A Supplemental Report on Emergency Communications and Their Utilization

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This is a supplemental report to *A Report on Emergency Communications and Their Utilization* (SAO Report No. 23-007). This supplemental report contains detailed results for all survey questions for the 1,032 entities who responded to the survey. In addition, the information for each emergency is available in an interactive dashboard at https://sao.texas.gov/Reports/DataVisualizations/23-007Interactive.html. The results are broken down by entity type for each question. The entity types were:

- Counties,
- Independent school districts (ISDs),
- Municipalities,
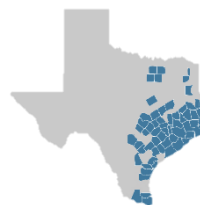- Special purpose districts (SPDs), and
- Utilities.

This survey was conducted to address the requirements in Rider X, page III-262, the General Appropriations Act (87th Legislature).
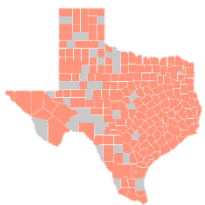
EMERGENCY COMMUNICATIONS
Survey results to questions related to entities' overall emergency communications capabilities, methods, and gaps in that communication.
Starting on Page 3.

HURRICANE HARVEY
Survey results to questions related to entities' emergency communications usage during Hurricane Harvey.
Starting on Page 35.

HURRICANE IMELDA
Survey results to questions related to entities' emergency communications usage during Hurricane Imelda.
Starting on Page 59.
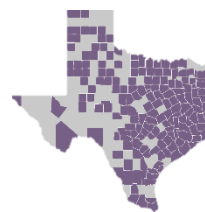
WINTER STORM URI
Survey results to questions related to entities' emergency communications usage during Winter Storm Uri.
Starting on Page 83.

For more information about this audit, contact Audit Manager Hillary Eckford or State Auditor Lisa Collier at 512-936-9500.

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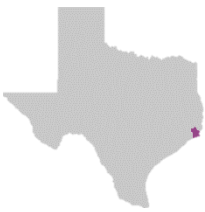
ODESSA SHOOTING

Survey results to questions related to entities' emergency communications usage during the Odessa Shooting.
Starting on Page 107.

INTERCONTINENTAL TERMINALS COMPANY DEER PARK FIRE

Survey results to questions related to entities' emergency communications usage during the Intercontinental Terminals Company Deer Park Fire.
Starting on Page 116.

THE TEXAS PETROCHEMICALS GROUP PORT NECHES PLANT FIRE

Survey results to questions related to entities' emergency communications usage during Texas Petrochemicals Group Port Neches Plant Fire.
Starting on Page 137.

This supplemental report presents the detailed results of all survey questions for:

- Counties,
- Independent school districts (ISDs),
- Municipalities,
- Special purpose districts (SPDs), and
- Utilities.

See text box for more information about SPDs and utilities.

Entity Types

Special purpose districts provide a variety of services including water conservation, toll roads, hospitals, libraries, utilities, and fire control efforts.

Utilities for this report refers to:

- Public water systems,
- Gas distribution utilities, and
- Electric utilities, including investor-owned providers, transmission and distribution providers, municipality-owned providers, and cooperatives.

Sources: The Office of the Comptroller of Public Accounts, the Railroad Commission, the Commission on Environmental Quality, and the Public Utility Commission of Texas.

Emergency Communications Questions

Emergency Management Planning

Figure 1

Question 1 – Does your entity have a documented emergency management plan that includes information about how to communicate with constituents in the event of an emergency?

	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
Response	51 Responses	329 Responses	127 Responses	204 Responses	176 Responses
Yes	98%	98%	83%	56%	84%
No	2%	2%	17%	44%	16%

Respondents who answered Yes to Question 1 were asked a follow-up question (Question 1-A), which is presented in Figure 2.

Figure 2

Question 1-A – What types of emergencies does your emergency management plan cover? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	50 Responses	322 Responses	103 Responses	106 Responses	146 Responses
Active shooter	56%	95%	43%	25%	17%
Cyber attacks	44%	53%	36%	28%	62%
Drought	66%	20%	65%	66%	76%
Extended utility outages	64%	58%	69%	70%	92%
Fire	92%	94%	76%	43%	68%
Hurricane or other tropical weather events	56%	55%	50%	56%	59%
Hazardous spill	84%	87%	64%	38%	23%
Public health emergency	96%	87%	67%	60%	77%
Public safety or civil unrest	74%	57%	51%	25%	20%
Severe weather events	94%	94%	88%	78%	80%
Transportation infrastructure	54%	52%	41%	19%	15%
Other[b]	12%	3%	5%	5%	1%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] Other responses did not directly address the question. For example, responses indicating that their plans covered "All" disasters or a response of "None" were classified as other.

Respondents who answered No to Question 1 were asked a follow-up question (Question 1-B), which is presented in Figure 3.

Figure 3

Question 1-B – How does your entity plan for communications with constituents in the event of an emergency? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	5 Responses	20 Responses	75 Responses	25 Responses
Direct communication	1	3	10	30	23
Rely on other entities	-	1	8	41	1
No communication plans	-	1	1	2	1
Unresponsive[a]	-	-	1	2	-

[a] Unresponsive responses did not directly address the question. For example, responses such as "N/A" were classified as unresponsive.

Communication Methods

Figure 4

Question 2 – What emergency communication method(s) does your entity use to communicate with constituents? ª

Responseᵇ	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	51 Responses	336 Responses	131 Responses	201 Responses	175 Responses
Mass notification landline	73%	62%	47%	22%	21%
Mass notification cellular	76%	73%	52%	26%	27%
SMS/text	80%	92%	57%	44%	70%
Traditional media	61%	68%	49%	34%	34%
Social media	86%	93%	73%	41%	71%
Email	51%	88%	46%	47%	62%
Entity website	63%	85%	58%	56%	76%
Other web-based apps	14%	35%	14%	8%	7%
Two-way radio	57%	42%	27%	14%	10%
Weather radio	49%	9%	16%	3%	2%
Amateur radio	41%	-	17%	4%	3%
Emergency alert system (IPAWS)	59%	6%	21%	8%	7%
Public address speakers/sirens	35%	30%	33%	9%	10%
Digital signage	18%	29%	19%	5%	5%
Route notification	57%	15%	37%	25%	52%
Word of mouth	57%	45%	54%	28%	38%
Signage	-	-	1%	2%	29%
Rely on other entities	-	1%	4%	8%	1%

ª Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

ᵇ Less than 1 percent of entities responded with U.S. mail , phone trees, and video phone. In addition, 25 entities responded that they did not issue emergency communications.

Respondents who answered in Question 2 that they used a communication method to issue emergency communication were asked a follow up question (Question 3). The responses by entity type are presented on the following pages, starting with Figure 5.

Figure 5

Question 3 (Counties) - Do your emergency communication methods measure the percentage of constituents reached? [a]

Counties (51 Responses)	Yes, the actual percentage is measured through an emergency management system	Yes, the actual percentage of constituents is captured through alternative methods	Yes, an approximation is measured	No
Mass notification landline	41%	8%	8%	16%
Mass notification cellular	41%	6%	10%	20%
SMS/text	37%	8%	18%	16%
Traditional media	6%	-	14%	35%
Social media	10%	6%	29%	35%
Email	14%	6%	14%	16%
Entity website	4%	4%	16%	33%
Other web-based apps	2%	-	4%	4%
Two-way radio	2%	4%	10%	39%
Weather radio	-	2%	8%	37%
Amateur radio	4%	-	6%	29%
Emergency alert system (IPAWS)	16%	8%	14%	18%
Public address speakers/sirens	2%	-	10%	24%
Digital signage	-	-	4%	12%
Route notification	2%	8%	24%	24%
Word of mouth	-	4%	10%	39%
Other	-	2%	-	2%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 6

Question 3 (ISDs) - Do your emergency communication methods measure the percentage of constituents reached? [a]

Independent School Districts (330 Responses)	Yes, the actual percentage is measured through an emergency management system	Yes, the actual percentage of constituents is captured through alternative methods	Yes, an approximation is measured	No
Mass notification landline	28%	8%	13%	12%
Mass notification cellular	35%	8%	15%	13%
SMS/text	38%	11%	16%	26%
Traditional media	4%	2%	11%	48%
Social media	9%	9%	28%	44%
Email	31%	12%	17%	26%
Entity website	8%	7%	14%	52%
Other web-based apps	9%	5%	7%	11%
Two-way radio	1%	1%	5%	32%
Weather radio	-	-	-	8%
Amateur radio	-	-	-	-
Emergency alert system (IPAWS)	1%	-	2%	2%
Public address speakers/sirens	1%	-	4%	22%
Digital signage	-	1%	2%	26%
Route notification	1%	1%	7%	6%
Word of mouth	1%	2%	7%	35%
Other	2%	1%	2%	2%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 7

Question 3 (Municipalities) - Do your emergency communication methods measure the percentage of constituents reached? [a]

Municipalities (125 Responses)	Yes, the actual percentage is measured through an emergency management system	Yes, the actual percentage of constituents is captured through alternative methods	Yes, an approximation is measured	No
Mass notification landline	21%	6%	12%	10%
Mass notification cellular	22%	9%	10%	11%
SMS/text	20%	6%	16%	16%
Traditional media	1%	6%	6%	32%
Social media	7%	12%	22%	29%
Email	10%	6%	11%	19%
Entity website	5%	6%	13%	33%
Other web-based apps	2%	2%	3%	4%
Two-way radio	2%	1%	4%	22%
Weather radio	1%	-	2%	14%
Amateur radio	-	2%	2%	14%
Emergency alert system (IPAWS)	4%	2%	3%	11%
Public address speakers/sirens	1%	2%	6%	23%
Digital signage	-	2%	3%	14%
Route notification	4%	6%	14%	12%
Word of mouth	2%	2%	14%	38%
Other	2%	1%	4%	2%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 8

Question 3 (SPDs) - Do your emergency communication methods measure the percentage of constituents reached? [a]

Special Purpose Districts (183 Responses)	Yes, the actual percentage is measured through an emergency management system	Yes, the actual percentage of constituents is captured through alternative methods	Yes, an approximation is measured	No
Mass notification landline	8%	3%	6%	6%
Mass notification cellular	9%	3%	5%	8%
SMS/text	19%	5%	9%	15%
Traditional media	1%	1%	7%	26%
Social media	3%	4%	13%	23%
Email	16%	6%	11%	16%
Entity website	9%	4%	14%	31%
Other web-based apps	-	1%	3%	3%
Two-way radio	2%	1%	2%	11%
Weather radio	1%	-	1%	2%
Amateur radio	-	-	-	5%
Emergency alert system (IPAWS)	1%	1%	3%	4%
Public address speakers/sirens	1%	-	2%	8%
Digital signage	-	-	2%	4%
Route notification	1%	7%	9%	10%
Word of mouth	1%	2%	10%	17%
Other	1%	2%	1%	13%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 9

Question 3 (Utilities) - Do your emergency communication methods measure the percentage of constituents reached? [a]

Utilities (170 Responses)	Yes, the actual percentage is measured through an emergency management system	Yes, the actual percentage of constituents is captured through alternative methods	Yes, an approximation is measured	No
Mass notification landline	9%	2%	4%	5%
Mass notification cellular	10%	2%	8%	5%
SMS/text	12%	5%	11%	44%
Traditional media	2%	2%	7%	21%
Social media	2%	8%	15%	48%
Email	8%	8%	6%	41%
Entity website	3%	8%	9%	56%
Other web-based apps	1%	1%	1%	3%
Two-way radio	1%	-	1%	8%
Weather radio	-	-	1%	1%
Amateur radio	-	-	1%	2%
Emergency alert system (IPAWS)	2%	1%	1%	2%
Public address speakers/sirens	-	-	2%	8%
Digital signage	-	-	1%	4%
Route notification	3%	2%	9%	36%
Word of mouth	1%	3%	6%	29%
Other	1%	1%	3%	32%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 10

Question 4 – Does your entity use an emergency notification system or tools to communicate with constituents?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	49 Responses	331 Responses	129 Responses	202 Responses	176 Responses
Yes	84%	92%	66%	42%	57%
No	16%	8%	34%	58%	43%

Respondents who answered yes to Question 4 were asked a follow up question (Question 4-A). The responses are presented in Figure 11.

Figure 11

Question 4-A – Please name the system or tool and the manufacturer or vendor.[a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	41 Responses	296 Responses	82 Responses	78 Responses	99 Responses
School Messenger	-	72	-	-	1
Blackboard	1	38	5	9	2
Code Red	14	1	17	6	9
Remind	-	41	-	-	-
Apptegy	-	25	-	-	-
Everbridge	8	-	6	7	3
Skyward	-	18	-	-	-
Raptor	-	17	-	-	-
Reverse 911	5	-	2	3	3
OffCinco	-	-	-	12	-
Parent Square	-	11	-	-	-
Gabbart	-	8	-	-	-
Rave Alert	1	1	4	1	1
E-Notes	-	7	-	-	-
Hyper Reach	3	1	2	-	1

Question 4-A – Please name the system or tool and the manufacturer or vendor.[a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	41 Responses	296 Responses	82 Responses	78 Responses	99 Responses
Swift	1	3	2	1	-
School Reach	-	6	-	-	-
CrisisGo	-	5	-	-	-
Edlio	-	5	-	-	-

[a] Entities could respond with multiple systems. Respondents identified 96 different systems or tools as responses; this figure summarizes the totals for only the 19 emergency notification systems or tools that had 5 or more responses. Additional responses that did not specify a system or tool were not included in the results presented above.

Figure 12

Question 5 – Does your entity have a backup process in place if your emergency notification system or tools are inoperable? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	39 Responses	297 Responses	83 Responses	81 Responses	100 Responses
Yes	49%	41%	53%	53%	72%
No	51%	59%	47%	47%	28%

[a] For example, if cell towers are inoperable, power is out for an extended period, internet service is unavailable, and other issues.

Respondents who answered Yes to Question 5 were asked a follow up question (Question 5-A), which is presented in Figure 13 on the next page.

Figure 13

Question 5-A – Please describe the backups/redundancies that your entity has put into place. [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	19 Responses	119 Responses	44 Responses	42 Responses	72 Responses
Two-way radio	21%	38%	18%	17%	4%
Physical signage	5%	2%	5%	10%	67%
Traditional media	5%	19%	7%	5%	6%
Mass notification cellular	11%	10%	16%	17%	3%
Social media	-	16%	11%	5%	3%
Other web-based apps	-	16%	7%	7%	1%
Mass notification landline	-	11%	7%	19%	3%
Public address speakers/sirens	21%	3%	20%	10%	7%
Route notification	21%	1%	5%	12%	6%
Word of mouth	16%	3%	5%	12%	3%
Entity website	-	7%	2%	2%	1%
Email	5%	6%	2%	-	1%
Amateur radio	5%	-	14%	2%	1%
Phone tree	-	3%	-	7%	-
SMS/text	-	2%	2%	-	-
Emergency alert system (IPAWS)	-	-	7%	-	-
Digital signage	5%	-	-	-	-
Weather radio	-	-	2%	-	-
Other [b]	11%	13%	32%	19%	4%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] Other responses included backups that are not communication methods (for example, generators) or unique responses that could not be categorized.

Respondents who answered No to Question 5 were asked a follow-up question (Question 5-B), which is presented in Figure 14.

Figure 14

Question 5-B – What redundancies/backups have your entity implemented for times when the chosen communication method is unavailable or ineffective? [a]

Response [b]	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	5 Responses	22 Responses	33 Responses	84 Responses	58 Responses
Route notification	-	-	12%	10%	34%
Rely on other entities	-	14%	33%	15%	3%
Physical signage	-	-	-	10%	22%
Two-way radio	20%	9%	18%	6%	9%
Word of mouth	20%	5%	3%	5%	12%
Traditional media	20%	9%	3%	4%	10%
Mass notification cellular	-	9%	-	2%	14%
Mass notification landline	-	14%	3%	5%	3%
Public address speakers/sirens	20%	-	12%	4%	2%
Social media	-	9%	3%	2%	5%
Email	-	5%	6%	2%	5%
Other web-based apps	-	14%	3%	2%	2%
SMS/text	-	5%	3%	1%	7%
Entity website	-	-	3%	2%	2%
Amateur radio	-	-	3%	1%	-
Emergency alert system (IPAWS)	-	-	3%	-	-
Digital signage	-	5%	-	-	-
Weather radio	-	-	3%	-	-
No backups	60%	36%	21%	46%	12%

[a] For example, if cell towers are inoperable, power is out for an extended period, internet service is unavailable, and other issues.

[b] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 15

Question 6 (Counties) - How are contacts signed up to receive notifications from the different emergency communication methods? [a]

Counties (51 Responses)	Automatically Included	Opt In	Opt Out	Other	Not applicable
Mass notification landline	16%	55%	-	-	2%
Mass notification cellular	8%	67%	-	-	2%
SMS/text	6%	71%	-	-	4%
Traditional media	8%	18%	-	4%	27%
Social media	6%	57%	-	6%	12%
Email	6%	31%	-	2%	10%
Entity website	4%	22%	-	2%	25%
Other web-based apps	-	4%	-	-	4%
Two-way radio	12%	6%	-	4%	31%
Weather radio	6%	20%	-	-	20%
Amateur radio	-	16%	-	2%	20%
Emergency alert system (IPAWS)	29%	14%	2%	-	10%
Public address speakers/sirens	10%	4%	-	4%	18%
Digital signage	-	-	-	-	16%
Route notification	8%	2%	-	6%	39%
Word of mouth	4%	2%	-	4%	39%
Other	-	2%	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 16

Question 6 (ISDs) - How are contacts signed up to receive notifications from the different emergency communication methods? [a]

Independent School Districts (334 Responses)	Automatically Included	Opt In	Opt Out	Other	Not applicable
Mass notification landline	43%	10%	6%	-	1%
Mass notification cellular	45%	16%	7%	1%	2%
SMS/text	40%	40%	9%	-	2%
Traditional media	13%	19%	1%	2%	31%
Social media	16%	54%	1%	2%	16%
Email	48%	28%	6%	1%	4%
Entity website	19%	29%	1%	3%	30%
Other web-based apps	9%	16%	1%	-	4%
Two-way radio	6%	3%	-	3%	27%
Weather radio	1%	-	-	1%	7%
Amateur radio	-	-	-	-	-
Emergency alert system (IPAWS)	3%	1%	-	-	1%
Public address speakers/sirens	10%	2%	-	-	16%
Digital signage	7%	3%	-	1%	17%
Route notification	5%	1%	-	-	7%
Word of mouth	9%	6%	-	2%	26%
Other	3%	2%	-	-	1%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 17

Question 6 (Municipalities) - How are contacts signed up to receive notifications from the different emergency communication methods? [a]

Municipalities (126 Responses)	Automatically Included	Opt In	Opt Out	Other	Not applicable
Mass notification landline	8%	33%	1%	2%	5%
Mass notification cellular	2%	41%	1%	1%	5%
SMS/text	2%	50%	1%	-	6%
Traditional media	6%	21%	-	2%	17%
Social media	7%	47%	-	2%	15%
Email	3%	36%	1%	1%	5%
Entity website	3%	29%	-	2%	23%
Other web-based apps	1%	10%	-	2%	-
Two-way radio	2%	10%	-	2%	13%
Weather radio	3%	6%	-	1%	6%
Amateur radio	2%	8%	-	2%	6%
Emergency alert system (IPAWS)	9%	7%	2%	1%	4%
Public address speakers/sirens	9%	4%	-	2%	17%
Digital signage	6%	3%	-	-	10%
Route notification	12%	6%	-	1%	19%
Word of mouth	10%	9%	-	4%	33%
Other	-	6%	-	1%	2%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 18

Question 6 (SPDs) - How are contacts signed up to receive notifications from the different emergency communication methods? [a]

Special Purpose Districts (184 Responses)	Automatically Included	Opt In	Opt Out	Other	Not applicable
Mass notification landline	8%	11%	1%	-	3%
Mass notification cellular	8%	14%	1%	1%	3%
SMS/text	14%	22%	2%	1%	8%
Traditional media	4%	7%	-	1%	21%
Social media	2%	24%	-	2%	16%
Email	17%	22%	2%	2%	7%
Entity website	12%	16%	-	2%	29%
Other web-based apps	1%	5%	-	-	2%
Two-way radio	3%	3%	-	-	10%
Weather radio	1%	1%	-	-	1%
Amateur radio	-	2%	-	-	3%
Emergency alert system (IPAWS)	4%	3%	-	-	2%
Public address speakers/sirens	4%	1%	-	-	5%
Digital signage	1%	1%	-	-	4%
Route notification	11%	2%	1%	1%	13%
Word of mouth	7%	5%	-	-	17%
Other	1%	2%	-	2%	11%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 19

Question 6 (Utilities) - How are contacts signed up to receive notifications from the different emergency communication methods? [a]

Utilities (169 Responses)	Automatically Included	Opt In	Opt Out	Other	Not applicable
Mass notification landline	9%	9%	1%	-	2%
Mass notification cellular	10%	11%	1%	1%	2%
SMS/text	14%	53%	1%	1%	4%
Traditional media	5%	5%	-	3%	18%
Social media	5%	53%	-	4%	12%
Email	39%	18%	-	1%	5%
Entity website	9%	18%	-	5%	45%
Other web-based apps	1%	2%	-	-	2%
Two-way radio	1%	1%	-	1%	8%
Weather radio	-	1%	-	-	1%
Amateur radio	1%	-	-	1%	2%
Emergency alert system (IPAWS)	2%	2%	-	1%	1%
Public address speakers/sirens	4%	-	-	1%	5%
Digital signage	2%	-	-	1%	2%
Route notification	8%	2%	1%	-	40%
Word of mouth	12%	4%	-	4%	20%
Other	3%	2%	-	1%	31%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Respondents who answered in Question 6 that contacts are signed up to receive notifications automatically were asked a follow-up question (Question 6-A), which is presented in Figure 20 on the next page.

Figure 20

Question 6-A – Please describe how constituents are identified to automatically receive emergency communication notifications. [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	18 Responses	219 Responses	35 Responses	66 Responses	95 Responses
Automatic included through registration	6%	78%	9%	65%	14%
Automatic include all applicable constituents	22%	2%	11%	5%	1%
Public address speakers/sirens	11%	3%	11%	4%	1%
Route notification	-	1%	11%	4%	1%
Traditional media	6%	2%	6%	4%	1%
Email	-	3%	3%	2%	-
Other web-based apps	11%	5%	6%	2%	-
Emergency alert system (IPAWS)	28%	-	11%	1%	-
Mass notification landline	11%	-	9%	4%	1%
Entity website	-	1%	-	3%	1%
Word of mouth	-	-	3%	3%	1%
Social media	-	1%	9%	2%	-
SMS/text	-	1%	3%	-	-
Mass notification cellular	6%	-	6%	2%	-
Digital signage	-	1%	-	1%	-
Two-way radio	-	1%	-	-	-
Weather radio	6%	-	3%	-	-
Other [b]	-	1%	3%	2%	-
Unresponsive [c]	6%	1%	6%	4%	1%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] Other responses included those that could not be categorized.

[c] Unresponsive responses were those that did not directly address the question.

Respondents who answered in Question 6 that contacts must opt-in to receive notifications automatically were asked a follow-up question (Question 6-B), which is presented in Figure 21.

Figure 21

Question 6-B – Please indicate how your entity reaches out to sign people up for the communication methods selected. [a]

Response [b]	Counties 44 Responses	Independent School Districts 238 Responses	Municipalities 96 Responses	Special Purpose Districts 82 Responses	Utilities 118 Responses
Website	89%	69%	78%	74%	84%
Social media	91%	70%	76%	59%	77%
At registration	2%	39%	16%	23%	21%
Readiness/Emergency preparedness events	66%	8%	40%	24%	5%
News	57%	8%	29%	21%	11%
Radio	50%	5%	17%	12%	8%
Informational materials/flyers	2%	8%	7%	4%	6%
Do not reach out to sign people up	2%	4%	2%	6%	6%
In person	-	3%	5%	4%	4%
Other web-based apps	2%	5%	2%	-	2%
Email	2%	4%	-	1%	3%
Word of mouth	5%	2%	1%	2%	4%
Mass mailers	-	1%	6%	1%	3%
Other [c]	5%	1%	1%	2%	3%
Unresponsive [d]	-	1%	3%	4%	1%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] There was one additional response each for SMS/text and traditional media.

[c] Other responses included those that could not be categorized.

[d] Unresponsive responses were those that did not directly address the question. For example, responses such as "None."

Gaps in Communication

Figure 22

Question 7 – What gaps has your entity identified in your emergency communication methods, including who is not being reached (for example, groups or classes that are not effectively reached, having accessible notifications, language and information barriers, etc.)? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	40 Responses	256 Responses	102 Responses	126 Responses	134 Responses
None	10%	22%	19%	44%	54%
Outdated or missing contact information	8%	28%	10%	8%	10%
Access to technology	28%	14%	19%	11%	8%
Language barriers	13%	14%	9%	11%	4%
Elderly/Disabled	23%	2%	24%	10%	9%
Poor cell or internet coverage	18%	16%	4%	3%	4%
Lack of participation	10%	9%	11%	7%	7%
Lack of resources	13%	2%	4%	1%	1%
Hard to reach area/physical barrier	3%	1%	3%	2%	2%
Collaboration with other entities	-	1%	1%	2%	1%
Inability to communicate timely information	-	1%	2%	1%	-
Training	-	-	-	2%	-
Other [b]	5%	1%	4%	2%	1%
Unresponsive [c]	-	3%	5%	6%	4%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] Other responses included those that could not be categorized.

[c] Unresponsive responses were those that did not directly address the question. For example, responses such as "We attempt to reach all stakeholders."

Disaster Communications During 2017 Through 2021

Figure 23

Question 8 – During calendar years 2017 through 2021, please select types of disasters for which your entity sent emergency communications to its constituents. [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	45 Responses	272 Responses	100 Responses	115 Responses	133 Responses
Active shooter	9%	3%	4%	3%	-
Cyber attacks	9%	4%	6%	3%	3%
Drought	36%	1%	23%	23%	48%
Extended utility outages	69%	71%	64%	55%	94%
Fire	51%	10%	37%	25%	7%
Hurricane or other tropical weather events	33%	32%	31%	39%	52%
Hazardous spill	22%	3%	8%	9%	4%
Public health emergency	80%	66%	46%	34%	20%
Public safety or civil unrest	16%	21%	7%	2%	2%
Severe weather events	93%	100%	88%	82%	95%
Transportation infrastructure	18%	15%	19%	10%	4%
None	-	1%	3%	3%	2%
Other [b]	-	1%	-	-	1%
Unresponsive [c]	-	2%	2%	6%	1%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] Other responses included those that could not be categorized.

[c] Unresponsive responses were those that did not directly address the question. For example, responses such as "Whatever the county sent out."

Respondents who answered in Question 8 that its entity sent emergency communication used for a specific disaster type were asked a follow-up question (Question 9). The responses by entity type are presented on the following pages, starting with Figure 24 on the next page.

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Figure 24

Question 9 (Counties) - During calendar years 2017 through 2021, how often did your entity issue an emergency communication? [a]

Counties (44 Responses)	Was not utilized during that time period.	1 - 2 times	3 - 5 times	6 - 10 times	11 - 20 times	More than 20 times
Active shooter	-	7%	-	-	-	-
Cyber attacks	-	7%	2%	-	-	-
Drought	7%	9%	9%	2%	2%	2%
Extended utility outages	2%	18%	14%	7%	2%	9%
Fire	-	16%	16%	5%	2%	5%
Hurricane or other tropical weather events	-	11%	11%	2%	-	5%
Hazardous spill	-	9%	2%	5%	2%	-
Public health emergency	2%	11%	9%	14%	7%	27%
Public safety or civil unrest	-	-	7%	2%	-	2%
Severe weather events	5%	7%	14%	14%	14%	32%
Transportation infrastructure	-	2%	5%	2%	2%	5%
Other	-	7%	2%	2%	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 25

Question 9 (ISDs) - During calendar years 2017 through 2021, how often did your entity issue an emergency communication? [a]

Independent School Districts (303 Responses)	Was not utilized during that time period.	1 - 2 times	3 - 5 times	6 - 10 times	11 - 20 times	More than 20 times
Active shooter	1%	1%	-	-	-	-
Cyber attacks	1%	2%	1%	-	-	-
Drought	1%	-	-	-	-	-
Extended utility outages	1%	32%	16%	4%	2%	1%
Fire	1%	6%	1%	-	-	-
Hurricane or other tropical weather events	-	13%	9%	4%	1%	1%
Hazardous spill	-	1%	-	-	-	-
Public health emergency	-	9%	11%	9%	6%	16%
Public safety or civil unrest	-	6%	1%	2%	1%	1%
Severe weather events	-	18%	33%	18%	9%	3%
Transportation infrastructure	-	4%	4%	3%	1%	1%
Other	-	5%	3%	3%	-	1%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 26

Question 9 (Municipalities) - During calendar years 2017 through 2021, how often did your entity issue an emergency communication? [a]

Municipalities (101 Responses)	Was not utilized during that time period.	1 - 2 times	3 - 5 times	6 - 10 times	11 - 20 times	More than 20 times
Active shooter	1%	2%	-	-	-	-
Cyber attacks	1%	2%	1%	-	-	1%
Drought	5%	6%	4%	-	-	2%
Extended utility outages	1%	20%	13%	8%	3%	7%
Fire	2%	16%	4%	3%	2%	4%
Hurricane or other tropical weather events	1%	9%	10%	3%	2%	1%
Hazardous spill	-	3%	1%	3%	-	-
Public health emergency	1%	10%	7%	4%	3%	12%
Public safety or civil unrest	1%	-	2%	1%	-	-
Severe weather events	5%	14%	15%	18%	3%	15%
Transportation infrastructure	2%	3%	6%	3%	1%	1%
Other	3%	6%	1%	-	-	1%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 27

Question 9 (SPDs) - During calendar years 2017 through 2021, how often did your entity issue an emergency communication? [a]

Special Purpose Districts (124 Responses)	Was not utilized during that time period.	1 - 2 times	3 - 5 times	6 - 10 times	11 - 20 times	More than 20 times
Active shooter	1%	2%	-	-	-	-
Cyber attacks	1%	1%	1%	-	-	-
Drought	6%	8%	2%	-	-	2%
Extended utility outages	2%	19%	15%	2%	-	3%
Fire	4%	7%	5%	-	-	5%
Hurricane or other tropical weather events	1%	17%	6%	4%	1%	1%
Hazardous spill	2%	3%	2%	-	-	-
Public health emergency	2%	8%	6%	2%	3%	4%
Public safety or civil unrest	1%	-	-	1%	-	-
Severe weather events	1%	29%	12%	6%	6%	6%
Transportation infrastructure	2%	1%	1%	2%	1%	-
Other	9%	5%	1%	2%	-	4%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 28

Question 9 (Utilities) - During calendar years 2017 through 2021, how often did your entity issue an emergency communication? [a]

Utilities (160 Responses)	Was not utilized during that time period.	1 - 2 times	3 - 5 times	6 - 10 times	11 - 20 times	More than 20 times
Active shooter	-	-	-	-	-	-
Cyber attacks	-	1%	1%	1%	-	-
Drought	4%	34%	1%	1%	-	-
Extended utility outages	1%	19%	44%	3%	4%	2%
Fire	1%	2%	1%	1%	1%	-
Hurricane or other tropical weather events	1%	5%	4%	31%	-	2%
Hazardous spill	1%	1%	1%	-	-	-
Public health emergency	1%	5%	4%	1%	1%	3%
Public safety or civil unrest	-	-	1%	-	-	-
Severe weather events	1%	18%	12%	35%	3%	8%
Transportation infrastructure	-	1%	1%	-	-	1%
Other	2%	3%	3%	3%	1%	1%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 29

Question 10 – Please select the specific disasters in which your entity issued emergency communication. [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	47 Responses	309 Responses	114 Responses	174 Responses	169 Responses
Hurricane Harvey (August 2017)	30%	24%	20%	18%	39%
Hurricane Imelda (September 2019)	11%	12%	4%	7%	29%
Winter Storm Uri (February 2021)	60%	78%	54%	45%	71%
Odessa Shooting (August 31, 2019)	-	-	-	1%	-
The Intercontinental Terminals Company Deer Park Fire (March 17, 2019)	2%	1%	3%	1%	1%
The Texas Petrochemicals Group Port Neches Fire (November 27, 2019)	2%	-	-	-	-
None of the above	34%	18%	44%	51%	27%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 30

Question 11 – What additional resources or tools would help improve emergency communication with your entity's constituents? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	42 Responses	243 Responses	108 Responses	140 Responses	137 Responses
Equipment or communication tool upgrades or repairs	21%	24%	40%	34%	16%
Additional utility infrastructure or improved cell coverage	20%	16%	10%	3%	5%
Additional funding	5%	10%	8%	6%	8%
Increased use of opt in by constituents	13%	3%	11%	5%	6%
Backup system needed	7%	6%	8%	1%	7%
Processes improvements	4%	3%	5%	3%	6%
Up-to-date contact information	4%	5%	2%	2%	2%
Better communication and cooperation with other entities	-	5%	2%	1%	3%
Ability to communicate in different languages	9%	2%	3%	3%	1%
Staffing or facility	4%	1%	2%	4%	2%
Training	2%	1%	4%	2%	1%
None	13%	23%	6%	34%	43%

[a] Respondents could provide multiple options. As a result, the percentages do not sum to 100 percent.

Figure 31

Question 12 – In what ways do you think your entity's emergency communications system is working effectively? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	39 Responses	268 Responses	107 Responses	134 Responses	144 Responses
Coverage/reach	23%	34%	25%	26%	26%
Effective communication methods	30%	13%	20%	19%	16%
Entity's use of multiple communication avenues	9%	20%	16%	12%	9%
Entity's processes are working effectively	7%	9%	11%	10%	32%
Timely communication	16%	14%	7%	6%	5%
Positive feedback from users	12%	6%	9%	7%	11%
Easy to use communication	-	3%	1%	7%	-
Cost effective	-	-	-	5%	-
Entity has backup communication methods	2%	-	2%	1%	-
None	-	-	9%	6%	1%

[a] Respondents could provide multiple options. As a result, the percentages do not sum to 100 percent.

Figure 32

Question 13 – In what ways do you think your entity's emergency communications system could be improved? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	40 Responses	254 Responses	110 Responses	126 Responses	132 Responses
Need for new communication tools or upgrades	35%	24%	39%	29%	24%
Increased participation/opt In	11%	10%	16%	9%	8%
No improvements needed/identified	5%	15%	8%	28%	12%
Planning, preparation, training, exercises, and drills	11%	12%	10%	8%	6%
Ability to communicate in different languages	9%	5%	3%	1%	34%
Improved utilities and/or utility communication	11%	8%	3%	6%	1%
Increased funding/ resources	12%	5%	9%	4%	3%
Update/correct demographic information	2%	7%	1%	4%	4%
Generators/backup systems	4%	5%	2%	1%	-
Other/Unresponsive	2%	10%	10%	12%	8%

[a] Respondents could provide multiple options. As a result, the percentages do not sum to 100 percent.

Figure 33

Question 14 – Is there any other information that you would like the Texas Emergency Management Council and the State Auditor's Office to know about your entity's use of emergency communications between 2017 and 2021?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	25 Responses	175 Responses	79 Responses	111 Responses	59 Responses
Processes are working and/or have improved	14%	12%	11%	14%	19%
Funding/resources needed	10%	9%	18%	2%	8%
Coordination/ communication needed between entities	7%	3%	4%	4%	2%
Processes are not working	7%	-	5%	2%	2%
Small/rural localities need more resources	14%	1%	4%	-	-
Training needed	-	3%	1%	1%	2%
Need a unified/state notification system	7%	1%	2%	1%	3%
Need more state guidance/best practices	7%	1%	2%	-	2%
State requirements are a burden	-	1%	4%	-	-
Other/nonspecific	-	-	-	1%	3%
None	34%	70%	48%	75%	60%

[a] Respondents could provide multiple options. As a result, the percentages do not sum to 100 percent.

Hurricane Harvey

Emergency Communications Timelines

Figure 34

Question 15 - For Hurricane Harvey, please describe the points at which your entity decided to issue an official emergency communication. [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	12 Responses	64 Responses	21 Responses	25 Responses	62 Responses
Before the onset of the storm	42%	39%	43%	28%	84%
When flooding became a factor	33%	16%	24%	24%	2%
During the storm	42%	14%	24%	16%	5%
When schools closed	-	38%	-	-	-
During post-storm operations/recovery	17%	13%	10%	12%	6%
Based on utility availability	-	5%	5%	20%	10%
When communication from other entities was received	-	8%	5%	12%	-
When evacuations were ordered	8%	5%	10%	-	3%
When road conditions became unsafe	-	3%	5%	4%	2%
At certain wind speed thresholds	-	3%	5%	4%	-
Other[b]	-	2%	-	4%	3%
None	-	5%	5%	16%	3%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] Other responses included those that could not be categorized.

Figure 35

Question 16 - For Hurricane Harvey, once your entity decided to issue emergency communications, how long did it take to deploy the alert?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	14 Responses	73 Responses	23 Responses	31 Responses	63 Responses
0 minutes to 15 minutes	64%	63%	65%	52%	86%
16 minutes to 30 minutes	21%	30%	13%	19%	3%
31 minutes to 59 minutes	7%	3%	13%	13%	5%
1 hour to 2 hours	7%	3%	-	13%	3%
Longer than 2 hours	-	1%	9%	3%	3%

Figure 36

Question 17 - For Hurricane Harvey, how would you rate the timeliness of emergency communications that were issued by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	14 Responses	72 Responses	23 Responses	30 Responses	63 Responses
Excellent	7%	46%	17%	17%	78%
Good	50%	36%	39%	33%	13%
Satisfactory	36%	14%	30%	40%	6%
Fair	7%	4%	9%	10%	3%
Poor	-	-	4%	-	-

Figure 37

Question 18 - For Hurricane Harvey, did your entity continue issuing emergency communications to update constituents as new information came in?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	14 Responses	72 Responses	22 Responses	31 Responses	64 Responses
Yes	79%	92%	91%	90%	92%
No	21%	8%	9%	10%	8%

Respondents who answered Yes in Question 18 were asked a follow-up question (Question 19), which is presented in Figure 38.

Figure 38

Question 19 - For Hurricane Harvey, how would you rate the timeliness of follow-up information communicated by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	11 Responses	64 Responses	20 Responses	28 Responses	59 Responses
Excellent	9%	48%	20%	18%	83%
Good	45%	33%	40%	36%	14%
Satisfactory	36%	16%	25%	32%	3%
Fair	9%	3%	10%	14%	-
Poor	-	-	5%	-	-

Figure 39

Question 20 - For Hurricane Harvey, which of the following was included in the official emergency communication? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	14 Responses	70 Responses	23 Responses	31 Responses	61 Responses
Specific Hazard	71%	84%	96%	84%	93%
Location	71%	64%	70%	58%	92%
Timeframes	50%	74%	74%	58%	89%
Warning Source	50%	56%	52%	42%	92%
Magnitude	36%	36%	61%	39%	84%
Likelihood	43%	41%	57%	42%	87%
Protective Behavior	57%	56%	52%	32%	90%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Communication Methods

Figure 40

Question 21 – What emergency communication method(s) did your entity use to communicate with constituents for Hurricane Harvey? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	14 Responses	71 Responses	23 Responses	30 Responses	63 Responses
Mass notification landline	71%	70%	65%	23%	11%
Mass notification cellular	71%	72%	61%	27%	11%
SMS/text	57%	76%	48%	43%	84%
Traditional media	50%	69%	43%	23%	6%
Social media	79%	89%	78%	50%	89%
Email	57%	76%	30%	50%	87%
Entity website	50%	75%	57%	53%	89%
Other web-based apps	-	17%	9%	7%	2%
Two-way radio	21%	4%	13%	10%	2%
Weather radio	36%	3%	17%	10%	-
Amateur radio	21%	-	13%	7%	-
Emergency alert system (IPAWS)	14%	3%	17%	10%	-
Public address speakers/sirens	-	4%	13%	7%	-
Digital signage	14%	15%	9%	3%	-
Route notification	21%	4%	22%	7%	3%
Word of mouth	29%	32%	30%	27%	13%
Other	-	1%	4%	-	2%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Respondents who selected a communication method in Question 21 were asked follow-up questions (Questions 22 and 23). The responses to the follow-up questions are presented below by entity type starting with Figure 41.

Figure 41

Question 22 (Counties) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Harvey?

Counties (14 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	7	3	-	-
Mass notification cellular	-	-	7	3	-	-
SMS/text	-	-	4	4	-	-
Traditional media	-	-	2	4	1	-
Social media	-	1	3	5	2	-
Email	-	1	4	3	-	-
Entity website	-	-	4	3	-	-
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	2	1	-	-
Weather radio	-	1	1	3	-	-
Amateur radio	-	1	2	-	-	-
Emergency alert system (IPAWS)	-	-	-	1	1	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	1	1	-	-	-
Route notification	-	1	1	1	-	-
Word of mouth	-	1	2	1	-	-
Other	-	-	-	-	-	-

Figure 42

Question 22 (ISDs) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Harvey?

Independent School Districts (69 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	1	2	12	17	15	1
Mass notification cellular	-	-	12	20	16	1
SMS/text	-	-	12	20	22	-
Traditional media	-	1	15	16	14	1
Social media	-	1	20	20	19	-
Email	-	-	15	19	19	-
Entity website	-	4	14	18	16	1
Other web-based apps	-	-	1	4	6	-
Two-way radio	-	-	1	-	1	1
Weather radio	-	-	1	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	1	1	-
Public address speakers/sirens	-	-	1	1	1	-
Digital signage	-	2	3	1	3	2
Route notification	-	1	1	1	-	-
Word of mouth	1	-	8	8	3	2
Other	-	-	-	-	1	-

Figure 43

Question 22 (Municipalities) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Harvey?

Municipalities (22 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	5	6	3	-
Mass notification cellular	-	-	4	6	3	-
SMS/text	-	-	2	6	2	-
Traditional media	-	-	3	4	2	-
Social media	-	-	7	6	3	1
Email	-	-	3	2	2	-
Entity website	-	1	4	5	1	-
Other web-based apps	-	-	1	-	1	-
Two-way radio	-	-	-	1	1	-
Weather radio	-	-	-	2	1	-
Amateur radio	-	1	-	-	1	-
Emergency alert system (IPAWS)	-	-	-	1	3	-
Public address speakers/sirens	-	-	2	-	-	-
Digital signage	-	-	-	1	1	-
Route notification	-	-	3	-	1	1
Word of mouth	-	1	2	3	1	-
Other	-	-	-	-	1	-

Figure 44

Question 22 (SPDs) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Harvey?

Special Purpose Districts (29 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	1	3	2	-	-
Mass notification cellular	-	1	4	1	-	-
SMS/text	-	1	4	4	3	-
Traditional media	-	1	3	2	-	-
Social media	-	-	4	8	1	1
Email	-	2	3	8	2	-
Entity website	-	1	6	6	3	-
Other web-based apps	-	1	1	-	-	-
Two-way radio	-	-	1	1	1	-
Weather radio	-	-	1	1	-	-
Amateur radio	-	2	-	-	-	-
Emergency alert system (IPAWS)	-	1	1	1	-	-
Public address speakers/sirens	1	-	-	1	-	-
Digital signage	-	-	-	1	-	-
Route notification	1	-	-	1	-	-
Word of mouth	-	2	1	4	1	-
Other	-	-	-	-	-	-

Figure 45

Question 22 (Utilities) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Harvey?

Utilities (62 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	1	1	-	3	2	-
Mass notification cellular	1	1	-	3	2	-
SMS/text	-	-	1	4	48	-
Traditional media	-	1	1	2	-	-
Social media	-	-	2	8	46	-
Email	-	-	3	4	47	-
Entity website	-	2	2	6	46	-
Other web-based apps	-	-	1	-	-	-
Two-way radio	-	-	-	1	-	-
Weather radio	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	-	1	1	-	-
Word of mouth	-	1	3	2	2	-
Other	-	-	-	-	-	-

Figure 46

Question 23 (Counties) - Please indicate the percentage of constituents reached using the following communication methods.

Counties (13 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	1	3	2	3	-	1
Mass notification cellular	-	1	3	-	3	1	1
SMS/text	-	1	1	-	3	-	1
Traditional media	-	-	-	-	-	-	1
Social media	-	-	3	1	1	-	2
Email	-	1	2	-	3	-	-
Entity website	-	-	1	1	-	-	-
Other web-based apps	-	-	-	-	-	-	-
Two-way radio	-	-	1	-	-	-	1
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	1	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	1
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	1	-	-	-	-	1
Word of mouth	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-

Figure 47

Question 23 (ISDs) - Please indicate the percentage of constituents reached using the following communication methods.

Independent School Districts (55 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	1	2	1	2	6	14	11
Mass notification cellular	1	-	1	3	7	19	10
SMS/text	-	-	-	3	10	16	11
Traditional media	-	-	-	2	2	5	4
Social media	-	1	1	5	6	9	12
Email	-	-	3	3	8	13	7
Entity website	-	-	5	4	3	4	6
Other web-based apps	-	-	-	-	2	3	3
Two-way radio	1	-	-	-	-	-	1
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	1	-	-	-
Route notification	-	2	-	-	-	-	-
Word of mouth	-	-	-	-	1	1	-
Other	-	-	-	-	-	1	-

Figure 48

Question 23 (Municipalities) - Please indicate the percentage of constituents reached using the following communication methods.

Municipalities (18 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	-	2	2	6	2	2
Mass notification cellular	-	-	2	2	5	2	2
SMS/text	-	-	2	1	3	2	1
Traditional media	-	-	-	-	3	-	-
Social media	-	-	1	1	5	1	1
Email	-	-	-	1	1	1	2
Entity website	-	-	2	1	1	-	3
Other web-based apps	-	-	-	-	-	-	1
Two-way radio	-	-	-	-	-	1	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	1	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	1	-	-
Route notification	-	1	-	-	1	-	-
Word of mouth	-	-	-	2	-	1	-
Other	-	-	-	-	-	-	1

Figure 49

Question 23 (SPDs) - Please indicate the percentage of constituents reached using the following communication methods.

Special Purpose Districts (17 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	1	1	1	1	2	-
Mass notification cellular	-	1	1	1	1	-	-
SMS/text	-	1	2	2	1	4	-
Traditional media	-	-	-	-	-	-	-
Social media	-	-	2	2	-	1	1
Email	-	2	2	3	3	-	-
Entity website	-	2	1	3	-	1	-
Other web-based apps	-	-	1	-	-	-	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	2	-	-	-	-	1
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	1	1	-	-	-
Word of mouth	-	-	2	1	-	1	-
Other	-	-	-	-	-	-	-

Figure 50

Question 23 (Utilities) - Please indicate the percentage of constituents reached using the following communication methods.

Utilities (14 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	2	-	-	3	1	1
Mass notification cellular	-	2	-	-	2	2	1
SMS/text	-	1	-	1	3	1	1
Traditional media	-	-	-	-	1	-	1
Social media	-	-	1	3	2	-	2
Email	-	-	2	-	2	2	-
Entity website	-	1	1	-	1	-	2
Other web-based apps	-	-	-	-	1	-	-
Two-way radio	-	-	1	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	2	-	-	-	-	-
Word of mouth	-	1	-	1	1	-	1
Other	-	-	-	-	-	-	-

Figure 51

Question 24 - For Hurricane Harvey, did your entity have to use a backup/redundant method of emergency communication due to your primary communication methods not being available or effective?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	14 Responses	71 Responses	23 Responses	30 Responses	63 Responses
Yes	14%	18%	22%	17%	3%
No	86%	82%	78%	83%	97%

Figure 52

Question 25 - What changes, if any, has your entity made to your emergency communications due to Hurricane Harvey?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	11 Responses	43 Responses	22 Responses	18 Responses	17 Responses
None	45%	56%	55%	56%	65%
Implemented new communication methods	45%	33%	18%	28%	18%
Expanded outreach	-	5%	14%	17%	18%
Increased planning	-	5%	-	-	-
Provided more training	-	-	5%	-	-
Other [a]	9%	2%	9%	-	-

[a] Other includes two responses for generators and other unique responses.

Gaps in Communication

Figure 53

Question 26 - What languages are commonly used to communicate in your jurisdiction? [a]

Response [b]	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	14 Responses	71 Responses	23 Responses	29 Responses	63 Responses
English	100%	99%	100%	100%	100%
Spanish	64%	72%	52%	48%	84%
Vietnamese	14%	6%	9%	3%	-
Chinese [c]	7%	-	4%	-	2%
Arabic	7%	-	-	7%	-
Hindi	-	-	-	7%	-
American Sign Language	14%	-	-	-	-
Other [d]	-	1%	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] No entities responded that German or French were used to communicate in their jurisdictions.

[c] Includes Cantonese, Mandarin, and other Chinese languages.

[d] For Other, one independent school district indicated that it used web translation services.

Figure 54

Question 27 (Counties) – For Hurricane Harvey, what languages did you issue emergency communication in?

Counties (14 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	71%	36%	7%	-	-	-	-	-	-
Mass notification cellular	71%	29%	-	-	-	-	-	-	-
SMS/text	57%	29%	-	-	-	-	-	-	-
Traditional media	50%	21%	-	-	-	-	-	-	-
Social media	79%	36%	-	-	-	-	-	-	-
Email	57%	36%	-	-	-	-	-	-	-
Entity website	50%	29%	7%	7%	7%	7%	7%	7%	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	21%	7%	-	-	-	-	-	-	-
Weather radio	36%	14%	-	-	-	-	-	-	-
Amateur radio	21%	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	14%	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	14%	-	-	-	-	-	-	-	-
Route notification	21%	14%	-	-	-	-	-	-	-
Word of mouth	21%	14%	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

Figure 55

Question 27 (ISDs) - For Hurricane Harvey, what languages did you issue emergency communication in?

Independent School Districts (68 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	66%	41%	1%	-	-	-	-	-	-
Mass notification cellular	68%	41%	1%	-	-	-	-	-	-
SMS/text	74%	41%	1%	-	-	-	-	-	-
Traditional media	63%	19%	-	-	-	-	-	-	-
Social media	84%	32%	-	-	-	-	-	-	-
Email	74%	40%	1%	-	-	-	-	-	-
Entity website	71%	40%	6%	3%	3%	3%	3%	3%	-
Other web-based apps	16%	9%	-	-	-	-	-	-	-
Two-way radio	3%	1%	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	3%	1%	-	-	-	-	-	-	-
Public address speakers/sirens	1%	-	-	-	-	-	-	-	-
Digital signage	15%	1%	-	-	-	-	-	-	-
Route notification	4%	3%	-	-	-	-	-	-	-
Word of mouth	31%	15%	1%	-	-	-	-	-	-
Other	1%	1%	-	-	-	-	-	-	-

Figure 56

Question 27 (Municipalities) - For Hurricane Harvey, what languages did you issue emergency communication in?

Municipalities (23 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	61%	17%	-	4%	-	-	-	-	-
Mass notification cellular	61%	13%	-	4%	-	-	-	-	-
SMS/text	43%	13%	-	-	-	-	-	-	-
Traditional media	43%	26%	-	-	-	-	-	-	-
Social media	78%	26%	-	4%	-	-	-	-	-
Email	30%	9%	-	-	-	-	-	-	-
Entity website	57%	17%	-	4%	-	-	-	-	-
Other web-based apps	4%	-	-	-	-	-	-	-	-
Two-way radio	13%	4%	-	-	-	-	-	-	-
Weather radio	17%	17%	-	-	-	-	-	-	-
Amateur radio	13%	4%	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	13%	4%	-	-	-	-	-	-	-
Public address speakers/sirens	13%	4%	-	-	-	-	-	-	-
Digital signage	9%	4%	-	-	-	-	-	-	-
Route notification	22%	-	-	-	-	-	-	-	-
Word of mouth	26%	13%	-	-	-	-	-	-	-
Other	4%	4%	-	-	-	-	-	-	-

Figure 57

Question 27 (SPDs) - For Hurricane Harvey, what languages did you issue emergency communication in?

Special Purpose Districts (29 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	21%	-	-	-	-	-	-	-	-
Mass notification cellular	21%	3%	-	-	-	-	-	-	-
SMS/text	41%	7%	-	-	-	-	-	-	-
Traditional media	21%	7%	-	-	-	-	-	-	-
Social media	45%	14%	-	-	-	-	-	-	-
Email	52%	10%	-	-	-	-	-	-	-
Entity website	52%	21%	-	-	-	-	-	-	-
Other web-based apps	7%	3%	-	-	-	-	-	-	-
Two-way radio	10%	-	-	-	-	-	-	-	-
Weather radio	7%	-	-	-	-	-	-	-	-
Amateur radio	3%	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	10%	7%	-	-	-	-	-	-	-
Public address speakers/sirens	7%	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	7%	3%	-	-	-	-	-	-	-
Word of mouth	28%	14%	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

Figure 58

Question 27 (Utilities) - For Hurricane Harvey, what languages did you issue emergency communication in?

Utilities (63 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	11%	3%	-	-	-	-	-	-	-
Mass notification cellular	11%	3%	-	-	-	-	-	-	-
SMS/text	84%	76%	-	-	-	-	-	-	-
Traditional media	6%	2%	-	-	-	-	-	-	-
Social media	89%	75%	-	-	-	-	-	-	-
Email	87%	76%	-	-	-	-	-	-	-
Entity website	89%	-	-	-	-	-	-	-	-
Other web-based apps	2%	-	-	-	-	-	-	-	-
Two-way radio	2%	-	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	3%	-	-	-	-	-	-	-	-
Word of mouth	13%	5%	-	-	-	-	-	-	-
Other	2%	-	-	-	-	-	-	-	-

Figure 59

Question 28 - For Hurricane Harvey, were there certain groups of constituents who were not effectively reached by your communication systems/methods or who had information barriers that precluded effective communication?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	14 Responses	70 Responses	23 Responses	29 Responses	63 Responses
Yes	50%	19%	43%	24%	6%
No	50%	81%	57%	76%	94%

Respondents who answered Yes in Question 28 were asked a follow-up question (Question 28-A), which is presented in Figure 60.

Figure 60

Question 28-A - Please elaborate on which groups of constituents were affected and how.

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	6 Responses	13 Responses	9 Responses	5 Response	4 Responses
Households with language barriers	2	3	3	3	1
The elderly	3	-	2	1	2
Households without access to technology	2	1	2	1	2
Households with lack of phone coverage	-	5	2	-	-
Households without internet access	-	1	3	-	1
Households without electricity	-	3	-	-	-
Households with unreliable contact information	-	3	-	-	-
Low-income households	1	1	1	-	-

Question 28-A - Please elaborate on which groups of constituents were affected and how.

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	6 Responses	13 Responses	9 Responses	5 Response	4 Responses
Inconclusive[a]	-	-	1	1	-
Households that flooded	-	2	-	-	-
People who haven't opted in for communication	1	-	-	-	-
Lack of education	1	-	-	-	-

[a] Inconclusive responses were those that could not be categorized. For example, one entity responded "Unsure."

Figure 61

Question 29 - Please explain any changes, if any, that your entity has made since Hurricane Harvey to help reduce/address gaps in emergency communications.

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	5 Responses	35 Responses	18 Responses	13 Responses	59 Responses
No changes	-	46%	39%	69%	93%
Implemented new/ improved communication methods	60%	14%	28%	8%	2%
Expanded outreach	20%	6%	17%	-	3%
Updated contact records	-	17%	-	8%	-
Implemented language translation services	20%	6%	6%	15%	2%
Improved technology	-	9%	-	-	-
Improved infrastructure	-	9%	-	-	-
Developed relationships with outside agencies	20%	3%	-	-	-
Training	-	-	6%	-	-
Researching improvements	-	-	6%	-	-
Public education	20%	-	-	-	-

Hurricane Imelda

Emergency Communications Timelines

Figure 62

Question 30 - For Hurricane Imelda, please describe the points at which your entity decided to issue an official emergency communication. [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	4 Responses	29 Responses	4 Responses	9 Responses	49 Responses
Before the onset of the storm	50%	45%	75%	22%	96%
During post-storm operations/recovery	50%	21%	-	11%	2%
During the storm	-	21%	25%	22%	2%
When flooding became a factor	-	14%	-	33%	-
When schools closed	-	17%	-	-	-
When communication from other entities was received	-	10%	-	11%	-
Once the warning was issued	25%	-	25%	11%	2%
Based on utility availability	-	3%	-	11%	2%
When evacuations were ordered	-	7%	25%	-	-
At certain wind speed thresholds	-	3%	-	-	-
None	-	-	-	-	2%
Other	-	7%	-	11%	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 63

Question 31 - For Hurricane Imelda, once your entity decided to issue emergency communications, how long did it take to deploy the alert?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	5 Responses	35 Responses	5 Responses	11 Responses	48 Responses
0 minutes to 15 minutes	60%	69%	80%	27%	4%
16 minutes to 30 minutes	20%	31%	-	18%	96%
31 minutes to 59 minutes	-	-	-	27%	-
1 hour to 2 hours	20%	-	20%	27%	-
Longer than 2 hours	-	-	-	-	-

Figure 64

Question 32 - For Hurricane Imelda, how would you rate the timeliness of emergency communications that were issued by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	5 Responses	35 Responses	5 Responses	11 Responses	48 Responses
Excellent	20%	49%	-	18%	2%
Good	20%	34%	100%	36%	98%
Satisfactory	60%	14%	-	36%	-
Fair	-	3%	-	9%	-
Poor	-	-	-	-	-

Figure 65

Question 33 - For Hurricane Imelda, did your entity continue issuing emergency communications to update constituents as new information came in?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	5 Responses	35 Responses	5 Responses	11 Responses	48 Responses
Yes	80%	97%	80%	91%	98%
No	20%	3%	20%	9%	2%

Respondents who answered Yes to Question 33 were asked a follow-up question (Question 34), which is presented in Figure 66.

Figure 66

Question 34 - For Hurricane Imelda, how would you rate the timeliness of follow-up information communicated by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	4 Responses	33 Responses	4 Responses	10 Responses	47 Responses
Excellent	25%	42%	-	20%	2%
Good	25%	36%	100%	30%	98%
Satisfactory	50%	21%	-	40%	-
Fair	-	-	-	10%	-
Poor	-	-	-	-	-

Figure 67

Question 35 - For Hurricane Imelda, which of the following was included in the official emergency communication? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	5 Responses	35 Responses	5 Responses	11 Responses	48 Responses
Specific Hazard	80%	86%	80%	82%	100%
Location	80%	69%	80%	55%	98%
Timeframes	80%	80%	80%	64%	100%
Warning Source	40%	69%	100%	45%	100%
Magnitude	40%	43%	80%	36%	100%
Likelihood	40%	49%	60%	45%	98%
Protective Behavior	80%	51%	20%	55%	100%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Communication Methods

Figure 68

Question 36 – What emergency communication method(s) did your entity use to communicate with constituents for Hurricane Imelda? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	5 Responses	35 Responses	5 Responses	11 Responses	48 Responses
Mass notification landline	60%	63%	80%	18%	2%
Mass notification cellular	60%	69%	80%	18%	2%
SMS/text	60%	74%	80%	27%	98%
Traditional media	40%	69%	40%	27%	-
Social media	60%	91%	80%	73%	98%
Email	60%	86%	60%	45%	98%
Entity website	60%	63%	60%	18%	98%
Other web-based apps	-	26%	20%	-	2%
Two-way radio	20%	9%	20%	9%	2%
Weather radio	40%	3%	20%	18%	-
Amateur radio	20%	-	-	9%	-
Emergency alert system (IPAWS)	-	3%	20%	9%	-
Public address speakers/sirens	-	-	-	9%	-
Digital signage	20%	6%	20%	-	-
Route notification	-	-	20%	9%	96%
Word of mouth	20%	23%	20%	27%	-
Other	-	6%	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 69

Question 37 (Counties) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Imelda?

Counties (5 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	2	1	-	-
Mass notification cellular	-	-	2	1	-	-
SMS/text	-	-	2	1	-	-
Traditional media	-	1	-	-	1	-
Social media	-	-	1	2	-	-
Email	-	-	1	2	-	-
Entity website	-	1	1	1	-	-
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	1	-	-	-
Weather radio	-	-	2	-	-	-
Amateur radio	-	-	1	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	1	-	-	-
Route notification	-	-	-	-	-	-
Word of mouth	-	-	1	-	-	-
Other	-	-	-	-	-	-

Figure 70

Question 37 (ISDs) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Imelda?

Independent School Districts (34 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	5	7	7	2
Mass notification cellular	-	-	4	9	8	2
SMS/text	-	-	2	14	9	1
Traditional media	-	-	6	8	9	1
Social media	-	-	5	11	13	2
Email	-	1	4	11	11	1
Entity website	-	-	6	7	8	1
Other web-based apps	-	-	2	1	4	1
Two-way radio	-	-	-	-	2	1
Weather radio	-	-	1	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	1	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	1	1
Route notification	-	-	-	-	-	-
Word of mouth	-	-	1	6	1	-
Other	-	-	-	1	1	-

Figure 71

Question 37 (Municipalities) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Imelda?

Municipalities (5 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	-	2	2	-
Mass notification cellular	-	-	-	2	2	-
SMS/text	-	-	-	2	2	-
Traditional media	-	-	-	1	1	-
Social media	-	-	-	2	2	-
Email	-	-	-	1	2	-
Entity website	-	-	1	-	2	-
Other web-based apps	-	-	-	1	-	-
Two-way radio	-	-	-	1	-	-
Weather radio	-	-	-	1	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	1	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	1	-
Route notification	-	-	-	-	-	1
Word of mouth	-	-	-	1	-	-
Other	-	-	-	-	-	-

Figure 72

Question 37 (SPDs) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Imelda?

Special Purpose Districts (10 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	1	-	-	-
Mass notification cellular	-	-	1	-	-	-
SMS/text	-	-	1	1	-	-
Traditional media	-	-	2	-	-	-
Social media	-	-	3	4	-	-
Email	-	-	4	1	-	-
Entity website	-	-	1	1	-	-
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	1	-	-	-
Weather radio	-	-	-	1	1	-
Amateur radio	-	1	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	1
Public address speakers/sirens	-	1	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	1	-	-	-	-
Word of mouth	-	1	-	1	-	-
Other	-	-	-	-	-	-

Figure 73

Question 37 (Utilities) - How effective were each of the following emergency communication method(s) in communicating with constituents for Hurricane Imelda?

Utilities (48 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	-	-	1	-
Mass notification cellular	-	-	-	-	1	-
SMS/text	-	-	-	-	47	-
Traditional media	-	-	-	-	-	-
Social media	-	-	-	-	47	-
Email	-	-	-	-	47	-
Entity website	-	-	-	-	47	-
Other web-based apps	-	-	1	-	-	-
Two-way radio	-	-	-	-	1	-
Weather radio	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	-	-	-	46	-
Word of mouth	-	-	-	-	-	-
Other	-	-	-	-	-	-

Figure 74

Question 38 (Counties) - Please indicate the percentage of constituents reached using the following communication methods.

Counties (4 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	1	-	1	1	-	-
Mass notification cellular	-	-	1	1	1	-	-
SMS/text	-	-	-	1	1	-	-
Traditional media	-	-	-	-	-	-	-
Social media	-	-	2	-	1	-	-
Email	-	1	-	-	1	-	-
Entity website	-	-	-	1	-	-	-
Other web-based apps	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-

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Figure 75

Question 38 (ISDs) - Please indicate the percentage of constituents reached using the following communication methods.

Independent School Districts (29 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	1	-	-	2	4	10	2
Mass notification cellular	1	-	-	1	4	13	2
SMS/text	-	-	-	1	5	13	2
Traditional media	-	-	-	1	1	6	2
Social media	-	-	1	4	6	5	4
Email	-	-	1	2	7	10	2
Entity website	-	-	1	4	2	4	3
Other web-based apps	-	-	-	1	2	3	2
Two-way radio	-	-	-	-	-	1	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	1	-
Other	-	1	-	-	-	1	-

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Figure 76

Question 38 (Municipalities) - Please indicate the percentage of constituents reached using the following communication methods.

Municipalities (4 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	-	-	-	3	1	-
Mass notification cellular	-	-	-	-	3	1	-
SMS/text	-	-	-	1	2	1	-
Traditional media	-	-	-	-	1	-	-
Social media	-	-	-	-	3	1	-
Email	-	-	-	-	2	1	-
Entity website	-	-	-	-	2	-	-
Other web-based apps	-	-	-	-	1	-	-
Two-way radio	-	-	-	-	-	1	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	1	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	1	-	-
Route notification	-	-	-	-	1	-	-
Word of mouth	-	-	-	-	-	1	-
Other	-	-	-	-	-	-	-

Figure 77

Question 38 (SPDs) - Please indicate the percentage of constituents reached using the following communication methods.

Special Purpose Districts (5 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	-	1	-	-	-	-
Mass notification cellular	-	-	1	-	-	-	-
SMS/text	-	-	1	1	-	-	-
Traditional media	-	-	-	-	-	-	-
Social media	-	-	-	3	-	-	2
Email	-	1	-	1	1	-	-
Entity website	-	-	-	1	-	-	-
Other web-based apps	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	1	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	1	-	-	-	-
Word of mouth	-	-	1	-	-	-	-
Other	-	-	-	-	-	-	-

Figure 78

Question 38 (Utilities) - Please indicate the percentage of constituents reached using the following communication methods.

Utilities (2 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	-	-	-	1	-	-
Mass notification cellular	-	-	-	-	1	-	-
SMS/text	-	-	-	-	1	-	-
Traditional media	-	-	-	-	-	-	-
Social media	-	-	-	1	-	-	-
Email	-	-	-	-	-	1	-
Entity website	-	-	-	-	1	-	-
Other web-based apps	-	-	-	-	1	-	-
Two-way radio	-	-	1	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-

Figure 79

Question 39 - For Hurricane Imelda, did your entity have to use a backup/redundant method of emergency communication due to your primary communication methods not being available or effective?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	5 Responses	35 Responses	5 Responses	9 Responses	48 Responses
Yes	-	17%	20%	22%	96%
No	100%	83%	80%	78%	4%

Figure 80

Question 40 - What changes, if any, has your entity made to your emergency communications due to Hurricane Imelda?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	3 Responses	19 Responses	5 Responses	7 Responses	1 Response
None	67%	74%	60%	57%	100%
Implemented new communication methods	33%	21%	-	29%	-
Expanded outreach	-	5%	-	14%	-
Provided more training	-	-	20%	-	-
Purchased generators	-	-	20%	-	-

Gaps in Communication

Figure 81

Question 41 - What languages are commonly used to communicate in your jurisdiction? [a]

Response [b]	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilies
	5 Responses	35 Responses	5 Responses	10 Responses	48 Responses
English	100%	100%	100%	100%	100%
Spanish	60%	77%	100%	40%	98%
Vietnamese	20%	6%	20%	10%	-
Chinese [c]	-	-	20%	-	2%
Arabic	20%	-	-	10%	-
Hindi	-	-	-	10%	-
American Sign Language	20%	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] No entities responded that German, French, or Other Languages were used to communicate in their jurisdictions.

[c] Includes Cantonese, Mandarin, and other Chinese languages.

Figure 82

Question 42 (Counties) - For Hurricane Imelda, what languages did you issue emergency communication in?

Counties (5 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	60%	20%	-	-	-	-	-	-	-
Mass notification cellular	40%	20%	-	-	-	-	-	-	-
SMS/text	40%	20%	-	-	-	-	-	-	-
Traditional media	40%	20%	-	-	-	-	-	-	-
Social media	60%	20%	-	-	-	-	-	-	-
Email	60%	40%	-	-	-	-	-	-	-
Entity website	60%	40%	20%	20%	20%	20%	20%	20%	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	20%	-	-	-	-	-	-	-	-
Weather radio	40%	-	-	-	-	-	-	-	-
Amateur radio	20%	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	20%	-	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

Figure 83

Question 42 (ISDs) - For Hurricane Imelda, what languages did you issue emergency communication in?

Independent School Districts (33 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	58%	36%	-	-	-	-	-	-	-
Mass notification cellular	61%	45%	-	-	-	-	-	-	-
SMS/text	73%	55%	-	-	-	-	-	-	-
Traditional media	67%	36%	-	-	-	-	-	-	-
Social media	91%	45%	-	-	-	-	-	-	-
Email	82%	55%	-	-	-	-	-	-	-
Entity website	64%	39%	9%	9%	6%	6%	6%	6%	-
Other web-based apps	27%	9%	-	-	-	-	-	-	-
Two-way radio	6%	3%	-	-	-	-	-	-	-
Weather radio	3%	3%	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	3%	3%	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	6%	-	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-	-	-
Word of mouth	21%	15%	-	-	-	-	-	-	-
Other	3%	3%	-	-	-	-	-	-	-

Figure 84

Question 42 (Municipalities) - For Hurricane Imelda, what languages did you issue emergency communication in?

Municipalities (5 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	80%	20%	-	20%	-	-	-	-	-
Mass notification cellular	80%	20%	-	20%	-	-	-	-	-
SMS/text	60%	20%	-	20%	-	-	-	-	-
Traditional media	40%	20%	-	-	-	-	-	-	-
Social media	60%	-	-	-	-	-	-	-	-
Email	60%	-	-	-	-	-	-	-	-
Entity website	40%	-	-	-	-	-	-	-	-
Other web-based apps	20%	-	-	-	-	-	-	-	-
Two-way radio	20%	-	-	-	-	-	-	-	-
Weather radio	20%	20%	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	20%	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	20%	-	-	-	-	-	-	-	-
Route notification	20%	-	-	-	-	-	-	-	-
Word of mouth	20%	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

Figure 85

Question 42 (SPDs) - For Hurricane Imelda, what languages did you issue emergency communication in?

Special Purpose Districts (10 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	10%	-	-	-	-	-	-	-	-
Mass notification cellular	10%	-	-	-	-	-	-	-	-
SMS/text	20%	10%	-	-	-	-	-	-	-
Traditional media	20%	-	-	-	-	-	-	-	-
Social media	70%	20%	-	-	-	-	-	-	-
Email	50%	10%	-	-	-	-	-	-	-
Entity website	20%	10%	-	-	-	-	-	-	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	10%	-	-	-	-	-	-	-	-
Weather radio	20%	-	-	-	-	-	-	-	-
Amateur radio	10%	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	10%	-	-	-	-	-	-	-	-
Public address speakers/sirens	10%	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	10%	-	-	-	-	-	-	-	-
Word of mouth	30%	10%	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

Figure 86

Question 42 (Utilities) - For Hurricane Imelda, what languages did you issue emergency communication in?

Utilities (48 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	2%	-	-	-	-	-	-	-	-
Mass notification cellular	2%	-	-	-	-	-	-	-	-
SMS/text	98%	96%	-	-	-	-	-	-	-
Traditional media	-	-	-	-	-	-	-	-	-
Social media	98%	96%	-	-	-	-	-	-	-
Email	98%	96%	-	-	-	-	-	-	-
Entity website	98%	-	-	-	-	-	-	-	-
Other web-based apps	2%	-	-	-	-	-	-	-	-
Two-way radio	2%	-	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	96%	96%	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

Figure 87

Question 43 - For Hurricane Imelda, were there certain groups of constituents who were not effectively reached by your communication systems/methods or who had information barriers that precluded effective communication?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	5 Responses	35 Responses	4 Responses	10 Responses	48 Responses
Yes	40%	17%	25%	20%	2%
No	60%	83%	75%	80%	98%

Respondents who answered Yes to Question 43 were asked a follow-up question (Question 43-A), which is presented in Figure 88.

Figure 88

Question 43-A - Please elaborate on which groups of constituents were affected and how.

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	2 Responses	5 Responses	0 Responses	2 Responses	1 Response
Households without phones	-	3	-	-	-
Households with language barriers	-	-	-	1	1
Inconclusive [a]	1	-	-	1	-
Households without internet	-	1	-	-	-
Households without electricity	-	1	-	-	-
Households without access to technology	1	-	-	-	-
Households affected by floods	-	1	-	-	-
Lack of education	1	-	-	-	-

[a] Inconclusive responses include those like "Unknown" and "Community Leaders."

Figure 89

Question 44 - Please explain any changes, if any, that your entity has made since Hurricane Imelda to help reduce/address gaps in emergency communications.

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	2 Responses	16 Responses	3 Responses	6 Responses	0 Responses
No changes	50%	56%	67%	50%	-
Implemented new/improved communication methods	-	19%	-	33%	-
Updated contact records	-	19%	-	-	-
Improved technology	-	13%	-	-	-
Expanded outreach	50%	6%	-	-	-
Increased training	50%	-	33%	-	-
Implemented language translation services	-	-	-	17%	-
Improved infrastructure	-	6%	-	-	-
Developed relationships with outside agencies	-	6%	-	-	-

Winter Storm Uri

Emergency Communications Timelines

Figure 90

Question 45 - For Winter Storm Uri, please describe the points at which your entity decided to issue an official emergency communication. [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	23 Responses	214 Responses	58 Responses	63 Responses	117 Responses
When the storm affected utilities	57%	31%	60%	44%	81%
Before the onset of the storm	39%	19%	22%	33%	16%
When schools closed	-	41%	2%	2%	-
During the storm	35%	18%	26%	25%	8%
Unsafe road conditions developed	4%	21%	5%	5%	-
After the storm	13%	3%	5%	3%	2%
Communication from other entities received	-	5%	2%	6%	-
Other	-	-	2%	2%	3%
None	-	3%	10%	5%	4%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 91

Question 46 - For Winter Storm Uri, once your entity decided to issue emergency communications, how long did it take to deploy the alert?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	28 Responses	238 Responses	62 Responses	75 Responses	117 Responses
0 minutes to 15 minutes	61%	71%	56%	39%	69%
16 minutes to 30 minutes	25%	22%	23%	24%	16%
31 minutes to 59 minutes	7%	4%	11%	19%	8%
1 hour to 2 hours	4%	3%	5%	17%	6%
Longer than 2 hours	4%	-	5%	1%	1%

Figure 92

Question 47 - For Winter Storm Uri, how would you rate the timeliness of emergency communications that were issued by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	28 Responses	239 Responses	62 Responses	77 Responses	115 Responses
Excellent	14%	41%	16%	10%	57%
Good	43%	41%	39%	34%	23%
Satisfactory	29%	17%	35%	36%	14%
Fair	11%	2%	6%	17%	7%
Poor	4%	-	3%	3%	-

Figure 93

Question 48 - For Winter Storm Uri, did your entity continue issuing emergency communications to update constituents as new information came in?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	28 Responses	238 Responses	61 Responses	77 Responses	115 Responses
Yes	86%	94%	92%	87%	90%
No	14%	6%	8%	13%	10%

Respondents who answered Yes to Question 48 were asked a follow-up question (Question 49), which is presented in Figure 94.

Figure 94

Question 49 - For Winter Storm Uri, how would you rate the timeliness of follow-up information communicated by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	24 Responses	223 Responses	56 Responses	67 Responses	104 Responses
Excellent	17%	39%	21%	13%	62%
Good	29%	43%	39%	27%	25%
Satisfactory	42%	16%	32%	39%	9%
Fair	8%	3%	7%	21%	4%
Poor	4%	-	-	-	1%

Figure 95

Question 50 - For Winter Storm Uri, which of the following was included in the official emergency communication? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	28 Responses	235 Responses	62 Responses	76 Responses	114 Responses
Specific Hazard	86%	79%	79%	80%	86%
Location	75%	54%	60%	58%	76%
Timeframes	54%	77%	66%	54%	79%
Warning Source	46%	43%	47%	37%	67%
Magnitude	50%	30%	44%	33%	63%
Likelihood	46%	33%	37%	28%	61%
Protective Behavior	75%	46%	63%	49%	70%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Communication Methods

Figure 96

Question 51 – What emergency communication method(s) did your entity use to communicate with constituents for Winter Storm Uri? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	28 Responses	239 Responses	60 Responses	74 Responses	116 Responses
Mass notification landline	64%	51%	45%	16%	16%
Mass notification cellular	64%	57%	42%	19%	16%
SMS/text	75%	82%	50%	38%	74%
Traditional media	50%	54%	47%	27%	25%
Social media	82%	86%	78%	55%	78%
Email	36%	68%	35%	42%	61%
Entity website	43%	71%	55%	57%	80%
Other web-based apps	7%	17%	12%	3%	4%
Two-way radio	29%	3%	7%	5%	3%
Weather radio	29%	2%	8%	4%	1%
Amateur radio	18%	-	3%	-	1%
Emergency alert system (IPAWS)	18%	1%	8%	3%	2%
Public address speakers/sirens	-	-	2%	1%	1%
Digital signage	11%	10%	7%	3%	1%
Route notification	18%	1%	22%	8%	44%
Word of mouth	32%	23%	33%	19%	22%
Other	4%	2%	2%	4%	1%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 97

Question 52 (Counties) - How effective were each of the following emergency communication method(s) in communicating with constituents for Winter Storm Uri?

Counties (27 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	2	9	5	1	-
Mass notification cellular	-	2	7	7	1	-
SMS/text	-	2	7	10	1	-
Traditional media	-	1	3	6	2	-
Social media	1	-	7	8	5	-
Email	-	1	3	5	-	-
Entity website	1	1	3	4	2	-
Other web-based apps	-	-	-	1	-	-
Two-way radio	-	-	4	1	2	-
Weather radio	1	1	3	2	1	-
Amateur radio	-	1	4	-	-	-
Emergency alert system (IPAWS)	-	-	1	2	2	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	1	-	2	-	-	-
Route notification	-	-	1	3	1	-
Word of mouth	-	1	2	3	2	-
Other	-	-	-	-	1	-

Figure 98

Question 52 (ISDs) - How effective were each of the following emergency communication method(s) in communicating with constituents for Winter Storm Uri?

Independent School Districts (236 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	5	15	57	42	2
Mass notification cellular	-	1	14	67	51	1
SMS/text	-	1	26	97	70	-
Traditional media	-	1	39	56	26	4
Social media	-	5	32	101	58	5
Email	-	4	36	72	48	1
Entity website	-	5	48	62	44	8
Other web-based apps	-	-	7	17	16	1
Two-way radio	-	1	1	1	2	-
Weather radio	-	-	1	2	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	1	2	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	4	9	4	3	2
Route notification	-	-	1	1	-	-
Word of mouth	-	5	8	21	13	7
Other	-	-	-	-	2	1

Figure 99

Question 52 (Municipalities) - How effective were each of the following emergency communication method(s) in communicating with constituents for Winter Storm Uri?

Municipalities (58 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	1	6	14	5	1
Mass notification cellular	-	1	4	14	5	1
SMS/text	-	-	5	16	7	-
Traditional media	1	2	6	10	8	-
Social media	-	2	9	23	12	-
Email	2	2	5	8	4	-
Entity website	3	3	9	11	6	-
Other web-based apps	-	1	2	1	3	-
Two-way radio	-	-	1	3	-	-
Weather radio	-	1	2	1	1	-
Amateur radio	-	-	1	1	-	-
Emergency alert system (IPAWS)	-	-	1	3	1	-
Public address speakers/sirens	-	-	1	-	-	-
Digital signage	1	-	1	2	-	-
Route notification	-	-	3	4	6	-
Word of mouth	-	1	6	6	4	3
Other	-	-	1	-	-	-

Figure 100

Question 52 (SPDs) - How effective were each of the following emergency communication method(s) in communicating with constituents for Winter Storm Uri?

Special Purpose Districts (72 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	4	4	2	-
Mass notification cellular	-	-	6	5	1	-
SMS/text	-	2	8	9	8	-
Traditional media	-	1	12	2	1	1
Social media	-	2	20	14	3	-
Email	1	-	14	8	7	1
Entity website	-	4	23	6	6	1
Other web-based apps	-	-	1	-	1	-
Two-way radio	-	-	3	-	1	-
Weather radio	-	-	2	-	1	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	1	1	-
Public address speakers/sirens	-	-	-	1	-	-
Digital signage	-	1	-	-	-	1
Route notification	-	1	3	1	1	-
Word of mouth	-	3	3	4	3	1
Other	-	-	-	1	1	1

Figure 101

Question 52 (Utilities) - How effective were each of the following emergency communication method(s) in communicating with constituents for Winter Storm Uri?

Utilities (116 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	1	1	5	6	5	-
Mass notification cellular	1	1	4	8	4	-
SMS/text	-	-	12	18	54	1
Traditional media	1	1	10	12	4	1
Social media	-	2	9	23	56	-
Email	-	3	9	6	52	-
Entity website	-	10	10	17	54	1
Other web-based apps	-	-	3	2	-	-
Two-way radio	-	1	-	1	1	-
Weather radio	-	1	-	-	-	-
Amateur radio	-	1	-	-	-	-
Emergency alert system (IPAWS)	-	-	1	1	-	-
Public address speakers/sirens	-	1	-	-	-	-
Digital signage	1	-	-	-	-	-
Route notification	-	-	-	2	49	-
Word of mouth	-	6	7	9	4	-
Other	-	-	-	-	1	-

Figure 102

Question 53 (Counties) - Please indicate the percentage of constituents reached using the following communication methods.

Counties (23 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	4	1	3	5	-	2
Mass notification cellular	-	4	1	5	4	1	1
SMS/text	-	3	2	4	5	1	1
Traditional media	-	-	1	2	2	1	-
Social media	-	-	2	4	4	2	-
Email	-	2	-	3	3	-	1
Entity website	-	-	-	4	2	1	1
Other web-based apps	-	-	-	-	1	-	-
Two-way radio	-	-	2	1	-	1	-
Weather radio	-	-	1	-	1	1	-
Amateur radio	-	-	-	3	-	-	-
Emergency alert system (IPAWS)	-	-	-	2	-	2	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	1	-	-
Route notification	-	-	1	-	2	-	-
Word of mouth	-	-	1	-	3	-	-
Other	-	-	-	1	-	-	-

Figure 103

Question 53 (ISDs) - Please indicate the percentage of constituents reached using the following communication methods.

Independent School Districts (191 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	1	4	1	5	18	58	17
Mass notification cellular	1	-	1	2	23	75	16
SMS/text	-	1	-	11	28	84	22
Traditional media	-	-	-	4	5	11	4
Social media	-	2	3	15	21	27	32
Email	-	1	4	13	21	66	14
Entity website	-	1	4	9	10	14	20
Other web-based apps	-	1	-	5	6	13	5
Two-way radio	-	2	-	-	-	1	-
Weather radio	-	1	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	1	-
Route notification	-	-	1	-	-	-	-
Word of mouth	-	1	1	1	3	2	3
Other	-	-	-	1	-	1	1

Figure 104

Question 53 (Municipalities) - Please indicate the percentage of constituents reached using the following communication methods.

Municipalities (44 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	1	2	2	9	3	6
Mass notification cellular	-	1	1	2	11	2	6
SMS/text	-	1	1	2	9	5	6
Traditional media	-	-	1	-	5	2	4
Social media	-	4	-	3	13	2	6
Email	-	2	-	1	4	1	6
Entity website	-	1	2	3	4	1	8
Other web-based apps	-	-	-	-	2	-	2
Two-way radio	-	-	-	-	2	1	-
Weather radio	-	-	-	1	1	-	-
Amateur radio	-	-	-	1	1	-	-
Emergency alert system (IPAWS)	-	-	-	-	2	-	-
Public address speakers/sirens	-	-	-	-	1	-	-
Digital signage	-	-	-	1	1	-	-
Route notification	-	1	1	1	2	5	2
Word of mouth	-	-	2	-	1	3	1
Other	-	-	-	-	-	-	-

Figure 105

Question 53 (SPDs) - Please indicate the percentage of constituents reached using the following communication methods.

Special Purpose Districts (53 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	1	2	4	1	2	-
Mass notification cellular	-	-	1	5	2	-	1
SMS/text	-	1	2	9	5	4	1
Traditional media	-	1	-	1	-	-	2
Social media	-	2	2	7	5	-	8
Email	-	1	5	7	5	5	-
Entity website	-	6	2	7	2	3	2
Other web-based apps	-	-	-	-	-	1	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	1
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	1	-	1	-
Public address speakers/sirens	-	-	-	-	-	-	1
Digital signage	-	-	-	-	-	-	-
Route notification	-	2	-	2	-	1	1
Word of mouth	-	-	1	1	-	1	2
Other	-	-	-	-	-	1	1

Figure 106

Question 53 (Utilities) - Please indicate the percentage of constituents reached using the following communication methods.

Utilities (47 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	3	1	1	5	1	4
Mass notification cellular	-	2	1	4	2	2	4
SMS/text	-	-	7	6	8	3	5
Traditional media	-	1	1	3	1	-	5
Social media	-	4	2	5	6	3	9
Email	-	2	3	3	2	4	4
Entity website	-	6	2	2	3	3	6
Other web-based apps	-	-	1	-	1	-	-
Two-way radio	-	-	-	1	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	1
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	2	-	-	1	1	-
Word of mouth	-	2	1	1	1	2	1
Other	-	-	-	-	-	-	1

Figure 107

Question 54 - For Winter Storm Uri, did your entity have to use a backup/redundant method of emergency communication due to your primary communication methods not being available or effective?

	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
Response	27 Responses	235 Responses	60 Responses	74 Responses	116 Responses
Yes	30%	12%	35%	23%	53%
No	70%	88%	65%	77%	47%

Figure 108

Question 55 - What changes, if any, has your entity made to your emergency communications due to Winter Storm Uri? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	17 Responses	150 Responses	48 Responses	46 Responses	52 Responses
None	35%	73%	40%	59%	44%
Expanded outreach	29%	9%	17%	15%	15%
Implemented new communication methods	18%	7%	19%	13%	21%
Purchased generators	18%	3%	17%	9%	10%
Increased planning	-	5%	13%	9%	10%
Provided more training	-	3%	2%	-	-
Other	-	1%	-	2%	6%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Gaps in Communication

Figure 109

Question 56 - What languages are commonly used to communicate in your jurisdiction? [a]

Response [b]	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	27 Responses	237 Responses	59 Responses	76 Responses	116 Responses
English	100%	100%	100%	100%	100%
Spanish	56%	68%	53%	38%	61%
Vietnamese	7%	3%	12%	1%	1%
American Sign Language	11%	1%	3%	1%	-
Chinese [c]	4%	0%	3%	1%	1%
Hindi	-	-	2%	3%	-
Arabic	4%	-	2%	1%	-
German	-	-	-	-	-
Other [d]	-	1%	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] No entities responded that French were used to communicate in their jurisdictions.

[c] Includes Cantonese, Mandarin, and other Chinese languages.

[d] For Other, one school district indicated that it used web translation services.

Figure 110

Question 57 (Counties) - For Winter Storm Uri, what languages did you issue emergency communication in? [a]

Counties (27 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	63%	22%	4%	-	-	-	-	-	-
Mass notification cellular	63%	22%	-	-	-	-	-	-	-
SMS/text	74%	26%	-	-	-	-	-	-	-
Traditional media	48%	15%	-	-	-	-	-	-	11%
Social media	81%	22%	4%	4%	-	4%	-	-	-
Email	33%	11%	-	-	-	-	-	-	-
Entity website	41%	22%	4%	4%	4%	4%	4%	4%	-
Other web-based apps	4%	4%	-	-	-	-	-	-	-
Two-way radio	26%	-	-	-	-	-	-	-	-
Weather radio	30%	4%	-	-	-	-	-	-	-
Amateur radio	19%	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	19%	4%	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	11%	-	-	-	-	-	-	-	-
Route notification	19%	7%	-	-	-	-	-	-	-
Word of mouth	26%	7%	-	-	-	-	-	-	-
Other	4%	-	-	-	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 111

Question 57 (ISDs) - For Winter Storm Uri, what languages did you issue emergency communication in? [a]

Independent School Districts (233 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	49%	27%	0.4%	-	-	-	-	-	-
Mass notification cellular	56%	30%	0.4%	-	-	-	-	-	-
SMS/text	80%	41%	0.4%	-	-	-	-	-	0.4%
Traditional media	52%	18%	-	-	-	-	-	-	-
Social media	85%	32%	-	-	-	-	-	-	0.4%
Email	67%	33%	0.4%	-	-	-	-	-	0.4%
Entity website	68%	31%	2%	1%	1%	1%	1%	1%	0.4%
Other web-based apps	17%	7%	-	-	-	-	-	-	0.4%
Two-way radio	2%	-	-	-	-	-	-	-	-
Weather radio	2%	0.4%	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	1%	1%	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	8%	1%	-	-	-	-	-	-	-
Route notification	0.4%	-	-	-	-	-	-	-	-
Word of mouth	21%	12%	0.4%	-	-	-	-	-	-
Other	0.4%	0.4%	-	-	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent. Auditors received one response for each of the results listed as 0.4%.

Figure 112

Question 57 (Municipalities) - For Winter Storm Uri, what languages did you issue emergency communication in? [a]

Municipalities (59 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	46%	12%	-	2%	-	-	-	-	-
Mass notification cellular	42%	12%	-	2%	-	-	-	-	-
SMS/text	51%	14%	-	2%	-	-	-	-	-
Traditional media	42%	19%	-	-	-	-	-	-	-
Social media	78%	25%	2%	2%	-	-	-	-	-
Email	32%	5%	-	-	-	-	-	-	-
Entity website	53%	14%	3%	3%	2%	2%	2%	2%	-
Other web-based apps	10%	-	-	-	-	-	-	-	-
Two-way radio	7%	2%	-	-	-	-	-	-	-
Weather radio	8%	5%	-	-	-	-	-	-	-
Amateur radio	3%	2%	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	8%	5%	-	-	-	-	-	-	-
Public address speakers/sirens	2%	2%	-	-	-	-	-	-	-
Digital signage	5%	2%	-	-	-	-	-	-	-
Route notification	19%	5%	-	-	-	-	-	-	-
Word of mouth	32%	10%	2%	2%	-	-	-	-	-
Other	2%	-	-	-	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 113

Question 57 (SPDs) - For Winter Storm Uri, what languages did you issue emergency communication in? [a]

Special Purpose Districts (72 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	14%	-	-	-	-	-	-	-	-
Mass notification cellular	17%	3%	-	-	-	-	-	-	-
SMS/text	38%	6%	-	-	-	-	-	-	-
Traditional media	25%	4%	-	-	-	-	-	-	1%
Social media	51%	8%	-	-	-	-	-	-	-
Email	42%	4%	-	-	-	-	-	-	-
Entity website	54%	13%	-	-	-	-	-	-	-
Other web-based apps	3%	1%	-	-	-	-	-	-	-
Two-way radio	6%	-	-	-	-	-	-	-	-
Weather radio	4%	1%	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	3%	-	-	-	-	-	-	-	-
Public address speakers/sirens	1%	-	-	-	-	-	-	-	-
Digital signage	3%	1%	-	-	-	-	-	-	-
Route notification	8%	3%	-	-	-	-	-	-	-
Word of mouth	19%	10%	-	-	-	-	-	-	-
Other	4%	3%	-	-	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 114

Question 57 (Utilities) - For Winter Storm Uri, what languages did you issue emergency communication in? [a]

Utilities (116 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	16%	5%	-	-	-	-	-	-	-
Mass notification cellular	16%	6%	-	-	-	-	-	-	-
SMS/text	74%	48%	-	-	-	-	-	-	-
Traditional media	24%	4%	-	-	-	-	-	-	-
Social media	77%	44%	-	-	-	-	-	-	-
Email	61%	43%	-	-	-	-	-	-	-
Entity website	79%	7%	-	-	-	-	-	-	-
Other web-based apps	4%	-	-	-	-	-	-	-	-
Two-way radio	3%	-	-	-	-	-	-	-	-
Weather radio	1%	-	-	-	-	-	-	-	-
Amateur radio	1%	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	2%	-	-	-	-	-	-	-	-
Public address speakers/sirens	1%	-	-	-	-	-	-	-	-
Digital signage	1%	-	-	-	-	-	-	-	-
Route notification	44%	41%	-	-	-	-	-	-	-
Word of mouth	22%	7%	-	-	-	-	-	-	-
Other	1%	-	-	-	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 115

Question 58 - For Winter Storm Uri, were there certain groups of constituents who were not effectively reached by your communication systems/methods or who had information barriers that precluded effective communication?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	27 Responses	236 Responses	59 Responses	72 Responses	114 Responses
Yes	41%	17%	31%	33%	11%
No	59%	83%	69%	67%	89%

Respondents who answered Yes to Question 58 were asked a follow-up question (Question 58-A), which is presented in Figure 116.

Figure 116

Question 58a - Please elaborate on which groups of constituents were affected and how.

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	10 Responses	41 Responses	17 Responses	21 Responses	12 Responses
Households without electricity	3	16	1	6	4
Households with poor internet coverage	1	8	4	8	8
Households with a lack of cell service	3	14	2	-	3
Households with language barriers	2	8	3	5	1
The elderly	3	-	5	3	3
Households with unreliable contact information	-	7	-	1	1
Groups with limited access to technology	1	1	2	3	1
People who haven't opted in for communication	1	1	-	1	2

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Question 58a - Please elaborate on which groups of constituents were affected and how.

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	10 Responses	41 Responses	17 Responses	21 Responses	12 Responses
Low-income households	2	1	2	-	-
Inconclusive	-	3	-	1	-
The deaf community	-	-	2	1	-
Other [a]	-	1	4	1	1

[a] Other responses included being unable to deliver communications, communicating with non-Texans, households who opt out, and none.

Figure 117

Question 59 - Please explain any changes, if any, that your entity has made since Winter Storm Uri to help reduce/address gaps in emergency communications. [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	11 Responses	116 Responses	33 Responses	35 Responses	32 Responses
No changes	64%	65%	39%	60%	53%
Expanded outreach	27%	5%	12%	6%	9%
Updated contact records	-	8%	3%	9%	16%
Implemented new/Improved communication methods		3%	18%	11%	6%
Offered language translation	-	5%	9%	6%	-
Improved infrastructure	-	3%	9%	6%	6%
Researched new solutions	9%	3%	6%	-	6%
Improved technology	-	3%	6%	3%	-
Provided training	-	3%	3%	-	-
Improved planning	-	1%	-	3%	3%
Other	-	-	3%	3%	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Odessa Shooting

Emergency Communications Timelines

Figure 118

Question 60 - For the Odessa Shooting, please describe the points at which your entity decided to issue an official emergency communication.

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
Within 30 minutes of the shooting	-	-	-	100%	-

Figure 119

Question 61 - For the Odessa Shooting, once your entity decided to issue emergency communications, how long did it take to deploy the alert?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
0 minutes to 15 minutes	-	-	-	100%	-
16 minutes to 30 minutes	-	-	-	-	-
31 minutes to 59 minutes	-	-	-	-	-
1 hour to 2 hours	-	-	-	-	-
Longer than 2 hours	-	-	-	-	-

Figure 120

Question 62 - For the Odessa Shooting, how would you rate the timeliness of emergency communications that were issued by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
Excellent	-	-	-	-	-
Good	-	-	-	-	-
Satisfactory	-	-	-	-	-
Fair	-	-	-	100%	-
Poor	-	-	-	-	-

Figure 121

Question 63 - For the Odessa Shooting, did your entity continue issuing emergency communications to update constituents as new information came in?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
Yes	-	-	-	100%	-
No	-	-	-	-	-

Respondents who answered Yes to Question 63 were asked a follow-up question (Question 64), which is presented in Figure 122 on the following page.

Figure 122

Question 64 - For the Odessa Shooting, how would you rate the timeliness of follow-up information communicated by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
Excellent	-	-	-	-	-
Good	-	-	-	-	-
Satisfactory	-	-	-	-	-
Fair	-	-	-	100%	-
Poor	-	-	-	-	-

Figure 123

Question 65 - For the Odessa Shooting, which of the following was included in the official emergency communication? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
Specific Hazard	-	-	-	-	-
Location	-	-	-	-	-
Timeframes	-	-	-	-	-
Warning Source	-	-	-	-	-
Magnitude	-	-	-	-	-
Likelihood	-	-	-	-	-
Protective Behavior	-	-	-	100%	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Communication Methods

Figure 124

Question 66 – What emergency communication method(s) did your entity use to communicate with constituents for the Odessa Shooting? ª

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
Mass notification landline	-	-	-	-	-
Mass notification cellular	-	-	-	-	-
SMS/text	-	-	-	-	-
Traditional media	-	-	-	100%	-
Social media	-	-	-	100%	-
Email	-	-	-	-	-
Entity website	-	-	-	100%	-
Other web-based apps	-	-	-	-	-
Two-way radio	-	-	-	-	-
Weather radio	-	-	-	-	-
Amateur radio	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-
Digital signage	-	-	-	-	-
Route notification	-	-	-	-	-
Word of mouth	-	-	-	-	-
Other	-	-	-	-	-

ª Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 125

Question 67 (SPDs) - How effective were each of the following emergency communication method(s) in communicating with constituents for the Odessa Shooting?

Special Purpose Districts (1 Response)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	-	-	-	-
Mass notification cellular	-	-	-	-	-	-
SMS/text	-	-	-	-	-	-
Traditional media	-	-	-	-	-	1
Social media	-	-	-	-	-	1
Email	-	-	-	-	-	-
Entity website	-	-	-	-	-	1
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-
Other	-	-	-	-	-	-

There were no responses from any counties, independent school districts, municipalities, or utilities for Question 67.

Question 68 (SPDs) - Please indicate the percentage of constituents reached using the following communication methods.

Special Purpose Districts (1 Response)	0%	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%	Unknown
Mass notification landline	-	-	-	-	-	-	-
Mass notification cellular	-	-	-	-	-	-	-
SMS/text	-	-	-	-	-	-	-
Traditional media	-	-	-	-	-	-	1
Social media	-	-	-	-	-	-	1
Email	-	-	-	-	-	-	-
Entity website	-	-	-	-	-	-	1
Other web-based apps	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-

There were no responses from any counties, independent school districts, municipalities, or utilities for Question 68.

Figure 126

Question 69 - For the Odessa Shooting, did your entity have to use a backup/redundant method of emergency communication due to your primary communication methods not being available or effective?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
Yes	-	-	-	100%	-
No	-	-	-	-	-

Figure 127

Question 70 - What changes, if any, has your entity made to your emergency communications due to the Odessa Shooting?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
None	-	-	-	100%	-

Gaps in Communication

Figure 128

Question 71 - What languages are commonly used to communicate in your jurisdiction?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
English	-	-	-	100%	-
Spanish	-	-	-	100%	-

[a] No entities responded with Vietnamese, Chinese (which includes Cantonese, Mandarin, and other Chinese languages), Hindi, Arabic, German, French, American Sign Language, or other languages.

Figure 129

Question 72 (SPDs) - For the Odessa Shooting, what languages did you issue emergency communication in?

Special Purpose Districts (1 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	-	-	-	-	-	-	-	-	-
Mass notification cellular	-	-	-	-	-	-	-	-	-
SMS/text	-	-	-	-	-	-	-	-	-
Traditional media	100%	100%	-	-	-	-	-	-	-
Social media	100%	-	-	-	-	-	-	-	-
Email	-	-	-	-	-	-	-	-	-
Entity website	100%	-	-	-	-	-	-	-	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

There were no responses from any counties, independent school districts, municipalities, or utilities for Question 72.

Figure 130

Question 73 - For the Odessa Shooting, were there certain groups of constituents who were not effectively reached by your communication systems/methods or who had information barriers that precluded effective communication?

	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
Response	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
Yes	-	-	-	-	-
No	-	-	-	100%	-

Respondents who answered Yes to Question 73 were asked a follow-up question:
"Please elaborate on which groups of constituents were affected and how."
However, no responses were applicable to this question for the Odessa Shooting.

Figure 131

Question 74 - Please explain any changes, if any, that your entity has made since the Odessa Shooting to help reduce/address gaps in emergency communications.

	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
Response	0 Responses	0 Responses	0 Responses	1 Response	0 Responses
No changes	-	-	-	100%	-

The Intercontinental Terminals Company Deer Park Fire

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Figure 132

Question 75 - For the Intercontinental Terminals Company Deer Park Fire, please describe the points at which your entity decided to issue an official emergency communication. [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	3 Responses	3 Responses	0 Responses	1 Response
Shortly after the fires began	-	33%	67%	-	100%
When air quality concerns occurred	100%	-	33%	-	-
The second day	-	33%	-	-	-
When communications from other entities were received	-	33%	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 133

Question 76 - For the Intercontinental Terminals Company Deer Park Fire, once your entity decided to issue emergency communications, how long did it take to deploy the alert?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	3 Responses	3 Responses	1 Response	1 Response
0 minutes to 15 minutes	100%	67%	33%	-	100%
16 minutes to 30 minutes	-	33%	67%	-	-
31 minutes to 59 minutes	-	-	-	-	-
1 hour to 2 hours	-	-	-	-	-
Longer than 2 hours	-	-	-	100%	-

Figure 134

Question 77 - For the Intercontinental Terminals Company Deer Park Fire, how would you rate the timeliness of emergency communications that were issued by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	3 Responses	3 Responses	1 Response	1 Response
Excellent	-	33%	-	-	-
Good	100%	67%	100%	-	100%
Satisfactory	-	-	-	-	-
Fair	-	-	-	100%	-
Poor	-	-	-	-	-

Figure 135

Question 78 - For the Intercontinental Terminals Company Deer Park Fire, did your entity continue issuing emergency communications to update constituents as new information came in?

	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
Response	1 Response	3 Responses	3 Responses	1 Response	1 Response
Yes	100%	100%	67%	100%	-
No	-	-	33%	-	100%

Respondents who answered Yes to Question 78 were asked a follow-up question (Question 79), which is presented in Figure 136.

Figure 136

Question 79 - For the Intercontinental Terminals Company Deer Park Fire, how would you rate the timeliness of follow-up information communicated by your entity?

	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
Response	1 Response	3 Responses	2 Responses	1 Response	0 Responses
Excellent	-	33%	-	-	-
Good	100%	67%	100%	100%	-
Satisfactory	-	-	-	-	-
Fair	-	-	-	-	-
Poor	-	-	-	-	-

Figure 137

Question 80 - For the Intercontinental Terminals Company Deer Park Fire, which of the following was included in the official emergency communication? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	3 Responses	3 Responses	1 Response	1 Response
Specific Hazard	100%	100%	100%	100%	100%
Location	100%	100%	67%	100%	100%
Timeframes	-	100%	33%	100%	100%
Warning Source	-	100%	33%	100%	100%
Magnitude	-	67%	-	100%	100%
Likelihood	-	100%	33%	100%	100%
Protective Behavior	100%	100%	67%	100%	100%

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Communication Methods

Figure 138

Question 81 – What emergency communication method(s) did your entity use to communicate with constituents for the Intercontinental Terminals Company Deer Park Fire? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	3 Responses	3 Responses	1 Response	1 Response
Mass notification landline	-	67%	100%	-	100%
Mass notification cellular	-	67%	100%	-	100%
SMS/text	100%	100%	100%	-	100%
Traditional media	100%	100%	33%	-	-
Social media	100%	100%	100%	-	-
Email	100%	67%	67%	100%	100%
Entity website	100%	67%	100%	-	100%
Other web-based apps	-	-	-	-	-
Two-way radio	-	-	-	-	-
Weather radio	100%	-	-	-	-
Amateur radio	-	-	-	-	-
Emergency alert system (IPAWS)	-	67%	-	-	-
Public address speakers/sirens	-	-	-	-	-
Digital signage	-	-	-	-	-
Route notification	-	-	-	-	-
Word of mouth	100%	67%	-	-	-
Other	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 139

Question 82 (Counties) - How effective were each of the following emergency communication method(s) in communicating with constituents for the Intercontinental Terminals Company Deer Park Fire?

Counties (1 Response)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	-	-	-	-
Mass notification cellular	-	-	-	-	-	-
SMS/text	-	-	1	-	-	-
Traditional media	-	-	-	-	1	-
Social media	-	-	1	-	-	-
Email	-	-	1	-	-	-
Entity website	-	-	-	1	-	-
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-
Weather radio	-	-	1	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	1
Other	-	-	-	-	-	-

Figure 140

Question 82 (ISDs) - How effective were each of the following emergency communication method(s) in communicating with constituents for the Intercontinental Terminals Company Deer Park Fire?

Independent School Districts (3 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	-	2	-	-
Mass notification cellular	-	-	-	2	-	-
SMS/text	-	-	-	3	-	-
Traditional media	-	-	1	2	-	-
Social media	-	-	-	2	1	-
Email	-	-	1	-	1	-
Entity website	-	-	-	1	-	1
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	1	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	-	-	-	-	-
Word of mouth	-	-	-	1	-	1
Other	-	-	-	-	-	-

Figure 141

Question 82 (Municipalities) - How effective were each of the following emergency communication method(s) in communicating with constituents for the Intercontinental Terminals Company Deer Park Fire?

Municipalities (3 Responses)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	1	1	1	-
Mass notification cellular	-	-	1	1	1	-
SMS/text	-	-	1	1	1	-
Traditional media	-	-	-	-	1	-
Social media	-	-	1	1	1	-
Email	-	-	-	-	1	-
Entity website	-	-	1	1	1	-
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-
Other	-	-	-	-	-	-

Figure 142

Question 82 (SPDs) - How effective were each of the following emergency communication method(s) in communicating with constituents for the Intercontinental Terminals Company Deer Park Fire?

Special Purpose Districts (1 Response)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	-	-	-	-
Mass notification cellular	-	-	-	-	-	-
SMS/text	-	-	-	-	-	-
Traditional media	-	-	-	-	-	-
Social media	-	-	-	-	-	-
Email	-	-	1	-	-	-
Entity website	-	-	-	-	-	-
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-
Other	-	-	-	-	-	-

Figure 143

Question 82 (Utilities) - How effective were each of the following emergency communication method(s) in communicating with constituents for the Intercontinental Terminals Company Deer Park Fire?

Utilities (1 Response)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	-	-	1	-
Mass notification cellular	-	-	-	-	1	-
SMS/text	-	-	-	-	1	-
Traditional media	-	-	-	-	-	-
Social media	-	-	-	-	-	-
Email	-	-	-	-	1	-
Entity website	-	-	-	-	1	-
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-
Other	-	-	-	-	-	-

Figure 144

Question 83 (Counties) - Please indicate the percentage of constituents reached using the following communication methods.

Counties (1 Response)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	-	-	-	-	-	-
Mass notification cellular	-	-	-	-	-	-	-
SMS/text	-	-	-	-	-	-	-
Traditional media	-	-	-	-	-	-	-
Social media	-	-	-	1	-	-	-
Email	-	1	-	-	-	-	-
Entity website	-	-	-	-	1	-	-
Other web-based apps	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-

Figure 145

Question 83 (ISDs) - Please indicate the percentage of constituents reached using the following communication methods.

Independent School Districts (3 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	-	-	-	1	1	-
Mass notification cellular	-	-	-	-	1	1	-
SMS/text	-	-	-	-	2	1	-
Traditional media	-	-	-	1	-	-	-
Social media	-	-	-	-	1	-	2
Email	-	-	1	-	-	1	-
Entity website	-	-	-	-	1	-	1
Other web-based apps	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-

Figure 146

Question 83 (Municipalities) - Please indicate the percentage of constituents reached using the following communication methods.

Municipalities (3 Responses)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	-	-	1	2	-	-
Mass notification cellular	-	-	-	1	2	-	-
SMS/text	-	-	-	1	2	-	-
Traditional media	-	-	-	-	1	-	-
Social media	-	-	-	-	2	-	-
Email	-	-	-	1	1	-	-
Entity website	-	-	-	-	2	-	-
Other web-based apps	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-

No special purpose districts responded to Question 83.

Figure 147

Question 83 (Utilities) - Please indicate the percentage of constituents reached using the following communication methods.

Utilities (1 Response)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	-	-	-	1	-	-
Mass notification cellular	-	-	-	-	1	-	-
SMS/text	-	-	-	-	1	-	-
Traditional media	-	-	-	-	-	-	-
Social media	-	-	-	-	-	-	-
Email	-	-	-	-	-	1	-
Entity website	-	-	-	-	1	-	-
Other web-based apps	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-

Figure 148

Question 84 - For the Intercontinental Terminals Company Deer Park Fire, did your entity have to use a backup/redundant method of emergency communication due to your primary communication methods not being available or effective?

	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
Response	1 Response	3 Responses	3 Responses	1 Response	1 Response
Yes	-	-	-	-	-
No	100%	100%	100%	100%	100%

Figure 149

Question 85 - What changes, if any, has your entity made to your emergency communications due to the Intercontinental Terminals Company Deer Park Fire?

	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
Response	0 Response	1 Response	2 Responses	0 Response	0 Response
None	-	100%	50%	-	-
Provided more training	-	-	50%	-	-

Gaps in Communication

Figure 150

Question 86 - What languages are commonly used to communicate in your jurisdiction? [a]

	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
Response [b]	1 Response	3 Responses	3 Responses	1 Response	1 Response
English	100%	100%	100%	100%	100%
Spanish	100%	100%	67%	-	100%
Vietnamese	-	33%	33%	-	-
Chinese [c]	-	-	33%	-	100%
American Sign Language	100%	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

[b] No entities responded that Hindi, Arabic, German, French, or other languages were commonly used in their jurisdictions.

[c] Includes Cantonese, Mandarin, and other Chinese languages

Figure 151

Question 87 (Counties) - For the Intercontinental Terminals Company Deer Park Fire, what languages did you issue emergency communication in? [a]

Counties (1 Response)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	-	-	-	-	-	-	-	-	-
Mass notification cellular	-	-	-	-	-	-	-	-	-
SMS/text	100%	-	-	-	-	-	-	-	-
Traditional media	100%	100%	-	-	-	-	-	-	-
Social media	100%	-	-	-	-	-	-	-	-
Email	100%	100%	-	-	-	-	-	-	-
Entity website	100%	100%	100%	100%	100%	100%	100%	100%	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-	-	-
Weather radio	100%	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 152

Question 87 (ISDs) - For the Intercontinental Terminals Company Deer Park Fire, what languages did you issue emergency communication in? [a]

Independent School Districts (3 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	67%	67%	33%	-	-	-	-	-	-
Mass notification cellular	67%	67%	33%	-	-	-	-	-	-
SMS/text	100%	67%	33%	-	-	-	-	-	-
Traditional media	100%	67%	-	-	-	-	-	-	-
Social media	100%	67%	-	-	-	-	-	-	-
Email	67%	33%	33%	-	-	-	-	-	-
Entity website	67%	67%	67%	33%	33%	33%	33%	33%	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	67%	33%	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-	-	-
Word of mouth	67%	67%	33%	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 153

Question 87 (Municipalities) - For the Intercontinental Terminals Company Deer Park Fire, what languages did you issue emergency communication in? [a]

Municipalities (3 Responses)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	100%	33%	-	33%	-	-	-	-	-
Mass notification cellular	100%	33%	-	33%	-	-	-	-	-
SMS/text	100%	33%	-	33%	-	-	-	-	-
Traditional media	33%	-	-	-	-	-	-	-	-
Social media	100%	33%	-	33%	-	-	-	-	-
Email	67%	-	-	-	-	-	-	-	-
Entity website	100%	33%	-	33%	-	-	-	-	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 154

Question 87 (SPDs) - For the Intercontinental Terminals Company Deer Park Fire, what languages did you issue emergency communication in?

Special Purpose Districts (1 Response)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	-	-	-	-	-	-	-	-	-
Mass notification cellular	-	-	-	-	-	-	-	-	-
SMS/text	-	-	-	-	-	-	-	-	-
Traditional media	-	-	-	-	-	-	-	-	-
Social media	-	-	-	-	-	-	-	-	-
Email	100%	-	-	-	-	-	-	-	-
Entity website	-	-	-	-	-	-	-	-	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

Figure 155

Question 87 (Utilities) - For the Intercontinental Terminals Company Deer Park Fire, what languages did you issue emergency communication in?

Utilities (1 Response)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	100%	-	-	-	-	-	-	-	-
Mass notification cellular	100%	-	-	-	-	-	-	-	-
SMS/text	100%	-	-	-	-	-	-	-	-
Traditional media	-	-	-	-	-	-	-	-	-
Social media	-	-	-	-	-	-	-	-	-
Email	100%	-	-	-	-	-	-	-	-
Entity website	100%	-	-	-	-	-	-	-	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

Figure 156

Question 88 - For the Intercontinental Terminals Company Deer Park Fire, were there certain groups of constituents who were not effectively reached by your communication systems/methods or who had information barriers that precluded effective communication?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	3 Responses	2 Responses	1 Response	1 Response
Yes	-	-	-	-	-
No	100%	100%	100%	100%	100%

Respondents who answered Yes to Question 88 were asked a follow-up question (Question 88-A).

Question 88-A - Please elaborate on which groups of constituents were affected and how.

There were no responses that were applicable to Question 88-A.

Figure 157

Question 89 - Please explain any changes, if any, that your entity has made since the Intercontinental Terminals Company Deer Park Fire to help reduce/address gaps in emergency communications.

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	1 Response	2 Responses	0 Responses	0 Responses
No changes	100%	100%	50%	-	-
Training	-	-	50%	-	-

The Texas Petrochemicals Group Port Neches Plant Fire

Emergency Communications Timelines

Question 90 - For the Texas Petrochemicals Group Port Neches Plant Fire, please describe the points at which your entity decided to issue an official emergency communication.

There were no responses for Question 90.

Figure 158

Question 91 - For the Texas Petrochemicals Group Port Neches Plant Fire, once your entity decided to issue emergency communications, how long did it take to deploy the alert?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	0 Responses	0 Responses	0 Responses	0 Responses
0 minutes to 15 minutes	-	-	-	-	-
16 minutes to 30 minutes	100%	-	-	-	-
31 minutes to 59 minutes	-	-	-	-	-
1 hour to 2 hours	-	-	-	-	-
Longer than 2 hours	-	-	-	-	-

Figure 159

Question 92 - For the Texas Petrochemicals Group Port Neches Plant Fire, how would you rate the timeliness of emergency communications that were issued by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	0 Responses	0 Responses	0 Responses	0 Responses
Excellent	-	-	-	-	-
Good	-	-	-	-	-
Satisfactory	100%	-	-	-	-
Fair	-	-	-	-	-
Poor	-	-	-	-	-

Figure 160

Question 93 - For the Texas Petrochemicals Group Port Neches Plant Fire, did your entity continue issuing emergency communications to update constituents as new information came in?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	0 Responses	0 Responses	0 Responses	0 Responses
Yes	100%	-	-	-	-
No	-	-	-	-	-

Respondents who answered Yes to Question 93 were asked a follow-up question (Question 94), which is presented in Figure 161.

Figure 161

Question 94 - For the Texas Petrochemicals Group Port Neches Plant Fire, how would you rate the timeliness of follow-up information communicated by your entity?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	0 Responses	0 Responses	0 Responses	0 Responses
Excellent	-	-	-	-	-
Good	-	-	-	-	-
Satisfactory	100%	-	-	-	-
Fair	-	-	-	-	-
Poor	-	-	-	-	-

Figure 162

Question 95 - For the Texas Petrochemicals Group Port Neches Plant Fire, which of the following was included in the official emergency communication?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	0 Responses	0 Responses	0 Responses	0 Responses
Specific Hazard	100%	-	-	-	-
Location	100%	-	-	-	-
Timeframes	100%	-	-	-	-
Warning Source	-	-	-	-	-
Magnitude	-	-	-	-	-
Likelihood	-	-	-	-	-
Protective Behavior	100%	-	-	-	-

Communication Methods

Figure 163

Question 96 – What emergency communication method(s) did your entity use to communicate with constituents for the Texas Petrochemicals Group Port Neches Plant Fire? [a]

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	0 Responses	0 Responses	0 Responses	0 Responses
Mass notification landline	100%	-	-	-	-
Mass notification cellular	100%	-	-	-	-
SMS/text	100%	-	-	-	-
Traditional media	-	-	-	-	-
Social media	100%	-	-	-	-
Email	100%	-	-	-	-
Entity website	100%	-	-	-	-
Other web-based apps	-	-	-	-	-
Two-way radio	-	-	-	-	-
Weather radio	-	-	-	-	-
Amateur radio	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-
Digital signage	-	-	-	-	-
Route notification	-	-	-	-	-
Word of mouth	-	-	-	-	-
Other	-	-	-	-	-

[a] Respondents could select multiple options. As a result, the percentages do not sum to 100 percent.

Figure 164

Question 97 (Counties) - How effective were each of the following emergency communication method(s) in communicating with constituents for the Texas Petrochemicals Group Port Neches Plant Fire?

Counties (1 Response)	Not Effective	Minimally Effective	Moderately Effective	Highly Effective	Extremely Effective	Not applicable
Mass notification landline	-	-	-	1	-	-
Mass notification cellular	-	-	-	1	-	-
SMS/text	-	-	-	1	-	-
Traditional media	-	-	-	-	-	-
Social media	-	-	-	1	-	-
Email	-	-	-	1	-	-
Entity website	-	-	-	1	-	-
Other web-based apps	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-
Route notification	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-
Other	-	-	-	-	-	-

There were no responses to Question 97 from independent school districts, municipalities, special purpose districts, or utilities.

Figure 165

Question 98 (Counties) - Please indicate the percentage of constituents reached using the following communication methods.

Counties (1 Response)	0%	1-20%	21-40%	41-60%	61-80%	81-100%	Unknown
Mass notification landline	-	-	-	-	1	-	-
Mass notification cellular	-	-	-	-	1	-	-
SMS/text	-	-	-	-	1	-	-
Traditional media	-	-	-	-	-	-	-
Social media	-	-	-	-	1	-	-
Email	-	-	-	-	-	-	-
Entity website	-	-	-	-	-	-	-
Other web-based apps	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-

There were no responses to Question 98 from independent school districts, municipalities, special purpose districts, or utilities.

Figure 166

Question 99 - For the Texas Petrochemicals Group Port Neches Plant Fire, did your entity have to use a backup/redundant method of emergency communication due to your primary communication methods not being available or effective?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	0 Responses	0 Responses	0 Responses	0 Responses
Yes	-	-	-	-	-
No	100%	-	-	-	-

Question 100 - What changes, if any, has your entity made to your emergency communications due to the Texas Petrochemicals Group Port Neches Plant Fire?

There were no responses for Question 100.

Gaps in Communication

Figure 167

Question 101 - What languages are commonly used to communicate in your jurisdiction?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	0 Responses	0 Responses	0 Responses	0 Responses
English	100%	-	-	-	-
Spanish	100%	-	-	-	-
Vietnamese	100%	-	-	-	-

[a] No entities responded that Chinese (which includes Cantonese, Mandarin, and other Chinese languages), Hindi, Arabic, German, French, American Sign Language, or other languages were used to communicate in their jurisdictions.

Figure 168

Question 102 (Counties) - For the Texas Petrochemicals Group Port Neches Plant Fire, what languages did you issue emergency communication in?

Counties (1 Response)	English	Spanish	Vietnamese	Chinese	Hindi	Arabic	German	French	American Sign Language
Mass notification landline	100%	-	-	-	-	-	-	-	-
Mass notification cellular	100%	-	-	-	-	-	-	-	-
SMS/text	100%	-	-	-	-	-	-	-	-
Traditional media	-	-	-	-	-	-	-	-	-
Social media	100%	-	-	-	-	-	-	-	-
Email	100%	-	-	-	-	-	-	-	-
Entity website	100%	-	-	-	-	-	-	-	-
Other web-based apps	-	-	-	-	-	-	-	-	-
Two-way radio	-	-	-	-	-	-	-	-	-
Weather radio	-	-	-	-	-	-	-	-	-
Amateur radio	-	-	-	-	-	-	-	-	-
Emergency alert system (IPAWS)	-	-	-	-	-	-	-	-	-
Public address speakers/sirens	-	-	-	-	-	-	-	-	-
Digital signage	-	-	-	-	-	-	-	-	-
Route notification	-	-	-	-	-	-	-	-	-
Word of mouth	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-

There were no responses to Question 102 from independent school districts, municipalities, special purpose districts, or utilities.

Figure 169

Question 103 - For the Texas Petrochemicals Group Port Neches Plant Fire, were there certain groups of constituents who were not effectively reached by your communication systems/methods or who had information barriers that precluded effective communication?

Response	Counties	Independent School Districts	Municipalities	Special Purpose Districts	Utilities
	1 Response	0 Responses	0 Responses	0 Responses	0 Responses
Yes	-	-	-	-	-
No	100%	-	-	-	-

Respondents who answered Yes to Question 103 were asked a follow-up question (Question 103-A).

Question 103-A - Please elaborate on which groups of constituents were affected and how.

No responses were applicable to Question 103-A.

Question 104 - Please explain any changes, if any, that your entity has made since the Texas Petrochemicals Group Port Neches Plant Fire to help reduce/address gaps in emergency communications.

There were no responses for Question 104.

Copies of this report have been distributed to the following:

Legislative Audit Committee

The Honorable Dan Patrick, Lieutenant Governor, Joint Chair

The Honorable Dade Phelan, Speaker of the House, Joint Chair

The Honorable Joan Huffman, Senate Finance Committee

The Honorable Robert Nichols, Member, Texas Senate

The Honorable Greg Bonnen, House Appropriations Committee

The Honorable Morgan Meyer, House Ways and Means Committee

Office of the Governor

The Honorable Greg Abbott, Governor

Texas Division of Emergency Management

Mr. W. Nim Kidd, Chief of the Texas Division of Emergency Management

Ms. Blair Walsh, Division Chief, Community Relations

Legislative Committees

Members of the legislative committees with oversight responsibilities related to the subject of the report, as required by Rider X, page III-262, the General Appropriations Act (87th Legislature).