Dan Breedon, Principal Planner
Butte County Department of Development Services
7 County Center Drive
Oroville, CA 95695

August 3, 2015

Via email: dbreedon@buttecounty.net

Re: Comments to Butte County General Plan 2030 and Zoning Ordinance Amendments Draft Supplemental Environmental Impact Report (EIR) dated June 17, 2015 (Draft EIR)

Dear Mr. Breedon,

On behalf of PAN and our members in Butte County, we're writing to urge the County to consider safe and fair rules to protect the health of children and livelihood of farmers from harmful pesticides.

For over 30 years, PAN has worked in California, and across the nation and the globe to promote a just, fair and resilient food and farming system. As a result, we are especially concerned that the draft EIR proposes a reduction in the size of setbacks or buffer zones from 300 feet to a minimum 25-foot setback from residential areas for orchards and vineyards. Reducing the buffer zone area for farms that use pesticides is problematic, as pesticide drift threatens residents’ health in communities where housing is located next to agricultural operations. Pesticide applications taking place on field crops, orchards, and vineyards are all subject to conditions that result in pesticide drift, and thus it is concerning that the setback in residential areas is only required for orchards and vineyards.

Dozens of environmental, children’s health, and sustainable farming organizations, and well-respected health professionals recently weighed in on proposed statewide rules, urging a 1-mile buffer zone around California schools to heavily mitigate risks from pesticide drift (e.g. see enclosure). In addition, the current buffer zone policy aids in preserving and maintaining agriculture at the interface between urban and agricultural land.

The discussion around the buffer zones should also include consideration of ways to encourage more sustainable and pesticide-free farming practices. Minimizing or eliminating the use of pesticides would decrease a need for such buffer zones. With that said, the intent of the buffer zone policy is a good one, as buffer zones decrease the risk of pesticide drift causing health harms in residents living side by side with agricultural fields where pesticides are used. We urge the county to maintain the existing buffer zone, and consider an expansion for especially sensitive populations (i.e., children) and crops.

Pesticide drift constitutes a threat to communities’ health

Pesticide drift is one major route of exposure for residents living near pesticide applications. Pesticide drift has also been documented at distances greater than a mile or more. Drift can occur during applications (spray drift) or post-application (volatilization), when pesticides rise from the ground in
vapor phase. Pesticide residues have also been documented in dust from agricultural fields.¹

A 2011 analysis of drift incident records from 1998-2006 in 11 states, including California, found that 14% of the reported cases were children under 15 years of age. California data suggested that residents in agriculture-intensive areas have a 69 times higher risk of pesticide poisoning from drift exposure compared with other regions, with children having the greatest risk among non-occupational cases.²

It is a misguided notion that drift only occurs as a result of applicator error or carelessness. While applicator error is known to be a contributing factor to pesticide drift, factors beyond human control such as weather and wind direction can cause pesticide drift. For example, with large swaths of monoculture being the norm for many farms, pesticide applications that are begun during acceptable wind conditions may extend through a period of time when wind speed and wind direction change, creating the conditions that exacerbate or lead to spray drift. Weather conditions and wind direction are also known to affect volatilization drift.

**Pesticides used in California and health effects**

The state of California has created regulatory target levels for certain pesticides known to drift in the air. A number of pesticides have been named to California’s Toxic Air Contaminants list. Notable among these are fumigants such as 1,3-dichloropropene, also used in Butte County.

Fumigants are highly volatile and thus drift-prone, and were cited as responsible for 45% of the drift cases evaluated in the 2011 study cited above.² In California between 1999 and 2012, at least 1,641 workers and community members have fallen ill from drifting fumigants.³ In addition to illness due to acute exposures, 2013 air monitoring data from California’s Department of Pesticide Regulation found that cancer risk screening levels were exceeded for the fumigant 1,3-dichloropropene at Santa Maria and Camarillo/Oxnard.⁴

**Specific pesticides used in Butte County**

According to 2013 California Department of Pesticide Regulation data, the most recent on record, among the top pesticides used in Butte County are the fumigants 1,3-dichloropropene and chloropicrin. 1,3-dichloropropene is on California’s Toxic Air Contaminant list, while chloropicrin is being evaluated for the list. Both of these fumigants are carcinogenic. Chlorothalonil is another top pesticide used in Butte County, is known to drift, and is classified by EPA as a probable carcinogen. Another agrichemical used in Butte County is the organophosphate insecticide chlorpyrifos. Chlorpyrifos is a neurotoxicant with strong associations with negative effects on brain development, and is also known to volatilize and drift. In epidemiology studies of community members from Salinas, California, effects such as a 7-point decrease in IQ in 7-year olds have been documented in a population living in an agricultural community, with these

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⁴ CA DPR. “Methyl Bromide and 1,3-Dichloropropene Air Monitoring Results.” CA Department of Pesticide Regulation Memorandum, September 24, 2014.
effects associated with exposure to organophosphate insecticides.\textsuperscript{5} Another recent epidemiology study has documented an association between prenatal chlorpyrifos exposure and changes to the size and shape of children’s brains.\textsuperscript{6}

The above pesticides used in Butte County have been found in the air at various locations, including sites in California, using PAN’s Drift Catcher. Concerning levels in the air have been documented with regard to increased cancer risk or potential health harms via inhalation exposure.

Other pesticides addressed in the draft EIR include glyphosate (formulation is called Roundup), which was recently named as a class 2A “probable carcinogen.”\textsuperscript{7} While glyphosate is less likely to volatilize than the previously mentioned pesticides, the use of this pesticide raises concerns about human health, as residents could be exposed via other routes if this pesticide is used near or at residences.

**PAN’s Drift Catcher data**

Data collected by community partners with PAN’s Drift Catcher\textsuperscript{8} indicate that drift exposures are occurring at residences in rural areas near sites where pesticide applications are conducted. Some of the highest levels of pesticides recently documented by PAN’s Drift Catcher have been recorded at residences where the distance between fields ranged from 25 to 60 feet.\textsuperscript{9} A 2012 PAN project monitoring for chloropicrin drifting off of strawberry fields in Tehama County documented levels well exceeding regulatory target levels and increased cancer risk, with a Drift Catcher sited at a residence that was located 60 feet away from the field application.\textsuperscript{10} In fall 2014, PAN worked with a community member in Santa Cruz County to monitor for chloropicrin in the air at his residence using PAN’s Drift Catcher, and found increased cancer risk based on data collected from one week of monitoring chloropicrin drifting from a nearby field. The residence was located about 350 feet away from the field, well outside of buffer zones mandated by the state of California or by U.S. EPA.\textsuperscript{11}

Past Drift Catcher projects have documented drift of the pesticides chlorpyrifos (CA, MN, IA, WA) and chlorothalonil (MN) in various states.\textsuperscript{12} From 2004-2006, in Lindsay, California, the Drift Catcher documented chlorpyrifos drift at levels exceeding regulatory target levels for children and adults, and a companion biomonitoring pilot documented urinary metabolites of chlorpyrifos in those same residents’ urine that exceeded EPA “acceptable” levels for pregnant and nursing women, and exceeded EPA levels for men.\textsuperscript{13} Thanks to the campaigning of community groups and the Drift Catcher data, a $\frac{1}{4}$ mile buffer


\textsuperscript{8} PAN’s Drift Catcher is based on the devices used by California Air Resources Board to monitor for pesticides in the air.


zone policy was passed in 2007 in Tulare County (S.B. 391), which mitigated some of the worst exposures experienced by the Lindsay residents.

**Buffer zones & other potential solutions**

The 300-foot buffer zone policy in Butte County protects residents against dangerous levels of pesticides in the air, and must not be rolled back. Data collected in the state of California and elsewhere indicate that we need protections against pesticide drift, and buffer zones are one effective measure for mitigating these risks.

Encouraging sustainable and pesticide-free farming in Butte County would make it possible for agriculture to be done with little risk to residents living nearby. Sustainable farming methods also aid in developing healthy soil on farms, which would create a carbon offset further benefiting the community.

Sincerely,

Emily Marquez, Ph.D.
Staff Scientist

Endorsement:
CPR comment letter
July 31, 2015

Brian Leahy, Director
George Farnsworth, Chief of Enforcement
Department of Pesticide Regulation
P.O. Box 4015
Sacramento, CA 95812-4015
Emails: brian.leahy@cdpr.ca.gov, george.farnsworth@cdpr.ca.gov

RE: Californians for Pesticide Reform coalition comments on recommended school buffer zones and notification

Dear Director Leahy and Chief Farnsworth:

Thank you for hosting the recent series of workshops and providing excellent simultaneous translation. At the workshops, DPR heard from hundreds of teachers and parents who have serious concerns about pesticide use near rural schools and are asking for protection to get students, teachers and school staff out of harm’s way and address the disparate exposure of Latino school children.

Among those who expressed concerns was Maria Brito, a mother from Orosi who attended the Lamont hearing. She stated, "More protection is needed so other parents don't go through what I'm going through with my kids. I have to be very careful with their health and I'm worried when my daughter tells me that she can smell poison when she's at school.” Maria’s children have asthma and her eldest child has been diagnosed with autism. Sarah Henne, a teacher with the Pajaro Valley Unified School District declared, “We brought a busload of teachers during the last week of school, this is how important this is. We have 20,000 students, 1,200 teachers being exposed to 20 years of pesticide use if they choose to stay at a school close to a field. That’s a lot of years. Some counties have a quarter-mile buffer zone, but that’s not nearly adequate. Kids come on weekends. We have to know when pesticides are being applied and we need the buffer zones."\(^1\) When third-grade teacher Melissa Dennis writes report cards, she’s surprised how many students can’t keep up. “I work with students every day that are struggling because they don’t understand concepts in the classroom,” she said. “We all suspect prolonged exposure to pesticides is causing a lot of the difficulties we’re seeing with kids learning.”\(^2\)

Strong scientific evidence documents adverse health impacts associated with exposure to pesticides, particularly for young children in close proximity to pesticide applications. Early

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\(^1\) Quote from the Monterey County Herald, 6/2/2015.
\(^2\) Quote from the Monterey County Weekly, 6/4/2015.
childhood exposure to certain pesticides has been associated with elevated rates of cancer, autism, ADHD and other learning disorders. Among the top 5 pesticides applied in close proximity to California schools in 2010 were the soil fumigants chloropicrin and the methyl isothiocyanate (MITC)-generating metam sodium and metam potassium. They are all potent respiratory irritants, and studies authored by DPR scientists provide evidence that exposure to these fumigants can exacerbate asthma. University of California researchers recently found an association between higher levels of organophosphate pesticide urinary metabolites in 5 or 7 year-old children and respiratory symptoms consistent with asthma in the previous 12 months in the CHAMACOS cohort of children of Salinas area farmworkers. At the workshops, many community members expressed great concern about the prevalence of asthma in young children and the costs of medical treatment and missed school days.

DPR has no basis for the repeated claim that comprehensive evaluation of pesticide risks indicates low risk to most schools because no comprehensive evaluation of pesticide risks at schools has ever been conducted. Air monitoring sites are not representative of the most heavily-impacted schools, no dust monitoring has been conducted, and the department has a substantial backlog of unfinished risk assessments.

We recognize that pesticide use near schools is not a direct measure of exposure, but given the limited availability of air monitoring data, pesticide use data is the best predictor of possible exposure available. The report released last year by the California Department of Public Health, “Agricultural Pesticide Use Near Public Schools in California,” found that significant quantities of

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agricultural pesticides of public health concern are used in very close proximity to hundreds of public schools. The report also found that Latino schoolchildren were 91% more likely than white children to go to schools within ¼ mile of the highest use of pesticides of public health concern.

In light of this evidence of risk to children’s health and disparate exposure of Latino school children, California must take strong and swift action to protect children’s health by implementing large health protective buffer zones around public and private schools. To better protect children, these protections should also cover licensed day care facilities as defined in the Healthy Schools Act and school bus stops and routes. Buffer or protection zones are known to decrease the potential risk of exposure to pesticides. The U.S. EPA acknowledges that “buffer[s] will reduce the chances that air concentrations where bystanders [such as children] are located will cause acute adverse health effects.”

It is not acceptable to delay implementation of protections around schools until 2017. These protections need to be implemented no later than August of 2016 to prevent an additional school year of exposure. In addition, DPR should recognize the opportunity and work with its partner state and federal agencies and academic institutions to support farmers as they move away from the use of hazardous pesticides and toward sustainable, less hazardous, cutting-edge alternatives.

**Detailed Comments**

**DPR’s Concept Draft is misleading and substantially underestimates exposure and potential risk**

DPR cannot legitimately claim that comprehensive evaluation of pesticide risks indicates low risk to most schools – because the department’s air monitoring has been very limited, no dust monitoring has been conducted, and the department has a substantial backlog of unfinished risk assessments.

Of the three DPR and Air Resources Board (ARB) air monitoring sites at schools, only selected soil fumigants are monitored at two (in Oxnard and Watsonville), and 4-year-average 1,3-dichloropropene air levels exceed DPR’s cancer concern level at the Oxnard school. The third site – Shafter High School – is an appreciable distance from fields, with no agricultural pesticide use reported in the same 1-square-mile section in 2011, 2012 or 2013. Even so, 4-year-average air levels of the fumigant 1,3-dichloropropene exceeded DPR’s level for cancer risk concern. There were also a large number of detections of pesticides chlorothalonil, chlorpyrifos, MITC and carbon disulfide. Chlorpyrifos levels reached 1/3 of DPR’s acute screening level, and in 2013 the combined levels of organophosphate pesticides approached DPR’s level of concern. This unfortunately suggests potential for higher risk at schools located near the heaviest pesticide use. DPR has yet to conduct any analysis of how pesticide use in the immediate vicinity of monitoring sites relates to air monitoring results.

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9 The Healthy Schools Act applies to all licensed day care facilities except family day care homes.
A recent review of non-occupational pesticide exposure\textsuperscript{11} found evidence supporting contribution of agricultural pesticide drift, as measured by proximity to treated fields to levels of pesticides in household dust. Dust exposure is an exposure pathway that DPR has never attempted to quantify.

We recognize that pesticide use near schools is not a direct measure of exposure but given the limited availability of air monitoring data, pesticide use data is the best predictor of possible exposure available. The DPH report released last year estimated that 538,912 pounds of pesticides of public health concern were applied within \( \frac{1}{4} \) mile of public schools in 2010 in the 15 California counties reporting the highest agricultural pesticide use. At 2,511 schools attended by 1,457,230 students use within \( \frac{1}{4} \) mile was at least 319 pounds and the maximum use estimated within \( \frac{1}{4} \) mile of a school was 28,979 pounds. It is troubling that these findings were not even mentioned in the DPR concept draft or workshop presentations. CalEnviroScreen maps also show that many of California’s rural schools are located in areas of high use of volatile, higher-toxicity pesticides.

\textbf{Limitations of survey of county pesticide enquiries}

Before scheduling these workshops, DPR surveyed County Agricultural Commissioners (CACs) about pesticide enquiries around schools between 2011 and 2014. The 46 counties that returned surveys reported receiving a total of 1,779 pesticide-related enquiries, but only 1.5 percent of these were related to pesticide applications on school grounds and another 3 percent related to pesticide use near schools. The nature of the remainder of the pesticide enquiries was not reported so we have no way of knowing whether the majority of enquiries were herbicide, drift-related crop loss complaints from farmers or enquiries from the general public.

Reportedly none of these enquiries uncovered an exposure or illness but there was a lot of interest in more information. Yet even a brief anthropological study of only 13 people conducted in 2014 over the course of a few months\textsuperscript{12} revealed incidents of exposure and illness; of even greater concern, the study revealed patterns of illness that almost never get reported. Of the 13 Central Coast and Central Valley residents interviewed, five of the participants have worked in public schools. All five said there have been pesticide drift incidents at the schools where they’ve worked. In fact they consider pesticide-related symptoms “seasonal,” coinciding with the agricultural schedule. An administrator from Madera explained, “Headaches vary around whenever agriculture season starts from March to November, it’s pretty bad. That’s because our agriculture here is fully active. It starts from March. Here where I’m at right now, they cut grapes until December to January. So where I’m working, it’s almost the whole year around, [March to November]. That’s when we suffer from headaches. [Headaches stop in] December because that’s when we are on vacation. I go back to work at my

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\item \textsuperscript{12} Romero, Maria S, “A Critical Medical Anthropology Approach to Advocating for Social Justice and Policy Change in Pesticide Use and Practice to Reduce Health Risks Among Hispanic/Latinos in Central California,” University of North Texas, Department of Anthropology, August 2015.
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school and my headaches continues. My headaches continue all the way to December.” Mary Flodin, a retired teacher, expressed the same concern when she was a teacher in Santa Cruz County: “One of the most pervasive health effects that we found was a constant flu like feeling. It always started around back-to-school, then ended around Christmas and then it would start up again in the spring. Finally we realized that’s the fumigation schedule. This whole cough, runny nose, difficulty breathing, headache, lethargy, cloudy disoriented mind. Teachers would go to doctor after doctor, get antibiotics, ‘Why isn’t this working? Why don’t I get better?’”

Of the five school and former school staff, two reported pesticide drift onto their school just in the last two years: one due to pesticides applied on a windy day when students were at recess, affecting secretaries inside the school as well as teachers and students; and the other, which caused dizziness and vomiting among students immediately after they got off the bus at school. A Madera administrator reported the latter incident, noting that, “Because there were [CAC] inspectors out in the field they were going to come back in a few hours to check what happened. Since there were kids involved they made it a priority but it still took them a few hours before they got here. They set up these machines to read the air and went around the whole school taking readings. They said whatever was up there it was so minute they couldn’t detect it. They said there was something there but they couldn’t detect it. They smelled it themselves but the machine couldn’t pick it up. It was probably the residue.”

In addition, the CAC survey results provide little information of value because of the recognized low rate of reporting of suspected pesticide illnesses. Many residents fear retribution from employers and government, face linguistic barriers with CAC offices that have limited or no bilingual staff, or most frequently, simply do not know where to make a report.

In fact, in 2006 when CPR surveyed 321 community members in public places such as grocery stores in Tulare County, the responses documented a consistent problem with exposure incidents, yet few people even knew where to report:

- 41% of people said that they had been drifted on. Of these people, 23% said that they had been drifted on once; 53% said that they had been drifted on two to five times; 14% said they had been drifted on five to nine times; 10% of people said that they had been drifted on more than 10 times.
- 90 people said that their children attended schools near orchards or fields. Of these, 24 people (27%) said their children had complained about spraying.
- 80% of people said they did not know who to report pesticide drift to (of the 20% who said they knew where to report it, only several correctly identified the County Agricultural Commissioner).

This problem has remained the same over time. In 2012, the organization Organización en California de Líderes Campesinas, Inc., conducted an additional 253 surveys with community members from the counties of Coachella, Madera, Oxnard, Salinas and Sonoma, finding results similar to those found in Tulare County in 2006:

- 52% of people said that they had been drifted on. Of these people, 15% said that they had been drifted on once; 37% said that they had been drifted on two to five times; 15% said they had been drifted on five to ten times; 34% of people said that
they had been drifted on more than 10 times.

- Only 3% of all survey respondents said they had ever reported a pesticide incident to local authorities.
- 50 people said that their children attended schools near orchards or fields. Of these, 18 people (36%) said their children had complained about spraying.
- 68% of people said they did not know who to report pesticide drift to (with many others who said they did know where to report identifying the wrong entity).

Although limited in size and scope, these surveys provide a sketch of community members’ experiences with pesticide exposure and reporting. The results are consistent with what CPR coalition members who work in rural agricultural areas of the Central Coast and the San Joaquin Valley hear from community members regularly.

Finally, community residents who do know to call a CAC office and who have tried to report have reported being met with “hostility and resistance” or dismissed by CAC staff and told to learn English, that they have to work with their neighbors, or that “you have to learn to live with ag.” Or, as in one of the incidents described above, the investigation is not conducted in a timely or proper manner with equipment with low detection limits. Understandably, people become frustrated and see no point in reporting.

But of greatest concern, is the fact that exposure to pesticide vapors and dusts can occur completely unnoticed and pose serious, chronic health risks without immediate illness symptoms or observation of the actual pesticide application. Increasingly, scientific evidence points to a wide range of chronic impacts on children’s health from pesticide exposure, including cancers, ADHD and autism, and asthma, which DPR’s survey does not account for.

**Protection zones of 1 mile around schools and day care facilities should be required for all applications of pesticides of public health concern, pesticides labeled “Danger-Poison,” and pesticides designated as California-restricted materials**

A number of counties have already found the need to implement buffer zones of ¼ mile around schools for applications of restricted pesticides. Imperial County permit conditions go further and specify protection or buffer zones of 1 mile for aerial applications and MITC-soil injection applications and ½ mile for ground applications of restricted pesticides. San Luis Obispo County requires ½-mile protection zones for aerial applications of restricted pesticides. Kern County requires ¼-mile protection zones for all applications of restricted pesticides. The DPR-favored San Bernardino County Ordinance requires up to ¼-mile protection zones that apply only to adjacent properties for most applications of pesticide products labeled “Danger-Poison” and aerial and orchard air-blast and other upward-directed pesticide applications of other restricted and un-restricted pesticides around schools.

These are commendable first steps, but the UC Davis MIND Institute study, the UC Berkeley

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13 The buffer zones in the San Bernardino ordinance apply only to properties adjacent to schools.
CHAMACOS study\textsuperscript{15}, and the California Childhood Leukemia Study\textsuperscript{16}, all conducted in California, have shown that ¼-mile buffer zones are insufficient to protect California’s children from unsafe pesticide exposures. The UC Davis MIND Institute study documented significantly increased rates of autism in children of mothers who lived up to one mile from fields. The CHAMACOS study has documented chlorpyrifos contamination in homes up to 1.8 miles from treated fields and the California Childhood Leukemia study found elevated concentrations of several pesticides in the dust of homes up to 0.75 miles from treated fields.

To ensure adequate protection, buffer zones around schools and day care facilities should be required statewide and expanded to a distance of one mile for pesticides of public health concern to better protect children from pesticide drift and contaminated dust that can drift onto school grounds and be tracked inside classrooms. Pesticides of public health concern as delineated in the 2014 DPH report “Agricultural Pesticide Use Near Public Schools in California” include carcinogens, reproductive and developmental toxicants, cholinesterase inhibitors, toxic air contaminants, fumigants and priority pesticides for assessment and monitoring. Any additional pesticides that are labeled “Danger-Poison” or designated as California-restricted materials should also be included in this 1-mile buffer zone category.

**Protection Zones of 1/8 to ¼ mile should be required for all other pesticide applications**

We recommend use of the San Bernardino ordinance as a starting point for setting a buffer zone of ¼ mile around schools and day care facilities for aerial, air-blast and other upward-directed applications of all other pesticides of lower health concern. It is particularly important to require a significant buffer zone for pesticides with known respiratory effects such as sulfur and pyrethroids. The buffer zone distance should apply to all farming operations within ¼ mile of a school, not just the adjacent property because pesticide drift does not observe property boundaries.

A buffer zone of at least 1/8 mile should be required for downward directed ground applications of all pesticides of lower health concern because these can still move off-site to some extent in mist, volatilized drift and dust.

Some buffer zone is necessary for all pesticide applications because some children may have allergic reactions to even lower-toxicity, biologically-based pesticides or inert ingredients. In addition, pesticides are sometimes reclassified as more hazardous as new health effects information is collected. For example, new toxicology information recently led the World Health Organization to designate widely-used glyphosate a “probable carcinogen.”

**Protection zones must remain in effect for extended periods**

The majority of school protection zones now in place are only enforced from an hour before school starts until 2 hours after classes end. Some specify that the protection zones must also be observed during scheduled school events or when children are present. This is not adequate

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for protecting children, teachers and school staff before, during, or after school and work hours. At the Sacramento Workshop, Rose Alba who works at the Courtland YMCA Day Care Center reported that farmworker parents must drop their children off early in the morning and pick them up late after they finish work in the fields. Community members at the Oxnard workshop observed that maintenance workers are on school grounds late at night when pesticides are frequently applied and that students at track practice often see nearby pesticide applications. In addition, restricting applications to times when grounds are expected to be occupied does not account for exposure while pesticides evaporate from fields after application or when pesticides are entrained in dust that is deposited on school grounds and blown or tracked into school buildings where residues can persist for extended periods.

The San Bernardino ordinance and several county permit conditions appropriately prohibit aerial applications within the protection or buffer zone at all times in recognition of the impossibility of preventing drift from aerial applications. Buffer zones should also be enforced at all times for all applications of pesticides of public health concern as well as for “Danger-poison” and California-restricted materials pesticides. For other pesticides, buffer zones should be enforced for – at minimum – the length of the Restricted Entry Interval. This incentivizes use of lower toxicity pesticides with 4 hour or 12 hour REIs.

Protection zones are needed for school bus routes and known routes used by children to walk to school
Children are also at risk of exposure to pesticide drift while waiting for the school bus and walking and riding to school. To provide for safe routes to and from school, we recommend requiring a ¼ mile buffer zone around school bus stops, bus routes and known school walking routes during the 2 hours before school and after school for aerial and air-blast applications of all pesticides.

Improved and expanded air monitoring is needed to ground-truth protection zones
Follow-up air monitoring and inside dust monitoring at schools in high pesticide use areas is needed to ground-truth protection zones. Current DPR Air Monitoring Network locations should be relocated to schools located closer to intensive agricultural pesticide use than the current sites, and more comprehensive monitoring should be conducted at Ohlone Elementary and Rio Mesa High School.

Use caps are needed around schools to reduce cumulative exposure to multiple pesticides
The only guaranteed way to reduce exposure to pesticides at schools and day care facilities is to control the total amount of nearby pesticide use. Caps that limit the amount of pesticides that can be applied within 1 mile of schools and day care facilities need to be imposed. DPR should use both the DPH report and CalEnviroScreen to help identify schools with high pesticide use nearby that are located in the most impacted and vulnerable communities statewide – then take immediate steps to cap pesticide use around those schools.

Notification is not a substitute for keeping kids out of harm’s way
To protect children's health, exposure needs to be prevented by requiring substantial buffer zones around schools. However, for any pesticide use that continues to be allowed within 1
mile of schools, advance notification should be provided to schools. Those schools, in turn, should then be required to notify teachers and other school staff as well as use their robo-call systems to notify parents. This notification should be provided at least one week before fumigations and at least 48 hours before any other pesticide applications. At the workshops, many farmers stated that they are already notifying schools of planned spraying on a voluntary basis. As a result, a clear and coordinated system across the state should be relatively easy to implement.

**Provide annual data on pesticide use near schools and work with schools to improve reporting**

Annual data should also be compiled on pesticide use near schools and day care centers in agricultural areas, and this data should be posted online in a user-friendly format. In addition, DPR should require CACs in counties with the heaviest agricultural pesticide use near schools to work with schools in their counties to post pesticide incident response information in every classroom and notify parents about pesticides generally, including how to detect and report drift or poisoning and what to do if poisoning occurs.

**Phase out uses of highly hazardous pesticides and promote safer alternatives**

Reducing the use of, and phasing out, fumigants and other highly-hazardous, drift-prone pesticides are the most effective ways to protect children and others from harmful pesticide exposure. School protection or buffer zones should be viewed as opportunity zones for trials of safer replacement pest control methods. DPR needs to work with other state and federal agencies to sustain and increase investment in helping farmers transition away from fumigants and chlorpyrifos by 2020, and promote sustainable agriculture over the longer term.

We thank DPR for hosting listening workshops across the state, and investing the staff resources in ground-truthing the reality of what many communities are facing, especially *chronic* health effects that are often undocumented in existing surveys and monitoring. The reality is that pesticides of public health concern are too often used in heavy amounts near California schools, and place Latino schoolchildren at a disproportionate risk of exposure. This environmental injustice needs to be addressed and we look forward to the state’s proposal to address this problem by August 2016, including necessary protections and new incentives to support and reward modern farming.

Sincerely,

Sarah Aird
Acting Executive Director
Californians for Pesticide Reform

CPR Steering Committee Member Organizations: