FEMA's interim response, including the fully responsive data requested in parts 3 and 4, is in the /Maria/ and /Other disasters/ folders at https://bd02.github.io/external/Reorganized/Other/ . FEMA's responses to requests 1, 2, 5, and 6 are still pending as of 2022/03/11.

18 February 2020

FEMA FOIA Branch
Records Management/Disclosure Branch
500 C Street, S.W., Mailstop 3172
Washington, D.C. 20472-3172

Dear Madam or Sir:

Under the Freedom of Information Act (FOIA), I request the following records.

Requested records

Puerto Rico power outage data

1. Please provide the two files
    a. ARC Barrio Scores 12-26-17.xlsx
    b. RCIA Zone Lead Status Report (1-10-2018).xlsx

    These files contain barrio-level survey data collected by the American Red Cross (ARC) in Puerto Rico in the months following Hurricane Maria. The information I am requesting is aggregated to barrio level, not individual households.

    If providing the whole files is problematic for some reason, please provide at a minimum the columns for municipality, barrio, date of survey, number of surveys, and barrio-level Electrical Status information.

DR-4339-PR JFO Planning Section will have copies of records #1, and possibly #2a. I don't know whether Region II or ARC is the 'owner' for FOIA purposes.

2. If ARC, in their role as an instrumentality of the Government, collected similar data (barrio- or municipality-level time series data on population electric power status) for any part of the time periods below and it still exists, please provide this data for
    a. Hurricane Maria, from September 2017 to the earlier of August 2018 or the time ARC stopped collecting this information.[1]
    b. Hurricane Hugo (DR-0842-PR), from September 1989 to the earlier of January 1990 or the time ARC stopped collecting this information; and
    c. Hurricane Georges (DR-1247-PR), from September 1998 to the earlier of December 1998 or the time ARC stopped collecting this information.

I don't know whether anyone in FEMA has copies of these records, but I believe that Office of Recovery / Mass Care would be the POC for ARC.

[1] ARC surveyed the 900 barrios about every one to four weeks from October (I'm not sure about September) through at least early January 2018, recording status as yes/no/partial.

Post-Maria migration to Florida

3. Please provide the disaster assistance application counts by mailing zip code, for DR-4339-PR survivors registering from Florida zip codes, which you previously released to CNN and Hunter College in response to requests

   - 2018-FEFO-00176, CNN, request date 11/6/2017
   - 2018-FEFO-00395, CNN, request date 1/23/2018
   - 2018-FEFO-00500, Hunter College, request date 2/22/2018.

   I am only interested in Florida, and I am only interested in overall counts by zip code in Florida, but you are welcome to provide more data if it is more convenient for you.

   This request is for aggregate data, not individual data.

This information is held by Individuals and Households Program, FEMA.

Registrations by county by day

The two lists in #4 and #5 overlap: for convenience, the disasters which do not appear on both lists are marked in blue.

4. Please provide the total (total counts of) individual assistance registrations by county of damaged residence by day, for

   a. Florida:

      i. Hurricane Charley (DR-1539-FL) (2004)
      ii. Hurricane Frances (DR-1545-FL) (2004)
      iii. Hurricane Ivan (DR-1551-FL) (2004)
      iv. Hurricane Jeanne (DR-1561-FL) (2004)
      v. Hurricane Dennis (DR-1595-FL) (2005)
      vi. Hurricane Wilma (DR-1609-FL) (2005)

   b. Puerto Rico:

      i. Hurricane Hugo (DR-0842-PR) (1989)
      ii. Hurricane Georges (DR-1247-PR) (1998)

   c. Texas:

      i. TS Allison (DR-1379-TX) (2001)
      ii. Hurricane Ike (DR-1971-TX) (2008)

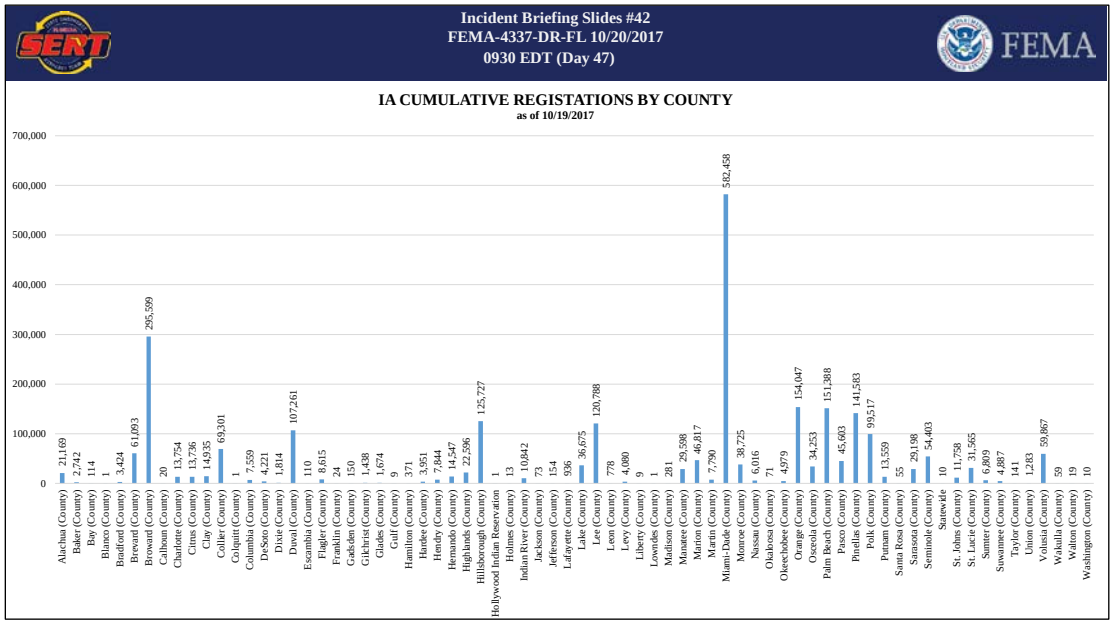
   d. New Jersey:

      i. Hurricane Sandy in New Jersey (DR-4086-NJ) (2012)

   e. New York:

      i. Hurricane Sandy in New York (DR-4085-NY) (2012).

FIGURE 1. REQUEST #4: [PUBLIC] EXAMPLE OF THE LEVEL OF DETAIL REQUESTED[3]



For the 2017 disasters (not requested) this information can be aggregated from individual-registration-level FEMA data sets which are already public.[2] Please note that I am not requesting individual-level, household-level, or registration-level data like the public 2017 data referenced in note 2 – only aggregate data. I am requesting only total registrations by county by day, specifically the kind of information needed to construct daily charts similar to figure 1 above. I would prefer county-level aggregates if available, but if not then zip-code or sub-county unit aggregates would be fine.

This information is held by Individuals and Households Program, FEMA.

[2] Federal Emergency Management Agency (2019, December 23). OpenFEMA Dataset: Individual Assistance Housing Registrants Large Disasters - V1. Data file, IndividualAssistanceHousingRegistrantsLargeDisasters.csv. At https://www.fema.gov/openfema-dataset-individual-assistance-housing-registrants-large-disasters-v1 (retrieved 26 June 2019).

[3] I'm not requesting a chart like this one, only the data needed to make other charts like it. Federal Emergency Management Agency (2017, October 19). Cumulative individual assistance registrations by county, Florida, Irma, as of 10/19/2017. State of Florida & FEMA incident briefing slides #42 FEMA-4337-DR-FL 10/20/2017 0930 EDT (day 47). Florida State Emergency Response Team (SERT): at https://content.govdelivery.com/attachments/USDHSFEMA/2017/10/20/file_attachments/899701/FEMA-4337-DR-FL-Incident%2BBrief%252342-10-20-2017.pdf (retrieved 8 August 2019).

Preliminary damage assessment data not already public

5. Please provide the preliminary damage assessment information by aggregate counts in the four categories of structure damage (Affected, Minor, Major, Destroyed) by county, similar to the public data file 'FEMA_Damage_Assessments_Harvey_20170829.xls' for Hurricane Harvey,[4] for the following disasters:

    a. Florida:

        i. Hurricane Charley (DR-1539-FL) (2004)
        ii. Hurricane Frances (DR-1545-FL) (2004)
        iii. Hurricane Ivan (DR-1551-FL) (2004)
        iv. Hurricane Jeanne (DR-1561-FL) (2004)
        v. Hurricane Dennis (DR-1595-FL) (2005)
        vi. Hurricane Katrina (DR-1602-FL) (2005)
        vii. Hurricane Wilma (DR-1609-FL) (2005)
        viii. TS Rita (EM-3259-FL) (2005)

    b. Puerto Rico:

        i. Hurricane Hugo (DR-0842-PR) (1989)
        ii. Hurricane Georges (DR-1247-PR) (1998)

    c. Texas:

        i. TS Allison (DR-1379-TX) (2001)
        ii. Hurricane Ike (DR-1971-TX) (2008).

I am asking only for the summary data table by county which can be represented as a simple table (figure 2), aggregated by county rather than by individual structure.

Any file format that is most convenient for you, including PDFs, would be fine.

If both are available, please provide counts of 1) total structures and counts of 2) residential-only structures similar to the .xls file referenced above. If not, either one is fine.

If multiple days are available for each disaster, please provide the date closest to the third day after the disaster, e.g. like the example in figure 2 (8/28, the third day after impact on 8/25). If it is more convenient for you to provide multiple dates for one or more disasters, please feel welcome to do so.

This information is held by Response Geospatial Office, FEMA.

[4] Federal Emergency Management Agency (2017, August 29). Preliminary damage assessment by county table, Hurricane Harvey. Response Geospatial Office. File http://disasters.geoplatform.gov/publicdata/NationalDisasters/2017/HurricaneHarvey/Data/DamageAssessments/FEMA_Damage_Assessments_Harvey_20170829.xls, at http://disasters.geoplatform.gov/publicdata/NationalDisasters/2017/HurricaneHarvey/Data/DamageAssessments/ (checked 4 February 2020).

FIGURE 2. REQUEST #5, LEVEL OF DETAIL REQUESTED (EXAMPLE)[5]

County	State	Affected < 2'	Minor 2'-5'	Major > 5'-8'	Des-troyed > 8'	Total Impact	Total Residential / Manufactured Home Count	Total Structures
Aransas	Texas	1,259	1,151	359	-	2,769	12,019	13,030
Brazoria	Texas	987	116	2		1,105	107,730	127,914
Calhoun	Texas	517	363	61	-	941	9,424	10,680
Chambers	Texas	22	-	-	-	22	14,784	17,612
DeWitt	Texas	3	1	-	-	4	1,993	5,286
Fort Bend	Texas	2,762	2,461	528	65	5,816	216,026	258,160
Galveston	Texas	3,519	1,262			4,781	140,040	153,044
Harris	Texas	36,922	29,796	9,640	3,721	80,079	1,175,541	1,305,101
Jackson	Texas	74	52	39		165	5,164	7,895
Jefferson	Texas	5,147	3,126	87		8,360	99,170	116,850
Lavaca	Texas	29	41	9		79	5,283	12,165
Liberty	Texas	332	363	218	224	1,137	25,513	33,561
Matagorda	Texas	1,151	291			1,442	14,195	17,809
Montgomery	Texas	1,144	977	469	225	2,815	165,176	178,966
Nueces	Texas	2,336	1,455	595	-	4,386	101,115	112,072
Refugio	Texas	2	-	-	-	2	2,403	2,751
San Patricio	Texas	706	45	1		752	38,157	43,500
Victoria	Texas	180	341	107		628	27,388	31,042
Walker	Texas	19	28	25	17	89	14,005	18,879
TOTAL		57,111	41,869	12,140	4,252	115,372	2,175,126	2,466,317
As of 8/28/2017								
Yellow highlights indicate damage assessment categories that need to be further reviewed due to discrepancies with the modeled output results. As additional information is provided, the analysis will be refined and the assessments updated.								

Puerto Rico THIRAs not already public

6. Please provide Puerto Rico's 2013, 2014, and 2015 Threat and Hazard Identification & Risk Assessment (THIRA) and State Preparedness Report (SPR) submissions, in a similar format and level of completeness as the 2016 Puerto Rico, USVI, and Region II THIRAs/SPRs which you released to American Oversight last year (2019-FELI-00001).[6]

A Word or pdf document format (e.g. the machine-generated 'submission reports') similar to those which you released to American Oversight would be ideal. (The specific format of these will vary from year to year to some extent.) But if this is difficult to do for one or more years, any electronic or paper format would be fine.

[5] Tab 'County_Summary', .xls file referenced footnote 4.

[6] Federal Emergency Management Agency (2019, April 5, June 18). FOIA releases 2019/02/15, 2019/04/15 to American Oversight. *American Oversight v. Federal Emergency Management Agency* 1:2018-cv-02470, D.D.C.

- Federal Emergency Management Agency (2016, March). Region II draft Threat and Hazard Identification and Risk Assessment (THIRA). Bates pp. 000322-000719. FEMA 2019/02/15 release to American Oversight, 2019-FELI-00001: at https://assets.documentcloud.org/documents/5788192/FEMA-Records-Regarding-Hurricane-Maria-Response.pdf (retrieved 14 December 2019).
- Commonwealth of Puerto Rico (2016). Threat and Hazard Identification and Risk Assessment (THIRA) and State Preparedness Report (SPR). Bates pp. 003153-003311. FEMA 2019/04/15 release to American Oversight, 2019-FELI-00001: at https://assets.documentcloud.org/documents/6184550/FEMA-Reports-regarding-Disaster-Preparation.pdf (retrieved 14 December 2019).
- U.S. Virgin Islands (2016). Threat and Hazard Identification and Risk Assessment (THIRA) and State Preparedness Report (SPR). Bates pp. 003312-003483. FEMA 2019/04/15 release to American Oversight, 2019-FELI-00001: at https://assets.documentcloud.org/documents/6184550/FEMA-Reports-regarding-Disaster-Preparation.pdf (retrieved 14 December 2019).

These records are held by National Preparedness Assessment Division, FEMA.

FOIAbility

I realize that the FOIAability of records (#1-2) provided to FEMA by the American Red Cross may be unclear. Please request permission from the originators to allow public release. This uniquely useful data reflects some of the unique capabilities which ARC brings to FEMA's disaster mission which are not widely known at present, compared with their other work. I was amazed when I saw it. I believe public knowledge of the information in these records is in ARC's interest, and I believe they will recognize that.

Records #3 have previously been released to others.

FEMA has published the information in record #4 for Harvey, Irma, and Maria. For earlier disasters, the information is not currently published by FEMA.

FEMA has published the information in record #5 for Sandy, Harvey, Irma, and Maria. For disasters before 2012 the information is not currently published by FEMA, although the agency has provided it to public audiences in the past.[7]

Regarding record #6, FEMA confirmed that the THIRA information which it provided to American Oversight in its entirety was released as non-exempt from FOIA.[8]

Public and agency interest

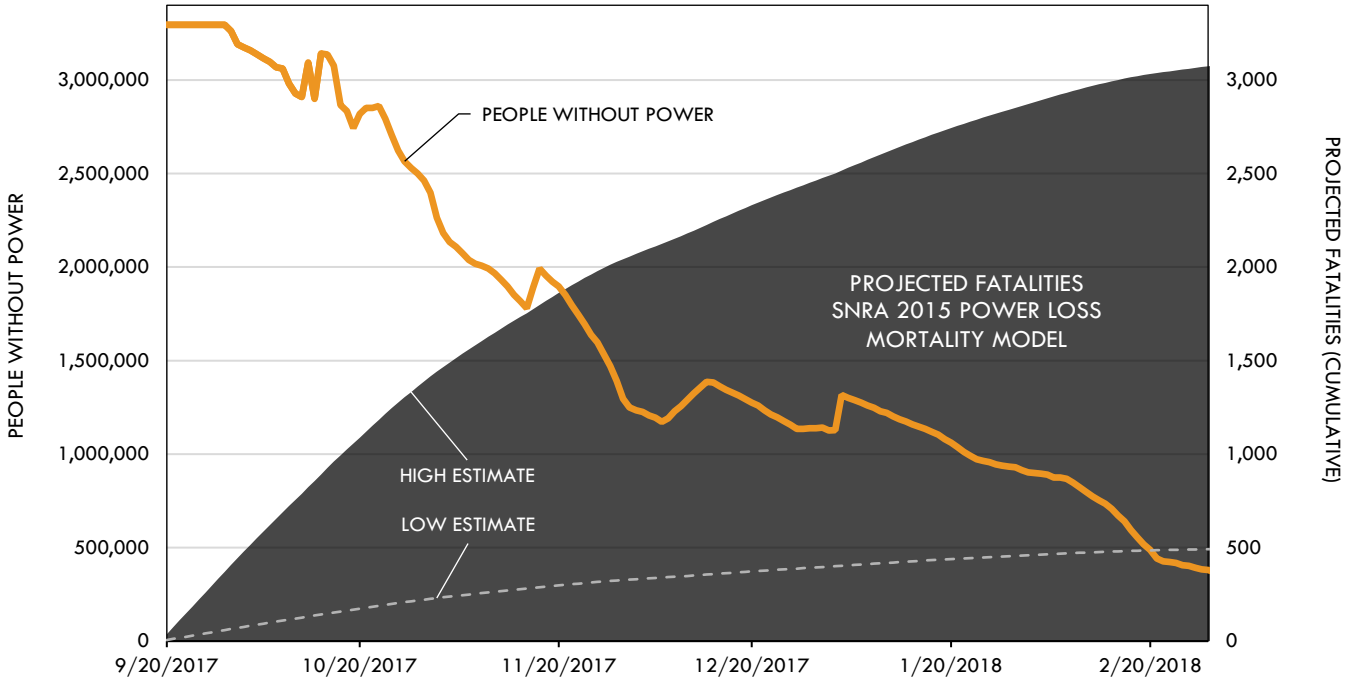
A government employee may petition his own agency if 1) it is in the public interest, 2) it is consistent with law and policy, and 3) the public interest outweighs any negative impact to the agency's interest.[9]

[7] Gilreath, Morgan B. Jr. (2009, May 5). Slide 14. Integrated Damage Assessment Model. FEMA District IV Individual Assistance (IA) Conference 2009, Atlanta GA: at http://vcpa.vcgov.org/2009-05-05%20FEMA%20-%20Atlanta%20GA%20-%20IDAM%20presentation.pdf (retrieved 2 September 2019).

[8] Federal Emergency Management Agency (2019, April 5, June 18). Documents 12-13, joint status reports with plantiff, 12 p. 1, 13 p. 2, unredacted pages of 2019/02/15, 2019/04/15 releases non-exempt. American Oversight v. Federal Emergency Management Agency 1:2018-cv-02470, D.D.C. (2019-FELI-00001): at https://assets.documentcloud.org/documents/6184550/FEMA-Reports-regarding-Disaster-Preparation.pdf, https://assets.documentcloud.org/documents/5788192/FEMA-Records-Regarding-Hurricane-Maria-Response.pdf (retrieved 14 December 2019).

[9] *Borough of Duryea, Pennsylvania*, et al. *v. Guarnieri*, 564 U.S. 379 (2011).

FIGURE 3. PUERTO RICO POWER RESTORATION AND EXPECTED FATALITIES, FEMA 2015 STRATEGIC NATIONAL RISK ASSESSMENT (SNRA) POWER LOSS MORTALITY MODEL



Power loss mortality model: Linear extrapolation of best-estimate (90) excess fatalities, New York City 14-15 August, 2003 East Coast Blackout, Anderson et al (2012) (*Epidemiology* 23(2) 189-193, NIH public access https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3276729/pdf/nihms348988.pdf) to total person-days without electric power. Low estimate (1.8 fatalities/million person-days) assumes the 90 NYC fatalities represented all fatalities from the multi-state blackout (50 million person-days without power in U.S. and Canada); high estimate (11.25 per million person-days) assumes the 90 NYC fatalities represented impacts only in NYC (8 million person-days). The SNRA used the low-estimate-assumptions for the electric-power-related hazard events which FEMA added in 2015 (space weather & physical attack on the power grid). FEMA also included indirect fatalities in other events added or revised in 2015 where defensible numbers were available, but these were not specific to electric lifeline failure.

Maria power restoration curve: Assumption 100% without power 20-21 September, remainder from figure 10, Kwasinski et al (2019) (*IEEE Power and Energy Technology Systems Journal* 6(1) 85-94: at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8644031). Population, GWU displacement scenario. Direct fatalities not included in totals.

In April, I discovered that the power loss mortality model of the 2015 Strategic National Risk Assessment (SNRA) appears to have accurately projected the magnitude of excess fatalities from Hurricane Maria in Puerto Rico (figure 3) at the high estimate, when I had previously believed otherwise.[10] This appears to be true not just retrospectively but also prospectively (figure 4).[11] I have spent the months since trying to confirm or disconfirm this on my own, but experts outside the Government will need to do this definitively.

I am requesting the currently non-public information that I know outside experts will need to validate the SNRA's power loss mortality model, and other relevant information.

[10] U.S. Department of Homeland Security (2015, June). The Strategic National Risk Assessment (SNRA). DHS Office of Risk Management & Analysis (RMA), DHS/FEMA National Integration Center (NIC). June 2015 revision, FEMA/NIC. Unclassified SNRA 2015 Technical Appendix pp. 16-18, 33-34, 40, 49-50, 54, 57-58, 63-72. Unclassified SNRA 2015 Findings, page 1.

[11] 'Prospective' = using the information available in October 2017 as inputs to project mortality in the following months. The calculation itself and the chart based on it (figure 4) are retrospective because they were made in 2020. (By contrast, the data and the chart of figure 3 are both retrospective.) I used the word 'retrospectively' in the figure title to emphasize that the chart itself was not made in October 2017, but years later.

Relevance

Records #1-2 are the only source that I know of the kind of time series, population-level outage information needed to validate the SNRA's power loss mortality model in Puerto Rico to the same level of geographic granularity that is possible for other jurisdictions.

Record #3 is to adjust the population balance from the Maria migration scenario on the Florida end, to correct county-level excess mortality consequent to Irma in Florida.

The information in records #4 and #5 will be needed to assess the information value of the SNRA's power loss health impacts model for prioritizing response actions, relative to other information early in a disaster, in historical storm scenarios with recorded county-level power outage differences.

Record #6: The SNRA and the THIRAs are complementary products, by design: any presentation which focuses on either one to the exclusion of the other can be misleading. You have already released in full the 2016[12] THIRA which directly supported FEMA's response in 2017, but previous years' versions which supported other FEMA decisions are relevant to the 2017 disasters as well.

Handling

For documents with non-releasable information, please provide all segregable, nonexempt information.

I am an individual seeking information for personal use, and not for a commercial use. Although I have copies of some of these records in my official capacity, I am requesting them in my personal capacity so DHS can authorize them for public distribution (6 CFR § 5.1(d)).

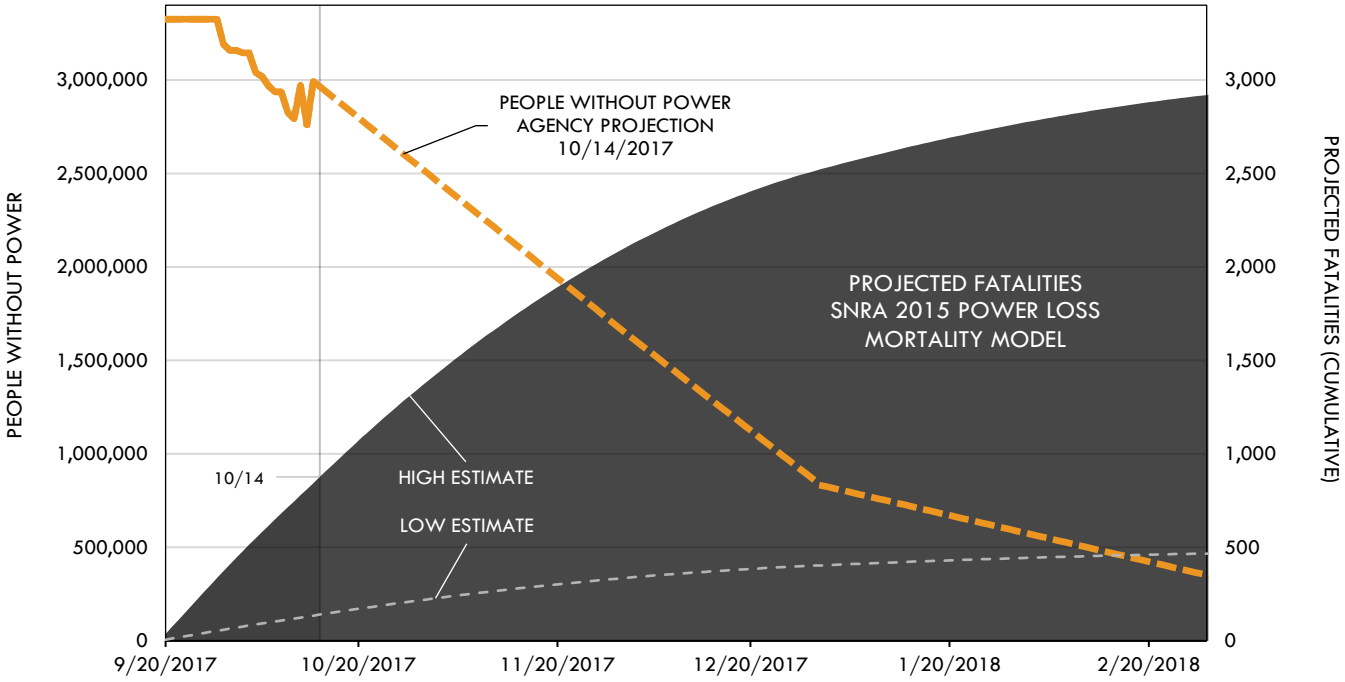
I request a waiver of fees for this request because it is in the public interest. If you deny this waiver, then please go ahead and process the request without the waiver in order to not delay things further.

- If so, please supply the records without informing me of the cost if the fees do not exceed $1,000, which I agree to pay. If additional fees are necessary, please let me know in advance of fulfilling my request.

I would prefer the request filled electronically. If the information is already public, please provide a link to an already-public source if you are allowed to do this. Otherwise, please provide it by e-mail attachment if available, or CD-ROM if not.

[12] The THIRAs are submitted at year end, so the [December] 2016 submission which you have already released was the one current in fall 2017.

FIGURE 4. RETROSPECTIVELY PROJECTED FATALITIES BASED ON THE AGENCY'S OCTOBER 2017 PROJECTIONS OF POWER RESTORATION TO THE ISLAND



Power loss mortality model: Linear extrapolation of best-estimate (90) excess fatalities, New York City 14-15 August, 2003 East Coast Blackout, Anderson et al (2012) (*Epidemiology* 23(2) 189-193, NIH public access https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3276729/pdf/nihms348988.pdf) to total person-days without electric power. Low estimate (1.8 fatalities/million person-days) assumes the 90 NYC fatalities represented all fatalities from the multi-state blackout (50 million person-days without power in U.S. and Canada); high estimate (11.25 per million person-days) assumes the 90 NYC fatalities represented impacts only in NYC (8 million person-days). The SNRA used the low-estimate-assumptions for the electric-power-related hazard events which FEMA added in 2015 (space weather & physical attack on the power grid). FEMA also included indirect fatalities in other events added or revised in 2015 where defensible numbers were available, but these were not specific to electric lifeline failure.

Maria power restoration curve: 9/20-10/13, FEMA senior leadership briefing (SLB) 10/13/17 1700 EDT (https://oversight.house.gov/sites/democrats.oversight.house.gov/files/Senior%20Leadership%20Briefing%20and%20Recovery%20Snapshots.pdf); projected 10/14-3/31 (linear interpolation), FEMA daily operations brief 10/14/17 (https://www.hsdl.org/?view&did=804878). Assumption of constant population (Census July 2017). Official fatality total (47 as of 10/14) not included in chart.

Thank you,

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