

NASCIO State IT Recognition Awards 2025 Submission - SprayDays California

State: California

Agency: California Environmental Protection Agency

Department: Department of Pesticide Regulation (DPR)

Submitting Entity: California Department of Technology (CDT)

Award Category: Information & Communications Technology

Project Title: SprayDays California

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One-Sentence Summary: SprayDays California is a first-of-its-kind, real-time pesticide application notification platform that improves transparency and access to information statewide.

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Executive Summary & Project Description

In March 2025, the California Department of Pesticide Regulation (DPR) launched SprayDays California, a centralized statewide notification system that provides real-time public access to information about scheduled restricted material (RM) pesticide applications before they happen. Developed to improve transparency and accessibility for the public, SprayDays bridges a critical information gap by making data about planned pesticide use previously only available through local county channels available online in an intuitive, multilingual format. The system reflects DPR's commitment to transparency and public engagement and outreach.

SprayDays displays information from Notices of Intent (NOIs), which are required by law to be submitted to a county agricultural commissioner prior to the use of RM pesticides in agricultural production. RM pesticides are strictly regulated and require a licensed applicator to use and advance review and approval before they are used because of their higher potential to cause harm to people, animals, the environment, or other crops if exposure occurs. The system presents this information using a 1x1 mile map grid, building on the Public Land Survey System's Township Section Range model, and allows users to sign up to receive email or SMS notifications up to 48 hours in advance for scheduled applications in their area. Key information such as the pesticide product name, application method, and intended date and time of the application is included in each notification.

The department received funding for the project in the 2021-2022 California State Budget. The platform was built in-house by DPR's application development team over three years using Microsoft Azure cloud services. The frontend was developed with jQuery, ASP.NET, and Bing Maps, while backend components included Azure Logic Apps, App Services, and SQL Server. A major feature is its seamless integration with CalAgPermits, California's statewide platform used by County Agricultural Commissioners (CACs) to manage pesticide permits and NOIs.

In its first month of public use, SprayDays reached over 7,000 active users and issued nearly 1,000 public notifications based on more than 3,600 NOIs received. Early user engagement has been strong. SprayDays represents a major step forward in providing timely, relevant RM pesticide information to Californians, empowering them to stay informed about agricultural pesticide use near their homes, schools, and workplaces.

IDEA

What problem or opportunity does the project address?

Agricultural communities in California have expressed interest in more information about pesticide use in their region. The community in Kern County initially started a conversation about a pesticide application notification system through their local Assembly Bill 617 (AB 617) Community Emissions Reduction plan. Following this request, the 2021-2022 California State Budget provided DPR with funding to develop a statewide system to increase public access to information prior to intended applications of California restricted material pesticides on farms across the state. SprayDays was the ultimate result of this directive, which emphasized accessibility and transparency.

Why does it matter?

SprayDays California is an important milestone in California's efforts to improve government transparency and modernize access to information. The platform fulfills the public's growing expectations for digital services that are immediate, user-friendly, and inclusive. With a simple sign-up process and clear notifications, SprayDays allows people to stay informed about pesticide applications in their communities, many for the first time.

SprayDays directly supports broader state priorities for digital equity, environmental health, and regulatory transparency. The system is particularly significant for residents in rural and agricultural regions who may live or work near areas where RM pesticides are more frequently applied. The system makes information that was already legally required and public information, such as NOIs, readily available through an intuitive public interface, allowing community members to make informed decisions about their surroundings. By providing timely updates, SprayDays supports individual awareness and promotes better communication with residents. Additionally, the system has helped normalize electronic NOI submissions statewide, which improves data quality and processing efficiency for DPR and its county partners.

What makes it different?

SprayDays is the first digital, statewide pesticide notification system of its kind. In fact, other states have expressed interest in replicating California's approach. The SprayDays system brings together modern cloud infrastructure, geospatial data management, and multilingual public engagement in a cohesive, scalable platform.

The DPR application development team accomplished the goal of building a notification system that provides simple, accurate, and accessible information to the public that aligns with several of California's existing regulatory requirements. The system is also compatible with operational workflows of CACs, who are responsible for reviewing and approving RM pesticide applications through its integration with CalAgPermits. CalAgPermits, the statewide permitting and tracking system used by counties for pesticide regulation, collects and stores NOIs, which contain essential information about planned applications. SprayDays is unique in that it is a statewide system that pulls relevant data from the county-based CalAgPermits in near real time and makes it available to the public in a user-friendly interface.

What makes it universal?

The use case, providing clear and timely regulatory information to the public, extends beyond agriculture and beyond pesticide applications. The notification system is also built to accommodate diverse user needs. It is accessible on both desktop and mobile devices, provides content in multiple languages, and presents information clearly for both general users and technical stakeholders. The SprayDays model could be adapted to other areas where broad public access to technical, time-sensitive government data is needed.

IMPLEMENTATION

What was the roadmap?

The success of SprayDays California is the result of an intensive, multi-branch effort within DPR, supported by stakeholder engagement across government, academic, and community sectors. From concept through launch, a wide range of collaborators played essential roles in securing buy-in, shaping the regulatory framework, designing the technology, and ensuring public adoption.

The SprayDays California project followed a phased, cross-functional, and iterative project management approach, grounded in collaboration, regulatory alignment, and continuous improvement. The initiative was led by DPR's Application Development team with coordinated input from multiple internal branches, including Legal Affairs, Enforcement, Communications, and Executive Leadership, ensuring that the final product addressed both technical requirements and user needs.

The project was managed using an agile-inspired framework, allowing teams to adapt quickly as regulatory, stakeholder, and technical needs evolved. Planning began in early 2020, with technical development initiated in 2021. The project progressed through structured phases:

Planning & Requirements Gathering (2020):

Led by executive sponsors, this phase defined the scope, goals, and key success criteria. Feedback from AB 617 communities and CACs shaped early requirements.

System Design & Development (2021–2022):

The Application Development team worked iteratively, creating and refining system components including user interface design, geospatial mapping, CalAgPermits integration, and notification infrastructure using Azure services.

Testing & Evaluation (Late 2022 – Early 2023):

A controlled beta test in four counties, evaluated by the University of California, Davis (UC Davis), provided performance feedback on user experience, notification content, and operational efficiency.

Regulatory Development (2023–2024):

The Legal Affairs and Enforcement Groups developed the regulatory framework necessary to support the system, including rulemaking and public comment processes.

Launch & Early Monitoring (Q1 2025):

The system launched in March 2025 with statewide outreach and real-time system monitoring in place to track engagement, address issues, and deploy fixes rapidly.

SprayDays will be evaluated using both technical performance indicators and community engagement benchmarks. Key areas of assessment include:

- **System Reliability:** Uptime, error rates, and data processing accuracy.
- **User Engagement:** Number of website visits, number of subscribed users, and notification delivery rates.
- **Accessibility:** Availability of the platform across devices and languages.
- **Public Feedback:** Volume and nature of inquiries, feedback from counties and community organizations.
- **Operational Efficiency:** Electronic NOI submission compliance verified through random audits.

A successful implementation means that:

- Members of the public, especially in rural and agricultural communities, can easily access timely information about planned RM pesticide applications.
- Counties can submit NOIs electronically, with real-time integration into SprayDays.
- Stakeholders report confidence in the accuracy, clarity, and usefulness of the information provided.
- The system supports multilingual use and shows consistent accessibility across platforms.
- The infrastructure performs consistently without major downtime or technical failure.

Over time, success also includes increased statewide awareness and engagement with the system, broader understanding of the pesticide regulatory structure in California, and an adaptable foundation for future improvements driven by user needs and stakeholder feedback.

Who was involved?

SprayDays was developed by DPR's internal Application Development team with cross-branch coordination:

Initiation and Conceptual Development

SprayDays emerged in direct response to public engagement through AB 617, which focused on air quality improvements in frontline communities. Beginning in early 2020, the project was championed by

DPR leadership and gained critical momentum when it was included as a line item in the Governor's Budget, securing dedicated funding for planning and development. Community feedback for more accessible pesticide use information contributed to the program's design and vision.

Application Development Team

The Information Technology Branch at DPR led the in-house design and build of the SprayDays platform using Microsoft Azure cloud services, working under California Department of Technology (CDT) oversight but with internal agility to ensure faster iteration. Leveraging modern frameworks, including responsive front-end architecture developed with jQuery, ASP.NET, and Bing Maps as well as secure cloud-based backend infrastructure including Azure Logic Apps, App Services, Communication Services, Data Factory, and SQL Server components, the IT team engineered a real-time system that was simultaneously mobile- and desktop-friendly. The team developed custom APIs to link with RMs permit systems, and engineered tools for scalable notifications across multiple languages.

Enforcement and Program Expertise

The Enforcement Branch at DPR ensured the technical compliance of the platform with existing pesticide laws and helped shape how RM pesticide application data could be integrated into the system in a way that preserved both regulatory integrity and user clarity. Their deep subject matter knowledge was critical in translating complex regulatory frameworks into accessible public information.

Academic Review and External Testing

In late 2022 and early 2023, DPR partnered with UC Davis to conduct structured beta testing. UC Davis reviewed user flows, ease of use, and stakeholder response, providing valuable independent feedback that was incorporated prior to statewide launch.

Legal Affairs Branch

Legal Affairs played a pivotal role in developing the regulatory framework required to support SprayDays. This included drafting and finalizing regulations submitted in December 2024 and adopted in February 2025, allowing SprayDays to go live in March. Their work also addressed privacy issues and resulted in new policies, such as data retention protocols that aligned with CDT and state legal requirements.

Communications and Outreach Team

To ensure broad awareness and community adoption, DPR's Communications and Outreach team launched a coordinated public engagement campaign. This included:

- User-focused input sessions with community partners during development.
- Multilingual media campaigns, producing all materials in both English and Spanish, as well as in regionally significant languages like Hmong, Tagalog, and Punjabi.
- Educational webinars and training videos to help users learn how to search, subscribe, and receive notifications for pesticide applications in their area.
- In-person events and presence at regional stakeholder gatherings, particularly in AB 617 communities, to build grassroots awareness and feedback loops.

County Agricultural Commissioners and Local Partners

Coordination with the California Agricultural Commissioners (CACs), who oversee pesticide use at the local level, was critical. DPR worked closely with CACs throughout the planning phase to align notification systems with county workflows. This coordination helped inform backend interoperability improvements and build a cohesive statewide rollout plan.

Executive Leadership and Policy Support

Secretary Yana Garcia of the California Environmental Protection Agency (CalEPA), DPR's former Director Julie Henderson, and current Director Karen Morrison have all been vocal champions of the program. Their public statements emphasized the state's commitment to transparency, equity, and digital innovation. Their visible support lent credibility and momentum to the effort throughout its lifecycle.

"SprayDays is a game-changer in how we communicate environmental information to Californians. It reflects our commitment to empowering communities with timely, transparent data." – **Yana Garcia, Secretary, CalEPA**

"We've long heard from residents in agricultural areas who want better access to information about pesticide use. SprayDays was built with their voices at the center." – **Karen Morrison, Director, DPR**

This cross-functional approach, combining technical innovation, regulatory authority, legal clarity, and community trust, enabled SprayDays to meet its ambitious goals and lay the groundwork for continued evolution.

How did you do it?

The team followed an agile implementation model, incorporating continuous feedback from external stakeholders and internal users. Key technical milestones included:

- Designing a scalable notification engine that integrates API calls to pull approved NOIs from CalAgPermits, California's official county-level pesticide permitting system.
- Constructing a dynamic spatial mapping tool using the Public Land Survey System for statewide consistency across counties.
- Engineering multi-language support, with content initially in English and Spanish, and then expansion to now include Arabic, Armenian, Cantonese, Farsi, Hindi, Hmong, Japanese, Khmer, Korean, Mandarin, Punjabi, Russian, Tagalog, and Vietnamese.
- Embedding a cloud-based data pipeline to process real-time updates while maintaining data integrity and performance across sessions.
- Developing mobile-optimized views and low-bandwidth functionality for rural access.

The team faced several technical challenges, including standardizing geospatial data using the Public Land Survey System, creating a reliable notification engine, and improving address verification tools for rural users all while adhering to oversight requirements from the California Department of Technology while maintaining in-house autonomy for system architecture.

The SprayDays infrastructure was developed at approximately half of its original budget estimate, thanks to the use of in-house resources and scalable cloud architecture. The cost savings allowed DPR to invest in additional improvements, including expanded language access and user support tools. The result is a modern, efficient, and reliable platform that provides an important public service.

IMPACT

What did the project make better?

SprayDays filled a critical gap in statewide transparency by connecting regulatory data with public access tools. The platform enables individuals to subscribe to real-time notifications of planned RM pesticide applications in their communities. It has improved coordination between state and local regulatory authorities by streamlining the transmission of NOIs, standardizing location data, and reinforcing compliance timelines through automated alerts.

How do you know?

Since launch, SprayDays has demonstrated strong public interest and operational success. The system recorded over 7,000 active users and tens of thousands of views in its first month. More than a thousand registered accounts subscribed to receive notifications. Notification delivery was evenly split between SMS and email. Minimal downtime and low technical support volume affirmed the system's stability and accessibility.

User engagement data shows that people are actively checking the map, signing up for notifications, and sharing feedback. Residents in counties where agricultural use of pesticides is higher in the state, like Monterey, Ventura, and Kern, have shown especially high sign-up rates. Meanwhile, users in large urban areas like Los Angeles and the San Francisco Bay Area are visiting the site frequently, reflecting broader public interest in pesticide use information.

The platform has also prompted new efficiencies within DPR and at the local level. With SprayDays and the regulations it supports in place, more counties are almost entirely using electronic NOI submission through CalAgPermits, allowing for faster processing. Internally, DPR has gained tools and cloud environments that can be adapted to future digital service projects.

Feedback from stakeholders, including counties, agricultural professionals, and community groups, has been neutral to positive. Users have appreciated the clarity of information, the responsiveness to inquiries, and the team's openness to iterative improvement. Over the first month, DPR received only a few dozen public inquiries, indicating that the system's design and guidance are serving most users effectively.

What now?

SprayDays is built on modular architecture that enables long-term sustainability and adaptability. Feedback from community groups and users has already led to important improvements, such as enhancements to rural address entry, improved clarity in messages, and the addition of multiple frequently asked question topics. Future development will focus on refining features based on user behavior and stakeholder feedback. Goals include:

- Offering sign-up by section code to better serve unincorporated and rural communities
- Enhancing accessibility through additional language support, with the goal of including technically complex Indigenous languages
- Improving system interoperability between DPR and county databases to streamline compliance reporting and tracking

SprayDays also delivers return in the form of interagency efficiency. As the platform matures, it is expected to support quicker communication between state and county systems. SprayDays demonstrates how government-led application development, anchored by technical excellence and interdepartmental collaboration, can deliver a high-impact digital public service that reinforces California's leadership in transparent, responsive governance.