

ArcGIS for Community Risk Reduction

Maps and Apps for a safe community



**GIS
INSPIRING
WHAT'S
NEXT**

The Mission: To Identify Risk and Reduce their Occurrence and Impact

Challenges Faced by Public Safety Agencies

- **Community Risk Reduction (CRR)**

- To identify new and emerging hazards
- To track the changing demographics of our community
- To identify underserved populations
- To provide data and results to influence the budget process

- **Collaboration and Coordination**

- Getting information to and from personnel in the field
- Communicating to citizens & partner agencies

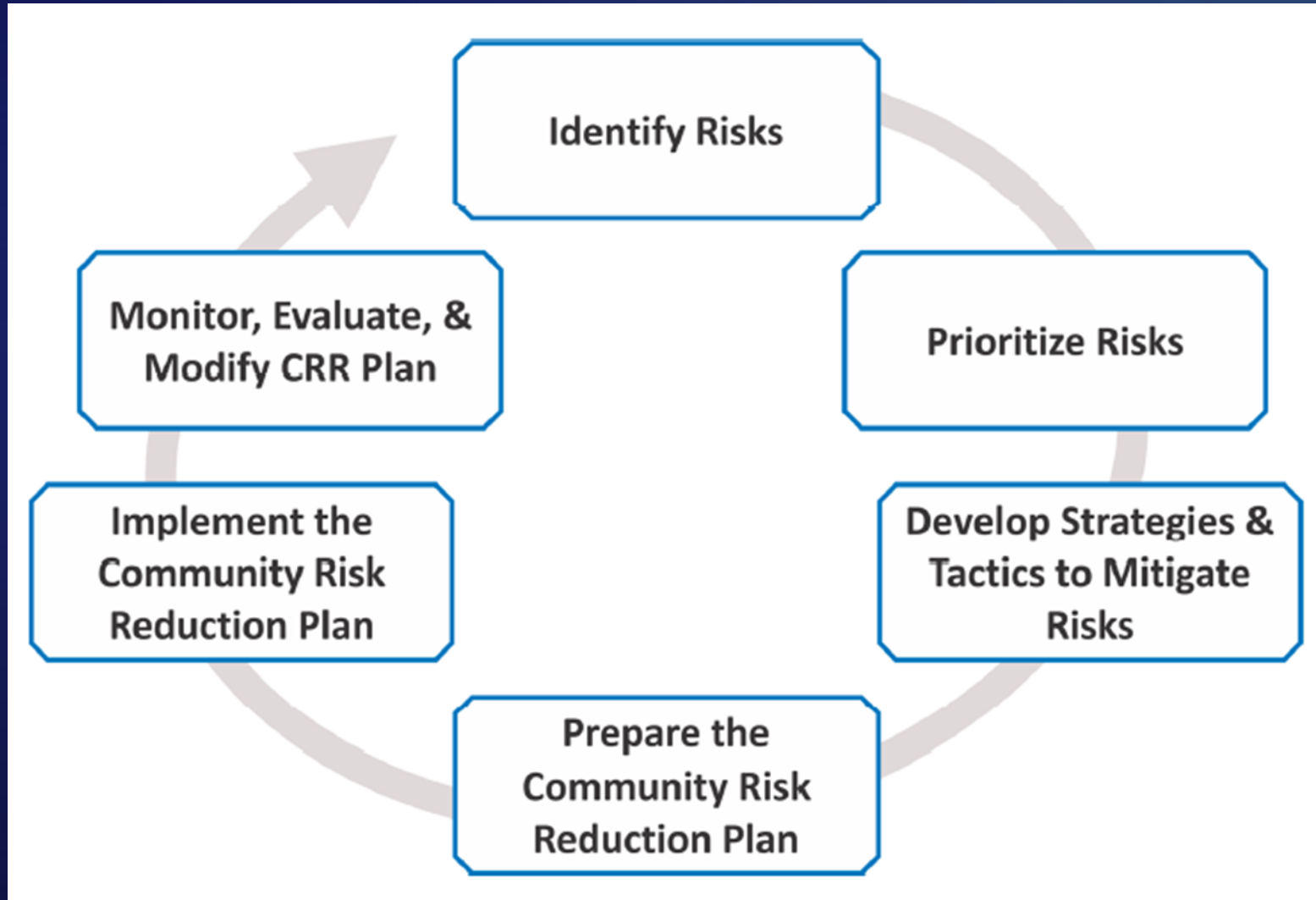
- **Community Risk Reduction coordinates prevention and mitigation**

- ArcGIS can provide solutions to lessen the impact of hazards, and lessen the impact to daily activities

...Questions of "Where" are in every identified community risk...

The Mission: To Identify and Reduce their Occurrence and Impact

Challenges Faced by Public Safety Agencies



...Questions of "Where" are in every identified community risk...

ArcGIS for Community Risk Reduction

Leverages and integrates authoritative datasets on the problem and mitigation activities

Real-Time Resource Management

- Dashboard
- Workforce

Coordinate with Field Staff

- Mobile Applications

Risk Assessment

- Community Specific Data
 - Living Atlas

Communicate with Stakeholders

- Public Information App



...to deliver a collection of focused maps and apps to help Public Safety agencies manage CRR more effectively...

Risk Assessment

The risk assessment process identifies the various risks to your community and/or service area

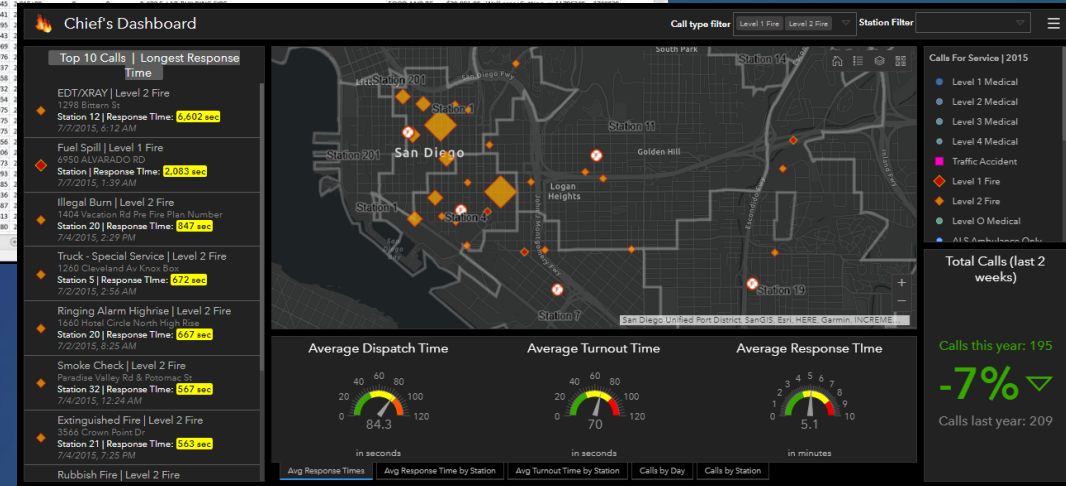
- Acquire Data that Identifies Risks
- Develop a Community Profile
- Identify Causal Factors & Populations at Greatest Risk
- Identify Target Hazards

Risk Assessment

Acquire Data that Identifies Risks

- Fire Department Incident Data
- PSAP Data
- Emergency Management Disaster Related Data
- Centers for Disease Control

DATE/TIME/ALARM	CAD#	INCIDENT/EXPOSURE/INJURY	FATALITY	ADDRESS	INCIDENT TYPE	PROPERTY TYPE	TOTAL_FIRE_LOAREA_ORI	CONTRI_#	Coordinate			
1/22/2014 2:02	186	2.01E+09	0	0	0	3785 FIVE BUILDING FIRE	1 OR 2 FAMILY	1348,000.00	Extensive fire spread	1172056	374290	
1/2/2014 14:57	457	2.01E+09	0	0	0	1308 HILL BUILDING FIRE	1 OR 2 FAMILY	5136,000.00	Laundry at heat stove	1170800	374290	
1/3/2014 7:07	758	2.01E+09	0	0	0	4580 MAR BUILDING FIRE	MULTIFAMILY	515,000.00	Undeterred undeterred	1173537	374289	
1/2/2014 8:11	760	2.01E+09	0	0	0	2315 HOME COOKING FIRE, CONFINED TO CONTAINER	1 OR 2 FAMILY	500.00	Cooking at electrical	1172056	374540	
1/6/2014 17:47	2068	2.01E+09	0	0	0	206 CLAY CHIMNEY OR FLUE FIRE, CONFINED TO CHIMNEY OR FLUE	1 OR 2 FAMILY	\$4,150.00	N/A	N/A	1183900	374280
1/21/2014 12:13	5158	2.01E+09	0	0	0	3332 PROF BUILDING FIRE	MULTIFAMILY	\$1,000.00	Function Equipment	1178248	374292	
1/22/2014 22:56	5900	2.01E+09	0	0	0	8377 CARE BUILDING FIRE	1 OR 2 FAMILY	\$58,000.00	Bedroom wood stove	1179250	375710	
1/14/2014 11:28	6898	2.01E+09	0	0	0	5212 NINE BUILDING FIRE	1 OR 2 FAMILY	\$23,000.00	Substnct/Electrical	1181430	372560	
1/13/2014 8:46	7045											
1/24/2014 12:53	7041											
1/17/2014 22:06	8493											
1/22/2014 5:25	543											
1/20/2014 1:06	969											
1/24/2014 1:25	976											
1/23/2014 15:20	1237											
1/24/2014 11:09	1858											
1/24/2014 11:26	1732											
1/24/2014 20:34	1954											
1/25/2014 1:40	2075											
1/25/2014 23:21	2475											
1/28/2014 22:09	3875											
1/20/2014 8:57	4056											
1/29/2014 10:31	4106											
1/29/2014 22:03	4373											
1/21/2014 10:50	5093											
1/31/2014 14:02	5185											
1/31/2014 15:24	5236											
2/2/2014 6:15	5487											
2/1/2014 9:15	5613											
2/1/2014 2:00	5980											



Risk Assessment

Develop a Community Profile

- Age
- Gender
- Income
- Race and ethnicity
- Social and cultural information
- Education
- Parcel & housing type, age, and density

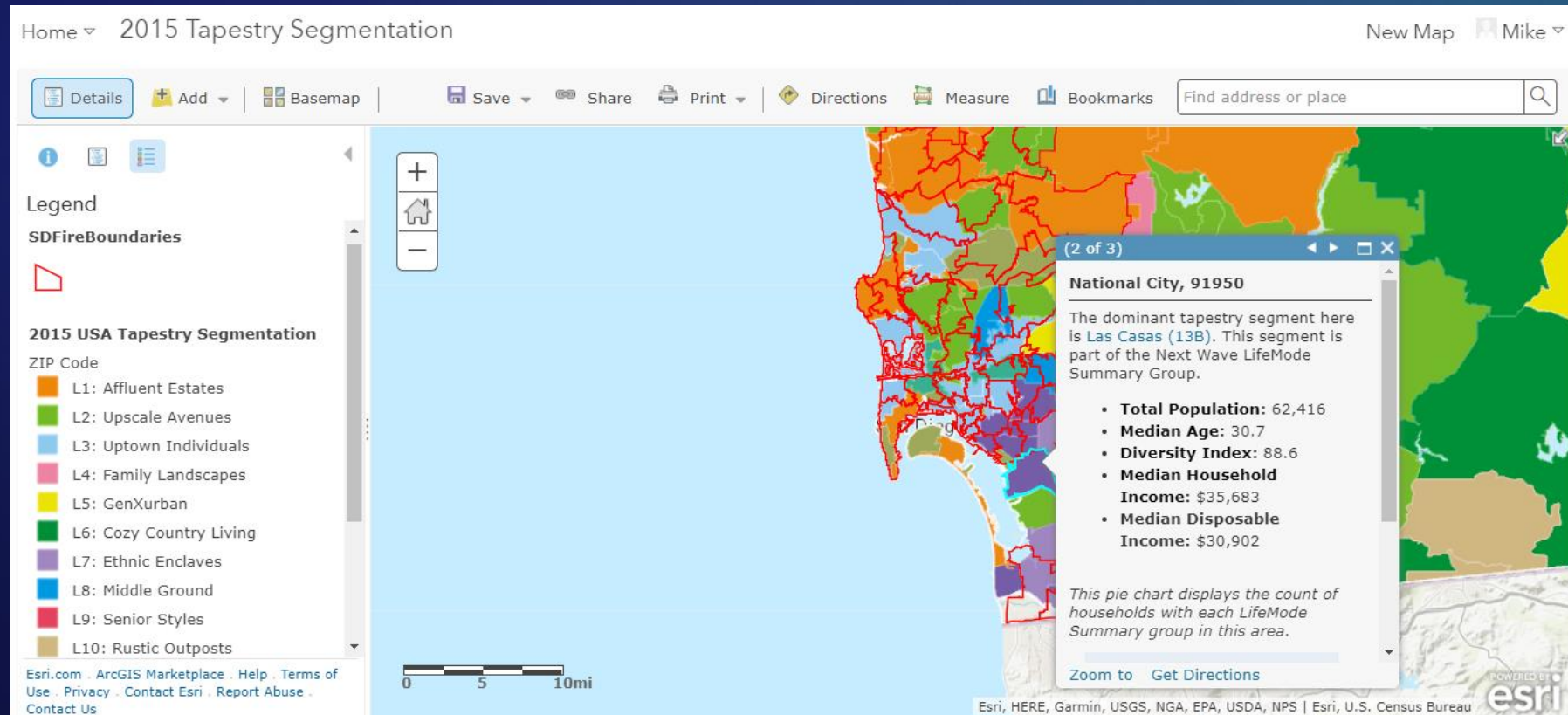
Risk Assessment

Causal Factors & Populations at Greatest Risk

- Social factors and cultural influences
- Economic factors
- Environmental elements
- Identify risk factors in specific populations:
- Children (age 5 & under)
- Older adults (age 65 & older)
- People with disabilities
- People living in poverty
- Populations that speak little or no English

Leveraging GIS

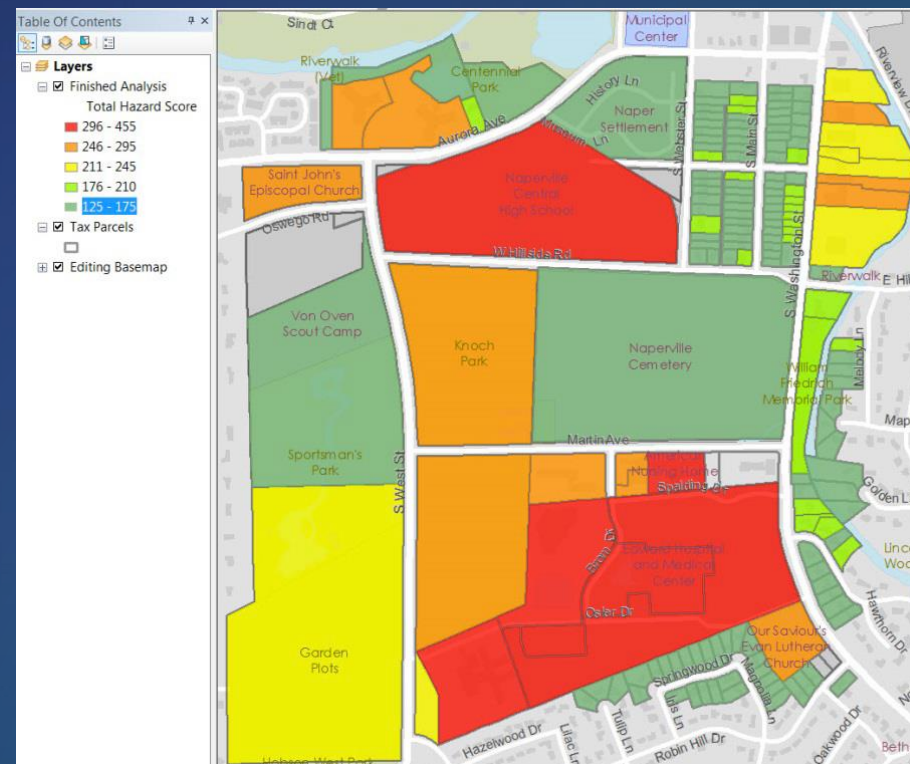
Demographic Profile



Risk Assessment

Identify Target Hazards

- Assembly Occupancies
- Educational Facilities
- Health Care Facilities
- Public Safety Structures
- Transportation Infrastructure
- Communications Infrastructure



Risk Assessment by Address Point

All Address Points



Distance from Hydrant



Square Footage



Building Height



Use Group



Fire Hazard Classification
Geodatabase & CAD Pairing



Leveraging GIS

Call Type

City of Bolton
Washington

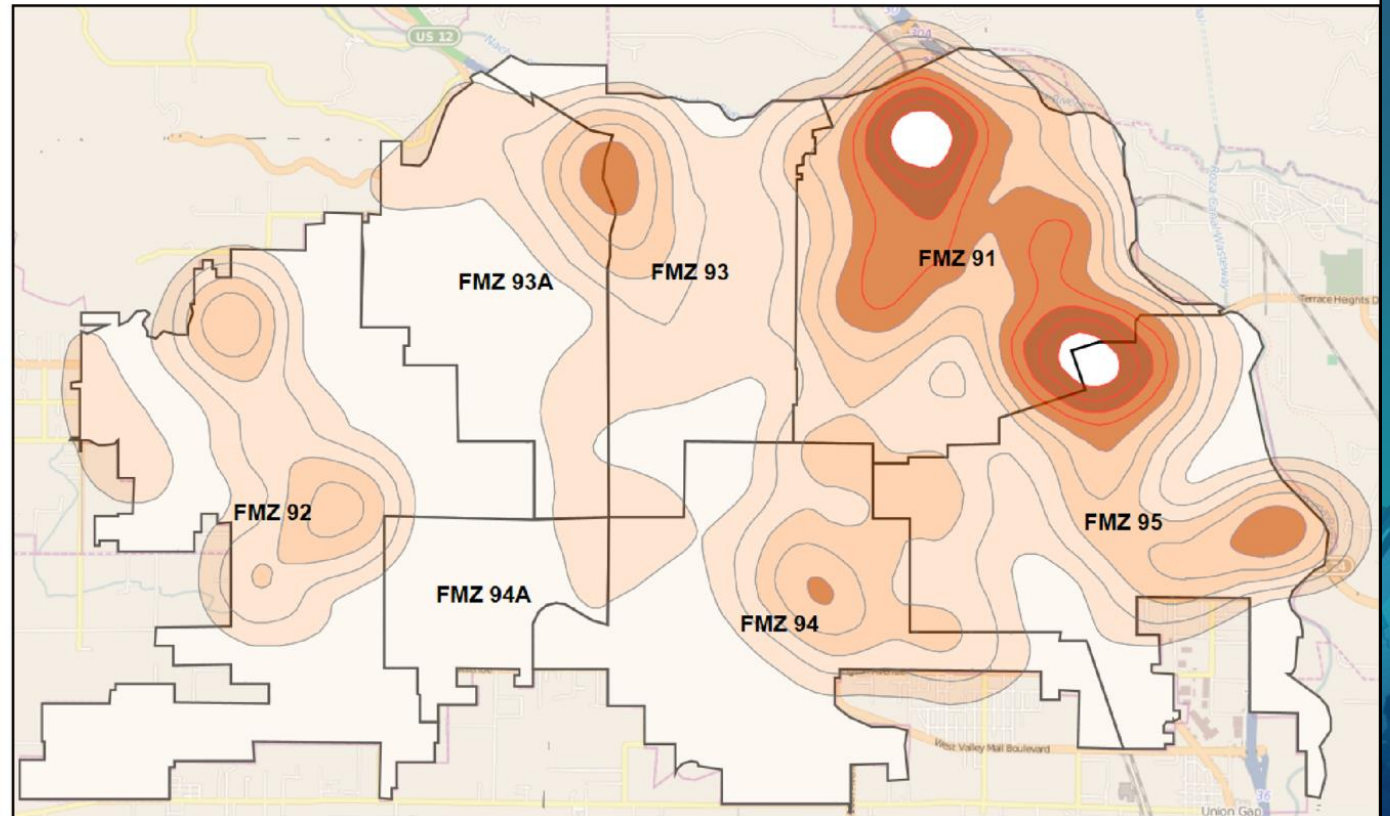
Wildland-Type Fires: 2009 - 2013

Legend

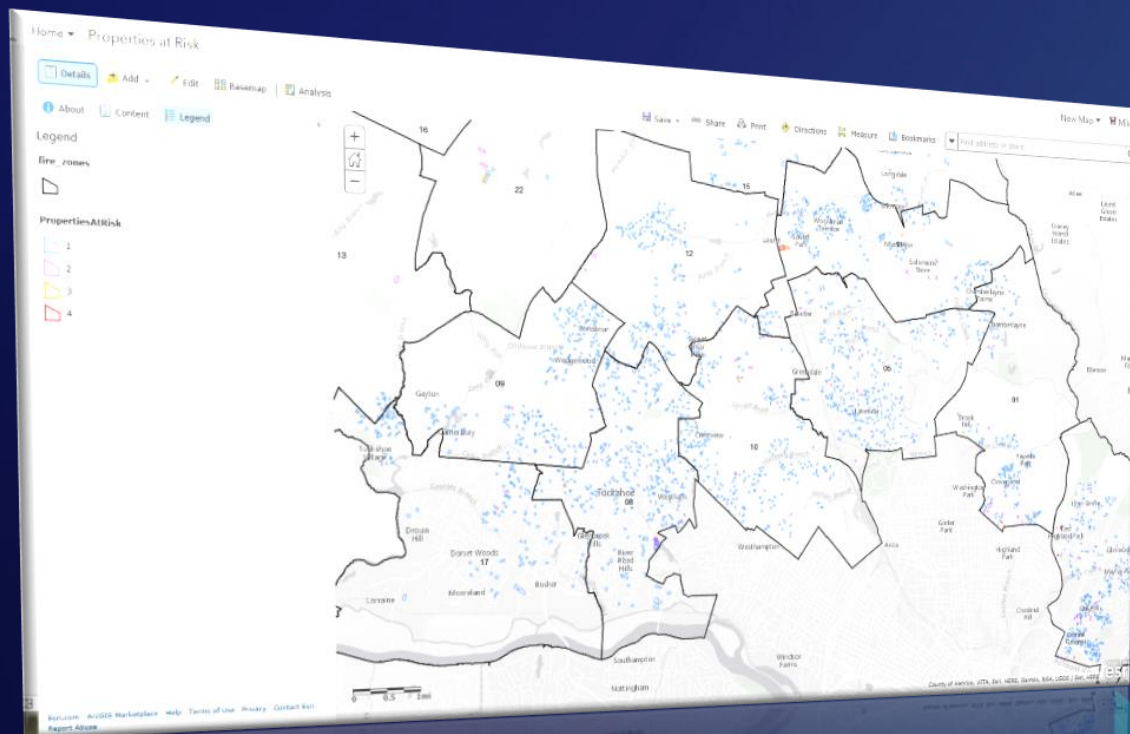
Density of Wildland Fires

- 0.5-1.5% of Wildland Fires
- 1.5-2.5% of Wildland Fires
- 3-4% of Wildland Fires
- 4-5% of Wildland Fires
- 5-6% of Wildland Fires

Fire Management Zones (FMZ)



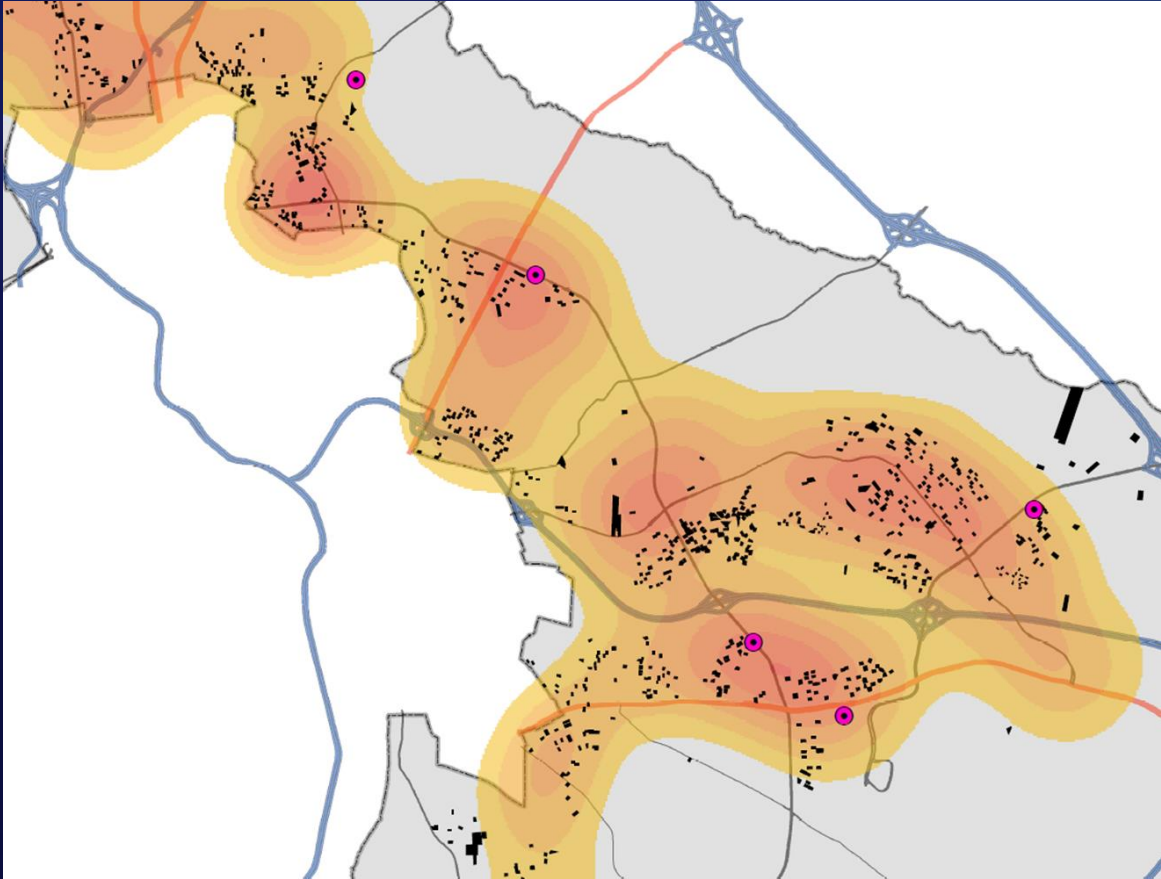
Leveraging GIS Community Risk Analysis



Engage
Residents Without a Working
Smoke Alarm

Leveraging GIS

Community Risk Analysis



All Tax Parcels



Less than \$45,000
household income



1980 or previous
construction date



Rental



1990 or previous
sale date



At Risk Property



Leveraging GIS

Community Risk Analysis

Smoke Alarm Initiative Project

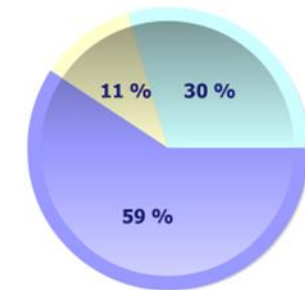
Weekly Report : 8/21/2017 to 8/27/2017

	Risk Assessment		Non Risk Assessment		Total	
	Last Week	YTD	Last Week	YTD	Last Week	YTD
# Addresses Visited	0	1,026	27	306	27	1,332
# Address with Smoke Alarm Install	0	231	16	152	16	383
# Smoke Alarm Installed		375	23	225	23	600
# Address with working Smoke Alarm (No Install)	0	77	0	35	0	112
# Entry Refused	0	197	3	31	3	228
# Visits with No Contact	0	508	8	78	8	586

Risk Assessment Address Visited Last Week: 0

Addresses Visited Last Week: 27

- Address with Smoke Alarm Install
- Address with working Smoke Alarm (No Install)
- Entry Refused
- Visits with No Contact



YTD Risk Assessment Validity





Demo

ArcGIS for CRR – Target Hazards

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Why Esri?

Location Platform Technology

- Enables quality, real-time location data collection, visualization, and analysis
- One version of the truth, always up to date- regardless of where you access it
- Leverages data you already have and makes it accessible across organization
- Named User security model controls access and federates to existing agency security framework
- Deploy in the cloud or on-premise
- Streamlines Inter-agency collaboration- Esri is already the choice of tens of thousands of public safety agencies worldwide

Configurable Apps

- Deliver operational plan maps in a role-appropriate form
- Apps are intuitive- minimal training required
- Apps for all devices- Desktop, Web, Mobile
- As needs evolves, technology goes with you:
 - Re-configure your apps
 - Configure new apps as new requirements emerge
 - No need to go back out to RFP to build another data silo

Next Steps

ArcGIS for Community Risk Reduction

- Thoughts On What You've Seen?
- Understanding Your Vision and other Need Areas

ArcGIS for CRR

A Location Strategy

Risk Assessment

- Available Data
- Web tools for analyzing incidents and community profile

Coordination with the Field

- Mobile Apps for viewing assignments and collecting data from the field
- Mobile data entry accessible anywhere

Stakeholder Communication

- Public-facing website for public information and updates



ArcGIS for Community Risk Reduction

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Manager

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References

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4. American Community Survey: <http://www.census.gov/acs/www/>
5. Oliver, D. (2011, November). *FireRescue Magazine*, 42-47
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7. American FactFinder:
<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>



THE
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