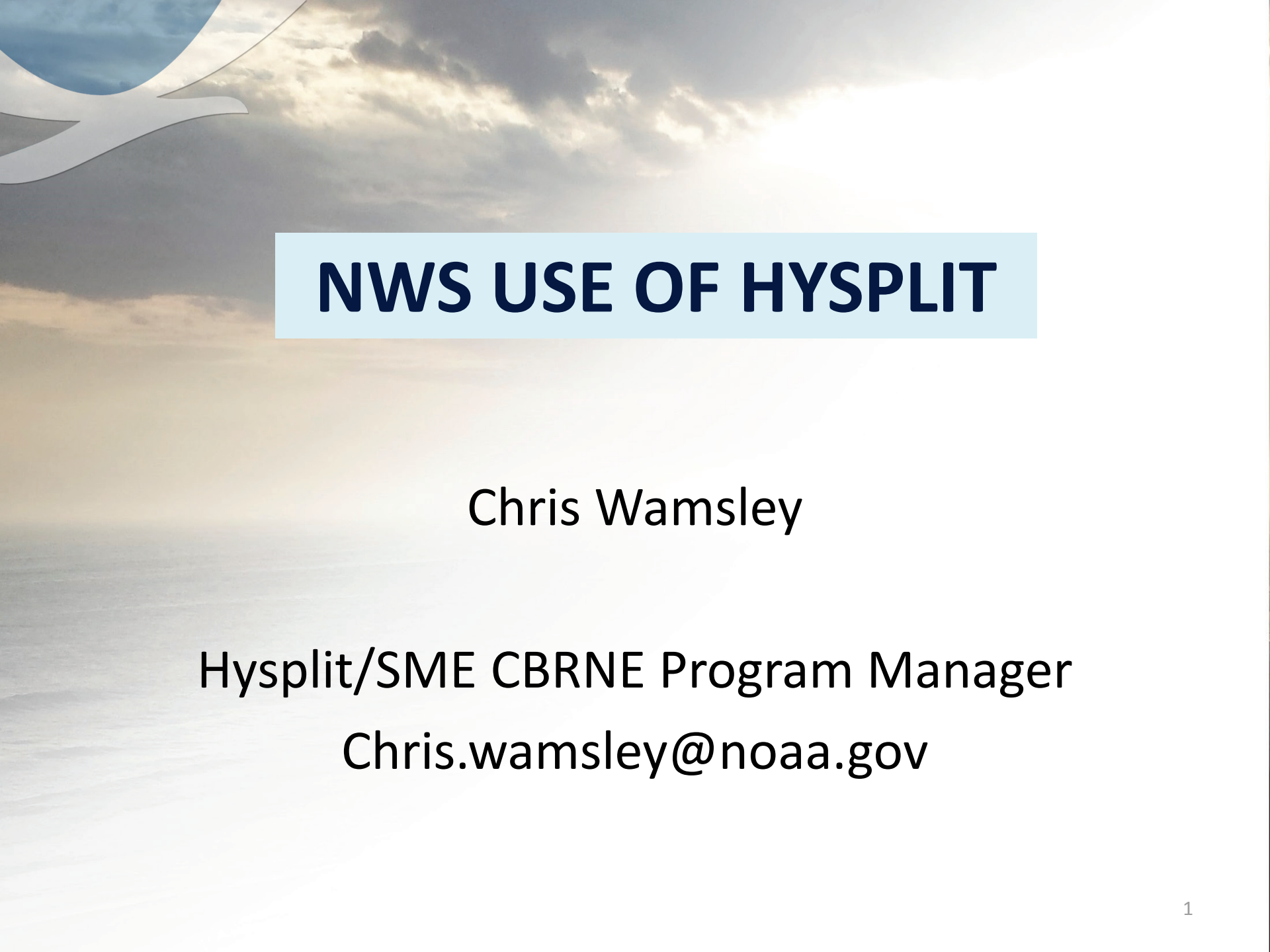




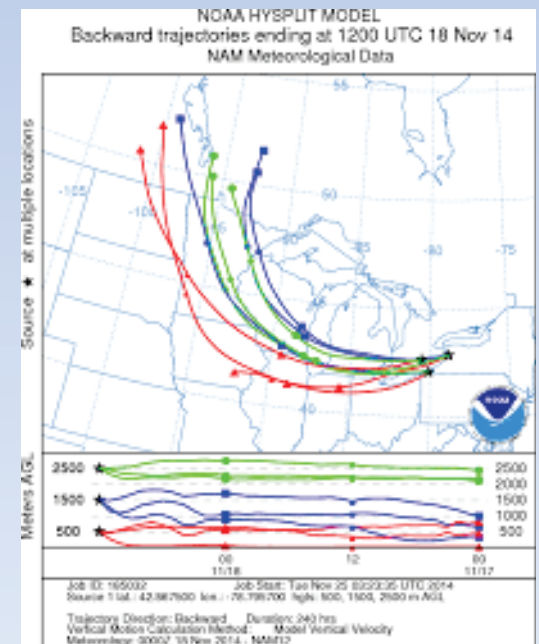
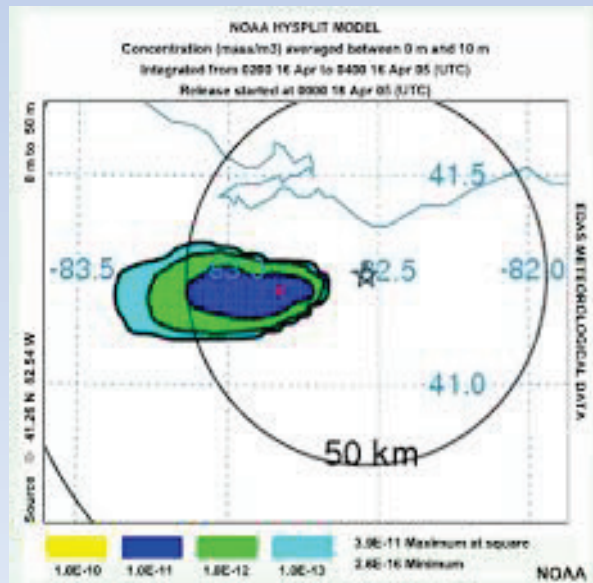
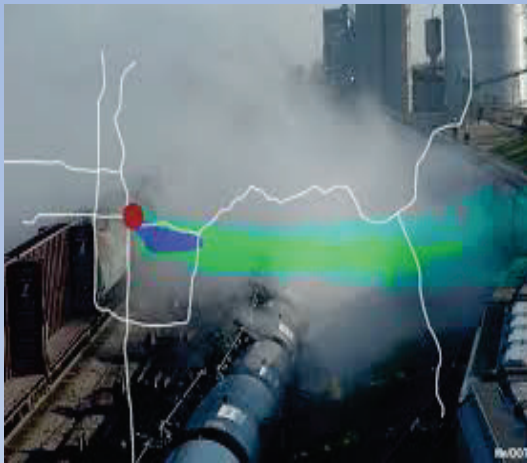
NWS USE OF HYSPLIT

Chris Wamsley

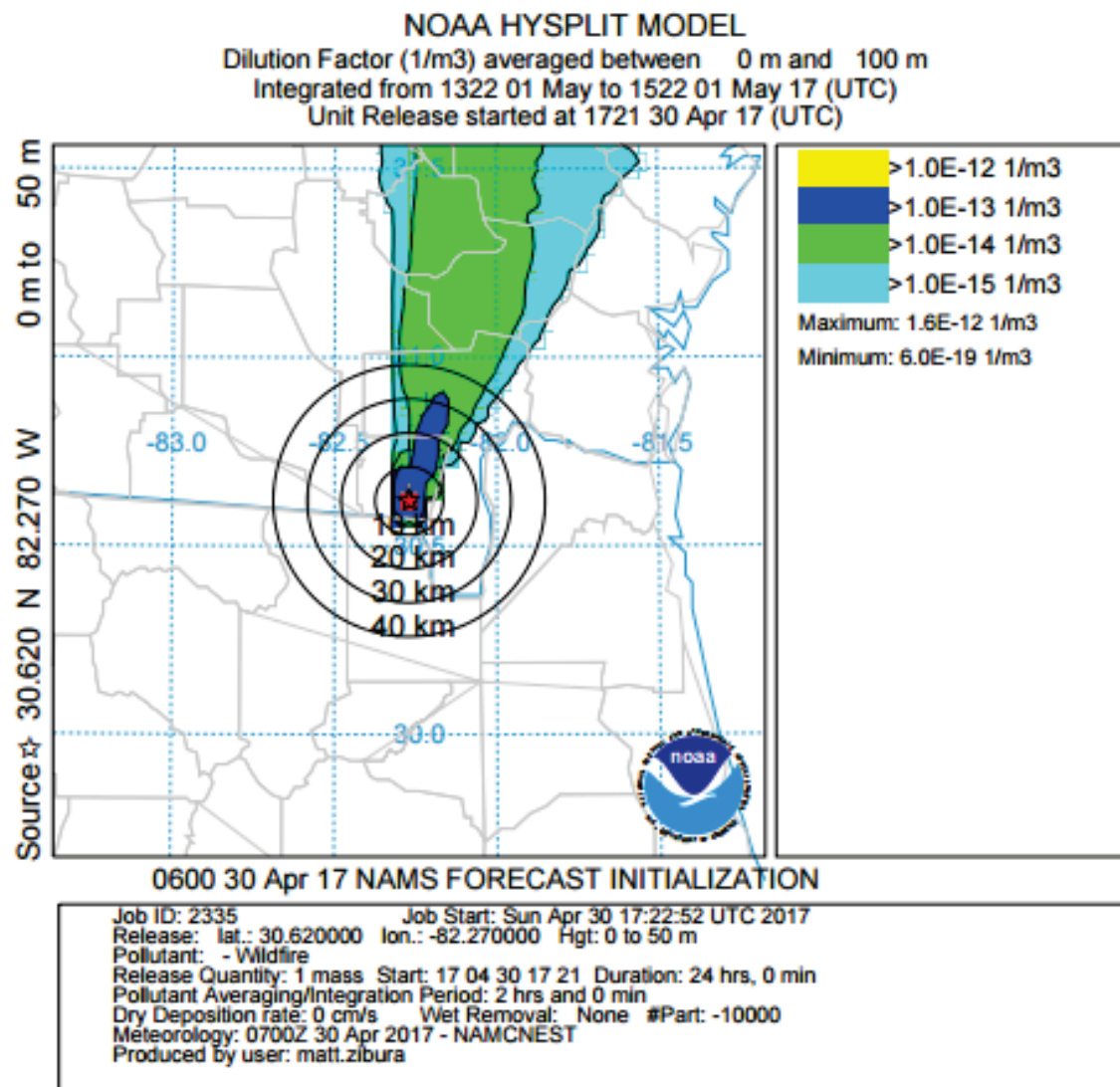
Hysplit/SME CBRNE Program Manager

Chris.wamsley@noaa.gov

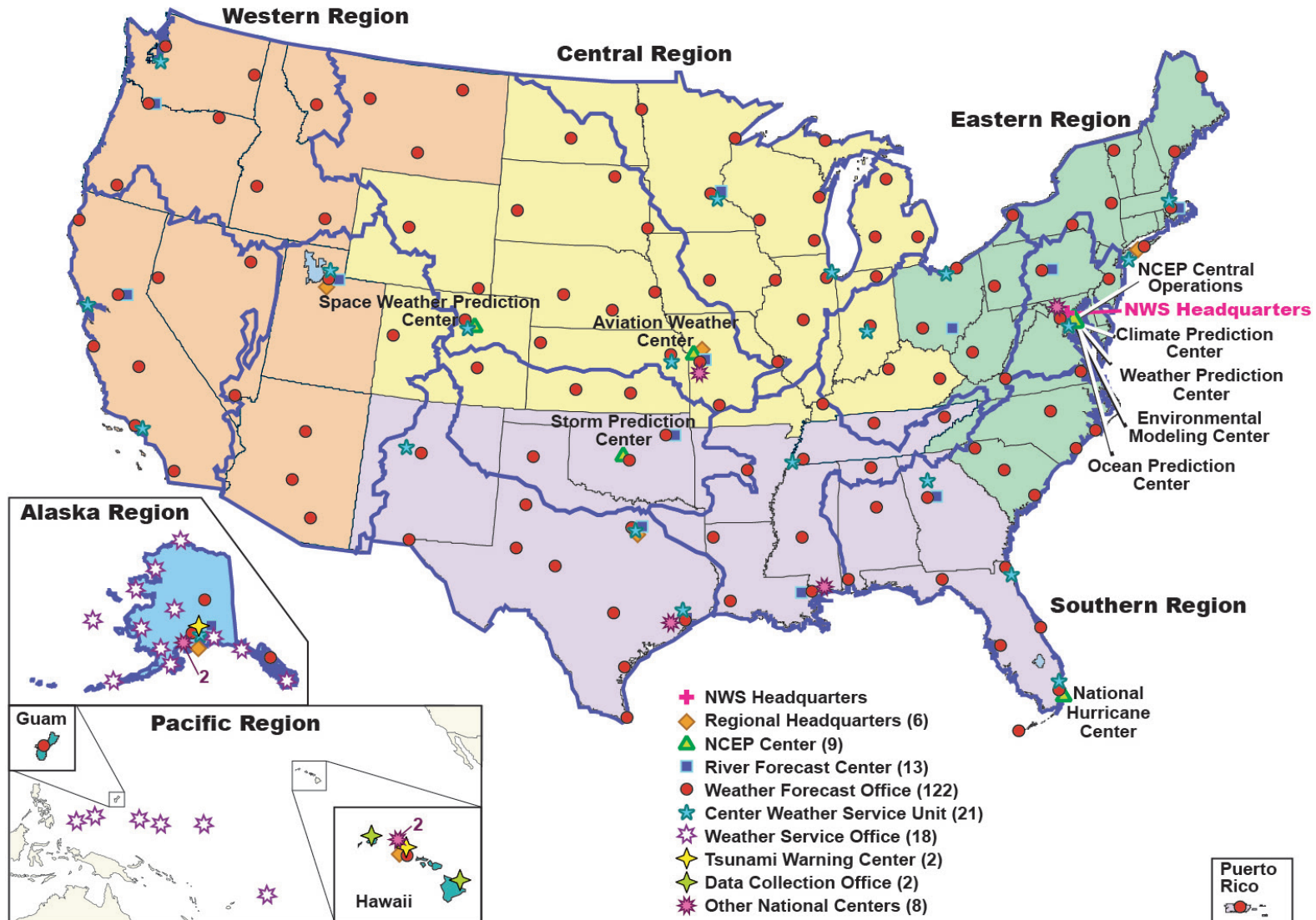
HYSPLIT



HYSPLIT Plume Animation



Practice...Practice...Practice

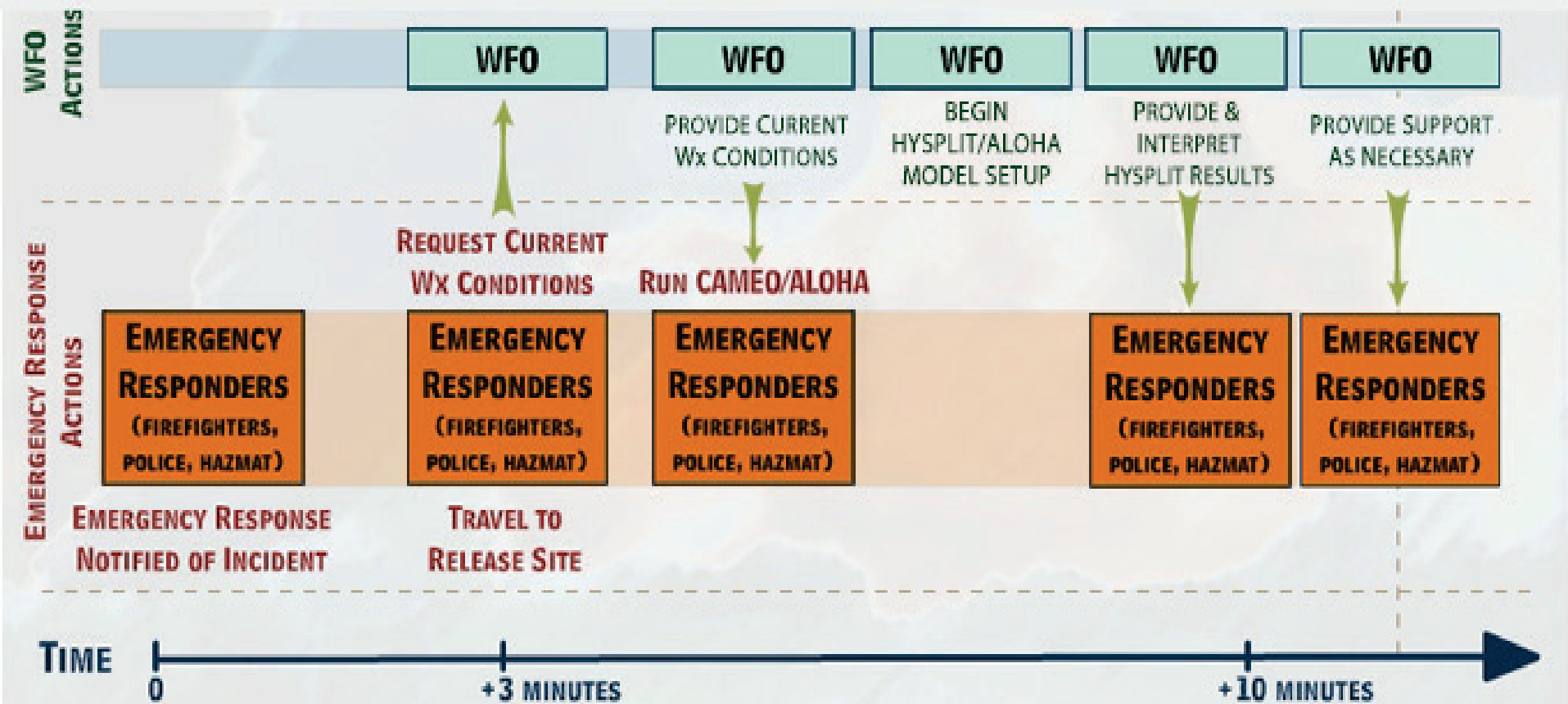


HYSPLIT Database – 90 days

18	06	04	15:46	26	1	Real_Event	Wildfire	conc		USER	NAMCNEST	17	06	04	15	30.574000	-82.323000	50	0	2
19	06	03	12:31	26	2	Exercise	Unspecified	conc	AMMONIA	AEGL	USER	17	06	06	12	40.076871	-83.549509	0.0	0	0
22	06	03	12:40	26	0	Exercise	Unspecified	conc	Mass	USER	USER	17	06	06	12	40.076871	-83.549509	50	0	3
23	06	03	17:24	26	1	Real_Event	Wildfire	conc		USER	NAMCNEST	17	06	03	17	30.574000	-82.323000	50	0	2
24	06	02	12:18	26	0	Exercise	Unspecified	conc		USER	RAP 20 km	17	06	02	14	41.144200	-100.829400	2	0	1
25	06	02	12:27	26	1	Exercise	Unspecified	conc	Unit	USER	RAP 20 km	17	06	02	14	41.144200	-100.829400	2	0	1
26	06	02	15:50	26	2	Exercise	Hazmat_Transportation	conc		USER	NAMCNEST	17	06	02	15	36.329825	-86.567658	50	0	0
27	06	02	17:10	26	3	Real_Event	Wildfire	conc		USER	NAMCNEST	17	06	02	17	30.574000	-82.323000	50	0	2
28	06	02	17:12	26	4	Exercise	Hazmat_Transportation	conc		USER	NAMCNEST	17	06	02	17	28.810400	-96.917600	50	0	1
29	06	02	17:48	26	0	Exercise	Hazmat_Transportation	conc		USER	USER	17	06	06	18	40.076871	-83.549508	50	0	0
30	06	02	17:54	26	6	Exercise	Unspecified	conc		USER	USER	17	06	06	12	40.076871	-83.549508	50	0	0
31	06	02	17:59	26	7	Exercise	Unspecified	conc		USER	USER	17	06	06	12	40.076871	-83.549508	50	0	0
32	06	02	18:12	26	8	Exercise	Unspecified	conc	AMMONIA	AEGL	USER	17	06	06	12	40.076871	-83.549508	0.0	0	0
35	06	01	16:50	26	7	Real_Event	Wildfire	conc		USER	NAMCNEST	17	06	01	16	30.594000	-82.102000	50	0	2
36	06	01	21:42	26	8	Exercise	Unspecified	conc		USER	NAMCNEST	17	06	01	21	31.660482	-110.669807	200	0	1
37	05	31	11:48	26	7	Exercise	Unspecified	conc	CHLORINE	AEGL	NAMCNEST	17	05	31	11	38.970900	-76.923300	0.0	0	0
38	05	31	12:01	26	8	Exercise	Unspecified	conc	CHLORINE	AEGL	NAMCNEST	17	05	31	11	38.970600	-76.923100	0.0	0	0
39	05	31	12:09	26	9	Exercise	Unspecified	conc	CHLORINE	AEGL	NAMCNEST	17	05	31	12	38.970700	-76.923000	0.0	0	0
40	05	31	12:21	26	0	Exercise	Unspecified	conc	CHLORINE	AEGL	NAMCNEST	17	05	31	12	38.970700	-76.923000	0.0	0	0
41	05	31	12:27	26	2	Exercise	Unspecified	conc	CHLORINE	AEGL	NAMCNEST	17	05	31	12	38.970700	-76.923000	0.0	0	0
43	05	31	12:31	26	3	Exercise	Hazmat_Radiation_IND	nuclear	IND	10 kt	NAMCNEST	17	05	31	12	38.809300	-77.004900	8200	0	0
44	05	31	14:21	26	4	Real_Event	Hazmat_Industrial	conc		USER	RAP 20 km	17	05	31	14	32.885000	-97.104000	50	0	0
45	05	31	14:30	26	6	Real_Event	Hazmat_Industrial	conc	Unit	USER	RAP 20 km	17	05	31	14	32.885000	-97.104000	50	0	0
46	05	31	14:43	26	6	Real_Event	Wildfire	conc		USER	NAMHUS	17	05	31	18	30.594000	-82.102000	100	0	2
47	05	30	00:56	26	4	Exercise	Wildfire	conc		USER	GFS	17	05	30	0	13.410000	144.750000	50	0	1
48	05	30	01:10	26	0	Exercise	Unspecified	conc		USER	GFS	17	05	30	1	13.362300	144.712300	300	0	0
49	05	30	15:50	11	392			traj			NAMCNEST	17	05	30	15	38.335600	-81.599700	500	0	0
50	05	30	15:54	11	906			traj			NAMCNEST	17	05	30	15	38.335600	-81.599700	500	0	0
51	05	30	17:16	26	6	Exercise	Hazmat_Transportation	conc	HYDROGEN FLUORIDE	AEGL	NAMCNEST	17	05	30	15	38.335600	-81.599700	0.0	0	0
52	05	29	10:37	26	2	Exercise	Unspecified	conc	CHLORINE	AEGL	RAP 20 km	17	05	29	10	41.140617	-100.766389	0.0	0	0
53	05	29	14:56	26	3	Exercise	Unspecified	conc	CHLORINE	AEGL	NAMCNEST	17	05	29	14	41.140617	-100.766389	0.0	0	0
54	05	28	00:18	26	7	Exercise	Unspecified	conc		USER	NAMCNEST	17	05	28	0	40.778000	-115.848400	50	0	0
55	05	28	00:31	26	8	Exercise	Unspecified	conc	CHLORINE	AEGL	NAMCNEST	17	05	28	0	40.778000	-115.848400	0.0	0	0
56	05	28	04:41	26	9	Exercise	Unspecified	conc		USER	RAP 20 km	17	05	28	04	41.53	-93.65	50	0	3

Response Time

Ideal Time-Response Diagram Showing WFO and Emergency Response Actions



What is IMAAC



- **The Interagency Modeling and Atmospheric Assessment Center (IMAAC) coordinates and disseminates Federal atmospheric dispersion modeling and hazard prediction products.**
- These products provide the Federal position during actual or potential incidents involving hazardous material releases.
- **Department of Defense (DoD)**
 - **Defense Threat Reduction Agency**
- **Department of Energy/National Nuclear Security Administration (DOE/NNSA)**
 - **National Atmospheric Release Advisory Center (NARAC)**
- **Department of Health and Human Services (HHS)**
- **Environmental Protection Agency (EPA)**
- **National Aeronautics and Space Administration (NASA)**
- **National Oceanic and Atmospheric Administration (NOAA)**
- **Nuclear Regulatory Commission (NRC)**

Things to think about

- **When does the NWS run the model**
- **When do we notify of a real/major event**
- **How do we notify**
 - **Local Scale**
 - **Informing on a National Scale (SDM, FEMA, IMAAC)**
 - **Communication up the chain in the NWS**
- **How does IMAAC get the WFO's phone #**
- **Which WFO is in charge, especially in an evacuation (Backup or one not affected)**

IDSS: Chemical Spill in Kansas

Salina, KS

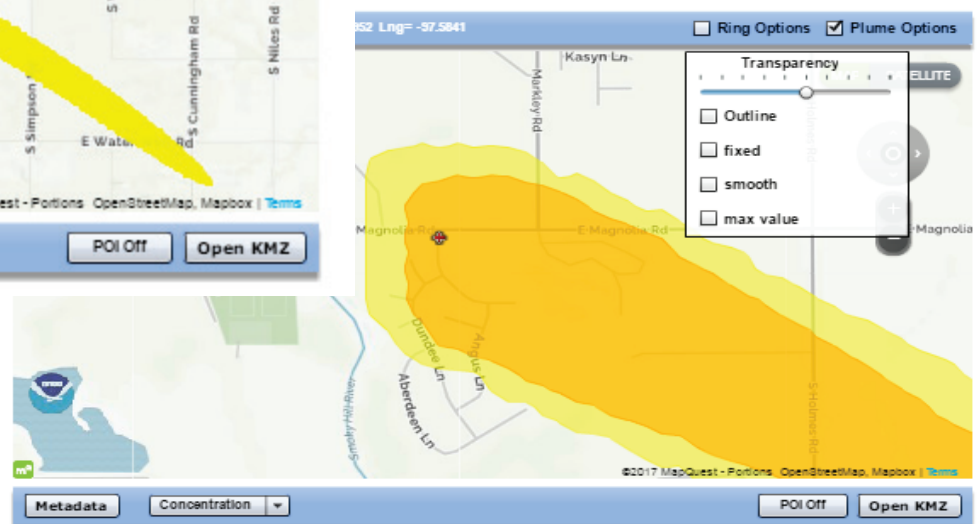
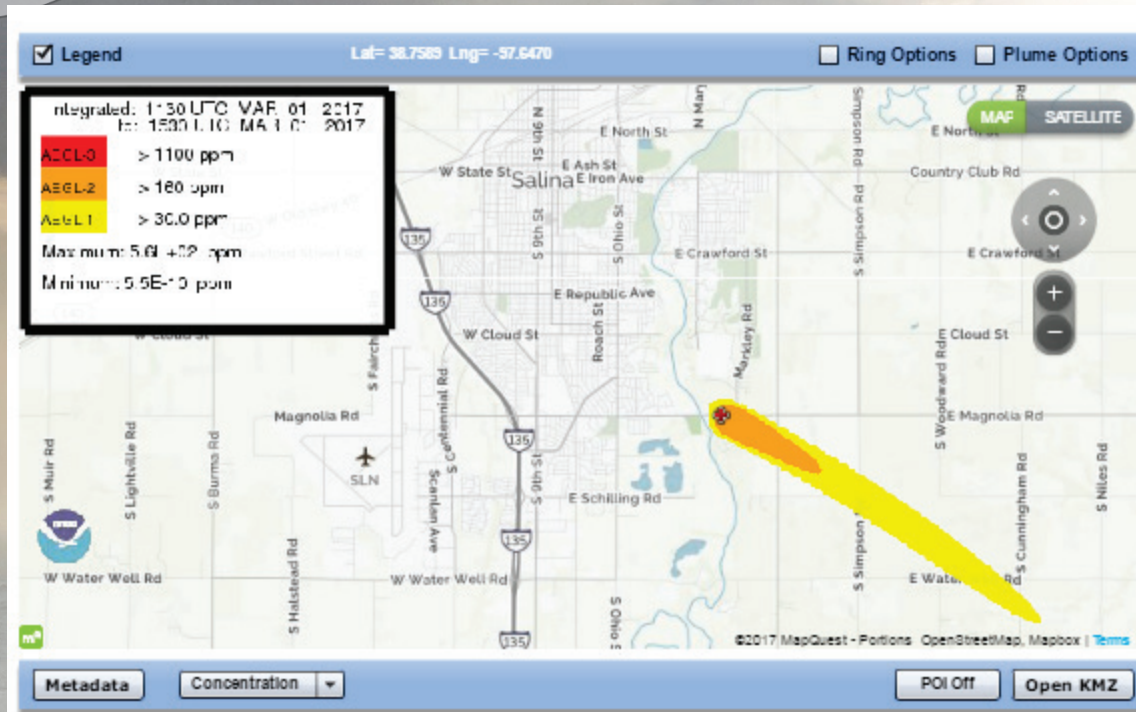
- 5000 gallon ammonia leaked from of an industrial building Wednesday morning.
- The Fox Run area was evacuated, and businesses in the area were closed.
- Unified School District 305 officials closed Schilling Elementary School for the day.

WFO Wichita

- Issued a Spot Forecast including HYSPLIT, and provided a verbal briefing to EMs.



Salina, KS - HYSPLIT Output



MORE RESULTS		Click on text link or dropdown menu to view images in a new window.			
		GIF Plots	PDF Plots	Google Earth	Flash Maps
Primary Concentration Grid		.gif	.pdf	.kmz	.kmz

IDSS – Refinery Fire

Power outage at Valero Refinery in Corpus Christi resulted in major flare event Monday

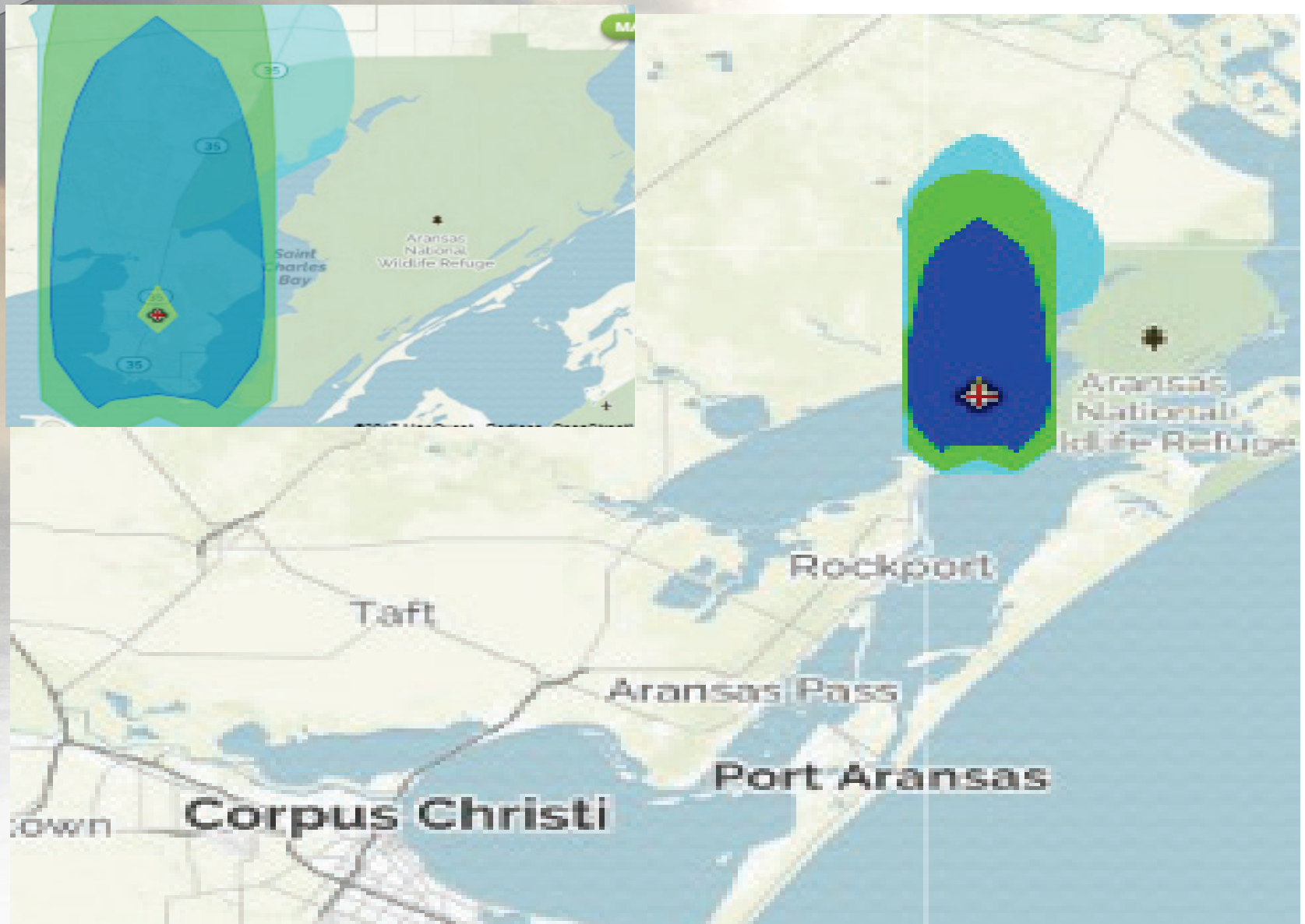
- Thick clouds of black smoke were dispersed for several hours
- This incident occurred just a few miles from the NWS office
- Shelter in place was issued for several schools in the vicinity of the refinery

WFO Corpus Christi

- Provided a Hysplit model run to the City of Corpus Christi's Office of Emergency Management.
- Clear skies and dry west winds were observed throughout the day.



HYSPLIT Run – Refinery Fire



Impacts - Wildfire

Hutchinson, Kansas

- A wildfire began Saturday afternoon and continues to burn as of Sunday evening.
 - Officials indicate approximately 1,200 acres have burned.
 - The Highlands neighborhood has been evacuated.
 - At least 2 outbuildings have been lost.
- Reno County declared a state of emergency allowing them to request resources from the state of Kansas.

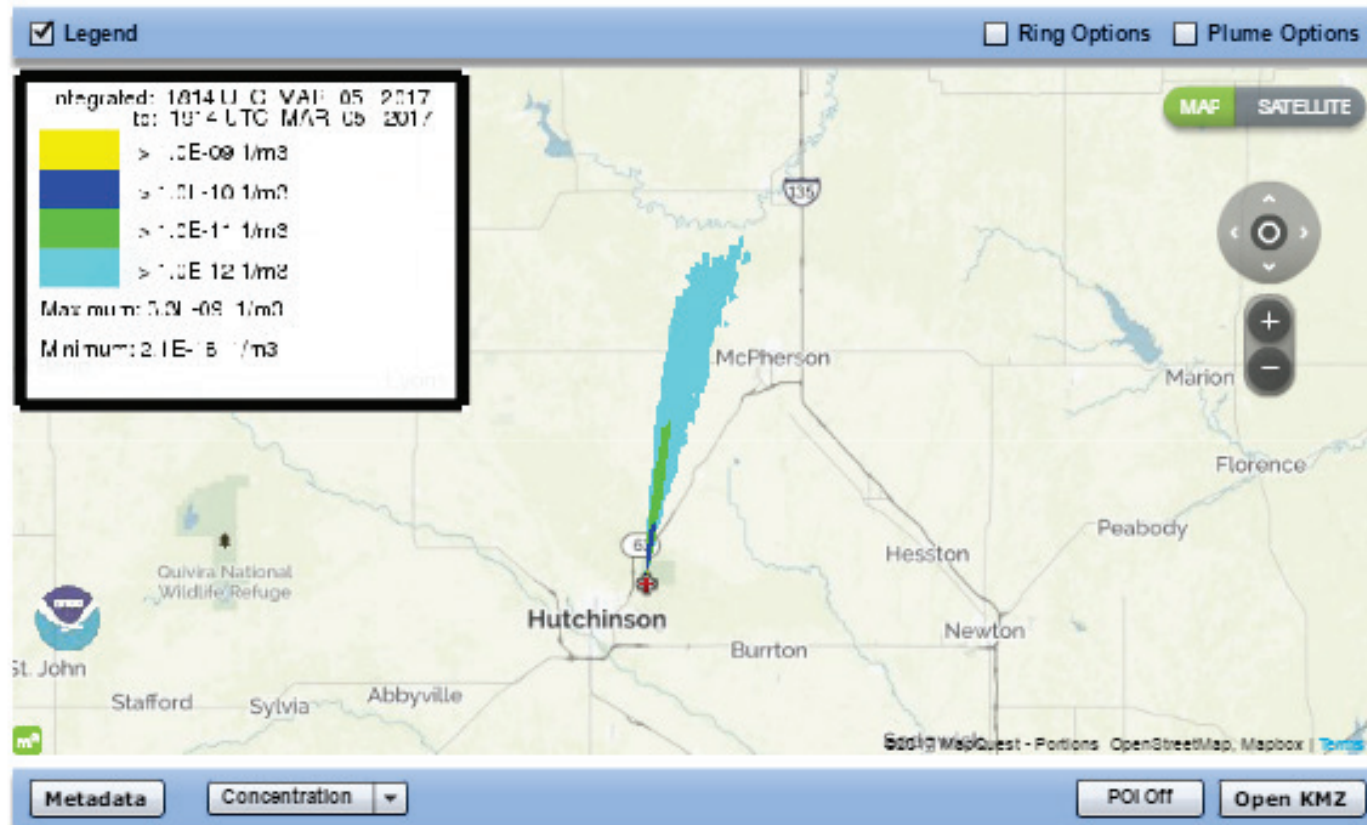


WFO Wichita

- The WFO provided both a Spot Forecast and a HYSPLIT run for local officials.
- The WFO had been advertising very high to extreme Grassland Fire Danger Index values for the past several days.
- A Red Flag Warning is in place today as continued extreme fire conditions are expected.



Hutchinson, KS - HYSPLIT Output



- “I’ve been in this business for going on 24 years, and I have never seen such an amazing collective effort,” Jeff Deal (Fire Chief for City of McPherson said. “From fire, law enforcement, EMS, community — all the agencies that have come into play have been amazing.”

IDSS – Southern Region

- WFO Houston is providing on-site IDSS in support of emergency preparedness and response at the Houston EOC for upcoming Super Bowl preparations.
- WFO Melbourne provided forecast support and HYSPLIT runs to Emergency Managers for the 2017 NFL Pro Bowl and Daytona Motor Speedway this past weekend.



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