



DISASTER DATA COLLECTION

RESPONDING TO EMERGENCIES USING ARCGIS
TECHNOLOGY

WHAT WE DO

DTSC assists counties in responding to Natural Disasters by assessing and removing all household hazardous waste (HHW) and easily removable asbestos from affected properties.



MODERNIZING BUSINESS PROCESSES

**MCCOURTNEY & LOBO FIRE (NEVADA COUNTY) FIELD CHECK LIST
HHW ASSESSMENT**

		GPS	
ADDRESS	11044 Ponderosa Rd., Rough & Ready	N Lot 39.234903	W Long 121.156345
APN			
DATE	10/19/2017		
TIME ONSITE	1215		
PERSONNEL	NRC, Nevada County, * DTSC		

		YES	NO
ASBESTOS:	Is there potentially ASBESTOS containing materials.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PUBLIC CONTACT:	Was there any with the PUBLIC at this address?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EMPTY CONTAINERS:	Were EMPTY CONTAINERS identified and marked with WHITE PAINT (X)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FUEL TANKS? HHW REMOVED?		# CONTRS	SIZE (GAL/LB)
Used Oil/Fuel		13	55 gallon
Antifreeze		1	1 gallon
Batteries		10	
Paint		2	1 gallon
Propane cylinders	Misc. Sizes	20	
Pesticides/Fertilizers			
Pool or Cleaning Chemicals			
Gasoline		7	5 gallon
Diesel			
Other:	1 aerosol can 1 gallon solvent		
Types of Asbestos (transite piping, panels, chimney flues)			
- Large amount of transite roofing located on back of property stacked up - removed by crew			
- Miscellaneous pieces of asbestos throughout property			
OTHER NOTES:			
Two saddle fuel tanks located on partially burned truck were half-full of fuel. Property owner wanted the fuel thus we did not remove it.			
CGI / 4 Gas	ND		
Gamma Rad	ND		



PAPER ENTRY HISTORICAL PROCESS

- Tedious
- Time Consuming
- Data Reconciliation Effort
- Difficult to Communicate
- Exhausting

Collector 1:44 PM 62%

North HHW v3

APN
050-220-125-000

Address
6854 PENTZ RD PARADISE CA 95969

Date and Time of Assessment *
January 31, 2019 1:43 PM

Team Name *

Team Lead
Roger.Cleaves@dtsc.ca.gov_DTSC

Organization *

Suspect ACM exists onsite? (enter asbestos details below) *
☐ Yes ☐ No

HHW exists onsite? (enter HHW details below) *
☒ Yes ☐ No

▼ HHW Item Collection Details - Expand Arrow

HHW Comments

HHW Types Found

<input type="checkbox"/> Aerosols	<input type="checkbox"/> Antifreeze	<input type="checkbox"/> Batteries	<input type="checkbox"/> Bulk Fuel	<input type="checkbox"/> Bulk Oil
<input type="checkbox"/> Compressed Gas Cylinders	<input type="checkbox"/> Fertilizers	<input type="checkbox"/> Household Cleaners	<input type="checkbox"/> Paint	<input type="checkbox"/> Pesticides
<input type="checkbox"/> Pool Chemicals	<input type="checkbox"/> Solvents	<input type="checkbox"/> Other		

E-waste Collected Onsite? *
☐ Yes ☐ No

Transfer In Place? *
☐ Yes ☐ No



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DIGITAL FORM

CURRENT PROCESS

- Digital
- Available Offline
- Visual Representation
- Easy to Communicate
- Easy

Collector 1:44 PM 62%

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<input type="checkbox"/> Pool Chemicals	<input type="checkbox"/> Solvents	<input type="checkbox"/> Other		

E-waste Collected Onsite? *
☐ Yes ☐ No

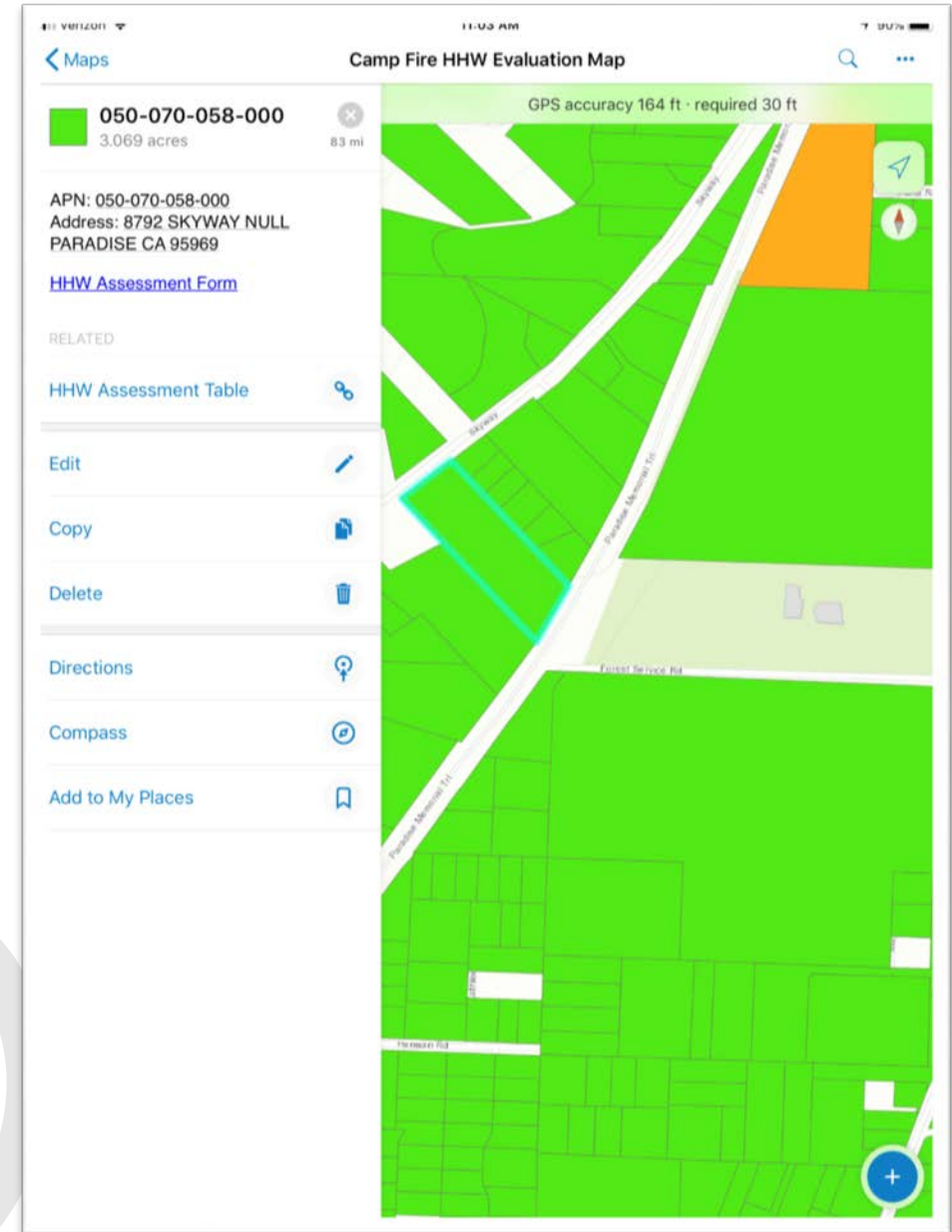
Transfer In Place? *
☐ Yes ☐ No

✓



COLLECTOR AND SURVEY123

- Collector
 - Use the maps offline to show which parcels still need to be assessed
 - View CalFire Damage Assessment data on map to get idea of where structures are
 - When in service range, see in real time as staff clear parcels
 - Use hyperlink in pop-up to open Survey123
- Survey123
 - Collect assessment record offline
 - Smart-form, conditional fields based on choices made
 - Easy-to-use

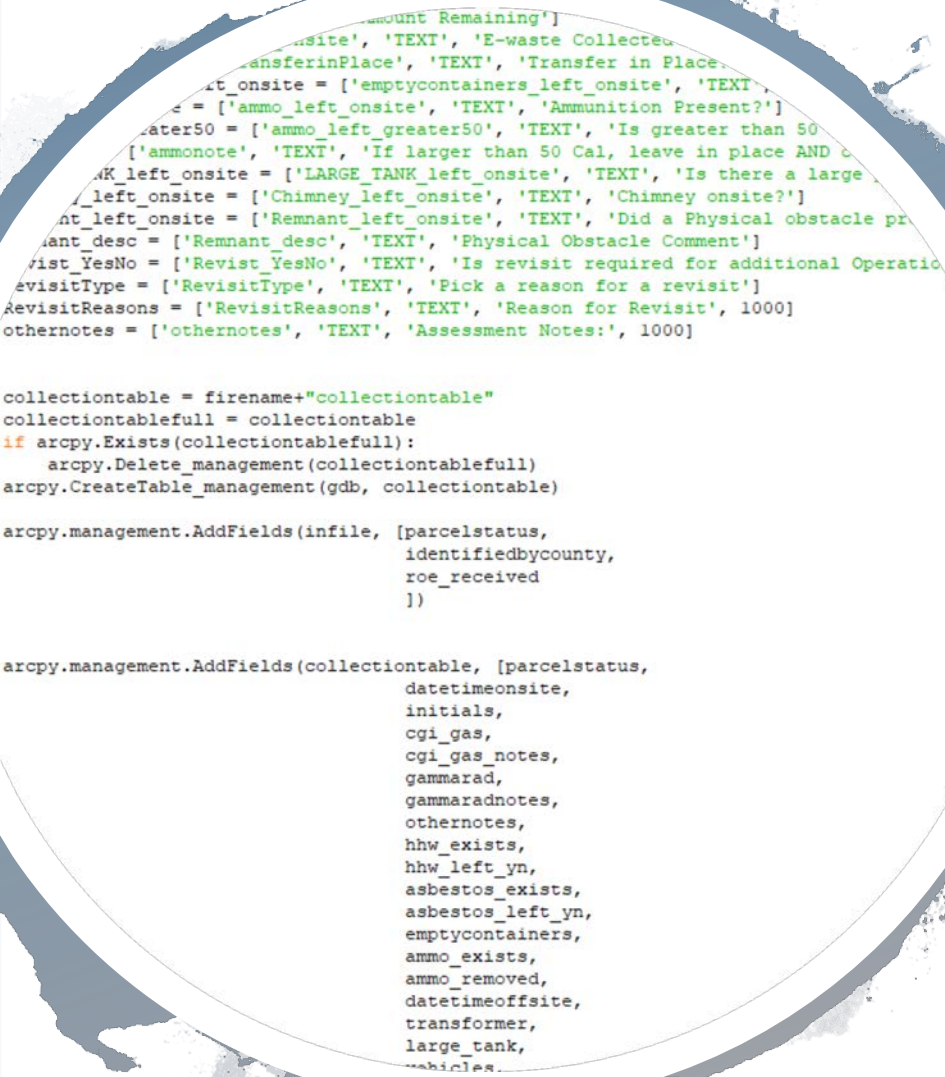


DATA SHARING AND TRANSPARENCY

By using ArcGIS Online we were able to make our data instantly available to:

- Affected Counties
 - Build apps and maps off of read-only views, able to “turn on” new parcels that need to be assessed for field staff to see and engage with
- Partner Agencies and Departments
 - Share summaries of daily and running totals, showcase data through dashboards
- Internal Stakeholders
 - Use dashboards and web apps to help plan next-day operations, monitor staff and crews’ progress
- Public
 - Instantly know what is being done to get them back home, complete transparency of our progress





```

        'amount Remaining']
        onsite = ['E-waste Collected', 'TEXT', 'E-waste Collected']
        transferinPlace = ['Transfer in Place', 'TEXT', 'Transfer in Place']
        onsite = ['emptycontainers_left_onsite', 'TEXT', 'Empty Containers Left Onsite']
        onsite = ['ammo_left_onsite', 'TEXT', 'Ammunition Present?']
        greater50 = ['ammo_left_greater50', 'TEXT', 'Is greater than 50']
        ammunote = ['TEXT', 'If larger than 50 Cal, leave in place AND']
        tank_left_onsite = ['LARGE_TANK_left_onsite', 'TEXT', 'Is there a large']
        left_onsite = ['Chimney_left_onsite', 'TEXT', 'Chimney onsite?']
        nt_left_onsite = ['Remnant_left_onsite', 'TEXT', 'Did a Physical obstacle pr']
        ant_desc = ['Remnant_desc', 'TEXT', 'Physical Obstacle Comment']
        vist_YesNo = ['Revisit_YesNo', 'TEXT', 'Is revisit required for additional Operatio']
        revisitType = ['RevisitType', 'TEXT', 'Pick a reason for a revisit']
        RevisitReasons = ['RevisitReasons', 'TEXT', 'Reason for Revisit', 1000]
        othernotes = ['othernotes', 'TEXT', 'Assessment Notes:', 1000]

collectiontable = filename+"collectiontable"
collectiontablefull = collectiontable
if arcpy.Exists(collectiontablefull):
    arcpy.Delete_management(collectiontablefull)
arcpy.CreateTable_management(gdb, collectiontable)

arcpy.management.AddFields(infile, [parcelstatus,
                                    identifiedbycounty,
                                    roe_received
                                    ])

arcpy.management.AddFields(collectiontable, [parcelstatus,
                                             datetimeonsite,
                                             initials,
                                             cgi_gas,
                                             cgi_gas_notes,
                                             gammarad,
                                             gammaradnotes,
                                             othernotes,
                                             hhw_exists,
                                             hhw_left_yn,
                                             asbestos_exists,
                                             asbestos_left_yn,
                                             emptycontainers,
                                             ammo_exists,
                                             ammo_removed,
                                             datetimeoffsite,
                                             transformer,
                                             large_tank,
                                             vehicles

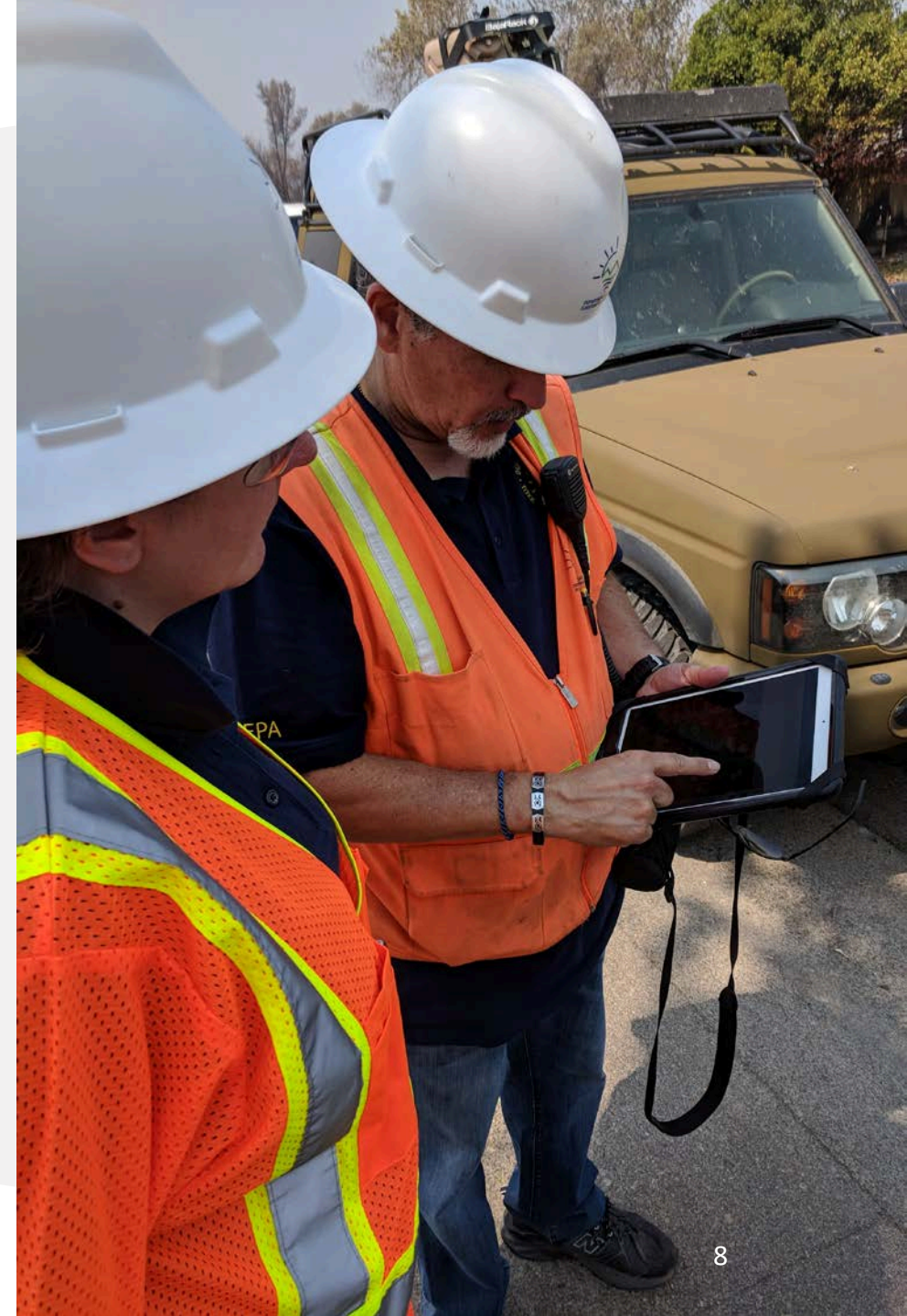
```

THE NITTY GRITTY

- **Python:**
 - Scripted creation of parcel layer and related collection table
 - Turned into script tool in ArcGIS Pro, so now it takes a few minutes to deploy the app
- **ArcGIS Online:**
 - Used ArcGIS Online for all data hosting, easier to support infrastructure when you don't have to worry about it
 - Easier for sharing data through groups with other organizations or through distributed collaboration feature
- **Survey123:**
 - Build form template, then use the hosted feature layer's related table as the data source, so when users submit surveys they write directly to the related table
- **Collector:**
 - Publish map for use in collector, where users can attach photos to parcels that may have issues. Also, use hyperlink to open up Survey123 for user data entry
- **Dashboards:**
 - Create dashboards that update nightly, keeping the public informed as well as other agencies

LESSONS LEARNED

- iPhones too small – hard to navigate map and click on parcels to edit data
- iPads get too hot – Carr Fire in Redding showed how quick they overheat
- Don't change data elements if you can help it!
- Use ArcGIS Online for data hosting
- Get updated parcel data **ASAP**
- **Iterative process – learn, adapt and refine apps after every event**





Department of
Toxic Substances
Control

THANK YOU



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WWW.DTSC.CA.GOV