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From Testimony to Transformation

The Identifying Violations Affecting Neighborhoods (IVAN) Program in California

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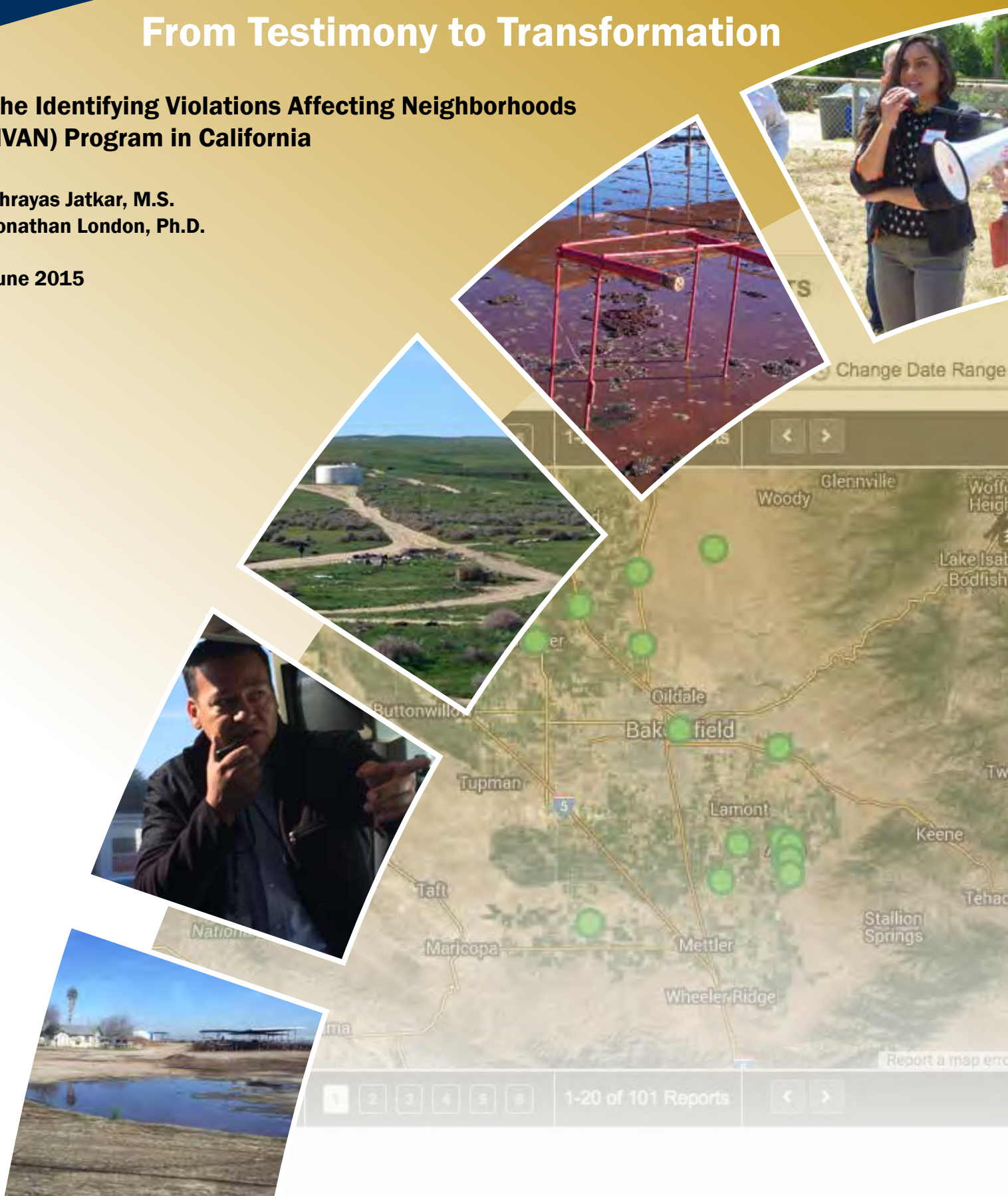

Preface

The origins of this report came from a request from community and public agency partners of the UC Davis Center for Regional Change that are deeply involved with the Identifying Violations Affecting Neighborhoods (IVAN) program. These partners include the Comité Cívico Del Valle (CCDV), Central California Environmental Justice Network (CCEJN), and the environmental justice program at the California Environmental Protection Agency (CalEPA). These partners wanted a critical, qualitative analysis of the IVAN program that could help identify its strengths and challenges, while raising awareness about IVAN among decision-makers, funders, and community organizations not currently engaged in the program. With our partners, we designed this report to complement other IVAN initiatives including the development of standardized performance measures that are under way: one by CCDV and the other by CCEJN. While the CRC conducted the research for and writing of this report, we took a collaborative approach that included community and public agency partners throughout the process, from research design and draft review, to the completion of the report.

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LIST OF ACRONYMS USED

CalEPA	California Environmental Protection Agency
CCDV	Comité Cívico Del Valle
CCEJN	Central California Environmental Justice Network
Central Valley RWQCB	Central Valley Regional Water Quality Control Board
Colorado River Basin RWQCB	Colorado River Basin Regional Water Quality Control Board
CRC	Center for Regional Change, UC Davis
DOGGR	Department of Oil, Gas, and Geothermal Resources
DTSC	Department of Toxic Substances Control
EJEI	Environmental Justice Enforcement Initiative
FERN	Fresno Environmental Reporting Network
IVAN	Identifying Violations Affecting Neighborhoods
Imperial County APCD	Imperial County Air Pollution Control District
KEEN	Kern Environmental Enforcement Network
OEHHA	Office of Environmental Health Hazard Assessment
PCR	Petro Capital Resources
San Joaquin Valley APCD	San Joaquin Valley Air Pollution Control District
South Coast AQMD	South Coast Air Quality Management District
SWRCB	State Water Resources Control Board
SEP	Supplemental Environmental Project
U.S. EPA	U.S. Environmental Protection Agency
WEI	Western Environmental, Incorporated

I. Executive Summary

Identifying Violations Affecting Neighborhoods (IVAN) is an innovative program of environmental monitoring, reporting, and enforcement in California. It is intended to improve health and conditions of well-being in disadvantaged communities where residents face high levels of environmental hazards and low levels of the economic, political, and social resources needed to address them. The IVAN program resembles an environmental version of a neighborhood watch. It provides the means for community residents to report problems they experience or observe to public agencies that have the mandate and capacity to investigate and resolve them.[1] Or, to strike an even more apt analogy, the IVAN program is like a form of community policing.[2] This is because the program ultimately seeks to transform the process of environmental reporting and enforcement from being reactive to proactive. It does so by fostering partnerships between public agencies and the community (i.e., individuals and organizations). These partnerships are based on regular dialogue and collaborative problem solving, rather than occasional one-way flows of information between different parties. To this end, environmental justice organizations and other kinds of community-based organizations work alongside public agency staff, participating in monthly task force meetings to address environmental complaints submitted by residents. All parties are expected to work collaboratively to respond to and resolve the environmental problems reported.

The IVAN program aims to increase the visibility of environmental problems, particularly in disadvantaged communities that are "disproportionately affected by environmental pollution and other hazards," and have a concentration of residents contending with low socioeconomic status.[3] This is achieved, in part, by a publicly accessible website where reports of environmental problems are identified, mapped, and tracked. IVAN also aims to increase the transparency of public agencies' responses to environmental problems. These responses may include investigation, outreach to the public, efforts to convene other public agencies and/or industry representatives, and enforcement when environmental laws or regulations are violated. The objective of the IVAN task force is to facilitate greater accountability in public agency responses. Regular communication between environmental justice advocates, community members, and public agency staff is intended to ensure that environmental problems facing community members are resolved to residents' satisfaction. See **Figure 1** (p. 3) for an illustration of the IVAN program model as it is designed to function.

This report examines the IVAN program to explain its history, successes, and challenges, and to offer suggestions for improving the program. The data for this report is drawn from written materials about the IVAN program, interviews with community leaders and staff in local and state environmental agencies (including the California Environmental Protection Agency (CalEPA) and Regional Water Quality Control Boards), and observation of IVAN activities such as task force meetings and bus tours between November 2014 and May 2015. In this report, the term IVAN program refers to the standard program model including its design, objectives, tools, and components. IVAN network(s) refer to the six sites or locations in California where environmental justice organizations and public agencies are implementing the program, including each site's local reporting website and task force.

We intend for this report to inform a wide range of audiences, including funders, policy-makers, public agency officials, and environmental justice advocates in California and beyond that are either currently involved in IVAN or are considering establishing an IVAN network. The report finds evidence of multiple benefits from the IVAN environmental monitoring system in some cases. This report also identifies challenges faced by IVAN networks and makes several recommendations that could improve the effectiveness of IVAN in achieving its intended goals. These benefits, challenges, and recommendations are summarized in **Table 1**.

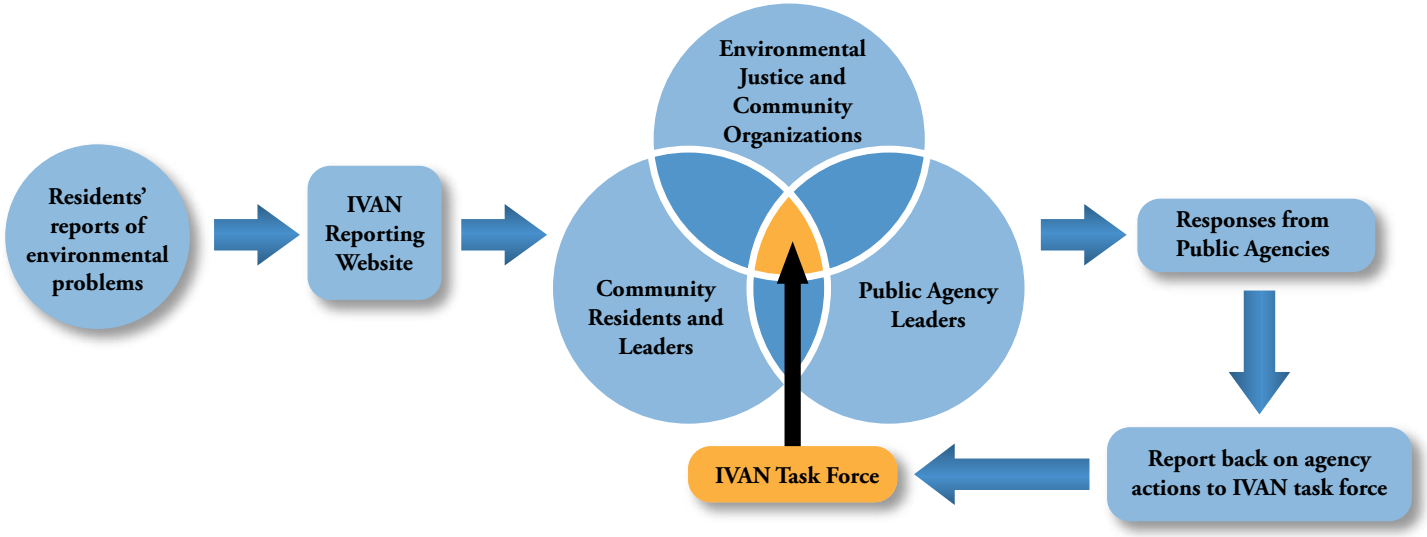
Table 1: Summary of IVAN Benefits, Challenges, and Recommendations

Benefits	Challenges	Recommendations
Greater awareness of cumulative environmental impacts and transparency of environmental regulations, and agency jurisdictions among IVAN task force participants.	Lack of sustainable funding may reduce the capacity of the IVAN networks to address long-term environmental justice issues.	Secure sustainable funding for community organizations and public agencies to maintain, improve, and expand IVAN networks over time.
Enhanced collaborative relationships between community and agency leaders for improving the enforcement process and resolving environmental problems.		Increase investment in communities over-burdened by environmental justice problems through Supplemental Environmental Projects (SEPs) generated by enforcement actions.
Increased observation and monitoring of environmental problems in disadvantaged communities by engaging residents in the enforcement process.	Public agencies do not always have the staffing capacity to respond to community reports in a timely or satisfactory manner.	Increased public agency allocations for monitoring and enforcement activities is needed.
Greater efficiency in managing and tracking resident-reported environmental problems using online reporting systems and other technologies.	Community residents do not always have the technical capacity to provide reports with the level of detail needed by public agencies.	Provide additional training for community members to build their skills and capacity to participate in the program effectively.
	Community organizations often lack field-sampled environmental monitoring data to complement reports submitted.	Integrate additional mechanisms and tools for monitoring environmental quality and community health.
Increased responsiveness and accountability on the part of government agencies to community concerns.	Rigorous assessment of the performance and impact of IVAN networks is lacking.	Develop standardized performance measures to evaluate IVAN's impact more thoroughly.
Improved resolution of local environmental justice problems, and a wider impact of enforcement at the regional, state, and/or industry-wide level.		
IVAN networks are place-based incorporating local knowledge.	IVAN networks exist in only a few counties, making comprehensive regional reporting difficult.	Expand IVAN to include more communities throughout California. Consider a statewide IVAN system.
IVAN reporting systems is maintained by community organizations and reflects community concerns and values.	Public agencies have their own reporting systems that are not currently integrated with the IVAN reporting system.	Consider linking IVAN reporting systems to the California Environmental Protection Agency (CalEPA) and other public agencies' reporting systems.

II. The Need for and Benefits of IVAN

The IVAN program has the potential to transform environmental enforcement and protection in California. Environmental justice organization leaders interviewed for this study noted that the enforcement agencies involved with IVAN networks have responded to complaints and problems more quickly than they did before IVAN existed. Public agencies often have provided a public account of their actions to address environmental problems at the task force meeting immediately following the one in which community members first reported the problems.[4] This is an improvement over past practices, in which public agency staff rarely reported their enforcement actions to the affected communities. The IVAN program model is illustrated in **Figure 1**.

FIGURE 1: Model of the IVAN Program



The establishment of community-based environmental monitoring programs is one response to the reduced funding for on-the-ground investigations and enforcement actions in public agencies over the past several years of budget cuts. In 2009, California's budget crisis resulted in 26 annual furlough days for environmental enforcement staff.[5] Reduced monitoring and enforcement clearly undermined public agencies' ability to fulfill their legal mandate.[6]

Involving community members in environmental monitoring has helped expand the scope of monitoring in a number of important ways. First, IVAN networks have harnessed the power of observation of many more people than could be employed by public agencies. Unlike public agency personnel, local residents have been able to report suspected violations at times of the day when public agency personnel were off duty. Allowing community members to submit reports by phone, text, or online has meant that public agencies were notified of problems and potential violations sooner than if reports were accepted at monthly task force meetings only. At the same time, reports have been submitted in-person at task force meetings, which has enabled community members to participate in the IVAN program if they lack internet access or cell phone communication. Third, issue-based or geographic jurisdictional boundaries have not restricted community members from reporting environmental problems in the same way that public agency enforcement staff have been confined to monitoring only the issues and facilities that fall under their agency's purview.[7]

At the heart of the IVAN program is an interactive website, where residents can upload reports of suspected environmental violations. The reporting system includes fields for describing the suspected violation, identifying its location, and including photographs and/or videos. These reports are aggregated by category, date, and location, and illustrated on a map. These reports are publicly accessible, although community members can submit them anonymously to avoid real or perceived retaliation. See **Figures 2 and 3** for examples of the IVAN reporting websites.

II. The Need for and Benefits of IVAN

FIGURE 2: Report entry form on KEEN website

FIGURE 3: Map view of suspected violations on the KEEN website

The use of an online reporting system has enhanced the effectiveness of the IVAN program in collecting and sharing reports of suspected environmental violations with the IVAN task forces. The online reporting system has made it easy for community members to upload photos and videos, which can in turn supplement their written or oral reports of environmental problems observed. In some cases, this diversity of types of documentation has been shown to be useful in compelling the appropriate public agencies to respond quickly to the problems reported by community members to IVAN task forces. Photos and videos have also provided public agencies with critical information needed to carry out enforcement actions by capturing time-sensitive activities that might have been missed by public agency staff otherwise (e.g., episodic venting of fumes or gases and discharges of harmful fluids). The mapping feature of IVAN's online reporting system has helped IVAN task force partners see the geographic concentration and spread of reports by location and by issue (e.g., poor air quality, illegal dumping, etc.). Consequently, IVAN task forces can often identify spatial and temporal patterns of hazards and potential violations better than government agencies or community organizations working alone. This can help guide the deployment of limited enforcement resources to the places and problems that require the most urgent attention.

While the technological innovations of the IVAN program are impressive, the combination of this technology with the social infrastructure of the IVAN networks has led to the success of the program.[8] In other words, the improvements in the partnerships, formed through IVAN, between environmental justice advocates, community members and leaders, and public agencies are critical to addressing the environmental problems reported. This is particularly important given the historical tensions and even conflicts that have arisen between environmental justice organizations and public agencies in California as elsewhere in the country.

All the IVAN networks include an online reporting website and a task force consisting of environmental justice and other kinds of community-based organizations, along with staff from federal and state environmental agencies. Task forces in each of the six IVAN networks are co-convened by environmental justice organizations and public agency leaders. Environmental justice organizations appoint community leaders, and public agencies assign their staff members to the IVAN task forces. Leadership roles differ across IVAN networks: either a public agency staff member or a community leader is responsible for reviewing and prioritizing the reports submitted to the task force (see **Table 2** for a description of leadership roles in IVAN networks). People in these leadership roles are paid employees of a public agency or environmental justice organization, and have duties and programs they handle in addition to IVAN. Environmental justice organization leaders tend to control the selection process for the leadership positions through appointment rather than through an election process.

II. The Need for and Benefits of IVAN

Table 2: Leadership Roles in an IVAN Network[9]	
Leadership Position	**Main Duties within IVAN Network**
Government/Community Problem Solver (GPS or CPS)	Prioritizes and manages reports, maintains connections with government representatives and community organizations at the local, regional, state, and federal levels.
Government Task Force Chair	Represents the government and regulatory agencies that participate in the task force meetings.
Community Task Force Chair	Represents community members and non-profit organizations that sponsor or host the task force.

The dialogue facilitated at IVAN task force meetings offers great potential to help improve environmental enforcement. For instance, in this process, environmental justice advocates and community leaders learn what kind of information is most useful to public agencies in order to investigate the environmental problems reported. In turn, they can convey this information to residents and other organizations on the reporting website, in workshops, and in other settings. Additionally, community partners involved with IVAN better recognize the range of public agencies and the issues they handle, while public agencies comprehend the multiple sources of environmental pollution and hazards affecting communities better. All groups learn about relevant environmental laws and regulations including gaps in existing policies. Therefore, the collaborative and relational work of the IVAN task force is the force multiplier for the reporting system and technology.[10]

III. History and Evolution of IVAN

INTRODUCTION

Over the past several years, the IVAN program has been shaped by the efforts of environmental justice and other community-based organizations and public agencies to improve environmental enforcement in disadvantaged communities. The environmental justice organizations that coordinate IVAN networks continue to develop the program with financial, technical, and other kinds of support from public agency partners and funders. The goals are threefold: a) to address changing needs, for example, by inviting additional public agencies to participate in the task force when incidents that fall under their jurisdiction or authority are reported; b) to take advantage of new opportunities, for example, by incorporating air monitoring data and re-tooling reporting websites; and c) to assess and improve IVAN's impact, for example, by, developing standardized performance measures.

As a founder of the IVAN program, Comité Cívico Del Valle (CCDV) based in the Imperial Valley plays an important role in coordinating its expansion to additional communities in California. There are six active IVAN networks located in California as of June 2015. These networks are in the Imperial Valley, Eastern Coachella Valley, Fresno, Kern, and Kings Counties, and the community of Wilmington near the Port of Los Angeles (see **Figure 4** for a map of the IVAN networks).[11] The organization Greenaction for Health and Environmental Justice received funding from CalEPA's Environmental Justice Small Grants Program in 2015 to launch an IVAN network in San Francisco's Bayview-Hunters Point neighborhood.[12]

III. History and Evolution of IVAN

A diverse array of organizations provide financial support to the IVAN program and networks, including private foundations (such as the Oakland, California-based Rose Foundation for Communities and the Environment and the California Wellness Foundation) and public agencies (such as the U.S. Environmental Protection Agency and California Environmental Protection Agency). These funds support IVAN network coordinators – many of whom work for non-governmental environmental justice organizations – and improvements to the software and technology that are critical to the IVAN program's reporting capability. Olmedo estimates that since 2009, CCDV has spent approximately half a million dollars of grant funding to have the online reporting system built, adjusted, and maintained.[13]

* LACEEN not analyzed in this report

FIGURE 4: Map of IVAN Networks

A PUBLIC AGENCY INITIATIVE DESIGNED TO ADDRESS ENVIRONMENTAL JUSTICE

In 2007, the California Department of Toxic Substances Control (DTSC) established an Environmental Justice Enforcement Initiative (EJEI) in response to long-standing grievances by environmental justice organizations about the inadequate enforcement of environmental laws and reduction of environmental hazards. Through the Initiative, DTSC intended to advance a new approach to environmental enforcement centered on connecting public agencies and environmental justice communities in order to address local environmental problems collaboratively. In 2008 and 2009, DTSC organized "Toxic Bus Tours" in Imperial County, Eastern Coachella Valley, parts of Fresno and Kern Counties, Wilmington, Maywood, Pacoima, and East Oakland to launch the EJEI.[14] Guided by both community residents and environmental justice advocates, these tours provided public agency staff opportunities to observe environmental issues of concern first-hand and hear about them directly from environmental justice advocates and residents. DTSC and other agency staff held meetings in the communities they visited on the tours. They established a self-imposed 100-day deadline to update residents about the investigations and enforcement actions they would pursue to reduce the environmental hazards identified during the bus tours.[15]

Despite these efforts, many environmental justice advocates and some DTSC staff members felt that the early activities of the EJEI did not go far enough to address the problems of enforcement in these areas' most vulnerable communities. Luis Olmedo, Executive Director of CCDV and Ryan Atencio, the then-DTSC enforcement staff member in Imperial County, contended that the severity of problems and challenges facing these vulnerable communities warranted a deeper, ongoing dialogue between public agencies and community leaders concerned about environmental justice issues. In 2009, Atencio sent a letter to his supervisors at DTSC out of frustration with the lack of enforcement resources available to him and his colleagues, and emphasized that work with environmental justice communities required that more staff time be devoted to environmental justice issues. Atencio acted independently of any community organization. However, he later acknowledged the critical role these organizations played in

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convincing DTSC management to agree to his appeal for additional and dedicated staff time to work on environmental justice issues in collaboration with local environmental justice organizations.[16]

COMMUNITY-BASED EFFORTS TO TRANSFORM ENVIRONMENTAL ENFORCEMENT

Later in 2009, DTSC, CCDV, and other community-based organizations established the Imperial County Environmental Justice Task Force. These entities convened monthly task force meetings in which residents reported environmental problems that they observed in their communities to public agencies. Atencio reviewed these reports and engaged the appropriate public agency based on different agencies' jurisdiction or authority to address the issues at hand. Atencio also began utilizing Google Earth technology to map the environmental problems reported by community members, which made it easier to keep track of these problems and visualize their extent and concentration in terms of issue and location.[17]

In its early stages in 2009, Olmedo and his colleagues decided to rename the environmental justice task force program and the associated reporting website in Imperial County the Imperial Visions Action Network.[18] The name was a tribute to the Imperial Visions Foundation, which was created to focus on environmental justice grant making following a legal settlement involving the Mesquite Mining Co. in 2002. The settlement directed $5 million to improve social and environmental conditions in the Imperial Valley.[19] In 2012, the name was changed to Innovation, Value, Access, and Networking, to better represent the values and practices of the program, and because other counties with a high concentration of disadvantaged communities had launched their own IVAN networks. Esther Bejarano, a community health worker in the Imperial Valley associated with the Comité Cívico Del Valle, came up with the current IVAN name Identifying Violations Affecting Neighborhoods in 2013, which she felt better conveyed what the IVAN program is and does.[20]

USING TECHNOLOGY TO STREAMLINE ENVIRONMENTAL REPORTING

Atencio learned about the Louisiana Bucket Brigade's use of mapping technologies to track oil refinery accidents in that state and create an Oil Spill Crisis Map following the BP/Deepwater Horizon oil spill in April 2010. The mapping technology was based on an innovative software program named Ushahidi (testimony, or witness in Swahili), which software developers created in the chaotic aftermath of the 2007-8 elections in Kenya.[21] Olmedo and Atencio decided to utilize the Ushahidi software to create an online reporting system for the environmental justice-based monitoring and enforcement initiative underway in Imperial County. In 2010, with funding from the California Wellness Foundation and other sources for the environmental justice initiative, CCDV contracted with database and website developers to build an online reporting system and website utilizing the Ushahidi software. Carlos Zamora, a former accountant turned database and website developer in Imperial County, was largely responsible for creating the online tools that the IVAN networks put into use, after an initial contract with a Bay Area firm proved unaffordable over the long term. The cost saving was clearly beneficial but Olmedo perceived that trusting relationships with the web developer was the most important factor in this partnership. "I'm glad that we worked with people we know, who we trust, who know the community. […]Technology is like a science project, you have to work to protect it," Olmedo noted.[22]

CCDV launched the online reporting system and website for the IVAN program in the Imperial Valley in August 2010. This reporting system and website vastly improved the program's efficiency by shifting a significant portion of Atencio's time away from tracking reports of environmental problems, to investigating and addressing problems identified by community members. According to Atencio, the online and publicly accessible reporting system and mapping feature increased agency transparency and accountability to community residents and environmental justice advocates. It seemed that public agencies no longer held exclusive control over information about the extent of certain environmental problems in a community. This, in turn, made it harder for public agencies to ignore those problems and community concerns about them.[23] "Once that list [of reports] goes live, there's nowhere to hide," as Atencio put it.[24]

CCDV has maintained the reporting system and website for the Imperial Valley, and serves as the technology coordinator for the IVAN program overall. In this role, CCDV manages the server and software code that supports all of the local IVAN networks' reporting websites. This kind of community control over the reporting system and IVAN websites is important to environmental justice advocates, who point to a history of inadequate responses and enforcement by public agencies in

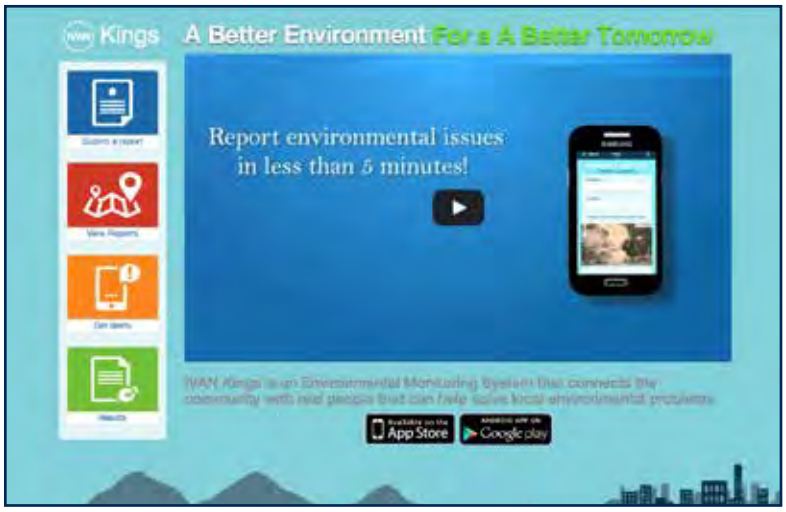
III. History and Evolution of IVAN

communities over-burdened by environmental hazards and injustices. Some public agencies have perceived the IVAN reporting system as unnecessary and duplicative of agencies' reporting systems, going so far as to view this form of community control as an attempt by community organizations to replace agencies' reporting systems altogether. This issue is discussed further under Recommendation #7 (p. 21), in which it is suggested that community and public agency stakeholders weigh the benefits and drawbacks of linking – but not merging – IVAN networks' and public agencies' reporting systems.

Atencio and Olmedo have described the development of the tools and technologies for environmental reporting as an iterative process. They stated that each version of the reporting system used by IVAN networks has improved on previous efforts and that the technology development process is ongoing.[25] The use of Google Earth to track reports of environmental problems and potential violations represented a beta version of the IVAN program, and was a vastly more efficient approach to record keeping than use of a white board and pen-and-paper. Subsequently, the launch of a reporting database and website based on the Ushahidi software constituted IVAN 1.0. Although the Ushahidi platform has been a more robust program compared to Google Earth, Olmedo had always dreamt of securing the funding needed to develop a software program designed to meet the needs of the IVAN program and networks. CCDV has facilitated development of the next version IVAN's reporting system and technologies based on lessons learned from the various IVAN networks. The IVAN network in Kings County was the first deployment of IVAN 2.0 that Z-Data Solutions developed in response to user feedback. For instance, the IVAN-Kings website is simple and clearly indicates where residents can submit and view reports, and get alerts to track agency responses (see **Figure 5** for a comparison of the IVAN-Imperial and IVAN-Kings reporting websites).

FIGURE 5: IVAN-Imperial and IVAN-Kings reporting websites

IVAN-Imperial home page



IVAN-Kings home page

THE IVAN PROGRAM SPREADS BEYOND THE IMPERIAL VALLEY

Beginning in 2010, environmental justice organizations working in southern and central California that had relationships with Olmedo sought his assistance in launching their own IVAN network due to what they perceived to be the success of the program in the Imperial Valley (see **Figure 6** for a timeline of IVAN's expansion). Promotores Comunitarios del Desierto, a community health and environmental justice organization in the Eastern Coachella Valley, established the IVAN-Eastern Coachella Valley (IVAN-ECV) network in September 2010. This was the first deployment of the IVAN program outside the Imperial Valley, and the launch event involved an environmental justice bus tour of the region similar to those organized under the auspices of the EJEI. In 2012, Californians for Pesticide Reform and the Center for Race, Poverty, and the Environment helped establish IVAN networks in Kern and Fresno Counties. Conditions for an IVAN network in Fresno County were particularly favorable because of the prior existence of an environmental justice task force in the county and the expressed strong interest in IVAN

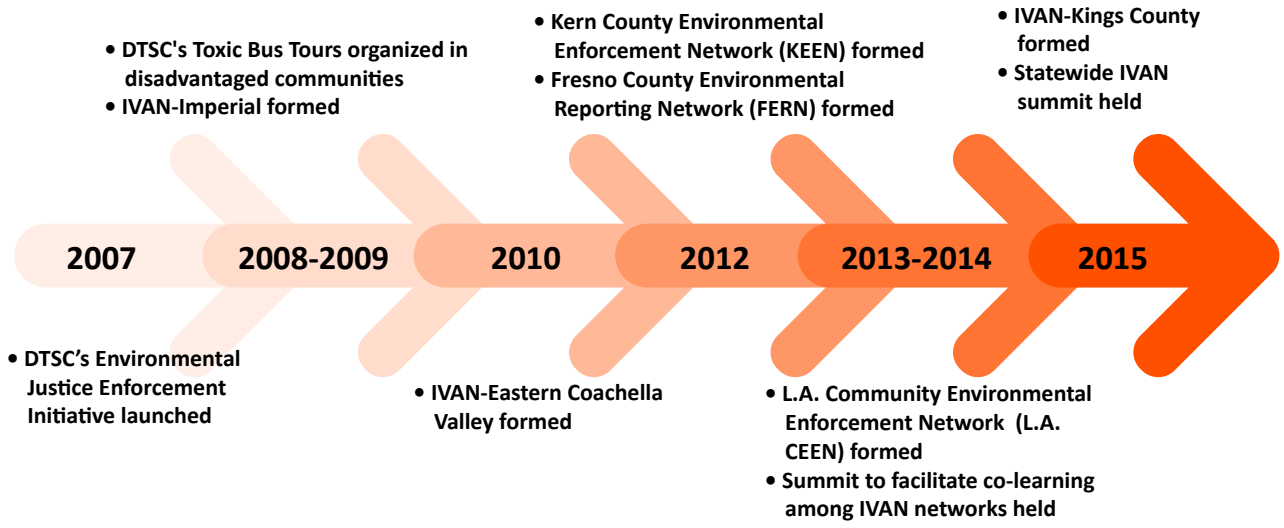
III. History and Evolution of the IVAN Program

Environmental justice bus tour and launch of IVAN program in Fresno County in October 2012

among community leaders.[26] A similarly broad base of support in environmental justice organizations active in Kern County led to the development of an IVAN network there. The environmental justice organizations in Kern and Fresno counties decided to give their IVAN networks different names that clearly identified their communities, thereby coining the names Kern Environmental Enforcement Network (KEEN) and Fresno Environmental Reporting Network (FERN). The community-based coordinators of KEEN and FERN are considering incorporating IVAN into their name so that their affiliation with the program model and other IVAN networks is apparent to public agencies, funders, and the general public.[27] This is the approach taken by the newest IVAN network in Kings County, which has named itself, "IVAN-Kings."

Finding the funding to build databases and new reporting websites, and to help cover community organizations' staff time, was another important consideration in establishing new IVAN networks. The California Endowment, through its Building Healthy Communities initiative, provided funding to help launch IVAN networks in the Eastern Coachella Valley and Fresno and Kern Counties. Grants from the U.S. Environmental Protection Agency (U.S. EPA) and CalEPA have also helped support IVAN networks and the environmental justice organizations that coordinate them. These funds support the staff with the Central California Environmental Justice Network (CCEJN) that coordinate KEEN and FERN. The Rose Foundation for Communities and the Environment provided funding to support the launch of IVAN-Kings, and CalEPA has recently contributed financial support to this newest of IVAN networks.

FIGURE 6: Timeline of the IVAN Program and Networks



IV. Case Studies: Lessons Learned

The four case studies discussed in this section demonstrate the benefits accrued by IVAN networks, and some of the challenges encountered in their efforts (see **Table 3** for a summary of the case studies). We chose these cases through a combination of methods, including a review of previous studies about IVAN networks[28] and discussions with environmental justice organization leaders and key public agency staff. The issues addressed in the cases below involve three distinct and major industries in California: Concentrated Animal Feeding Operations (CAFOs), hazardous waste disposal, and oil and gas production and distribution.

We employed case studies to document the different processes used by the IVAN networks in three different sites (Imperial Valley, Eastern Coachella Valley, and Kern County) to address the environmental issues deemed most pressing by the agency and community partners. We sought to understand the factors that supported and impeded success in resolving these issues, and the impact that IVAN networks had in each case. The communities, in which the case studies described below are set, share a common experience of contending with high levels of environmental hazards and social vulnerability, and rank among the most disadvantaged communities in California based on data from CalEnviroScreen 2.0.[29]

Based on our case study analysis, we found that the IVAN program's contribution to resolving the environmental problems included: the engagement of community members in environmental reporting that demonstrated the significance of time in observing and documenting potential violations; an online reporting system that allowed residents to make the major environmental problems in their communities visible and public; and a task force that provided a forum for environmental justice advocates, community members, and public agencies to meet and discuss responses to these problems until the problems were addressed. We also found several strategies employed by IVAN networks to be influential in these cases but that were not unique to the IVAN program. These were media coverage that helped garner widespread attention from decision-makers and the community at large, and the elevation of cases to public agency leadership with the authority to address the problems reported by community residents. The relative strength of environmental regulations were also important in these cases, by providing public agencies with the mandate to respond to problems identified by community members. As we will show, while these regulations supported and compelled effective agency responses to many of the problems, there were also instances in which agencies did not have the legal or administrative capacity to address community concerns adequately.

Table 3: Summary of Case Studies

Case	Problem	Challenge	Resolution	Broader Impact
A. Imperial Valley: Phillips Cattle Company, Inc. Confined Animal Feeding Operation (CAFO) feedlot	Water contamination from cattle carcasses at unused feedlot next to New River	Discrepancies in siting and permitting standards between regional agencies	Withdrawal of application to re-open feedlot and clean-up of feedlot site completed	Audit of all CAFOs in Imperial Valley by regional water agency followed by enforcement actions to bring CAFOs into compliance
B. Eastern Coachella Valley: Western Environmental, Inc. (WEI), hazardous waste facility	Water contamination, air pollution, and sickened residents from contaminated soils at WEI facility	Regulatory limits and standards not always adequate to protect public health	Suspension of hazardous waste processing at WEI facility	Clarification of state's jurisdiction regarding hazardous waste operations on tribal lands
C. Kern County: Vintage Production California, LLC (Vintage Production) oil drilling and hydraulic fracturing site	Water contamination from discharge of oil drilling fluids into unlined pits at Vintage Production's site	Lacking requirements to clean-up or remediate drilling sites where violations occurred	Stopped use of unlined pits for discharges of drilling fluids and fined Vintage Production	Investigation by regional water agency of all oil drilling operations in jurisdiction, fines levied for water quality violations, and use of fines to benefit impacted communities
D. Kern County: Petro Capital Resources (PCR), gas pipeline and oil storage tanks	Air pollution and sickened residents from gas pipeline leak and emissions from oil storage tanks operated by PCR	Limited ability to address pipeline-related hazards proactively due to lack of information and poor coordination among public agencies	Clean-up of homes evacuated by gas pipeline leak completed and PCR issued Notice of Violations for storage tank emissions	Greater awareness of challenges and needs regarding regulation of oil and gas operations among environmental justice advocates

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A. Cattle Feedlot Contamination of New River in the Imperial Valley

INTRODUCTION: The Imperial Valley in southern California is home to many Concentrated Animal Feeding Operations (CAFOs). These are all located in the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (Colorado River Basin RWQCB).[30] Because these facilities are considered point sources of pollution[31] – i.e., a single visible source of water, air, or other type of pollution –, they are subject to federal permitting regulations under the Clean Water Act administered by the Colorado River Basin RWQCB to protect water quality.[32] Air pollution from CAFOs in Imperial County also poses major public health hazards and is subject to California and federal Clean Air Act rules enforced by the Imperial Valley Air Pollution Control District (Imperial County APCD).[33]

Standing water polluted by waste from the New River Yard cattle feedlot in March 2010

THE PROBLEM: Phillips Cattle Company, Inc. (Phillips Cattle Company) operated the New River Yard, a large cattle feedlot adjacent to the New River and located about ten miles northwest of the city of Calexico in Imperial County. Phillips Cattle Company used this CAFO to raise steers for its clients, but closed operations at the feedlot at the end of 2009 because of the recession.[34] In March 2010, local resident Esther Bejarano observed potential water pollution hazards at the feedlot, and took pictures of the facility in which it appeared abandoned and flooded.

Bejarano reported the situation at the New River Yard to the IVAN-Imperial task force meeting in March 2010. Ryan Atencio, a DTSC enforcement staff member in Imperial County from 2005 to 2011 and then-Government Problem Solver (GPS) with the IVAN-Imperial network, responded immediately. Atencio toured the facility the next day, finding "half buried cattle carcasses and pools of liquid excrement draining into the river."[35]

Concern about potential water contamination from the feedlot grew. Other agencies' staff visited the site, and environmental justice advocates and community members continued to raise the issue at monthly IVAN task force meetings. In August 2010, video documentation of the cattle carcasses, excrement, and standing water (which could be breeding grounds for mosquitoes) was uploaded to IVAN's newly established online reporting system. Subsequently, community residents learned that Phillips Cattle Company had applied for a permit with the Colorado River Basin RWQCB and Imperial County APCD to reopen the facility. The potential reopening of the feedlot, and the potential for increased hazardous impact on the New River and surrounding community, added new urgency to the issue. The Imperial County APCD's decision in December 2010 to grant Phillips Cattle Company an exemption to the California Environmental Quality Act (CEQA) review also troubled community members deeply.[36] This signaled to community members that the Imperial County APCD, the lead public agency for this facility's CEQA review process, would likely issue an operating permit while disregarding community members' concerns about water quality.[37]

THE RESPONSE: Based in part on community pressure and agency investigations coordinated through the IVAN-Imperial task force, in January 2011, the Phillips Cattle Company withdrew its application to reopen the feedlot. The Phillips Cattle Company also began addressing existing water quality concerns. The site is now clean.[38] Several factors helped raise awareness and increase the visibility of problems at the feedlot, and ensured that local agencies were compelled to take action.[39] These included photo and video documentation of problems at the feedlot, dialogue and feedback between community members and local agencies facilitated through the IVAN-Imperial network, and media coverage via articles in the Imperial Valley Press.

The Colorado River Basin RWQCB's actions were especially critical. An investigation of the initial complaint revealed a major concern with the siting of the feedlot next to the New River. Meetings between the Colorado River Basin RWQCB and Imperial

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County APCD were held outside the IVAN task force setting. At issue was the Imperial APCD's preliminary decision in December 2010 to issue Phillips Cattle Company an operating permit.[40] The two agencies could not agree on ordering a cleanup of the site and allowing the permit application to go forward. The Colorado River Basin RWQCB sent a letter to the Imperial County APCD in January 2011 explaining that it would not permit Phillips Cattle Company to reopen the feedlot because a large area of the facility lay in the New River's floodplain. Since operation would require approval by both the Colorado River Basin RWQCB and Imperial County APCD, the permit was never issued and Phillips Cattle Company withdrew its application.

This case is notable both because of its resolution of a local environmental problem and for its broader impact. The Colorado River Basin RWQCB began auditing all the CAFOs under its jurisdiction in March 2012, partly to determine if siting in a floodplain was a widespread problem, or was unique to the New River Yard feedlot. The audit identified five other CAFOs located near the New and Alamo Rivers. The Colorado River Basin RWQCB found that siting was not a concern in these cases, because only a small area of those CAFOs lies in the rivers' floodplains. The Colorado River Basin RWQCB's Assistant Executive Officer Jose Angel stated that it was common for the public agency to conduct such audits periodically, suggesting that the audit was not necessarily a direct response to community pressure or the local IVAN network's efforts.[41] At the same time, this audit certainly commenced after the IVAN-Imperial task force addressed contamination at the New River Yard feedlot and following inter-agency discussions in 2010 about siting issues with Phillips Cattle Company's application to reopen the feedlot.

The audit revealed additional concerns with about a dozen other CAFOs, most of which the Colorado River Basin RWQCB deemed minor or moderate deficiencies. The lack of "depth markers" in ponds at CAFOs and the failure to collect and submit annual manure analysis were treated as minor deficiencies that the public agency handled by issuing non-compliance letters to CAFO operators.[42] Moderate deficiencies included outdated Engineered Waste Management Plans or CAFO operators' failure to implement such plans. The Colorado River Basin RWQCB handled these cases via an informal enforcement strategy (e.g. issuing non-compliance letters) at first, followed by formal enforcement measures (i.e., issuing Technical Orders for compliance) against unresponsive CAFO operators.[43] A major deficiency was found with one of the feedlots (Riata Feedlot) whose operator never filed a waste management plan and ignored the Colorado River Basin RWQCB's enforcement efforts. The public agency finally issued the Riata Feedlot operator an Administrative Civil Liability Complaint that resulted in a legal settlement requiring the operator to pay $68,000 in penalties and submit an Engineered Waste Management Plan.[44] The Colorado River Basin RWQCB's audit and subsequent enforcement actions helped improve the operation and management of CAFOs throughout the Imperial Valley, having a positive impact well beyond the serious contamination problems at the New River Yard feedlot first identified by Bejarano and addressed by the IVAN-Imperial task force.

THE CHALLENGE: The attention on CAFOs in the Imperial Valley, and the Colorado River Basin RWQCB's actions in particular, helped to reveal a discrepancy between the permitting regulations for the siting of CAFOs issued by the Colorado River Basin RWQCB and those issued by the Imperial County's Planning & Development and Environmental Health Departments.[45] While the IVAN network helped expose this disconnect between the regulatory policies and practices of the regional agencies, it also made the resolution of the CAFO problem less satisfying to community residents and environmental justice organizations. While not a complete success, the increased regulatory actions on CAFOs represented one important example of the potential of IVAN's community-based environmental monitoring and reporting approach. As one of the first such applications of the IVAN program, it also built support among community organizations and public agencies for IVAN's expansion into other regions of the state.[46]

LESSONS LEARNED: The New River Yard was on Atencio's list of facilities to inspect, but he did not have a chance to visit the site before Bejarano reported water quality concerns with the feedlot and New River. Therefore, one of the lessons that can be learned from this case study is that involvement of community members in observing and reporting environmental problems can help direct attention and initiate response from public agencies sooner than if just left to agencies' schedules of inspection visits. Resolution of this case also demonstrated to environmental justice organizations and community members that an IVAN network could help address and resolve environmental problems more quickly than prior to the program's deployment. The expectation and a kind of peer pressure among public agencies to provide updates on their efforts to address environmental problems at IVAN task force meetings were mechanisms that contributed to improvement in problem-solving in the Imperial Valley. "Who wants to be the agency that didn't come back with answers," according to Olmedo.[47]

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B. Hazardous Waste and Sickened Residents in the Eastern Coachella Valley

INTRODUCTION: Hazardous waste treatment is a multi-billion dollar industry in California, and it is regulated by the California DTSC.[48] In 2003, Western Environmental, Inc. (WEI) opened a hazardous waste processing facility near the town of Mecca in the Eastern Coachella Valley, at an industrial complex owned by the Cabazon Band of Mission Indians. The facility was on sovereign tribal land, which lay outside the jurisdiction of state permitting processes and inspection requests. As a result, WEI only required a permit from the Cabazon Band to operate.

Mecca residents protest WEI in March 2011 over contamination and health impacts

THE PROBLEM: Being located on tribal land also made the facility exempt from California's waste disposal and licensing fees, as well as U.S. state and local property taxes. Thus, WEI became one of the least expensive hazardous waste disposal options in California.[49] Because of low disposal costs, WEI secured a major contract with the Los Angeles Unified School District to treat contaminated soils. By 2009, it became one of the largest hazardous waste operations in California. The Cabazon Band's government did provide oversight of the facility. However, so much hazardous waste entered the relatively small, 10-acre WEI facility that former workers at the site stated that safe and adequate treatment of contaminated soils became nearly impossible, noting that hazardous working conditions were commonplace.[50]

Concerns about groundwater contamination from WEI's operations were expressed by former workers and at least one public official, Riverside County Fire Captain Robert Fish, who visited WEI in January 2009.[51] During the sharp increase in waste shipments to WEI starting in 2009, plastic liners under waste pits were torn accidentally on multiple occasions as workers tried to maneuver around large and growing piles of hazardous waste. Meanwhile, several ponds for liquid wastes were too small to contain the waste and did not have adequate leakage barriers.[52] WEI had difficulty containing the large piles of contaminated soils, some of which reached 40 feet in height. Local community activists found that dust from these soils had migrated to the two elementary schools in Mecca.[53] Community members were also concerned about air pollution resulting from fires at WEI.

These examples of environmental contamination, and its associated public health effects, intensified Mecca residents' concern about WEI's operations, prompting some community residents to form a watchdog group in 2009 to focus attention on the hazardous waste facility.[54] Residents that participated in this group kept a constant eye on WEI by driving in front of the facility on a daily basis and reported to the IVAN task force about fires at the facility and soil or potential fugitive dust emissions from WEI's site.

The situation in Mecca quickly worsened. In December 2010, odors sickened students and teachers at Saul Martinez Elementary School located less than two miles from WEI's facility. The elementary school went into lockdown mode on December 15, 2010 due to illnesses suspected to be related to air pollution from the WEI facility, which sent a school attendant and librarian to the hospital. Twelve others were treated on site that day for headaches, lightheadedness, and nausea, while CalFire crews checked all students before clearing them to go home. In 2011, the South Coast Air Quality Management District (South Coast AQMD) received so many complaints from teachers at Saul Martinez Elementary School that it asked them to keep a log and limit calls from the school to the agency's hotline to just one a day.[55] Mecca residents believed that the odors came from the WEI facility, which had begun importing thousands of tons of sewage sludge around the same time. South Coast AQMD indeed "traced foul odors back to Western [WEI] on 79 different days from December 2010 to June 2011."[56]

As a federal agency, the U.S. EPA did have some regulatory authority over the WEI facility, and it conducted unannounced inspections in November 2010 and February 2011. However, test samples indicated that the facility was in compliance with federal regulations, as well as the permit issued by the Cabazon Band of Mission Indians. Some critics argued, however, that this

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finding did not rule out that the site was not a health hazard. According to Amy Miller, an enforcement manager for hazardous waste issues in U.S. EPA's Region 9 office, "just because they [WEI] are in compliance with federal law, doesn't mean they didn't cause a potential threat to human health."[57]

THE RESPONSE: The Promotores Comunitarios del Desierto, a community health and environmental justice organization in the Eastern Coachella Valley, established the IVAN-Eastern Coachella Valley (IVAN-ECV) network in 2010, prompted in part by the controversy over the WEI facility. Community members once again voiced their concerns about WEI's operations on the IVAN-ECV's reporting system, and the IVAN-ECV task force made the issue the focus of many of their monthly meetings. The IVAN-Eastern Coachella Valley task force was an important forum where community members could press DTSC, U.S. EPA, and the South Coast AQMD officials to step up their investigations and enforcement efforts regarding WEI. Reporting in The Press Enterprise, The Desert Sun, and other local media outlets helped amplify community members' complaints.

Starting in May 2011, environmental enforcement agencies began taking stronger action against WEI. After further investigation, DTSC determined that WEI's permit from the Cabazon Band of Mission Indians was invalid, because the tribe had not first entered into a cooperative agreement with CalEPA. Without such an agreement – or a permit directly from DTSC – WEI could not legally accept "California-only hazardous waste," a regulatory category that included many of the contaminated soils WEI began amassing in 2009. On May 9, DTSC set up a truck stop to suspend delivery of California-only hazardous waste to WEI immediately. The same day, the U.S. EPA issued an order to WEI and another private facility adjacent to WEI, telling them they could no longer accept contaminated soils and other wastes without the U.S. EPA's approval.[58] As the amount of hazardous waste stockpiled and processed by WEI declined, the number of complaints registered with the South Coast AQMD by Mecca residents declined as well, from 41 in April 2011, to 17 in May, and 3 in June.[59]

Thus, DTSC immediately addressed community concerns about WEI. But the agency went further, demonstrating a willingness to engage with Mecca residents about its continued investigations into the matter. For instance, DTSC has maintained a WEI-specific page on its website since 2010 where background information on the facility and updates regarding data from inspections and soil samples has been available to the public.[60] In June 2011, DTSC officials participated in a community listening session with U.S. Senator Barbara Boxer and representatives of local and state agencies.

U.S. Senator Barbara Boxer and consumer advocate Erin Brockovich applaud Saul Martinez Elementary students and teachers in June 2011 for reporting odors and health problems

Also in June 2011, the California Assembly's Committee on Environmental Safety & Toxic Materials held an informational hearing just north of Mecca in Thermal, CA. Committee members heard directly from Mecca residents and public agency staff to understand the problems and regulatory gaps concerning the WEI facility.[61] In August 2011, DTSC released an internal audit identifying the main obstacles that had prevented earlier meaningful agency action to regulate WEI. The audit also provided recommendations to prevent similar situations throughout California's hazardous waste industry. DTSC's internal audit blamed several factors for the problems it encountered. These factors included: the lack of a legal and policy framework to enable DTSC to enforce its authority on tribal lands; the failure to escalate the issue by key DTSC executive staff; and the lack of guidance given to DTSC project managers in verifying the permitting status of hazardous waste processing facilities.[62] An independent report "Golden Wasteland" by Consumer Watchdog lambasted DTSC for what it perceived as multiple regulatory failures on the WEI case and others throughout California.[63] The California Senate Office of Oversight and Outcomes reviewed this report, and validated some, but not all of Consumer Watchdog's critiques.[64] In October 2013, the California Legislature passed Assembly Bill 1329 – sponsored by V. Manuel Perez whose assembly district included the Eastern Coachella Valley – to address the regulatory gaps identified in DTSC's internal audit. That bill prohibited the transport of hazardous waste to any facility outside the State

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of California's jurisdiction, unless certain conditions apply such as having a permit from U.S. EPA or entering a cooperative agreement with CalEPA.[65]

THE CHALLENGE: The attempts to resolve community concerns and comply with regulatory mandates resulted in important, but not complete success in this case. DTSC's audit made several clear recommendations for correcting the problems and obstacles identified in the WEI clean up. However, as of mid-2015, it has remained unclear whether DTSC implemented these recommendations fully and if they are adequate. The latest development in this case occurred in May 2014, when WEI sent a letter to DTSC indicating that it would not accept California-only hazardous waste until the Cabazon Band of Mission Indians and the CalEPA Secretary established a cooperative agreement as required by state hazardous waste law. DTSC stated that, accordingly, WEI would not have to comply with the recommendations DTSC issued following the public agency's site survey and soil sampling at WEI in 2012. DTSC stated that it would continue to work in an advisory capacity with the Cabazon Band of Mission Indians and remain available to support the Mecca community.[66] DTSC's internal audit in 2011 revealed that agency management failed to deal with regulatory issues at WEI for several years despite being aware that the facility was receiving and handling California-only hazardous waste. The audit also stated that DTSC received complaints about WEI from other public agencies prior to IVAN's existence.

LESSONS LEARNED: This case highlights the value of IVAN task forces for bringing together multiple agencies with overlapping jurisdictions over complex regulatory issues. The IVAN task forces also provided community members and advocates a public forum to demand accountability from public agencies to act on the information they have and fully address problems that have been identified. Agency responses to the WEI conflicts were also spurred by factors outside of IVAN, including public agency, advocacy, and legislative actions. This case also demonstrates that an improved approach to collaborating with tribal governments to resolve environmental concerns is needed.

C. Illegal Discharge of Fracking Fluids in Kern County

INTRODUCTION: Kern County has long been the leading area for oil and gas production in California. According to 2013 data from the state's Division of Oil, Gas, and Geothermal Resources (DOGGR), Kern County produces about 70% of the state's oil, and 33% of its gas.[67] The county is at the southern end of the Monterey Shale, which has attracted significant industry attention as one of the next major sites in the U.S. for hydraulic fracturing, or fracking. Fracking, a technique that fractures shale rock formations to release oil and gas stores, has raised significant concern among residents in Kern County communities such as Shafter, a town about 20 miles northwest of Bakersfield.[68]

Illegal discharge of oil drilling fluids into unlined pits near Shafter in October 2012

THE PROBLEM: In October 2012, Vintage Production California, LLC (Vintage Production) was video-recorded discharging hydraulic fracturing and other kinds of fluids into an unlined dirt pit, or sump, by local farmer and environmental justice activist Tom Frantz.[69] Frantz helped establish the IVAN network in Kern County (Kern Environmental Enforcement Network, or KEEN) in 2012 and was a strong critic of the fracking boom. Frantz had been concerned about oil and gas operations in the area, in part because of the lack of regulatory action against extensive gas flaring from a nearby oil processing facility that he had reported to KEEN and directly to the San Joaquin Valley Air Pollution Control District (San Joaquin Valley APCD) earlier in 2012. The response from the San Joaquin Valley APCD had been that companies had valid reasons for flaring gas, and that these practices were within the legal limits established by air pollution regulations. Frantz recounted that the San Joaquin Valley APCD had faulted an operation for providing an invalid reason for flaring in one case, but simply allowed the company to re-submit its rationale and continue with its flaring practice.[70]

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THE RESPONSE: Frantz reported the fluid discharge incident to regulatory agencies in early 2013, filing a report with CalEPA first and on the KEEN reporting system soon after. CalEPA has a staff person that verifies all environmental complaints before forwarding them to an appropriate department for further investigation. This filtering function is similar to that provided in the IVAN program model. The video and complaint were directed from CalEPA to the Central Valley Regional Water Quality Control Board (Central Valley RWQCB), which began investigating the issue, but with little immediate effect. This report remained on the KEEN task force's agenda for months. Community partners continued to demand more attention to concerns about groundwater contamination from Vintage Production's operation in Shafter without discernible results.[71] Environmental justice and local community organizations, frustrated by the slow pace of enforcement action and insufficient attention from the Central Valley RWQCB, decided to protest by alerting CalEPA's Environmental Justice Program, which then brought the matter to the attention of officials with the State Water Resources Control Board (SWRCB). Enforcement activity in Kern County intensified after SWRCB intervened and made calls to the Central Valley RWQCB.[72]

In April of 2013, the Central Valley RWQCB enforcement team issued Vintage Production an investigative order requiring the company to provide the public agency with a detailed report about the liquid discharges and associated water quality impacts from its drilling site in Shafter by May. The report revealed that the company discharged fracking and other drilling fluids into unlined sumps on 12 different days between September and October 2012. The Central Valley RWQCB issued Vintage Production a Notice of Violation in May 2013 after reviewing the company's report, and the two parties reached a settlement agreement in November 2013 stipulating Vintage Production would pay $60,000 in fines for this violation of the state's water code. While this was a relatively small fine, the Central Valley RWQCB also declared that it would investigate drilling operations throughout the area to ensure compliance with state regulations, while updating its local policy to "more specifically address oil field drilling fluid discharges to unlined sumps located in the Central Valley."[73]

BROADER IMPACT: The incident in Shafter and the ensuing enforcement actions helped make the case for broader investigations and stronger enforcement of oil and gas activities in the Central Valley. In November 2013, the Central Valley RWQCB issued another investigative order similar to the one it handed Vintage Production in May of that year. This time however, the order applied to all "significant oil and gas operators" in the public agency's jurisdiction and covered the use of drilling pits or sumps at all wells drilled from January 2012 to November 2013.[74] The Central Valley RWQCB reached settlement agreements in October 2014 with two companies it cited for violating California Water Code rules regarding unpermitted discharges of wastewater to land: Occidental of Elk Hills, LLC (Oxy) and Vintage Production again. The respective settlement agreements ordered Vintage Production to pay $130,284 in penalties, while Oxy was required to pay $346,500 due to the larger volume of its wastewater discharges.[75] The financial penalties were greater in 2014 than in 2013 for the same violation, because of the longer amount of time covered and therefore the larger volume of illegal discharges involved. More significantly, the settlement agreements in 2014 directed each company to pay half of their respective penalties through funding for Supplemental Environmental Projects (SEPs) that would benefit disadvantaged communities specifically. Vintage Production and Oxy together paid a total of $238,392 for the Community Water Center's Clean Water for Disadvantaged Communities Project in the San Joaquin Valley and Tulare Lake Basin.[76]

THE CHALLENGE: The Central Valley RWQCB's actions at the end of 2013 and in 2014 amounted to major improvements in the enforcement of water quality regulations. However, as of early 2015, community members like Frantz contended that cleanup of drilling sites where illegal discharges have occurred, remain a problem because environmental law does not require such cleanup efforts.[77]

LESSONS LEARNED: Until Frantz's reports, there was no indication that Vintage Production's drilling site in Shafter was on any agency's inspection list. Therefore, this case highlights the importance of community involvement in observing and reporting environmental problems to the appropriate public agencies through IVAN. At the same time, this case demonstrates that while IVAN networks can bring possible violations to light, community pressure for stronger regulation and robust enforcement of oil and gas activities is also needed. This case also demonstrates the limitations on reporting violations without the regulatory and enforcement frameworks to compel action.

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D. Gas Emissions from Leaking Oil Pipeline and Storage Tanks in Kern County

INTRODUCTION: Like Shafter, other communities in Kern County that have been contending with the impacts from oil and gas industry operations for decades are witnessing renewed interest in their aging oilfields.[78] One such community is Arvin, a small city of about 20,000 residents located 15 miles southeast of Bakersfield that is inhabited by a largely Latino population. Surrounded by agricultural fields, Arvin sits atop the Mountain View Oil Field.[79] While drilling activity in Arvin has slowed considerably over the past few decades, pipelines to distribute oil and gas run underneath the town as they do throughout Kern County.[80, 81] Arvin residents and local environmental justice advocates have become increasingly concerned about inadequate oversight and uncoordinated regulation of oil and gas pipelines in the area because of recent incidents involving Petro Capital Resources (PCR).

Evacuation of Arvin families in March 2014 due to leaking underground gas pipeline

THE PROBLEM: From March to December 2014, a leaking gas pipeline forced more than three dozen people living near Arvin High School in Kern County to evacuate their homes. At the time, it was estimated that the pipeline carrying flare waste gas might have been leaking for nearly two years. The level of toxic gas was found to be "13 times higher than levels deemed safe by the U.S. EPA."[82] Some residents who had experienced headaches, nosebleeds, coughing, and dizziness reported that these symptoms subsided or were gone while living away from home.[83] Regulatory attention to this leak was limited because this particular pipeline owned by PCR was exempt from state and federal regulations for pipeline testing due to its size, contents, and function.[84]

In March 2014, the pipeline was shut down. PCR was ordered to handle the remediation process involving the removal of gas-saturated soil, the installation of vents to prevent gas from continuing to seep into homes, and the monitoring of indoor air quality to ensure that explosive and toxic gases were eliminated or minimized.

In August 2014, PCR indicated that it was safe for the eight families to return to their homes. However, residents insisted that public agencies conduct independent safety tests before the evacuation order could be lifted. Community members were finally cleared to return to their homes in early December 2014, but only after test results were reviewed by the California Department of Oil, Gas, and Geothermal Resources (DOGGR) and CalEPA's Office of Environmental Health Hazard Assessment (OEHHA). However, PCR had delivered an ultimatum for residents to clear out of their temporary housing thirty miles away in south Bakersfield a few days before DOGGR and OEHHA provided residents with the clearance to return home.[85] About 100 people living in and around the neighborhood where the gas leak occurred filed claims for financial compensation with Kern County and the City of Arvin for physical injury, property damage, and emotional distress due to inadequate regulation of PCR.[86]

In December 2014, about a week after the evacuated families had returned home, local and regional organizations arranged an environmental justice tour of sites in Kern County. Groups on the tour included CCEJN, CRPE, Central Valley Air Quality Coalition (CVAQ), Clean Water Action, and Earthworks (an extractive industries watchdog organization with offices across the U.S. West). The first stop was at PCR's oil storage tanks located near Arvin High School. Using an FLIR™ infrared camera borrowed from Earthworks, the organizations detected gas emissions from the storage tanks that would be difficult or impossible to observe without such a camera. The groups submitted a report on the KEEN website and called the San Joaquin Valley Air Pollution Control District (San Joaquin Valley APCD), whose representative visited the site within a few hours of receiving the call. Use of the FLIR™ infrared camera was instrumental in leading the San Joaquin Valley APCD to investigate the issue further. Gustavo Aguirre, Jr., KEEN's Community Problem Solver, noted that San Joaquin Valley APCD staff were surprised that

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community organizations had access to such expensive equipment, given that the public agency's office in Bakersfield had acquired its own infrared camera only recently.[87]

THE RESPONSE: PCR had modified its storage tanks after shutting down its oil leases in March 2014 due to the pipeline leak.[88] The modification involved piping gas into the oil storage tanks rather than flaring it: PCR rejected the latter option, as it would have required public notice at a time when the company's gas pipeline leak was the talk of the town among Arvin residents.[89] Because PCR had failed to obtain the necessary permit before physically modifying its oil storage tanks, the San Joaquin Valley APCD issued the company a Notice of Violation on December 29, 2014. At the April 2015 KEEN task force meeting, staff from the San Joaquin APCD notified the group that the gas emissions from PCR's tanks had constituted a second violation, and that PCR would be assessed a fine, although the dollar amount was not specified.[90]

THE CHALLENGE: As of May 2015, these problems are far from being fully resolved. Yet, partly as a result of the activities of IVAN the, environmental justice advocates and community members are becoming keenly aware of the myriad problems with oil and gas operations in Kern County, particularly those involving pipelines. These problems include: the lack of regulations on testing requirements for small-diameter pipelines (under 4-inches); severely limited information about the location of oil and gas pipelines in Kern County; and poor coordination between local and state enforcement agencies such as DOGGR and the San Joaquin Valley APCD.[91]

LESSONS LEARNED: This case demonstrates the value of high levels of community capacity represented by the CCEJN and its member organizations in environmental monitoring and reporting. This case also illustrates the potential for IVAN to help force improved relationships between environmental justice advocates, community members, and public agencies involved in KEEN (especially DOGGR and San Joaquin Valley APCD). While the community and regulatory responses have not fully resolved local concerns, the activities associated with KEEN have made clear to oil and gas companies and regulating agencies that environmental justice advocates and community members are monitoring their operations in Kern County closely, and will continue to press for major improvements to agency regulations and coordination.

V. Recommendations for IVAN

The IVAN program has made great progress since its initial launch in the Imperial Valley in 2009. The number of IVAN networks has grown from one to six with more in the planning stages. Improvements have been made to the basic IVAN program model, the online reporting system has been enhanced, and the number of local environmental problems that have been resolved has increased. This has also generated environmental benefits at broader scales. These benefits include: clean-up and greater compliance with operating permits of CAFOs in the Imperial Valley; clear rules for regulation of hazardous waste facilities on tribal lands outside the State of California's jurisdiction; increased regulation of fracking and oil drilling wastes throughout the Central Valley RWQCB's jurisdiction; and reduced air pollution emissions from oil and gas transportation and storage in Kern County.

At the same time, environmental justice advocates and public agency partners have identified a number of needs and opportunities that, if addressed, could help strengthen the IVAN program even further. The following recommendations spell out actions that the philanthropic sector, public agencies, policy-makers, and environmental justice organizations could undertake.

V. Recommendations for IVAN

Table 4: Summary of Recommendations
1. Ensure sustainability of IVAN networks through diversified funding.
2. Increase investment in communities over-burdened by environmental justice problems through Supplemental Environmental Projects (SEPs).
3. Build the capacity of community members and organizations to contribute to the IVAN program, and environmental monitoring and enforcement.
4. Develop standardized performance measures to better track and analyze reports received and enforcement actions taken.
5. Integrate additional mechanisms and tools for monitoring environmental quality and community health.
6. Support the expansion of the IVAN program to additional regions and communities in California.
7. Consider linking the IVAN and CalEPA environmental reporting systems.

1) ENSURE SUSTAINABILITY OF IVAN NETWORKS THROUGH DIVERSIFIED FUNDING

IVAN networks must have sustainable funding to address the systemic and complex problems of environmental justice effectively. Currently, IVAN networks depend on a range of grants from public agencies and private foundations that may not be sustainable over time. IVAN partners should develop a stable funding strategy. This could include diversifying their funding sources to avoid dependence on any one source, securing a regular line item in public agency budgets, and developing an endowment, or other funding mechanisms, for long-term investment income.

Limited resources are also a challenge for public agencies themselves given continued budget cuts, an issue that state lawmakers could address through legislative action. This is crucial because IVAN networks can complement, but cannot replace robust and well-resourced public sector action against violators of environmental laws and regulations.

2) INCREASE INVESTMENT IN COMMUNITIES OVER-BURDENED BY ENVIRONMENTAL JUSTICE PROBLEMS THROUGH SUPPLEMENTAL ENVIRONMENTAL PROJECTS (SEPS)

Supplemental Environmental Projects (SEPs) are projects that benefit the environment and/or public health, and may be used to partially fulfill a penalty that a company or individual has incurred as a result of violating an environmental law.[92] SEPs are projects that go beyond the measures that a violator is required to take in order to comply with environmental law.[93]

State and local agencies across California involved in environmental protection should adopt policies that prioritize the use of SEPs to address environmental justice issues. The Central Valley RWQCB has such a policy in place, and DTSC is in the process of developing a similar one; the period for public comment on DTSC's draft SEP policy concluded in April 2015.[94] It would be valuable for public agencies to engage with foundations that have experience working with environmental justice communities in the development and implementation of SEPs.[95] The Central Valley RWQCB's SEP policy outlines engagement with the Rose Foundation for Communities and the Environment, for instance, because the foundation has "the institutional capacity, the proven track record, and the connections with disadvantaged communities" to be an effective partner, according to the Central Valley RWQCB.[96] This component of the Central Valley RWQCB's SEP policy should be encouraged among other environmental enforcement agencies. The state's Natural Resources Agency and all CalEPA Boards, Departments, and Offices (BDOs) should adopt policies covering SEPs, or similar mechanisms that targets their use to benefit disadvantaged communities. Public agencies could use the state's CalEnviroScreen mapping tool to identify disadvantaged communities for this kind of investment.

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3) BUILD THE CAPACITY OF COMMUNITY MEMBERS AND ORGANIZATIONS TO CONTRIBUTE TO THE IVAN PROGRAM, AND ENVIRONMENTAL MONITORING AND ENFORCEMENT

Environmental justice advocates involved with the IVAN program have expressed a need to develop training programs for community members to increase their knowledge and build skills as "civic scientists" involved in environmental monitoring.[97] Understanding major environmental laws, regulations, public agencies and their policy priorities, and recognizing which information public agencies need to begin addressing environmental wrongs, can help community members submit accurate and useful reports about environmental problems. Community members can learn how to do high-quality environmental reporting by drawing on promising practices in other locations, thereby assisting and/or compelling agencies to respond to problems swiftly and decisively.[98] Agency staff should assist in this effort by explaining which issues they handle, and outlining the type of information they find most useful when reviewing and deciding how to respond to reports submitted through IVAN.

Young people are often more vulnerable to environmental hazards than adults are, and should learn how to monitor potential environmental hazards in order to protect their health. Youth also tend to be more tech-savvy than adults are, and may find it easier to report on hazards through IVAN than adults do. They also tend to have more time and flexibility, and are often curious about or aware of their environment in ways that adults are not. Engaging youth leaders can help maintain interest and commitment to environmental justice in communities, helping to develop future environmental justice advocates and organizers. There are several ways to engage youth, ranging from developing school-based projects and curricula involving IVAN's reporting system, to building relationships between environmental and youth organizations.[99]

4) DEVELOP STANDARDIZED PERFORMANCE MEASURES TO BETTER TRACK AND ANALYZE REPORTS RECEIVED AND ENFORCEMENT ACTIONS TAKEN

Standardized performance measures can help IVAN networks evaluate and report on the impact they are having and identify areas for improvement.[100] In addition, standardized performance reports could become a valuable tool for public agencies to evaluate their progress in meeting goals and mandates related to community engagement and environmental enforcement. Such mandates include those spelled out in Assembly Bill 1329, which requires DTSC to prioritize enforcement actions in the most disadvantaged and over-burdened areas, as identified by CalEPA.[101]

Two complementary projects are underway to develop standardized performance measures for the IVAN program. CCDV is coordinating one such project for the IVAN program that involves working with Skeo Solutions – a government contractor whose clients include U.S. EPA and other federal agencies – to develop a set of measures that could be calculated automatically using the IVAN networks' reporting system (e.g., tracking the number of reports received by issue and location, and enforcement actions taken). CCEJN is spearheading the other project, which aims to examine a comprehensive set of quantitative and qualitative metrics to evaluate the level and quality of agency engagement, public participation, and communication between public agencies, environmental justice organizations, and community residents. In March 2015, Cesar Campos and Gustavo Aguirre, Jr. – Community Problem Solvers with FERN and KEEN, respectively – met with staff at a number of state and local public agencies that participate in the IVAN networks to solicit feedback on a draft set of evaluative metrics. Campos and Aguirre, Jr. plan to finalize the comprehensive set of quantitative and qualitative metrics before the end of 2015. CCEJN's initiative covers the IVAN networks only in Fresno and Kern Counties currently, and may expand to all networks later. These standardized performance measures can be used to hold public agencies accountable for following through on their commitments to address community-identified environmental concerns and priorities. This performance assessment may also help illuminate, and perhaps reduce, the power imbalance between public agencies, environmental justice organizations, and the communities in which they operate.

5) INTEGRATE ADDITIONAL MECHANISMS AND TOOLS FOR MONITORING ENVIRONMENTAL QUALITY AND COMMUNITY HEALTH

The use and integration of community-based environmental monitoring devices can help provide IVAN networks with additional data that is more localized than data generated by government monitoring stations. A wide range of tools have been developed to assist in community environmental monitoring, from devices that automatically record data, to projects that require the time and involvement of community members for data collection (e.g., Bucket Brigade and Pesticide Drift Catcher).[102] Bio-monitoring

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(i.e., analyzing hair, tissues, or bodily fluids for certain toxins) is another approach that could be useful. Some considerations to help decide which tools to employ include: defining the goal or objective of employing the tool(s); determining when and where to collect data; and understanding the capacities required for individuals and organizations to use the tool(s), including time and skills. IVAN networks might also consider quality assurance and quality control (QA/QC) protocols to follow so that data collected by community members is considered valid and actionable by public agencies.

Public agencies should create a catalogue of the environmental monitoring equipment they have, specifying the type of data they can capture, and share that information with other agencies and the public. Public agencies should also consider creating a system for lending basic equipment (i.e., low-cost air monitoring tools) to community members for environmental monitoring efforts. Community organizations could host educational and training events where public agency staff assist community members in learning which pieces of equipment are best suited to particular monitoring activities, and how to use them. Community organizations may require funding to cover the costs of new devices and equipment, as well as skills training and lab testing. There should be a proposal process and funds, to support equipment acquisition and capacity building for community environmental organizations.[103]

6) SUPPORT THE EXPANSION OF THE IVAN PROGRAM TO ADDITIONAL REGIONS AND COMMUNITIES IN CALIFORNIA

Addressing environmental justice problems often requires actions that span geographic and jurisdictional boundaries. IVAN networks are organized at a county scale currently, however. Therefore, expanding IVAN networks to other counties and linking those counties in some way will be necessary for IVAN to promote solutions that can address the scale of the problems they encounter. For example, groundwater or air pollution in one community may be caused by industrial activity in other locations, and/or by companies with operations in multiple sites. Finally, it will be important to balance the value of developing place-based IVAN systems fit to local social, political, economic and environmental contexts with the value of maintaining a cohesive approach that allows all county-based IVAN networks to work effectively with the same website system and to collaborate on inter-regional and statewide environmental justice strategies.

To support the expansion of IVAN to other locations, IVAN network coordinators Luis Olmedo and Rosalinda Nava with CCDV and Cesar Campos with CCEJN have discussed the need for a manual that can help guide environmental justice organizations and public agencies in establishing and developing a new IVAN network.[104] Community and public agency leaders will need funding to develop such a resource guide. Among other things, such a guide could include organizational insights that draw on the experience of existing IVAN networks. For example, community organizations and leaders should be aware that the relationship-building and collaborative planning leading up to the launch of a new IVAN network are critical to its success. Organizations should also have a clear understanding of community members' major environmental concerns to ensure that the IVAN network, including the task force, addresses their needs. In this same vein, the manual could discuss the ideal number of agencies and community partners needed to build a responsive and sustainable IVAN network, one that successfully mobilizes and listens to key constituencies. It could also provide ways to create user-friendly reporting systems, making their purpose and potential benefits clear to community members.[105]

7) CONSIDER LINKING THE IVAN AND CALEPA ENVIRONMENTAL REPORTING SYSTEMS

Discussions about potentially linking the IVAN online reporting system with CalEPA's single complaint tracking system for all BDOs should occur between public agencies and environmental justice organization leaders. Communication between reporting systems can help ensure that reports submitted to IVAN are also on record with CalEPA, which may prove useful if local agencies' response to reports is slow and/or inadequate. Having a copy of reports submitted to IVAN can also help CalEPA track environmental issues statewide and monitor the progress and effectiveness of enforcement actions carried out by the agency's BDOs. CalEPA should provide the resources needed to make this technically and financially feasible if environmental justice organizations and public agencies decide to pursue this linking of reporting systems. However, it will be important to address this issue in ways that balance public agency and environmental justice organizations' interests. For example, public agency leaders and environmental justice advocates should discuss important issues of privacy and community control more thoroughly before proceeding with this kind of coordination between reporting systems.

VI. Conclusion

Visiting a demolition site during bus tour for launch of IVAN program in Kings County in February 2015

The IVAN program represents an innovative approach to transforming the environmental justice-related monitoring and enforcement process in California from one based on one-way and often opaque flows of communication, to a more collaborative partnership between public agencies, environmental justice organizations, and community members. The case studies presented in this report demonstrate the power of the IVAN program to improve conditions in communities confronting environmental hazards, and to positively influence environmental regulation on a larger spatial and institutional scale. The cases also highlight a number of challenges facing the IVAN networks, and the need for strategies to address them.

Key lessons about the success and power of the IVAN program drawn from the above case studies include: the importance of using photo and video documentation as well as media coverage to compel agencies to respond to environmental problems; the significance of having or not having environmental regulations to ensure the adequate resolution of problems reported; and the value of building agency-community relationships in order to address the concerns and meet the needs of communities facing environmental risks. Funders, policy-makers, and public agency staff should support IVAN networks and assist with efforts to strengthen the program model following some of the key recommendations outlined in this report.

Currently, there is evidence that both public agency officials and environmental justice organization leaders are enthusiastic about IVAN as a way to improve their work. Reflecting on his experiences with other IVAN networks at the IVAN-Kings County launch event in February 2015, Assistant Secretary for Environmental Justice and Tribal Affairs at the California Environmental Protection Agency, Arsenio Mataka stated emphatically, "The IVAN program helps government do its job better."[106] Rey León, the primary environmental justice organization leader of the IVAN-Kings County network, and Executive Director of the San Joaquin Valley Latino Environmental Advancement Project, recently struck a similar note. He describes his aspiration for IVAN, "We look forward to take the dialogue of healthy communities and environmental justice to the next level, not just with residents but with policy makers and agency heads and enforcement staff." León insists, "This will impact the culture of the county immensely for a healthier Kings [County]!"[107]

Visiting illegal dumping sites during bus tour for launch of IVAN program in Kings County in February 2015

This research amply supports these conclusions. With more resources and continued improvements to the IVAN program, this approach has significant promise to help elevate the voices and visions of people over-burdened by environmental hazards, and to improve environmental regulation and enforcement in their communities.

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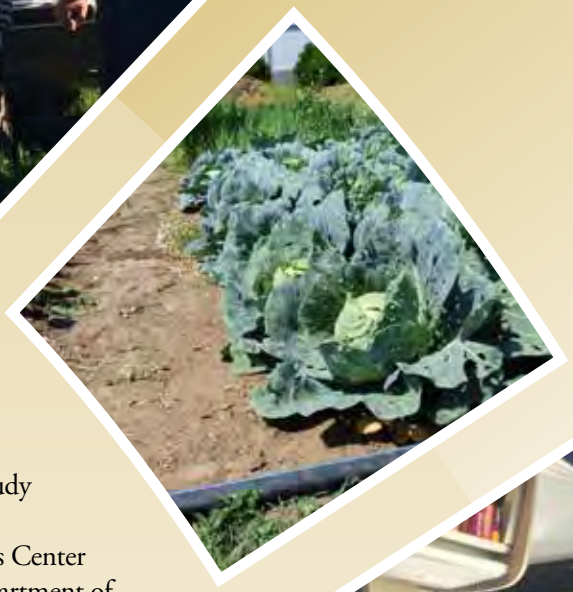

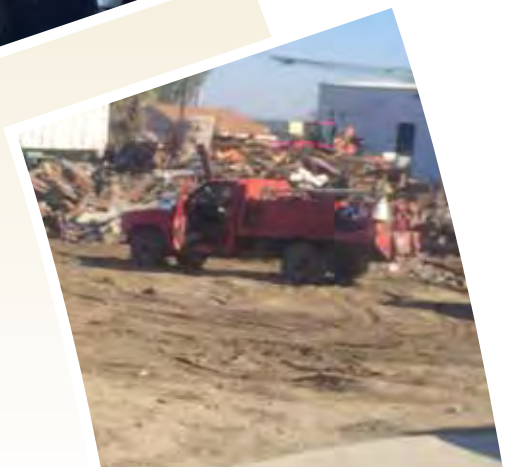

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