3.10 HAZARDOUS MATERIALS

INTRODUCTION

This section describes hazardous materials transportation, releases to the environment, and the associated risks within the SCAG region, identifies the potential impacts of the RTP on hazardous materials transportation and risks, includes mitigation measures for the impacts, and evaluates the residual impacts.

ENVIRONMENTAL SETTING

There are several ways in which the transportation-related use of hazardous materials poses a risk to residents of the SCAG region. Actual transport of hazardous materials via truck, rail, and other modes involves a degree of risk of accident and release. The use of hazardous materials and the generation of hazardous waste in the construction and maintenance of the transportation system are other avenues for risk or exposure. Finally, the past disposal of hazardous materials in a manner that creates residual contamination of soil or water can be a source of risk when such sites are disturbed in the course of future transportation projects or associated development. Each of these avenues is discussed below.

Hazardous Materials Transportation

Hazardous materials move through the SCAG region by a variety of modes: truck, rail, air, ship, and pipeline. Since pipelines are not within the scope of the regional transportation planning process, which applies to surface transportation, they will not be further discussed in this report.

According to the Office of Hazardous Materials Safety (OHMS) in the USDOT, hazardous materials shipments can be regarded as equivalent to deliveries, but any given shipment may involve one or more movements, or trip segments, that may occur by different modes. For instance, a shipment might involve initial pickup by truck (one movement), a transfer to rail (a second movement), and a final delivery by truck again (for a total of three movements). Each movement of hazardous materials implies a degree of risk, depending on the material being moved, the mode of transport, and numerous other factors.

According to national data[1], chemicals and allied products make up the majority of shipments and movements of hazardous materials, with petroleum products a close second and other hazardous materials (including hazardous waste, medical waste, radioactive materials and others) accounting for ten percent or less of total shipments. On a tonnage basis, however, petroleum products make up the majority – more than eighty percent – of hazardous material moved. Table

[1] United States Department of Transportation, Research and Special Programs Administration, Office of Hazardous Materials Safety. (1998, October). *Hazardous materials shipments: Tables 1 and 2 [Data file]*. Washington, DC: Author.

3.10-1 presents estimates of annual hazardous material shipment volumes by rail, truck, and ship in the SCAG region for the years shown. These data are the most recent available and thus are the most representative of current conditions. (Many goods may travel by two or all three modes while transiting the SCAG region.)

Table 3.10-1: Hazardous Material Shipment Rates in the SCAG Region

Mode	Total Materials Shipped (million tons)	Hazardous Materials Shipped (million tons)	Year
Truck	580.5	46.4	1997
Rail	120	12	2002
Ports	153.7	15.4	2000

Source: Truck: U.S. Department of Transportation, Bureau of Transportation Statistics (BTS). (1997). Commodity flow survey. Washington: Author; and Federal Highway Administration, Office of Motor Carriers. (1996). National Fleet Survey. Washington, DC: Star Mountain, Inc. **Rail:** Southern California Association of Governments. (2002). Los Angeles basin mainline study. Los Angeles: Author; and Alameda Corridor Transportation Authority. (1996, February). Final Environmental Impact Statement. Los Angeles: Author. **Ports:** Port of Los Angeles web site http://www.portoflosangeles.org/statistics/detailstat_year=2000.htm; Port of Long Beach web site http://www.polb.com/html/2_portStats/comparison.html; and Alameda Corridor Transportation Authority. (1996, February). Final Environmental Impact Statement. Los Angeles: Author.

Aside from rail, pipeline, and water shipments, hazardous materials transported through the SCAG region make use of many of the same freeways, arterials, and local streets as other traffic in the region. This creates a risk of accidents and associated release of hazardous materials for other drivers and for people along these routes, as does the use of rail modes for hazardous materials shipments. Figure 3.10-1 shows a map of freight rail routes in the SCAG region.

According to the OHMS's August 1999 Biennial Report on Hazardous Materials Transportation, the highway mode accounts for the largest share of incidents, deaths and injuries associated with hazardous materials transportation. Rail accounts for the next largest portion, followed by air and water modes. Highway incidents also account for the largest share of economic damage among modes. For the years 1990 through 1997, hazardous waste incidents accounted for 3,475 of the national total of 98,749 incidents, or about 3.5% of incidents – an indicator that hazardous waste accounts for a small proportion of both shipments and risk.

OHMS data indicates that hazardous material incidents on highways have exhibited a downward trend since the mid-1990's, while rail incidents have been trending generally downwards since the early 1990's. Hazardous material incidents by air, however, have exhibited a more or less steady increase, while incidents by water show no clear trend. OHMS statistics also indicate that about eighty percent of incidents are the result of human error.[2]

[2] U.S. Department of Transportation. (1999, August). *Biennial report of hazardous materials transportation, calendar years 1996-1997.* Washington, DC: Author.

Hazardous Material Use in Transportation System Maintenance and Construction

Solvents, architectural coatings (paints), and other hazardous materials are used in the construction and maintenance of the transportation system. Their use and storage is regulated by the California Occupational Safety and Health Administration and by local fire departments. Once these materials become wastes, they are regulated by the State Department of Toxic Substances Control. See the Regulatory Setting section below for further discussion.

Contaminated Sites from Prior Hazardous Material Releases

Soil and groundwater can become contaminated by hazardous material releases in a variety of ways, including permitted or illicit use and accidental or intentional disposal or spillage. Before the 1980's, most land disposal of chemicals was unregulated, with the result that numerous industrial properties and public landfills became dumping grounds for unwanted chemicals. The largest and most contaminated of these sites, in general, became federal Superfund sites in the early 1980's, so named for their eligibility to receive cleanup money from a federal fund established for that purpose under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Sites are added to the National Priorities List following a hazard ranking system. The U.S. EPA maintains this list of federal Superfund sites, as well as a more extensive list of all sites with potential to be listed known as CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System).

Numerous smaller properties also have been designated as contaminated sites. Often these are gas station sites, where leaking underground storage tanks were upgraded under a federal requirement in the late 1980's. Another category of sites, which may have some overlap with the types already mentioned, is brownfields – previously used, often abandoned sites that because of actual or suspected contamination, are undeveloped or underused. Both the U.S. EPA and DTSC maintain lists of known brownfield sites. These sites are often difficult to inventory due to their owners' reluctance to publicly label their property as potentially contaminated. In California, numerous regulatory barriers have blocked effective reuse of brownfields sites, including uncertainty as to cleanup levels and ultimate cleanup cost. State legislation (SB 32, Escutia) adopted in 2001 establishes a locally-based program to help speed the cleanup and reuse of brownfields sites.

Several California environmental agencies maintain lists of properties that are contaminated or are otherwise associated with the use of hazardous materials, including the following:

- Department of Toxic Substances Control (DTSC; part of the California Environmental Protection Agency [Cal/EPA]):
  - Site Mitigation and Brownfields Reuse Program ("CalSites") list – sites that have known or suspected contamination
  - HazNet list – data on hazardous waste shipments from Hazardous Waste Information System

  - Hazardous Waste and Substances Site List ("Cortese" list) – hazardous materials release locations

- California Integrated Waste Management Board (part of Cal/EPA)
  - Solid Waste Information System – data on open, closed and inactive solid waste disposal facilities and transfer stations

- State Water Resources Control Board (SWRCB; part of Cal/EPA)
  - Leaking Underground Storage Tank list – data for specific parts of the state is also maintained by the Regional Water Quality Control Boards (RWQCB)

- Cal/EPA
  - Annual Work Plan – indicates which sites are targeted for cleanup using state funds.

REGULATORY SETTING

Federal Agencies and Regulations

The USDOT (see 49 CFR Parts 171-180) regulates hazardous materials shipping at the federal level. Congress passed the Hazardous Materials Transportation Act to give authority to the Secretary of Transportation "to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in commerce."

The Research and Special Programs Administration (RSPA) of USDOT issues the hazardous materials regulations. The regulations cover definition and classification of hazardous materials, communication of hazards to workers and the public, packaging and labeling requirements, operational rules for shippers, and training. They apply to interstate, intrastate, and foreign commerce by air, rail, ships, and motor vehicles, and also cover hazardous waste shipments. The Federal Highway Administration is responsible for highway routing of hazardous materials and highway safety permits. The U.S. Coast Guard regulates bulk transport by vessel.

The hazardous material regulations include emergency response provisions, including incident reporting requirements. Reports of major incidents go to the National Response Center, which in turn is linked with CHEMTREC, a service of the chemical manufacturing industry that provides details on most chemicals shipped in the U.S.

Hazardous waste generation, storage, treatment, and disposal is regulated by the U.S. EPA (see 40 CFR Parts 238-282) pursuant to the Resource Conservation and Recovery Act (RCRA). The regulations define hazardous waste: "According to EPA estimates, of the 13 billion tons of industrial, agricultural, commercial, and household wastes generated annually, more than 279

million tons (2 percent) are "hazardous," as defined by RCRA regulations." [3] The regulations specify requirements for generators, including waste minimization methods, as well as for transporters and for treatment, storage, and disposal facilities (also called TSDFs). The regulations include restrictions on land disposal of wastes and used oil management standards.

The principle of RCRA is that hazardous waste be managed "from cradle to grave." To assure this, the regulations require identification for generators and transporters, and permits for TSDFs. The regulations provide mechanisms for tracking waste shipments, such as special hazardous waste manifests that must be used for shipping. The regulations also require financial assurances through closure and post-closure for facilities that accept waste for disposal. The statute and regulations provide for inspection, enforcement, and formal corrective action for facilities that do not live up to the terms of their permits and other requirements. In California, the DTSC is authorized by EPA to implement most of the RCRA regulations.

Contaminated site identification and cleanup activities at the federal level are limited to sites that have been placed on the National Priorities List (the "Superfund" list) due to the hazard they represent. Generally, these are large, extensive, or particularly high-risk sites. The National Contingency Plan (NCP; see 40 CFR 300) includes regulations on removals of hazardous substance releases.

State Agencies and Regulations

Transportation and use of hazardous materials are the concern of several state and local agencies, including Caltrans, which tracks hazardous materials spills at the District level; the California Highway Patrol (CHP), whose Commercial Vehicle Section includes a Motor Carrier/Licensing & HazMat Regulations Unit; and the state Office of Emergency Services, which responds to hazardous materials emergencies in cooperation with local responders. In addition, state law has established Certified Uniform Program Agencies (CUPA), often housed within local fire departments, to oversee local hazardous materials storage, usage, and disposal.

The identification and cleanup, or remediation, of environmentally contaminated properties is regulated by several agencies in California, depending on the size and nature of the site, its past uses, and whether soil or groundwater are impacted. As indicated by the lists given under Environmental Setting, the Cal/EPA, the DTSC, SWRCB, and RWQCBs may all have an interest or role in site cleanup. Generally, the water boards will get involved where groundwater or surface water is impacted by contamination. Cleanup of former military bases may also be managed by a group of agencies, including USEPA and DTSC, regional water boards, and occasionally water districts, and is advised by a local citizens' group called a Restoration Advisory Board.

[3] United States Environmental Protection Agency. (1997, September). *RCRA: Reducing risk from waste* (*EPA530-K-97-004)*. Retrieved November 5, 2003, from http://www.epa.gov/epaoswer/general/risk/risk.txt

METHODOLOGY

This section summarizes the methodology used to evaluate the expected impacts from hazardous materials associated with implementation of the proposed Plan. Since shipments are an indicator of risk, as stated by the OHMS, the impact of hazardous materials transportation through the SCAG region was assessed by examining the 2004 RTP's effect on hazardous materials shipments. Specifically, the regional transportation modeling results for goods movement in the region were compared for the various RTP EIR Alternatives. Hazardous materials shipments account for approximately 10% of total rail shipments (based on figures used for planning of a major local rail project) and about 8% of total truck shipments (based on a national figure provided by the Bureau of Transportation Statistics; see Table 3.10-1).

GIS was used to analyze where major freeway, rail, and transit projects in the 2004 RTP come within a one-quarter mile radius of a school. A half-mile buffer (one quarter mile on either side) was drawn around the freeway, rail, and transit projects in the 2004 RTP to compute the number of schools potentially affected by the projects in the 2004 RTP.

Comparison with the No Project

The analysis of hazardous materials includes a comparison between the expected future conditions with the proposed Plan and the expected future conditions if no Plan were adopted. This evaluation is not included in the determination of the significance of impacts; however, it provides a meaningful perspective on the expected effects of the 2004 RTP.

Determination of Significance

The methodology for determining significance applies the significance criteria below to compare the existing conditions to the expected future conditions with the Plan.

SIGNIFICANCE CRITERIA

Criteria for determining significance of impacts were developed from the CEQA Guidelines Appendix G. The proposed Plan would have a significant impact if implementation would:

- Create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during transportation;
- Create a hazard to the public or the environment through the use or disposal of hazardous materials in the construction and maintenance of transportation facilities;
- Emit hazardous materials within one-quarter mile of a school;
- Create a hazard to the public or the environment by the disturbance of contaminated property during the construction of new transportation facilities;
- Cause a cumulatively considerable hazard to the public or the environment.

IMPACTS AND MITIGATION MEASURES

Implementation of the 2004 RTP would affect the transportation and handling of hazardous materials in the SCAG region. The significant impacts include risk of accidental releases due to an increase in the transportation of hazardous materials and the potential for such releases to reach schools within one-quarter mile of transportation facilities affected by the 2004 RTP. Impacts that are less than significant include the use of hazardous materials in transportation system construction, which is well regulated, and direct and cumulative impacts represented by the risk of disturbing previously contaminated property during construction, which can be mitigated. An additional cumulative impact relates to the potential for additional hazardous materials transportation to surrounding counties.

All mitigation measures shall be included in project-level analysis as appropriate. The lead agency for each individual project in the Plan shall be responsible for ensuring adherence to the mitigation measures prior to construction. SCAG shall be provided with documentation of compliance with mitigation measures through SCAG's monitoring efforts, including SCAG's Intergovernmental Review Process.

Impact 3.10-1: The implementation of the 2004 RTP would create a potential hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during transportation. This would be a significant impact.

Implementation of the 2004 RTP would facilitate the movement of goods, including hazardous materials, through the region. For example, by 2030 the RTP includes over 6,700 new mixed-flow, HOV, and arterial lane miles and predicts a substantial increase in vehicle miles traveled (VMT) by trucks, a common mode of hazardous materials transport. In addition, freight rail improvements and other goods movement capacity enhancements are included in the Plan. Transportation of goods in general, and hazardous materials in particular, can thus be expected to increase substantially with implementation of the 2004 RTP. SCAG's transportation demand model indicates, for example, that truck VMT will increase by approximately 70% between 2000 and 2030.

Transportation system improvements in the 2004 RTP would generally improve transportation safety, thus reducing the likelihood of hazardous material transportation incidents. Specific elements in the Plan, such as truck climbing lanes, could be expected to reduce the level of risk posed by hazardous materials transport by separating trucks from other traffic types. This separation should reduce the likelihood of accidents due to the different acceleration rates and driving patterns of heavy trucks compared with other vehicles. (However, the provision of dedicated capacity enhancement facilities might also provide an incentive for even greater goods shipment through the SCAG region, thus potentially offsetting this benefit.) Likewise, the imposition of tolls or fees to help finance dedicated capacity enhancement facilities may induce the transfer of some freight, including hazardous materials, to rail rather than truck. Federal

statistics, however, show that hazardous materials incidents are much less common by rail than on highways.[4]

Mitigation Measures

MM 3.10-1a: SCAG shall encourage the USDOT, the Office of Emergency Services, and the Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.

MM 3.10-1b: SCAG shall encourage the USDOT and the CHP to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation.

Significance after Mitigation

The improvements to the regional transportation system by 2030 would facilitate a substantial increase in the transportation of all goods, including hazardous materials. Even with the above mitigation, this impact would remain **significant**.

Impact 3.10-2: The implementation of the 2004 RTP would create a potential hazard to the public or the environment through the use or disposal of hazardous materials in the construction and maintenance of transportation facilities.

The construction and maintenance of transportation facilities included in the 2004 RTP would involve the use of hazardous materials such as solvents, paints and other architectural coatings. The use and storage of these materials will be regulated by local fire departments, CUPAs, and the California Division of Occupational Safety and Health. Materials left over from construction projects can likely be re-used on other projects. For materials that cannot be or are not reused, disposal would be regulated by the DTSC under state and federal hazardous waste regulations. With these regulations in place, this impact is expected to be **less than significant**.

Mitigation Measures

None required.

Significance after Mitigation

The impact is **less than significant**.

[4] U.S. Department of Transportation. (1999, August). *Biennial report of hazardous materials transportation, calendar years 1996-1997.* Washington, DC: Author.

Impact 3.10-3: Implementation of the 2004 RTP would result in the potential release of hazardous materials within one-quarter mile of schools.

The results of the GIS analysis show that the 2004 RTP projects analyzed would occur within one-quarter mile of approximately 746 schools. Hazardous materials carried on these roadways could affect these schools if there were to be a release or incident during transportation.

The 2004 RTP includes funding for many new arterial projects and modifications to existing arterial projects that were not specified precisely enough to be included in the GIS analysis. The 2004 RTP also includes capacity enhancements and the Maglev system, whose alignments have not been finalized. However, construction and operation of the arterials, capacity enhancements, and Maglev system could cause additional effects on schools in the region, and numerous schools would be within one-quarter mile of these projects. This impact is considered to be significant.

Mitigation Measures

MM 3.10-3a: SCAG shall encourage the USDOT, the Office of Emergency Services, and Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.

MM 3.10-3b: SCAG shall encourage the USDOT and the CHP to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation.

MM 3.10-3c: Prior to approval of any RTP project, the Lead Agency for each individual project shall consider existing and known planned school locations when determining the alignment of new transportation projects and modifications to existing transportation facilities.

Significance after Mitigation

The transportation of hazardous materials within one-quarter mile of schools would remain a **significant** impact, even with the above mitigation.

Impact 3.10-4: Implementation of the 2004 RTP would create a potential hazard to the public or the environment by the disturbance of contaminated property during the construction of new or the expansion of existing transportation facilities.

Construction of the projects in the 2004 RTP could involve construction through or next to sites that have become contaminated due to past chemical use or disposal. In the two decades since federal and state laws were adopted providing for remediation of these sites, it is likely that the majority of contaminated sites have been identified. It is relatively unlikely that construction of new facilities or expansion of existing facilities will encounter previously unidentified contaminated properties. This impact is considered significant before mitigation.

Mitigation Measures

3.10-4a: Prior to approval of any RTP project, the project implementation agency shall consult all known databases of contaminated sites in the process of planning, environmental clearance, and construction for projects included in the 2004 RTP. Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.

Significance after Mitigation

The mitigation measure would assure that contaminated properties are identified and appropriate steps taken to minimize human exposure and prevent any further environmental contamination. The impact after mitigation would be **less than significant**.

Cumulative Impacts

A cumulative impact consists of an impact which is created as a result of the combination of the 2004 RTP together with other projects causing related impacts.

The 2030 transportation model includes the population, households, and employment projected for 2030, and therefore the largest demand on the transportation system expected during the lifetime of the 2004 RTP. In accounting for the effects of regional population growth, the model output provides a regional, long-term and cumulative level of analysis for the impacts of the 2004 RTP on transportation resources. **Forecast urban development and growth that would be accommodated by the transportation investments in the 2004 RTP, together with the increased mobility provided by the 2004 RTP would contribute to the significant impacts described in Impacts 3.10-1 and 3.10-3 above.** The regional growth, and thus cumulative impacts, are captured in the heavy-duty truck VMT data considered in this chapter.

In addition to the impacts described above, the urban development and growth that would be accommodated by the transportation investments in the 2004 RTP would have the following additional cumulative impacts:

Cumulative Impact 3.10-5: The 2004 RTP would contribute a cumulatively significant amount of hazardous material transportation impacts to counties outside of the SCAG region.

As the population increases through 2030, the number of trips originating and ending in Santa Barbara, San Diego and Kern counties to and from the SCAG region would increase, including trips involving the transportation of hazardous materials. The contribution to these trips in the SCAG region would contribute to significant hazardous material transportation impacts in these other counties.

Mitigation Measures

The projects and measures designed to minimize VHT and VMT that are included in the 2004 RTP as well as Mitigation Measures 3.3-1a, 3.4-1a, and 3.4-1b, would minimize this effect.

Significance after Mitigation

Even with the above mitigation, the regional contribution would remain **significant.**

Cumulative Impact 3.10-6: Implementation of the investments and policies in the 2004 RTP would create a potential hazard to the public or the environment by the disturbance of contaminated sites as a result of population and housing growth in the region.

The 2004 RTP's influence on mobility and its land use-transportation measures would influence population distribution, potentially contributing to a cumulatively considerable impact related to disturbance of contaminated sites by new urban development. With additional pressure for infill development, reuse of "brownfields" properties may become more common as the region grows.

Mitigation Measures

MM 3.10-6a: As with new or expanded transportation projects, planners and private developers can and should check published lists of contaminated properties, which are continually updated, to identify cases where new development would involve the disturbance of contaminated properties.

Significance after Mitigation

With the use of these published lists, this impact should be less than cumulatively considerable and therefore **less than significant** with mitigation.

Comparison with the No Project

In the No Project Alternative, the regional population is projected to be the same as for the Plan Alternative, but no regional transportation investments would be made beyond the existing programmed projects. The population distribution is assumed to follow past trends, uninfluenced by additional transportation investments.

Direct Impacts

The No Project Alternative would result in the construction of only about 1,500 new lane miles, compared with over 6,700 new lane miles in the Plan Alternative. The No Project Alternative would also omit construction of capacity enhancements and the Maglev system and involve fewer transit improvements than the Plan Alternative. As a result, new transportation projects in the No

Project Alternative would be within a quarter-mile radius of only 290 schools, 456 less than the Plan Alternative.

Because there would be fewer projects built, the No Project Alternative could result in a smaller increase in the movement of hazardous materials around the SCAG region and therefore in the associated risks. However, without the transportation system improvements incorporated in the 2004 RTP, vehicle miles traveled and vehicle hours of delay would increase more by 2030 for the No Project Alternative than for the Plan Alternative. Thus there would be more opportunities for accidents with vehicles transporting hazardous materials in the No Project Alternative than in the Plan Alternative. Also, with fewer new roadways constructed, hazardous materials transport would be concentrated on existing routes, and could not be diverted to dedicated lanes. In general, the Plan impacts would be greater than the No Project impacts for Impacts 3.10-1, 3.10-2, 3.10-3, and 3.10-4.

Cumulative Impacts

With the construction of fewer new lane miles and other transportation projects in the No Project Alternative compared to the Plan, more transportation demand would be transferred to surrounding counties, and therefore more hazardous materials transportation would be facilitated in these counties. Thus, the No Project impacts would be greater than the Plan impacts for Cumulative Impact 3.10-5.

The Plan Alternative assumes the use of urban form strategies that would encourage greater property reuse and more infill development than under the No Project Alternative. Thus it is more likely that previously contaminated sites would be encountered under the Plan Alternative than the No Project. Therefore, the No Project impacts would be less than the Plan impacts for Cumulative Impact 3.10-6.

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