources of funding, both for the regulatory and the technical/educational assistance efforts of County agencies, as well as the compliance efforts of regulated entities in the private sector. The funding of hazardous materials and hazardous waste programs in El Dorado County has relied to date on permit fees, the General Fund, and, in the case of pesticides, State mill tax funds.

One of the most difficult aspects of future program development and implementation will be identifying and obtaining adequate funding. Fiscal issues affect both the funding of County agency programs and the program compliance by the private sector. There are a variety of potential sources of funding for both needs. This section contains two elements that identify potential sources of funding within the County for public sector programs (excluding the General Fund) and private sector activities. There are also funding sources available from Federal and private sector sources located outside the County.

The County's plan for future programs contemplates additional use of fee-based programs, in particular for development of a comprehensive hazardous materials/waste generator inspection, permitting and an enforcement program. It would be authorized through a Memorandum of Understanding (MOU) with the State Department of Health Services. Fees are likely to remain an important source of funding, and consideration should go into ways to anticipate and resolve possible negative impacts of fees and rate increases. Examples of potential negative impacts include illegal dumping, decreasing economies of scale as industries change practices, and discouragement of business development.

8.7.2 Potential New Sources of Funding Within El Dorado County

Funding of Public Sector Programs

There are several public funding mechanisms available within the County. some may be applied generally, while others may be more feasible if the particular fee or rate increase is tied to a problem that is being addressed by a specific program.

Permit Fees: In addition to fees collected currently to support the underground tank inspection program, and proposed for the AB 2185/2187 hazardous materials program, fees could be collected to support the hazardous waste generator inspection and permitting program proposed in the Comprehensive Inspection and Monitoring Program (CIMP). If these programs are combined resulting in a single permit, the fee schedule could be increased to reflect the County costs for implementing all three programs. The degree to which fees are increased, particularly as imposed on smaller businesses, will have to be determined in conjunction with other business license fees and other fees imposed by El Dorado County and its cities.

Increased Enforcement: There may be opportunities for raising revenue through the enforcement of local and State requirements related, at least in part, to hazardous materials or hazardous waste concerns. For example, stepped-up enforcement of hazardous waste transport regulations may result in added income to the County.

Municipal Solid Waste Collection Fees: Rates for garbage collection could be increased to meet the costs of household hazardous waste education and collection programs as well as the cost of a program to prevent the entry of hazardous wastes into the solid wastestream. Increased garbage rates have the advantage of spreading the impact to a large number of households and businesses, many of which may now be discarding hazardous waste as trash. El Dorado County garbage rates are reasonable for a rural county and the necessary increase would be small, but an increase may be necessary. As garbage collection is not mandatory in all areas of the County, an estimated pro-rated parcel mitigation fee may be another option.

County Service Area: El Dorado County has recently (July 26, 1988) formed Service Area #10 (Countywide parcel assessment) which will be empowered to provide services for solid waste, liquid waste and household hazardous waste management.

Water Rates: County permits could be issued to private water companies in El Dorado County and an annual permit fee could be collected form these companies. The result would be higher rates for consumers of privately supplied water, but the extra expense would be spread across a relatively large group. This source of funding most logically could be used to support activities such as monitoring of surface water and groundwater sources of drinking water.

Septic Tank Fees: Septic tanks are in wide use in the County, and could become a source of solvent contamination of groundwater in parts of the County. The use of septic tanks in El Dorado County could be licensed by the County with the funds used for

continuing monitoring of groundwater as provided for in State law (AB 1803, Connelly), or for other toxics-related activities.

Gasoline Taxes: Gasoline taxes could be increased as an attractive way of distributing costs broadly. An increase might meet with relative approval if its use were publicly tied to improved hazardous materials and hazardous waste management programs. Traditionally, gasoline taxes are used for transportation-related expenses. An increase could be used more narrowly to monitor hazardous material and waste transport and perhaps even to supplement state-allocated federal funding for transportation capital improvements.

Funding of Private Sector Programs

Private sector funding supplied from within El Dorado County could include:

Internal Financing: Large businesses, and some medium-sized and small businesses that use hazardous materials and generate hazardous waste, may be able to fund compliance and reduction activities through current capital. However, this may not be an option for many companies and farms, particularly if substantial investment in hardware such as recycling or treatment technology is needed. Small business and agriculture funding needs could be reviewed as an element of continued implementation of AB 2185/2187 and of development of the generator inspection program.

Loans: Loans for equipment may be obtained from local financial institutions or possibly from the local economic development corporation, particularly if the investment can be shown to have a relatively short payback period. Small business loans often require the involvement of the federal Small Business Administration, as discussed in the next section.

In-Kind Assistance: Future large quantity generating industries in El Dorado County would have staff and other resources that may potentially be shared with County agencies and directly with small businesses. Programs in community assistance with emergency response plans and hazardous materials and waste management exist under the aegis of the Chemical Manufacturers' Association and other industry and trade associations. Although this is not a source of direct funding, community assistance programs could support information and education programs for small businesses, institutions and households.

8.7.3 Potential Sources of Funding from Outside of El Dorado County

Funding of Public Sector Programs

There are several potential sources of State and Federal funding for the design and administration of county hazardous materials and hazardous waste management programs. Available funding tends to focus on the latter area. Funding tends to be tied to specific activities, and there may be little discretion regarding how, once obtained, the County could use such funds. Examples of such funding are described below:

Federal RCRA Funding: It may be possible to obtain Federal RCRA funding, disbursed through the State Department of Health Services, for the pursuit of local hazardous waste management program activities. Such funding usually takes the form of one-time grants. The availability of such funding over the next few years is questionable due to Federal budget limits.

State Hazardous Waste Reduction Grants: Initial start-up costs for a County, or a multi-county regional hazardous waste reduction program might abe funded as much as 50% through a grant from the State Department of Health Services' waste reduction demonstration grant program. The program is administered under Assemblyman Farr's AB 685 of 1985. Funded at a total of $1 million per year, the grants must be at least partially matched by the recipient. Grant money may, however, be sufficient for initial development, if a program can then be made fiscally self-supporting. Ventura County's waste reduction program was initially funded through such a grant. Ventura County will provide continued funding for waste reduction efforts through the hazardous waste generator permit fee levied pursuant to their hazardous waste generator inspection and permitting Memorandum of Understanding with the State.

Federal Grants for Waste Reduction: It is possible that as a result of pending Federal waste reduction legislation, some federal funding may be made available for innovative local waste reduction programs. This funding may be similar to that now available from the state.

Solid Waste Disposal Site Hazard Reduction Grants: New state legislation provides the possibility for funding of local efforts for preventing the entry of hazardous waste into the solid wastestream. AB 2448 (Ch 1319/87), by Assemblywoman Delaine Easten establishes the Solid Waste Disposal Site Hazard Reduction Act of 1987. One provision of the legislation (Section 66799.40 of the Government Code) provides for the allocation of grants to cities and counties for the purposes of:

a) Support for establishing collection systems to ensure that hazardous waste, including, but not limited to, household hazardous waste, is not improperly disposed of in a solid waste landfill.

b) Payment of the local costs of waste control and enforcement programs that help prevent the disposal of hazardous wastes in solid waste landfills.

It is uncertain at this point what level of funding may be available; inquiries should be addressed to the California Waste Management Board, the agency that administers the Act.

In addition, Section 66799.42 provides that any city or county may adopt a schedule of fees to be collected from local solid waste landfill operators

> "...in an amount sufficient to pay only those reasonable and necessary costs for the preparation, operation, maintenance and administration of a program to ensure that hazardous waste is not improperly disposed of in a solid

waste landfill."

Fee on Off-Site Waste Management Facilities: AB 2948, pursuant to which this Plan is written, also added Section 25173.5 to the State Health and Safety Code. The provision allows local governments to collect a "gross receipts tax," a levy of up to 10% of the gross receipts of any off-site multi-user facility used for the storage, treatment, or disposal of hazardous waste.

This funding option will be available to the County should an off-site waste management facility be located in the County in the future. The use of these funds is at the discretion of local government. The income available to the County would be a function of the size and type of facility, and the volume of total gross receipts.

To date, no Federal funding of local hazardous material and hazardous waste programs has been available. It is possible that as a result of pending legislation, some federal funding may be made available for innovative local waste reduction programs.

Funding of Private Sector Programs

Out-of-County sources of funding for private sector compliance activities include:

State Hazardous Waste Reduction Grants: This source of funding (AB 685), as discussed earlier, is also available in the form of matching grants for use by the private sector. Grants are available in phases for the design, bench scale development, full scale development and evaluation of new and innovative technology. Grants are not available for basic compliance activities.

State Small Business Waste Reduction Loans and Loan Guarantees: 1986 state legislation, SB 788 by Senator Garamendi, amy prove of assistance to individual businesses. The Hazardous Waste Reduction Bill is intended to assist "small businesses," generally those with less than 100 employees, and is expected to be operative on July 1, 1988. The loans and loan guarantees are to be used for investments that recycle wastes on-site or for technologies that reduce the toxicity and volume of wastes needing further management. Technologies need not be new or innovative, as is the case with the previous funding mechanism. The bill, with a $3 million budget, would assist small business by providing direct loans for waste reduction, or by lowering the cost of financing by subsidizing a portion of the interest on loans negotiated between small businesses and private lenders. $500,000 of the budget is available for direct low-interest loans. The remaining portion of the budget will fund the loan guarantees, with the hope that by partially subsidizing initial costs, such loans will be more attractive both to the borrower and to the lender.

State Polllution Control Financing Authority: The California Pollution Control Financing Authority (CPCFA) is an independent State agency that issues tax-exempt revenue bonds in order to finance investments in equipment required to meet regulatory standards for air and water quality. Hazardous waste equipment

can be financed, but only when its primary purpose is to decrease or prevent water pollution.

The CPCFA program has been well utilized by large businesses. But in recent years, the CPCFA has "grouped" several bonds composed of loans to ten to twenty small businesses for sale on the bond market. These grouped offerings for traditional pollution control equipment purchases take advantage of economies of scale by spreading the administrative costs of putting together and selling the bond among multiple participants. However, even the individual loans are quite high -- up to $500,000 -- and thus are still far more than many small businesses would need.

A drawback of the CPCFA programs is the use of the Federal SBA loan guarantee program, discussed below, to determine the credit worthiness of small business applicants. The loan-processing fee on a substantially increase the cost of a loan, and although CPCFA financing is somewhat more flexible than the SBA guarantees regarding the investments for which the monies may be used, small businesses find the program to be of limited use.

Federal Loan Programs: The Federal Small Business Administration's (SBA's) Pollution Control Facility Payment Guarantee Program has helped finance small business investments, but with mixed results. SBA guarantees payment of principal and interest on fixed rate loans that are obtained from private lenders to cover the capital costs of pollution control or waste management projects. The loans have the advantage of long repayment periods of up to thirty years.

There are several drawbacks to the program. First, there is uncertainty over the availability of the loan guarantee program. Although the survival of the program now seems more ensured, the actual level of funding will remain questionable given the federal deficit. Second, SBA financing is available only for the purchase and installation of capital equipment. The result is that only certain equipment-intensive aspects of waste management are eligible for funding, such as the purchase of on-site recycling or process-modification equipment. This funding, therefore, cannot be used for such "software" aspects of waste management as waste reduction audits. This can result in a continued bias towards "end-of-the-pipe" technical controls, rather than source reduction and non-capital-intensive waste reduction strategies.

Unfortunately, traditional SBA financing, even when available, has several other drawbacks that limit its usefulness:

- A small business applicant must be able to demonstrate profitable performance over three of the previous five years. Many small businesses cannot meet this profitability criterion.

- Loans must be for projects that are "necessary" for pollution control. The intention of this provision is to ensure that subsidized financing is not used for profit-making investments that might be made regardless of regulatory requirements. However, this provision may also limit the usefulness of the SBA guarantee since many

innovative waste reduction investments may prove cost effective and even profitable, hence potentially making such investments questionable in the eyes of the SBA.

Pooled Loan Marketing Corporation: The private sector has initiated efforts to provide nontraditional hazardous waste management financing for smaller businesses. The Pooled Loan Marketing Corporation (PLMC), a subsidiary of a California municipal securities firm, is a private sector, for-profit institution designed to pool private bank financing to assist small businesses with investments in the hazardous waste field.

The PLMC is now testing the pooled-loan concept through a grant with the Los Angeles County Economic Development Corporation. To avoid the problems of the SBA loan guarantee program, the partners will combine the small loans needed by individual smaller generators into a single submission to PLMC. SBA guarantees will be easier to obtain, and the credit worthiness of the individual small business participants will not be as important. The PLMC provides long-term, fixed rate financing for small business, purchasing loans once they are secured with the Pollution Control Financing Guarantee Program of the Small Business Administration. PLMC may prove to be an effective means of obtaining financing with a minimum of cost and red tape.

In addition to the above pilot program, the PLMC is using the Small Business Pollution Debenture Program to assist small business needing loans in the $500,000 to $5 million range. The PLMC uses debentures, essentially IOU's, issued by the companies themselves with the backing of the general credit of the PLMC.

Contact information for several of the programs discussed in this subsection is contained in Appendix J.

8.8 REGIONAL COORDINATION

The County and its cities recognize their collective responsibility to cooperate with other governments in the region and the state in planning for the effective management of hazardous wastes generated in the region and the State in accordance with the hazardous waste management hierarchy. Sound hazardous waste management planning, waste reduction efforts, and appropriate facility siting are the mutual responsibility of all governments. To this end, the County and its cities encourage multi-county and regional efforts to plan and implement alternatives to land disposal of untreated wastes and to limit the risks posed by the transportation of hazardous wastes around the state. Agreements for new facilities to provide the off-site capacity needed for hazardous waste treatment and residuals disposal should be reached among jurisdictions according to their fair share of the hazardous waste stream~~, and~~, each jurisdiction's environmental suitability for different types of facilities and other considerations including the siting criteria identified in Section 6. In accordance with DHS directives, El Dorado County and/or Placerville/South Lake Tahoe City restrictions based on "Fair Share" are subject to the following:

(a) Approval of proposed hazardous waste management facilities that do not exceed a jurisdiction's 'fair share' will depend on siting criteria and other criteria required by existing law, unless effective interjurisdictional agreements provide for adequate hazardous waste management capacity for the specific hazardous waste which the facility would have handled in another California county.

(b) El Dorado County and its cities can reject a proposed hazardous waste management facility/project that exceeds its 'fair share' if there are effective interjurisdictional agreements for the management of the specific hazardous waste generated in the County or there is adequate capacity to handle these wastes in the County.

(c) If adequate capacity does not exist in the County and/or City, or effective interjurisdictional agreements do not exist and subject to the siting criteria and review process established in Section 6 and 8, respectively, a jurisdiction shall not reject hazardous waste management proposals that exceed 'fair share' if the proponent demonstrates that the 'fair share' facility (i.e., smaller facility) is economically non-viable, except in cases in which a jurisdiction demonstrates that there are appreciably increased public health and/or environmental risks associated with the proposed facility.

Four regional coordination elements are included here to improve the effectiveness of El Dorado County's Hazardous Waste Management Plan. They are:

- Negotiate Joint Powers Agreements (JPA) with adjacent counties which produce similar hazardous wastestreams and share similar problems and needs. The feasibility of negotiation JPAs for TSDs (including transfer stations) is limited by transportation and associated public safety concerns unique to the Sierra Nevada mountains and foothills.

- Negotiate Memoranda of Understanding with all counties importing hazardous waste from El Dorado County. These MOUs should ensure that El Dorado County be kept apprised of changes in an importing county's facility capacity and the corresponding impacts on the quantities and types of wastes El Dorado County can export. They would also include provisions for importing counties to accommodate the quantities of collected hazardous wastes that would result from implementation of small business and household hazardous waste programs in El Dorado County. Two possible formats for inter-County agreements are described in Appendix I.

- Negotiate Joint Powers Agreements or Memoranda of Understanding with Tahoe Regional Planning Agency (TRPA) and Lahontan RWQCB. TRPA, in particular, is concerned with hazardous waste management and has regulatory jurisdiction in water, land, and air quality matters. Hazardous waste management within the Tahoe Basin must be

compatible with Federal and State laws and regulations.

El Dorado County (and other counties with lands within the Tahoe Basin) should have the lead responsibility in local regulation of hazardous materials land wastes and implementing County Hazardous Waste Plans. TRPA should coordinate and assure consistency of its planning and program efforts, including compliance monitoring, with the El Dorado CHWMP. TRPA and El Dorado County can also enter into agreements or MOUs in which TRPA assists in such program elements as educational and technical assistance for support for the South Lake Tahoe transfer station and waste oil recovery convenience centers.

TRPA and/or Lahontan RWQCB may also wish to promote consistency between the Placer County and El Dorado County Hazardous Waste Plans, particularly as they affect the Tahoe Basin. This effort could be achieved through MOUs between TRPA, Lahontan RWQCB, El Dorado and Placer Counties, and implemented by appropriate staff.

8.9 PUBLIC PARTICIPATION AND CHWMP APPROVAL

8.9.1 Public Participation

An important step in the public participation process during the plan formulation was establishing the Advisory Committee. Composed of nine members, the Committee represents the diverse concerns of the public. The Committee was comprised of four appointees from the Cities of Placerville and South Lake Tahoe, one appointee each from the County Division of Environmental Health and the Agricultural Commissioner, one waste industry representative, an environmental organization representative, and one member representing the community at large. Thus, the El Dorado County Advisory Committee had technical expertise in hazardous waste management, comprised a cross-section of economic and environmental concerns, and represented the major communities within the County. The composition of the Committee is shown below:

Name	Capacity
Ron Duncan	Technical Advisor
Edio Delfino	Agricultural Representative
Virginia Jane Harris	Environmental Representative
Wayne Pearce	Community at Large
Ozzie Scarriot	Industry Representative
Al Herzig	Placerville City Representative*
Bob Harmon	Placerville City Representative*
Joan Phillipe	South Lake Tahoe City Representative*
Clifford Zipp	South Lake Tahoe City Representative*

* The City Representatives were appointed by the City Selection Committee.

Public input was solicited during the Advisory Committee meetings which began on September 10, 1987. Seven Advisory meetings were held through April 1988; the minutes from the meetings are contained in Appendix P. During these meetings the consultant gathered information for the draft CHWMP, and the completed draft sections were reviewed and discussed.

Two public hearings were held in June, one in the City of Placerville and the other in the City of South Lake Tahoe. These meetings were lightly attended, but those that attended had some very helpful input. Engineers, automobile repair association members and hospital staff were present and made comments regarding the tremendous need for transfer stations, especially at South Lake Tahoe.

The public will have continued opportunity to participate in hazardous waste management issues. The California Environmental Quality Act (CEQA) requires environmental review of plans (which includes CHWMPs) and projects that will have significant environmental and health impacts; public participation in the CEQA process is required. Public review of the El Dorado CHWMP EIR will be coordinated with review of the plan itself. Very importantly, the public will also have considerable opportunity for input into the siting and approval of specific future hazardous waste management facilities proposed for El Dorado County on a case-by-case basis.