DPR's Air Monitoring Network (AMN) Expansion: A Prioritization Framework

Executive Summary

As part of the Department of Pesticide Regulation's (DPR) mandate for continuous evaluation of registered pesticides, DPR initiated a multi-year statewide Air Monitoring Network (AMN) beginning in 2011 to measure pesticide concentrations in the ambient air in several California agricultural communities. Through weekly sampling of air for 35 pesticides and 5 breakdown products, the data collected by the AMN assists DPR in assessing potential health risks, developing measures to mitigate risks, and evaluating the effectiveness of current regulatory requirements.

DPR received additional funding in the 2024 Budget Act to expand its ambient air monitoring efforts. This funding provides support for up to four additional monitoring stations. These new monitoring stations would be in addition to the five existing sites in Delhi (Merced County), Oxnard (Ventura County), Santa Maria (Santa Barbara County), Shafter (Kern County), and Watsonville (unincorporated Monterey County), as well as a planned conversion of the site in Parlier (Fresno County), for monitoring at a total of ten locations statewide. The funding would also allow for the development of a mobile monitoring platform used to prioritize locations that might benefit from short-term monitoring.

This document provides an overview of DPR's proposal to expand the AMN, including the conversion of existing sites, deployment of a novel mobile monitoring station, and a proposed approach for selecting new long-term air monitoring sites. DPR is also soliciting feedback from the public on its proposals in the form of a series of focused questions, included near the end of this document.

Air Monitoring Network Expansion

Additional resources allocated to the AMN will enable a significant increase in its size and capabilities over the next few years, growing the network's size from four stations in 2025, to a total of 10 stations, in addition to one mobile monitoring station, targeting by the end of **2027.** This expansion will represent the cumulative result of three components, including the conversion of existing stations, the introduction of a mobile monitoring platform, and the addition of four new monitoring stations. Additional details regarding each step in the expansion are described below.

Conversion of Existing Stations

The Delhi site in Merced County was expanded to a full AMN station as of January 1, 2026. Initially established in 2016 for the monitoring of the fumigant 1,3-D only, and located immediately adjacent to a school, overhaul of the site with additional sampling equipment allows for sampling of the full complement of pesticides and breakdown products monitored by the AMN.

Parlier, located in Fresno County, was also established in 2016 for the monitoring of 1,3-D alone. This station is DPR's only long-term monitoring location that is not located at a school site. Relocation of the Parlier station to a school and expanding monitoring to all 40 chemicals would integrate Fresno County into the AMN.

These changes to the stations in Fresno and Merced will increase the number of stations in the AMN from four to six.

Mobile Monitoring Platform

DPR is proposing to build a mobile monitoring station that may be quickly deployed to locations throughout California requiring evaluation for periods of one year or less. The mobile station will be equipped with standard sampling instrumentation used in the AMN, in addition to a weather tower and a MiTAP machine capable of semi-real-time monitoring for soil fumigants. Once deployed, staff will visit the station weekly to collect a single, 24-hour sample of ambient air, following established AMN protocol, while continuous hourly sampling for soil fumigants will be performed automatically by the MiTAP. The presence of an on-site weather tower will allow for confirmation of observations using modeling methods to further evaluate exposure risks.

While not a long-term AMN station, the mobile monitoring platform would complement the AMN's stationary sites, and the data it collects could be useful in screening different regions for potential exposure issues.

Prioritization for New Monitoring Stations

When considering the placement of a new long-term air monitoring station, DPR follows a site selection procedure to evaluate communities across the state (Figure 1: Prioritization Procedure Flow Chart). This process is updated with new data every 3-6 years and informs decisions on potential stations to be added to the monitoring network. Through this process, communities in the state are ranked from highest to lowest based on their proximity to fumigant and organophosphate applications. Fumigants are prioritized because they are used in large amounts and readily enter the gas phase, while organophosphate pesticides are both widely used and share a common biological mechanism which can produce an additive effect in terms of their toxicity, presenting a greater potential health hazard than non-fumigant, non-organophosphate pesticides. While not part of the formal prioritization procedure, historical use of non-fumigant, non-organophosphate pesticides may be considered when deciding between otherwise similar monitoring locations.

Weather and environmental justice factors from the Office of Environmental Health Hazard Assessment's (OEHHA) CalEnviroScreen 4.0 are considered when analyzing the pesticide-use data and ranking the communities, respectively. CalEnviroScreen 4.0 is designed to identify California communities that are disproportionately burdened by multiple sources of pollution. DPR uses the Population Characteristics (PC) percentile field, which rates

sensitive population indicators as well as socio-economic factors. The higher the PC percentile, the more susceptible a community's population may be to pollutant exposure.
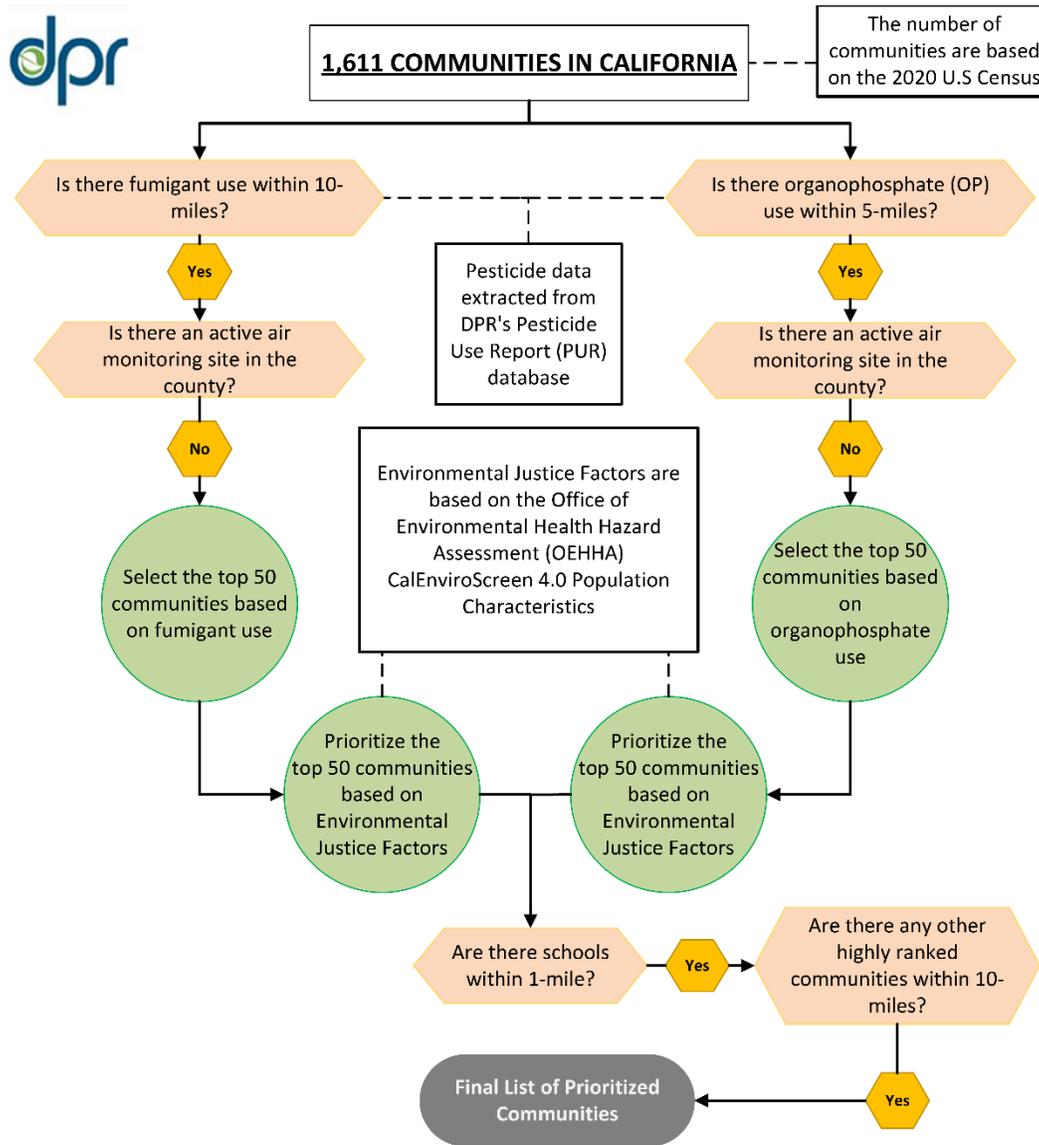

Figure 1: Flow chart of prioritization procedure. The chart identifies the decision pathway for communities to be included in the final list of prioritized communities; communities not meeting one or more criteria are not included on the final list.

The full technical details of this process are described in DPR's 2026 Standard Operating Procedure (SOP) for AMN site selection. In brief, the updated procedure uses a step-by-step approach to prioritize counties for placement of new AMN stations. While similar to the approach used in the 2020 site prioritization report, DPR has updated the process to expand the number of communities included in the analysis, refine estimates of fumigant

emissions, and improve representation of the different agricultural regions across California. The complete list of changes includes:

- Use of the updated 2020 Census places file to analyze all 1,611 communities[1] in California. This represents an increase of 383 communities, including newly incorporated areas and previously excluded urban regions of San Diego, San Francisco, Orange, and Los Angeles Counties.
- Prioritizing counties without preexisting AMN stations. Selecting one monitoring site per county for the AMN ensures continuous evaluation across areas with diverse crop types, fumigation methods, use patterns, and weather conditions.
- Consideration of variation in potential off-site movement of fumigants in response to application method. The revised process also considers the potential for fumigants to travel longer distances in the air.
- Presentation of individual fumigant rankings for 1,3-dichloropropene (1,3-D), methyl isothiocyanate (MITC) and chloropicrin. This allows DPR to compare sites based on use of each fumigant. Individual fumigant rankings will be used to ensure that no single fumigant is disproportionately represented in the AMN.
- An increase in the number of communities analyzed for PC percentile from 30 to 50, which accounts for the presence of sensitive populations and socioeconomic factors.
- Prioritization of communities with schools to focus the limited resources on monitoring areas where children are present.
- Prioritization of areas where a monitoring site represents a large number of highly ranked communities.

Because the site prioritization process develops independent rankings of the top-50 communities based on either organophosphate or soil fumigant usage, the outcome of the site prioritization process is a list of up to 100 communities. In practice, some communities may appear on both lists, lowering the total below 100, while selection for communities containing schools and regions containing more than a single high-ranking site further reduces the total. Therefore, the outcome of this process is a "short list" of communities where stations may be ideally situated to collect data regarding potential pesticide exposure.

Siting Criteria

Once a community is selected for monitoring, an appropriate location must be found *within* a selected community that satisfies certain requirements to ensure that results are representative of the ambient air. DPR evaluates prospective monitoring locations—and periodically reevaluates existing monitoring locations—to ensure they comply with U.S.

---

[1] "Communities" are defined here as any concentration of people recognized by the 2020 U.S. Census. This includes both incorporated, self-governing places such as towns or cities, and census-designated places (CDPs), which include unincorporated rural communities.

EPA's ambient air siting criteria. Monitoring sites must meet the following minimum criteria:

- 2 to 15 meters above the ground
- At least 1 meter horizontal and vertical distance from supporting structures
- At least 20 meters from trees
- Distance from obstacles should be at least twice the obstacle height
- Unobstructed air flow for at least 270 degrees

Sites must also satisfy certain access requirements including:
- Accessibility of the site to sampling personnel at the time of sampling
- Availability of electricity
- Protection of equipment from loss or tampering

DPR scientists evaluate prospective sites to make sure they meet the above requirements prior to equipment installation. If no acceptable sites can be found within a selected community, or if DPR cannot identify cooperators to host the site, then an alternative community must be considered.

Prioritized Counties and Communities

Additional funding received by DPR enables the addition of up to four new stations to the AMN **by the end of 2027.** DPR is currently evaluating locations where these new stations would have the greatest impact, using methods described in the site selection SOP (see Figure 1). The result of that evaluation was a list of 71 unique communities, selected based on geographic location and proximity to areas with high historic usage of either soil fumigants or organophosphate pesticides, distributed across a total of 14 California counties (see Appendix Table A-1).

Further refined to include only those communities containing schools, and proximity to one or more other highly ranked communities, the list was reduced to 34 unique communities distributed across seven counties. It was observed that high-priority communities identified in Santa Cruz and San Luis Obispo were within 10 miles of existing AMN stations in Monterey and Santa Barbara counties, respectively (Figure 2), which places them within the 5-10 mile distance described in the site selection SOP at which pesticide applications are expected to influence monitoring results; therefore, air concentrations at these prospective sites would be expected to be influenced by many of the same sources. DPR proposes that new AMN stations not be considered in these regions at this time, as to ensure each station provides independent information and expands the geographic coverage of the network. Removal of these communities from consideration reduced the list to 29 unique communities across five counties: Stanislaus, San Joaquin, Imperial, Siskiyou, and Tulare (Table 1).

DPR proposes that monitoring stations be placed among the communities identified in the ranking process, with a maximum of one per county. Final station placement is to be

contingent upon public consultation, identification of cooperators, availability of land meeting siting requirements, and professional scientific judgement. Additional detail regarding the number and distribution of communities in each county is detailed in following sections.

Table 1. List of counties prioritized based on the pesticide use around communities and filtering for schools and proximity to other highly ranked communities.

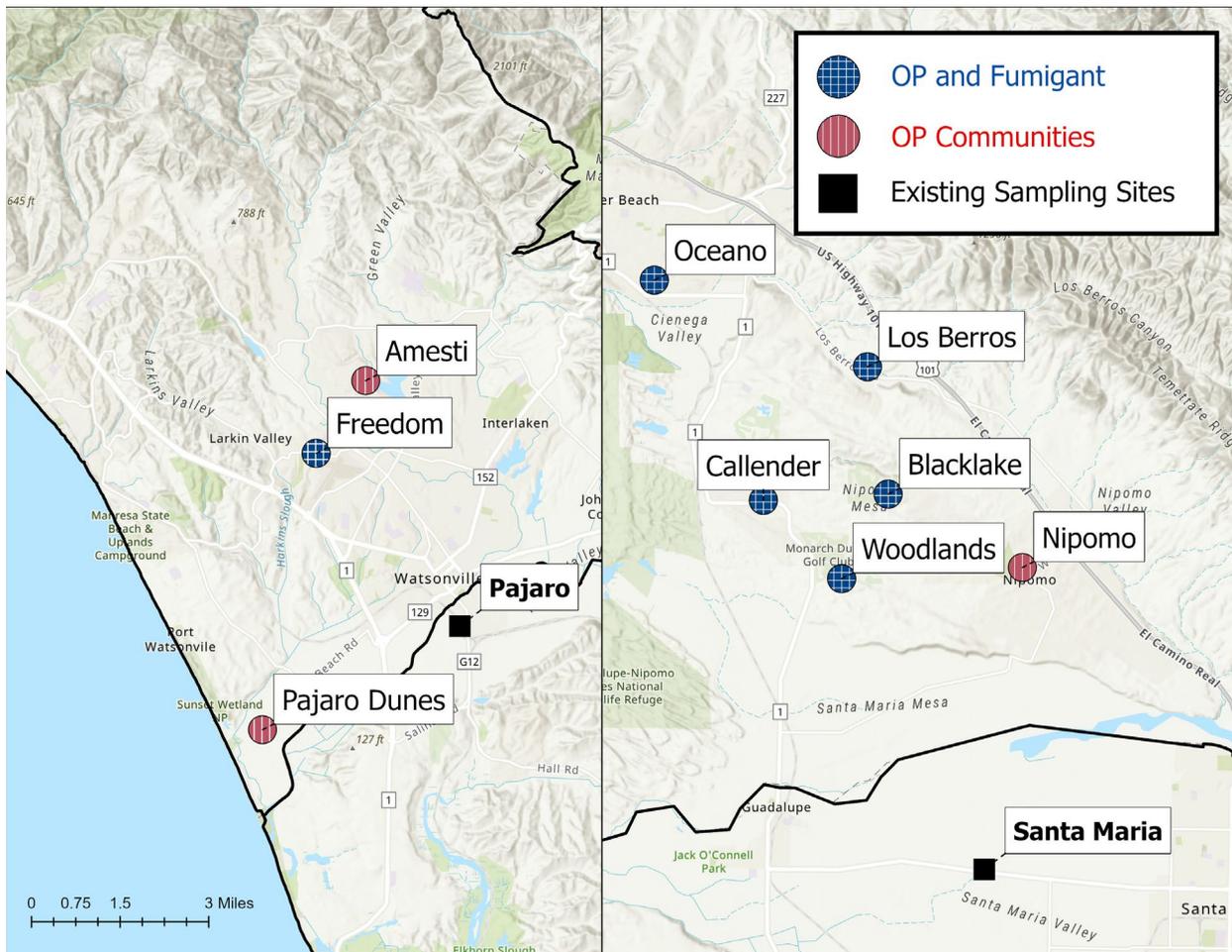| County	Fumigant use	Organophosphate use
Tulare	✓	✓
Stanislaus	✓	✓
Imperial	✓	✓
Siskiyou	✓	✓
San Joaquin	✓	

Figure 2. Proximity of existing AMN sites to the high-priority communities in Santa Cruz (left) and San Luis Obispo (right) counties.

Tulare

A total of 13 communities in Tulare County were among the final list of communities identified as being located in either high-fumigant or high-organophosphate use areas. Among these communities, Traver was selected for its location in high-fumigant-use areas, while Cutler, Ducor, Ivanhoe, Strathmore, and Waukena were selected for their location in high-organophosphate-use areas. The remaining communities, Delft Colony, El Rancho, Linnell Camp, Richgrove, Seville, Sultana, and Tooleville, were selected for being in both high-fumigant and high-organophosphate use areas.

Table 2. List of communities in Tulare County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas. A higher PC percentile indicates higher community susceptibility to pollution burden, while a use rank closer to 1 indicates higher usage.

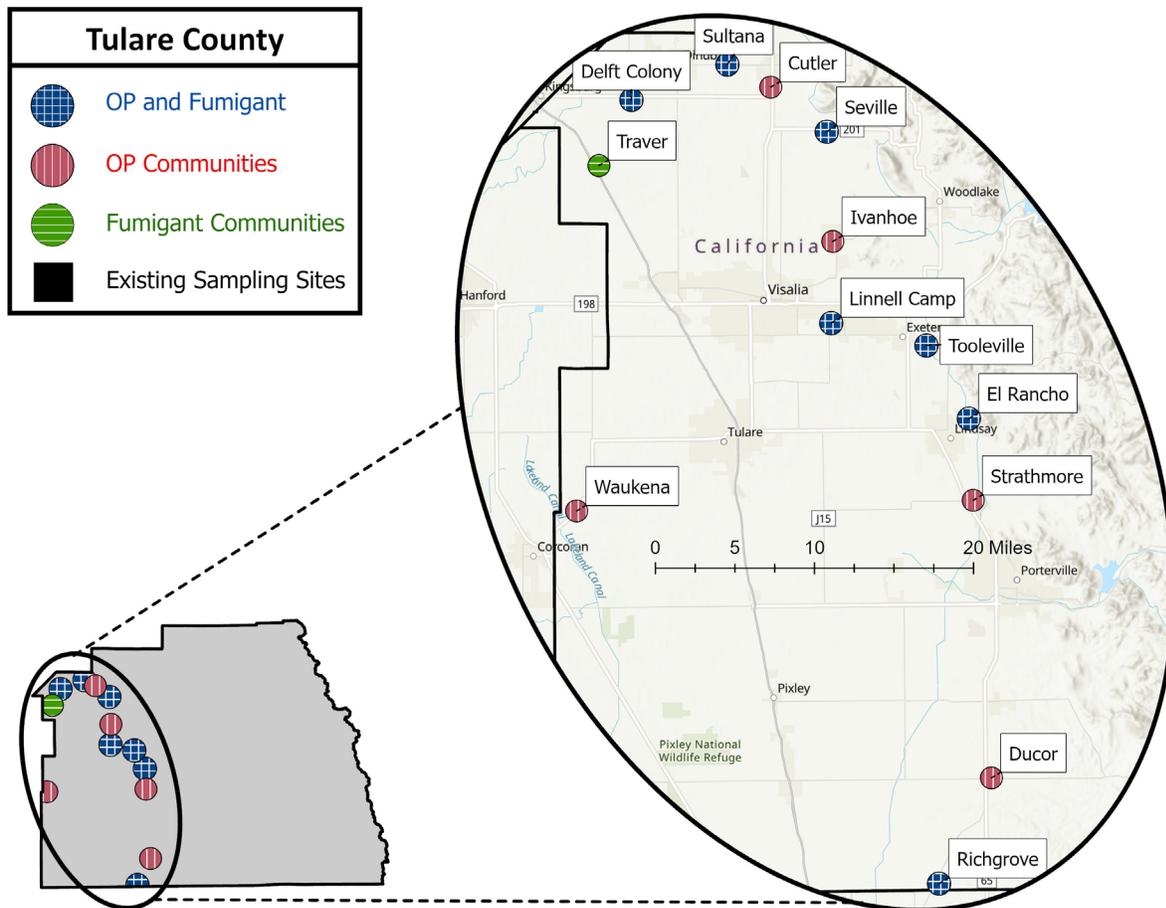| Community	PC percentile	Fumigant Use Rank	OP Use Rank
Traver CDP	89.57	29	NA
Waukena CDP	88.57	NA	49
Ducor CDP	86.60	NA	40
Richgrove CDP	86.59	44	50
Cutler CDP	85.83	NA	47
Strathmore CDP	85.67	NA	44
Seville CDP	77.77	31	12
Delft Colony CDP	66.12	4	16
Sultana CDP	66.12	25	25
Ivanhoe CDP	65.61	NA	46
Tooleville CDP	64.71	13	7
El Rancho CDP	63.75	6	1
Linnell Camp CDP	56.31	15	27

Figure 3. *Spatial distribution of communities in Tulare County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas*

Stanislaus

A total of eight communities in Stanislaus County were among the final list of communities identified as being located in either high-fumigant or high-organophosphate use areas. Among these communities, Westley was selected because it is in both high-fumigant- and high-organophosphate-use areas. The remaining communities, Airport, Bret Harte, Bystrom, Denair, Hickman, Parklawn, and Rouse are selected for being in high-fumigant use areas.

Table 3. *List of communities in Stanislaus County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas. A higher PC percentile indicates higher community susceptibility to pollution burden, while a use rank closer to 1 indicates higher usage.*

Community	PC Percentile	Fumigant Use Rank	OP Use Rank
Airport CDP	98.88	9	
Rouse CDP	96.38	11	
Bystrom CDP	93.72	24	

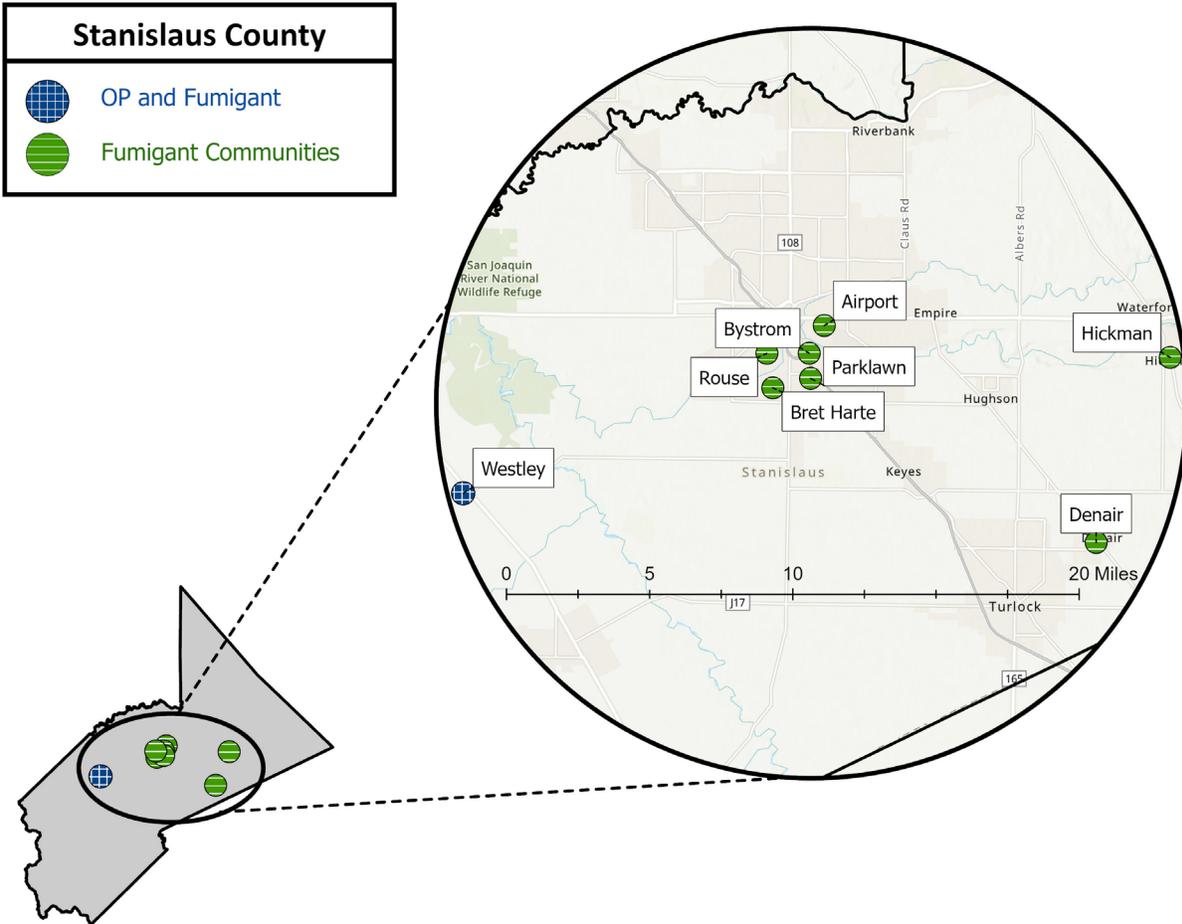|			
Bret Harte CDP	84.64	26	NA
Parklawn CDP	75.02	7	NA
Westley CDP	50.73	22	36
Denair CDP	48.35	36	NA
Hickman CDP	42.86	21	NA

Figure 4. *Spatial distribution of communities in Stanislaus County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas*

Imperial

A total of five communities in Imperial County are among the final list of communities identified as being located in high-organophosphate use areas. Among these communities, Westmorland ranks highest due to its location in areas of both high organophosphate and high fumigant use and its PC percentile, which prioritizes communities more susceptible to a pollution burden.

Table 4. *List of communities in Imperial County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas. A higher PC percentile indicates higher community susceptibility to pollution burden, while a use rank closer to 1 indicates higher usage.*

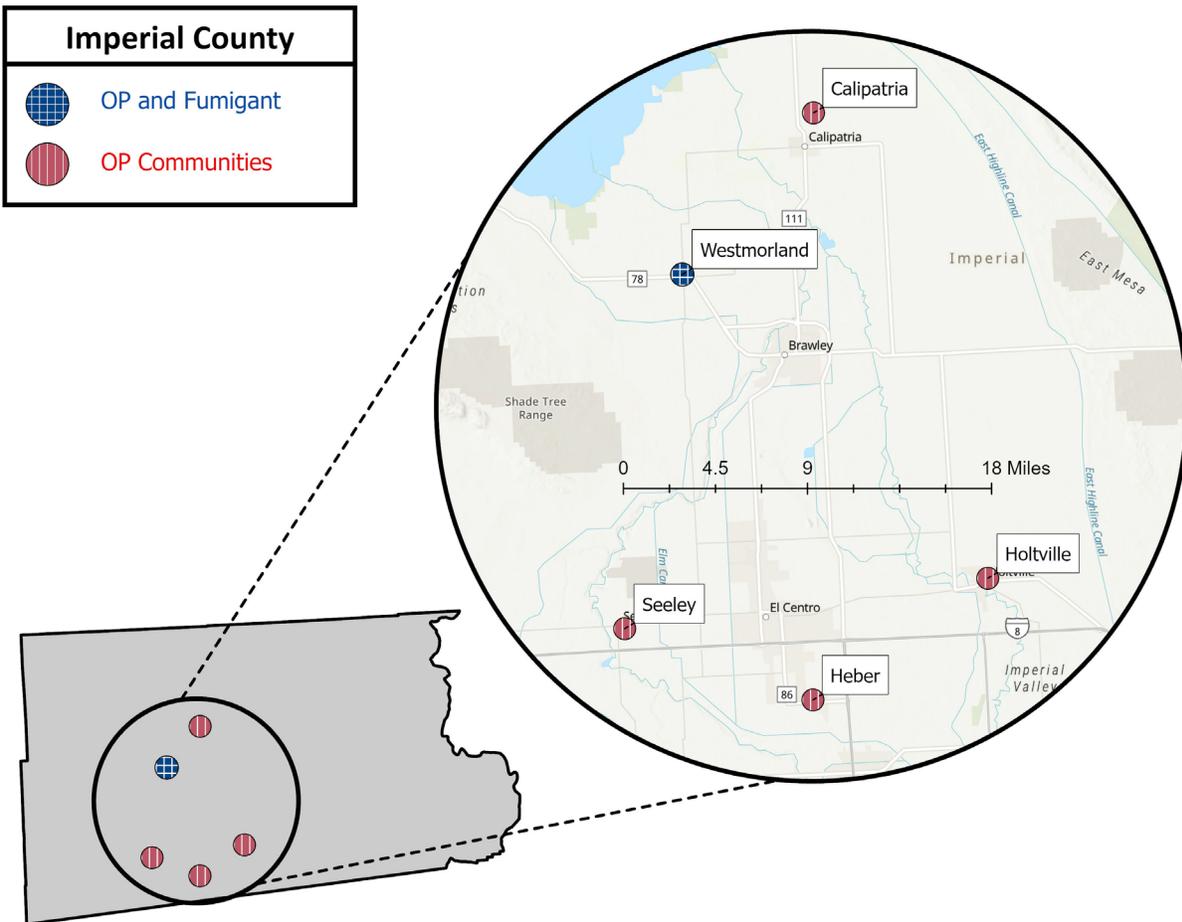| Community	PC Percentile	Fumigant Use Rank	OP Use Rank
Westmorland city	97.47	42	2
Calipatria city	86.28	NA	38
Seeley CDP	77.95	NA	39
Heber CDP	75.73	NA	31
Holtville city	70.95	NA	13

Figure 5. *Spatial distribution of communities in Imperial County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas*

San Joaquin

Two communities, Taft Mosswood and Lincoln Village, in San Joaquin County, are on the final list of communities identified as being located in high-fumigant-use areas.

Table 5. *List of communities in San Joaquin County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas. A higher PC percentile indicates higher community susceptibility to pollution burden, while a use rank closer to 1 indicates higher usage.*

Community	PC Percentile	Fumigant Use Rank	OP Use Rank
Taft Mosswood CDP	92.93	37	NA
Lincoln Village CDP	68.80	49	NA

Figure 6. *Spatial distribution of communities in San Joaquin County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas*

Siskiyou

One community, Dorris, in Siskiyou County, is on the final list of communities identified as being located in a high-fumigant-use area.

Table 6. *List of communities in Siskiyou County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas. A higher PC percentile indicates higher community susceptibility to pollution burden, while a use rank closer to 1 indicates higher usage.*

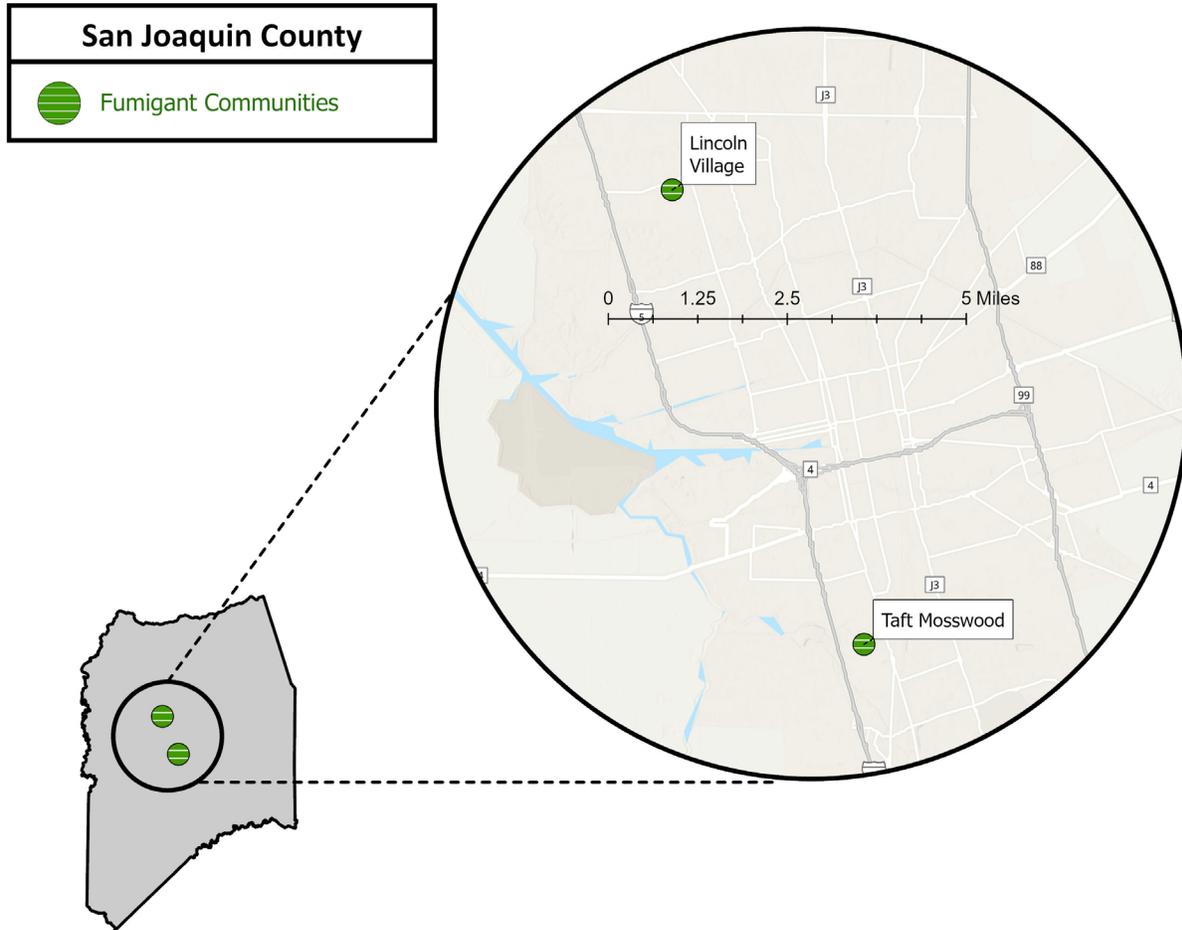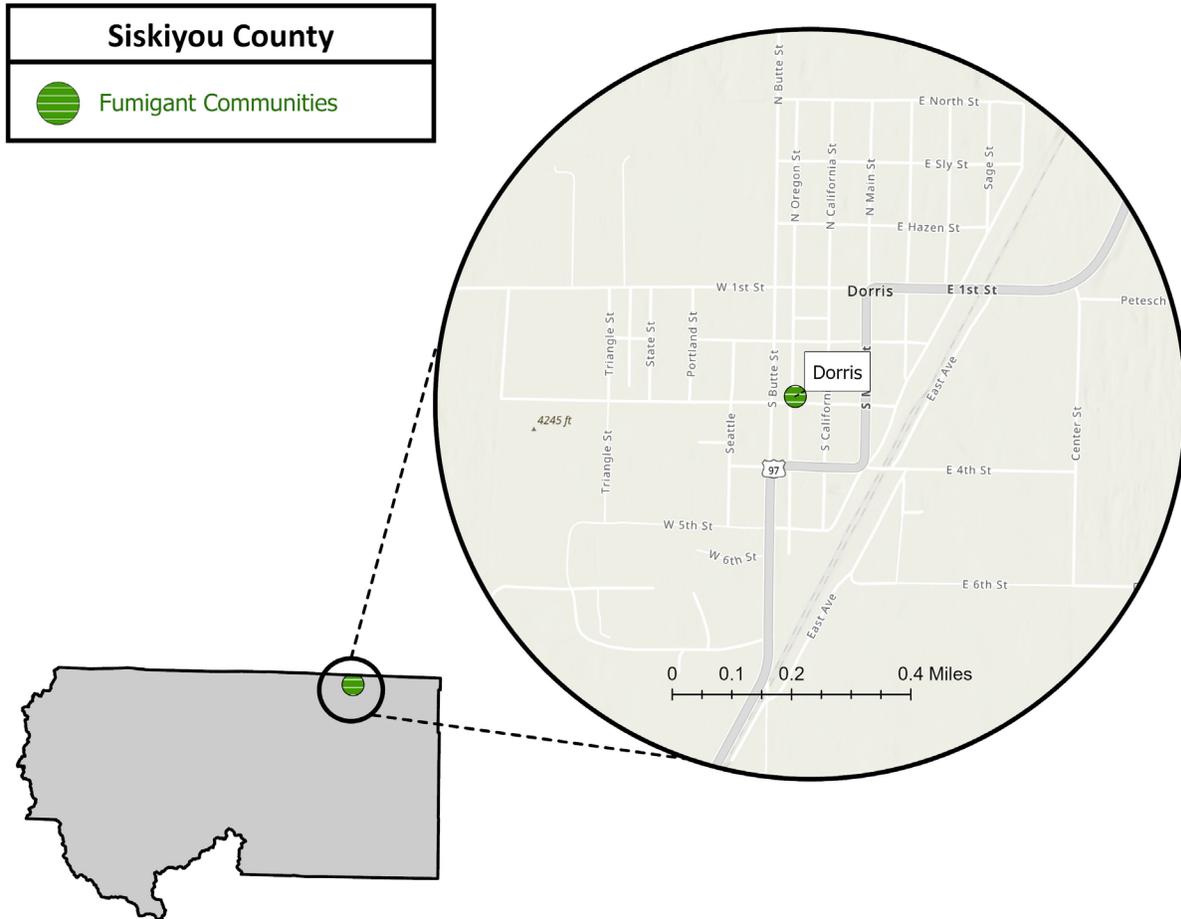| Community	PC percentile	Fumigant Use Rank	OP Use Rank
Dorris City	37.87	33	NA

Figure 7. *Spatial distribution of communities in Siskiyou County prioritized based on their proximity to either high-fumigant or high-organophosphate use areas*

Final County Ranking

The number of high-ranking communities within each of the final five counties were considered in development of a prioritization table (Table 7). Tulare, Stanislaus, and Imperial counties contained the most, second-most, and third-most high-priority communities, respectively (Tables 2-4). While San Joaquin county contained one more community on the final prioritization list as compared to Siskiyou (Tables 5-6), DPR prioritized Siskiyou over San Joaquin due to the larger number of its communities in the initial list of 71 communities (Appendix Table A-1) within the county and the absence of monitoring stations in the state's northern region.

Table 7. DPR's proposed list of counties that should be prioritized for future AMN stations, with a rank closer to 1 indicating higher priority.

County	Priority Category by DPR
Tulare	1
Stanislaus	2
Imperial	3
Siskiyou	4
San Joaquin	5

Questions for Public Comment

The questions below are intended to gather targeted feedback on DPR's proposed strategy for AMN expansion. There will be a 60-day comment period open for the public to provide feedback to this document and the focus questions [the comment period will be open from March 12 – May 11, 2026]. DPR intends to review and consider public comments received and to issue a final report that summarizes the comments and provides a final decision and justification for new AMN monitoring stations.

1. DPR followed a prioritization process to narrow the list of counties from 14 to 5 as potential locations for the new AMN stations. Currently, DPR has enough resources for up to four new AMN stations. DPR intends to go down the list beginning at the highest rank (rank 1) until funding is exhausted. Therefore, the proposed ranking of counties could mean that some locations may not be selected for a new AMN station at this time. Please provide feedback on the order of the ranking of these five counties, any other counties that should be considered, and any other factors DPR should consider.

County	Number of Top-50 Communities	Priority Category by DPR	Alternative Priority Ranking
Tulare	27	1	
Stanislaus	13	2	
Imperial	6	3	
Siskiyou	6	4	
San Joaquin	2	5	
Other			

2. Once the list of county priority is finalized, DPR will further evaluate the selected communities within each county to find the most appropriate location to host the AMN station. The appropriate locations are those accessible to sampling personnel on weekdays and weekends, have electrical outlets, and are secure from equipment loss or tampering. Please rank the communities within each county that you believe would be the most desirable location for monitoring, with a rank of 1 indicating the community being most desirable.

Communities in Tulare	Priority to host AMN station
Cutler CDP	
Delft Colony CDP	
Ducor CDP	
El Rancho CDP	
Ivanhoe CDP	
Linnell Camp CDP	
Richgrove CDP	
Seville CDP	
Strathmore CDP	
Sultana CDP	
Tooleville CDP	
Traver CDP	
Waukena CDP	
Other suggestions	

Communities in Stanislaus	Priority to host AMN station
Airport CDP	
Bret Harte CDP	
Bystrom CDP	
Denair CDP	
Hickman CDP	
Parklawn CDP	
Rouse CDP	
Westley CDP	
Other suggestions	

Communities in Imperial	Priority to host AMN station
Calipatria city	
Heber CDP	
Holtville city	
Seeley CDP	
Westmorland city	
Other suggestions	

Communities in Siskiyou	Priority to host AMN station
Dorris city	
Other suggestions	

Communities in San Joaquin	Priority to host AMN station
Lincoln Village CDP	
Taft Mosswood CDP	
Other suggestions	

Appendix

Table A-1. Output of the site prioritization process following methods described in DPR's 2026 site selection SOP. The following list combines the top 50 communities based on fumigant use, and the top 50 communities based on organophosphate (OP) use. The list includes 71 unique communities, because certain communities appear on both lists. Communities are based on classification per the 2020 U.S. Census.

Community	County	Fum Use Rank	OP Use Rank	PC Percentile
Airport CDP	Stanislaus	9	NA	98.88
Westmorland city	Imperial	42	2	97.47
Rouse CDP	Stanislaus	11	NA	96.38
Bystrom CDP	Stanislaus	24	NA	93.72
Taft Mosswood CDP	San Joaquin	37	NA	92.93
Stratford CDP	Kings	NA	29	91.82
East Orosi CDP	Tulare	28	17	91.48
Alpaugh CDP	Tulare	NA	4	89.98
Rodriguez Camp CDP	Tulare	27	30	89.98
Traver CDP	Tulare	29	NA	89.57
Matheny CDP	Tulare	NA	32	88.57
Waukena CDP	Tulare	NA	49	88.57
Ripley CDP	Riverside	NA	43	88.12
Ducor CDP	Tulare	NA	40	86.6
Jovista CDP	Tulare	5	22	86.59
Richgrove CDP	Tulare	44	50	86.59
Calipatria city	Imperial	NA	38	86.28
Cutler CDP	Tulare	NA	47	85.83
Plainview CDP	Tulare	45	14	85.67
Strathmore CDP	Tulare	NA	44	85.67
Yettem CDP	Tulare	16	8	84.67
Bret Harte CDP	Stanislaus	26	NA	84.64
Woodville Farm Labor Camp CDP	Tulare	NA	28	82.64
Seeley CDP	Imperial	NA	39	77.95
London CDP	Tulare	32	NA	77.85
Seville CDP	Tulare	31	12	77.77
Las Flores CDP	Tehama	50	NA	75.96
Monson CDP	Tulare	20	21	75.95
Heber CDP	Imperial	NA	31	75.73
Parklawn CDP	Stanislaus	7	NA	75.02
Monterey Park Tract CDP	Stanislaus	2	15	74.02
La Vina CDP	Madera	12	NA	72.01
Hypericum CDP	Tulare	3	9	71.68
Holtville city	Imperial	NA	13	70.95

Lincoln Village CDP	San Joaquin	49	NA	68.8
Cowan CDP	Stanislaus	8	45	67.1
Delft Colony CDP	Tulare	4	16	66.12
Sultana CDP	Tulare	25	25	66.12
Ivanhoe CDP	Tulare	NA	46	65.61
Tooleville CDP	Tulare	13	7	64.71
Hardwick CDP	Kings	14	NA	64.31
El Rancho CDP	Tulare	6	1	63.75
Tonyville CDP	Tulare	18	3	63.75
Pajaro Dunes CDP	Santa Cruz	NA	42	63.25
Freeport CDP	Sacramento	NA	10	59.64
Linnell Camp CDP	Tulare	15	27	56.31
East Tulare Villa CDP	Tulare	38	37	54.14
Amesti CDP	Santa Cruz	NA	35	53.31
Freedom CDP	Santa Cruz	43	20	52.9
Lindcove CDP	Tulare	30	18	50.88
Grayson CDP	Stanislaus	10	23	50.73
Westley CDP	Stanislaus	22	36	50.73
Carrick CDP	Siskiyou	41	NA	49.8
Denair CDP	Stanislaus	36	NA	48.35
Knights Landing CDP	Yolo	NA	34	47.64
Winterhaven CDP	Imperial	NA	19	47.38
Knights Ferry CDP	Stanislaus	35	NA	45.17
Tulelake city	Siskiyou	34	NA	43.18
Hickman CDP	Stanislaus	21	NA	42.86
La Grange CDP	Stanislaus	46	NA	42.86
Macdoel CDP	Siskiyou	1	NA	37.87
Mount Hebron CDP	Siskiyou	17	NA	37.87
Dorris city	Siskiyou	33	NA	37.87
San Juan Bautista city	San Benito	40	26	36.08
Fort Jones city	Siskiyou	NA	41	32.54
Oceano CDP	San Luis Obispo	47	48	27.89
Nipomo CDP	San Luis Obispo	NA	33	24.21
Woodlands CDP	San Luis Obispo	23	6	22.42
Blacklake CDP	San Luis Obispo	19	5	13.72
Callender CDP	San Luis Obispo	39	11	13.72
Los Berros CDP	San Luis Obispo	48	24	11.96