A REVIEW OF

The Poisoning of Public Thoroughfares: How Herbicides Blight California's Roads

by Patty Clary, executive director, Californians for Alternatives to Toxics, Spring 1999.

By Hilary Melcarek

This new report written by Californians for Alternatives to Toxics (CATs), a leader in the successful California anti-spray campaign, explains the problems associated with spraying herbicides for weed control on California roadsides by the California Department of Transportation (Caltrans), and how the massive agency has failed to stop excessive spraying, despite promises to do so. A group of activists has effectively stopped roadside herbicide applications in Trinity, Humboldt, and Mendocino Counties in District 1 and Alpine County in District 10. They are now working to prevent spraying in the remainder of the state. According to the report, Caltrans has issued Environmental Impact Statements promising to lessen the use of toxic herbicides and to stop spraying weeds solely for the sake of appearances. Although their proposals look good on paper, Caltrans consistently has not followed through, according to CATs. Caltrans has also promised to avoid herbicide spraying within 100 feet of children's bus stops, though the agency has neglected to identify where they are located. A pledge made in 1992 to reduce its use of herbicides by 50% by the year 2000 is unlikely to be met by Caltrans, despite millions of dollars spent on research studies, says the report.

Caltrans serves as a model for much smaller county road agencies throughout the state, yet has failed to act as a responsible state agency, says the report. According to CATs, most of Caltrans' twelve district offices could not provide a basic summary of their use of toxic herbicides. CAT says Caltrans officials are not sure how much the agency spends on herbicides — annual expenditures can only be estimated at $4 to $6 million for weed killing chemicals.

The report also illustrates how roadside vegetation problems can be managed by using non-toxic alternatives while staying well within state budget requirements. Alternatives include planting flowers, integrated vegetation management (IVM), or using natural herbicides.

The following summaries and excerpts from *The Poisoning of Toxic Thoroughfares* adequately illustrate Caltran's inconsistencies.

Caltrans

As required by the California Environmental Quality Act (CEQA), all districts of California must compose an annual plan that describes in detail how roadside vegetation is managed under their jurisdiction. The plans are meant to be accessible to the public and regulatory agencies, but are so complicated that it is unlikely even herbicide applicators will be able to follow them when out spraying, says the report. Difficulty may also arise when trying to obtain such information.

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> *The annual vegetation control plan issued by Districts 1 and 2 maintenance managers includes a delineated summary of chemical herbicide use, as it is required under CEQA. None of the other ten Caltrans district offices could produce a similar report, taking up to seven months before furnishing the legally required summary.*
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> *Other District offices delayed providing information and when finally compelled to do so also revealed their incomprehension of public record law. District 6 officials waited five months to reply to an initial informational request, then insisted that supplying the data would cost $500. The worst response time was logged by employees of District 7 who dragged their feet for seven months before giving the information that was requested.*

Oftentimes, Caltrans removes roadside weeds with toxic herbicides just to establish "clean" roadways. This, they claim, is to ensure the safety of travelers. According to Caltrans, the removal of weeds to heighten visibility of signs and other vehicles is key in preventing car accidents and loss of property.

> *Vegetation management activities cost Caltrans well in excess of $23.5 million each year. Some of their weed control directives are explicit, such as when engineering specification mandate that bridges and culverts be kept free of*

plant growth. State and federal laws also require that certain plants considered noxious weeds be eliminated before they spread to adjacent fields. Far more equivocal, however, are decisions about how a road should look. These are based on highly subjective and debatable opinions.

It's the safety of the road-driving public and their own employees that is the most important determining factor, claim road agencies. They cite their formidable responsibility of preventing car accidents and loss of property by preserving on-the-road visibility of other vehicles and signs. They must keep paving intact, provide rapid drainage, and prevent fires, all of which, they say, can't be done without herbicides.

California's use of roadside herbicides is widespread

According to *The Poisoning of Public Thoroughfares*, Caltrans and county road agencies apply more than 132,000 gallons of liquid herbicides and 93,000 pounds of dry herbicides on roadsides in a typical year. In its study, CATs found that Caltrans applies an average of five gallons of liquid and two or more pounds of dry herbicides per road-mile to the 15,000 miles of highways under its jurisdiction. Additionally, the report found that "51 of the state's 58 county governments also rely on chemical poisons to kill weeds, averaging more than one pound and one gallon of herbicide per mile along the 64,000 miles of roads under county management."

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Pollution Effects: Water, Air, and Soil

Water

The California Department of Pesticide Regulation (DPR) has conducted annual studies on California water sources, which have found that the same herbicides, year after year, contaminate well water.

Herbicide leachers were first found polluting the state's ground water a decade ago. The most popular herbicide used by public road agencies is still diuron, which has been found in many wells each year since sampling began fourteen years ago. Bromacil and simazine – two other top roadside defoliants – have also been found in water samples. Norflurazon, the state's third most popular roadside herbicide, was just detected for the first time in 9.5% of wells in 1997. This is because it was commonly not anticipated to pollute ground water and consequently on a low-priority sampling list.

Some roadside chemicals that are considered non-leaching herbicides, such as glyphosate and oryzalin, are actually very likely to wash away with rainwater and pollute surface waters, says the study. California, however, neither samples nor tests roadside surface water for glyphosate, oryzalin, or any of the herbicides sprayed along public roads.

Air

Roadside herbicides are also known to drift and evaporate, causing air pollution, says the study. Although inhalation is the pathway of greatest exposure to the millions of people traveling on California roadways, Caltrans neglected to study drift exposures in its 1992 risk assessment on roadside chemicals. Caltrans commonly uses chemicals known to cause drift, such as glyphosate. "14% to 78% of glyphosate has been found to drift away from the sprayed target, and glyphosate residues have been detected up to 1,300 feet from where it was applied," says the report.

CALTRANS ST. HWY			COUNTY ROADS	
Gallons	Pounds	Active Ingredient	Gallons	Pounds
9,916	8,387	**Diuron**	16,627	20,356
35,229		**Glyphosate**	27,283	
	14,661	**Oxadiazon**		1,128
1,459	1,059	**Simazine**	1,718	16,605
	6,137	**Norflurazon**		13,119
9,032		**Oryzalin**	418	665
	4,870	**Isoxaben**		
	3,612	**Bromacil**		949
1,480		Diquat	2,307	
	2,028	Am. Sulfate		
	1,434	Sulfonyl Ureas		1,584
1,324		Triclopyr	1,156	
1,986		Oxyfluorfen	246	
		2,4-D	1,220	1,756
695		Arsenic	30	
1,337	1,987	Other herbicides	340	1,111
2,131		Activator 90	1,000	
2,360		Other surfactants	3,201	54
66,949	44,175	TOTALS	55,546	57,327

Californians for Alternative to Toxics

Photo by Michael Amsler

Soil

Of the top eight herbicides used by Caltrans, half are highly persistent in soils, while the others are "moderately long lasting." Exposure may occur when chemicals clinging to dust particles are absorbed or inhaled. However, Caltrans has not studied the effects of herbicide spraying on roadside soil or on the pollution level of dust.

The Chemically Sensitive

Exposure to pesticides along roadways can be particularly threatening to those with Multiple Chemical Sensitivities (MCS). Travel on public roads can be extremely hazardous to this group of people, because contact with herbicides can trigger illness or even life threatening reactions. The actions of government agencies that use toxic chemicals threaten the health of many members of the public.

> *. . . a recent survey conducted by the state Department of Health Services found that of adult Californians, 16.9% — or as many as four million people – believe that they display symptoms of sensitivity to chemicals. Of these, 6.4%, or as many a 1.5 million people, have been medically diagnosed with MCS. This means that one in six adult travelers could be especially sensitive to the adverse health effects of roadside spraying.*

Children at Risk

Caltrans is making very little effort to avoid applying herbicides to areas where children walk and catch school buses, despite promises to do so, says CATs. Children are especially susceptible to toxic effects from pesticide exposure due to their size, developing tissues, and lower ability to metabolize toxins.

> *The chances that children may be exposed to the harmful chemicals applied by these agencies are enormous. Of 15,000 miles of highway maintained by Caltrans, almost two-thirds are sprinkled with school bus stops. Many more bus stops are located along the 64,000 miles of roads maintained by country agencies. Making matters worse, chemical weed control for both Caltrans and county roads is concentrated in the months from October through April, while children are attending school.*
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> *The road agencies claim they try to avoid spraying where signs indicate bus stops on unknown areas of heavy foot traffic. Caltrans even acknowledged its obligation to protect children in its 1992 Environmental Impact Statement on roadside vegetation control, when it pledged to "not apply chemicals within 100 feet of school bus stops identified by public school districts" and to develop guidelines to "modify or exclude chemicals on roadsides where children walk to school."*
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> *However, few, if any, of the road agencies actively pursue information about the location of school bus stops or areas where children walk so that applicators will know where to avoid using herbicides.*

Alternatives to Spraying

There are many viable alternatives to herbicide spraying for Californias roadside weeds, says CATs. These alternatives are not more expensive than herbicide applications, and are oftentimes less expensive. Some alternatives, as listed in the report, include dry steam, preferred vegetation planting, Integrated Vegetation Management (IVM), and the use of organic mulches. Wildflower plantings can out-compete roadside weeds, while IVM uses monitoring to determine whether vegetated areas require maintenance. Organic mulches containing corn gluten, a set of two amino acids found in the germ of the corn seed, act as natural herbicides by preventing root systems from developing from seeds.

Conclusion

The *Poisoning of Toxic Thoroughfares* documents Caltrans' extensive inconsistencies in implementing their proposed policy as stated in their 1992 Environmental Impact Statement. Caltrans is consequently putting the public at risk while failing to provide people with the information they need, such as when spraying will occur and what herbicides will be used. Travelers on California public roads are unaware of the dangers they face from exposure to toxic herbicides, and are thus unable to protect themselves accordingly. *For a copy, send $14 (ppd) to CATs, P.O. Box 1195, Arcata, California 95518, 707-822-8497, catz@reninet.com.*