

U.S. House of Representatives  
**Committee on Transportation and Infrastructure**  
John L. Mica (FL-07), Ranking Member



**Staff Analysis of  
FEMA's Temporary Housing: Four Years After  
Katrina Thousands of Trailers Remain In Storage**

**Minority Staff Report  
111<sup>th</sup> Congress  
Committee on Transportation and Infrastructure  
October 2009**

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## I. Executive Summary

### *FEMA Has Over 121,000 Excess Housing Units in Storage Costing Taxpayers Hundreds of Millions of Dollars*

Hurricane Katrina caused more damage than any other single disaster in U.S. history when it made landfall in 2005. 700,000 people were displaced and approximately 300,000 homes were destroyed or rendered uninhabitable. This catastrophe stretched the resources of government agencies at all levels.

Unfortunately, four years after Hurricane Katrina, taxpayers are still footing the bill for the costs associated with unused temporary housing units (THUs) purchased for the 2004 and 2005 hurricane seasons, including Hurricanes Katrina and Rita.

FEMA purchased 230,000 THUs for the 2004 and 2005 hurricane seasons and, more specifically, over 145,000 following Hurricane Katrina, costing more than \$2.6 billion.

While FEMA is preparing to purchase up to 135,000 new THUs for future catastrophic disasters, over 121,000 unused THUs sit in leased storage facilities awaiting disposal, costing taxpayers \$100 million to \$120 million annually.

Further complicating the issue is FEMA's own policy to restrict the use of travel trailers based on complaints about the possible effects of formaldehyde. Instead of testing each unit to determine suitability, FEMA issued a blanket policy prohibiting their use for housing. As a result, more than 100,000 travel trailers remain in storage, unused and costing the taxpayer hundreds of millions of dollars.

### Recommendations

FEMA should:

- ***Test unused THUs to determine if the housing restriction is warranted:*** the Centers for Disease Control and Prevention (CDC) conducted tests of 519 THUs for formaldehyde levels and the results varied dramatically by unit. FEMA's determination to restrict the use of all of the 104,000 travel trailers, based on these varied results of only 0.5% of the units, should be reevaluated, and perhaps actual testing of each unit should be conducted to determine suitability.
- ***Be accountable for the purchase costs of housing units:*** precise numbers for the actual costs to purchase the unused THUs were not readily available and the methods of purchasing the THUs following Hurricane Katrina were haphazard, resulting in an inability to manage and account for costs.
- ***Improve oversight of storage and maintenance costs:*** As with the purchase costs, an accurate assessment of actual storage costs was not readily available.

- ***Improve the National Disaster Housing Strategy to adequately prepare for catastrophic disasters:*** FEMA released the National Disaster Housing Strategy in January 2009, pursuant to the Post-Katrina Emergency Management Reform Act of 2006 (PKEMRA), but clear temporary housing solutions to a catastrophic disaster remain elusive. While solutions to such an event would likely require a variety of options, including the use of THUs, those options should be analyzed and articulated in the Strategy.

While FEMA has taken some steps towards improvements for *future* disasters, FEMA must improve the management of its existing THUs, including an assessment of all the costs associated with their purchase, storage, and maintenance. FEMA should pursue ways in which the return to the taxpayer can be maximized either in the disposal process or in the reuse of certain THUs.

## **II. FEMA’s Temporary Housing Unit (THU) Program**

### *Background*

The primary mission of the Federal Emergency Management Agency (FEMA) is “to reduce the loss of life and property and protect the Nation from all hazards, including natural disasters, acts of terrorism, and other man-made disasters, by leading and supporting the Nation in a risk-based, comprehensive emergency management system of preparedness, protection, response, recovery, and mitigation.”<sup>1</sup>

Following the declaration of a major disaster, certain authorities under the Robert T. Stafford Disaster Relief and Emergency Assistance Act<sup>2</sup> (Stafford Act) are triggered to support FEMA’s role as the lead agency in response and recovery. In particular, Section 408<sup>3</sup> of the Stafford Act authorizes FEMA to provide housing assistance to individuals and households impacted by a major disaster. This assistance may include financial assistance for individuals and households to rent temporary housing, repair existing homes, or reside temporarily in properties acquired by the government. Such assistance is limited to up to 18 months, unless the President determines there are “extraordinary circumstances” that are in the public interest.<sup>4</sup>

One solution for meeting the temporary housing needs of individuals impacted by major disasters includes the use of Temporary Housing Units (THUs). THUs include a variety of types of mobile homes and typically have been categorized into three standard

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<sup>1</sup> 6 U.S.C. 313(b)(1).

<sup>2</sup> Public Law 93-288 (as amended); 42 U.S.C. 5121- 5207.

<sup>3</sup> 42 U.S.C. 5174.

<sup>4</sup> 42 U.S.C. 5174(c)(1)(B).

models – manufactured homes (~ 840 square feet), park models (~ 374 square feet), and travel trailers (~ 256 square feet). The use of THUs as a temporary housing solution is typically chosen after other temporary housing solutions (e.g. rental property) are not available within a reasonable distance of the affected community.<sup>5</sup>

In addition, in the wake of controversy surrounding formaldehyde levels found in some of the travel trailers used in response to the 2005 Hurricanes Katrina and Rita in the Gulf Coast (discussed below), FEMA has determined that travel trailers will not normally be used for interim housing and will only consider their use when no other form of housing is available.<sup>6</sup>

### *Current Acquisition Process*

The current process for the acquisition of THUs starts with FEMA’s Individual Assistance (IA) Branch of the Disaster Assistance Division. The IA Branch develops the standards and specifications for needed THUs, in consultation with the Department of Housing and Urban Development (HUD) and the Department of Homeland Security’s Office of Health Affairs. The IA Branch then works with contracting personnel to begin the acquisition process. The IA Branch will also work with manufacturers to ensure compliance with the specifications and to remedy any problems discovered upon delivery of the units to FEMA.<sup>7</sup>

Once THUs are acquired, they are delivered by the manufacturer to a FEMA facility at which point FEMA takes custody of the THUs and FEMA’s Logistics Management Division (LMD) inspects the units to ensure they are suitable and that there are no damages or defects. The LMD will also conduct an inspection that ensures the THUs meet the established specifications. Assuming the THUs pass all inspections, the THUs are considered “Ready for Dispatch” (RFD) and LMD ensures they are properly stored. LMD will repeat inspections every 90 days.<sup>8</sup>

If at some point FEMA determines it has more THUs than needed, or if any fail inspection or are otherwise not suitable, FEMA declares them excess and works with the General Services Administration (GSA) to dispose of them through GSA’s personal property disposal process. The proceeds from sales through GSA are returned to the U.S. Treasury unless a THU is disposed of through an “exchange” sale in which FEMA is, in effect, trading one unit to defray the costs of a new unit.<sup>9</sup>

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<sup>5</sup> *2009 Disaster Housing Plan*, Federal Emergency Management Agency.

<sup>6</sup> *National Disaster Housing Strategy*, Federal Emergency Management Agency, January 16, 2009, p. 60.

<sup>7</sup> Transportation and Infrastructure Committee Republican Staff discussions with FEMA on August 26, 2009.

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

### III. Hurricanes Katrina and Rita

#### *Lack of Preparation Resulted in Breakdown of Cost Controls*

On August 29, 2005, Hurricane Katrina hit the Gulf Coast states of Mississippi, Alabama, Louisiana, and Texas and alone caused more damage than any other single disaster in U.S. history.<sup>10</sup> Hurricane Rita then followed on September 24, 2005. Seven hundred thousand people were displaced and approximately 300,000 homes were destroyed or rendered uninhabitable. As a result of widespread damage to housing, FEMA, unprepared for such a disaster, resorted to meeting temporary housing needs with THUs. According to various reports, FEMA purchased and supplied 100,000 to 145,000 THUs in response to Hurricane Katrina.<sup>11</sup> This demand for THUs far exceeded the number FEMA could acquire through commercial retailers and, therefore, FEMA entered into contracts directly with manufacturers to meet the need.<sup>12</sup> The lack of preparation and the haphazard way in which the THUs were purchased resulted in a breakdown on cost controls and accountability.

Following Hurricanes Katrina and Rita, several investigations and congressional inquiries and hearings took place to examine the preparation for, response to, and later the recovery from Hurricanes Katrina and Rita. In particular, the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina was formed and culminated in the issuance of a report entitled “*A Failure of Initiative: The Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina*” on February 15, 2006.

Following the issuance of this report, Congress enacted the Post-Katrina Emergency Management Reform Act of 2006 (PKEMRA), strengthening FEMA within the Department of Homeland Security (DHS). Congressional investigations and hearings continue as problems still persist, slowing the recovery of the communities impacted by Hurricanes Katrina and Rita. So far in 2009, the Subcommittee on Economic Development, Public Buildings, and Emergency Management of the Committee on Transportation and Infrastructure has held nine hearings related to FEMA. In addition, congressional roundtables led by Representatives Mica and Anh “Joseph” Cao (LA-02) have been held to facilitate solutions for issues still plaguing the recovery of New Orleans.<sup>13</sup>

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<sup>10</sup> *Hurricanes Katrina and Rita: Coordination Between FEMA and the Red Cross Should Be Improved for the 2006 Hurricane Season*, General Accountability Office Report GAO-06-712 (June 2006), p. 6.

<sup>11</sup> *FEMA Disaster Housing and Hurricane Katrina: Overview, Analysis, and Congressional Issues*, Francis X. McCarthy, Congressional Research Service, August 8, 2008, p. 11; *Aldehyde and other Volatile Organic Chemical Emissions in Four FEMA Temporary Housing Units – Final Report*, Indoor Environment Department, Environmental Energy Technologies Division, Lawrence Berkley National Laboratory, November 2008, p. vii.

<sup>12</sup> *Interim Staff Report, Formaldehyde and FEMA Trailers*, Republican Staff, U.S. House Committee on Oversight and Government Reform, July 2008.

<sup>13</sup> Roundtables were held on February 13, 2009 and on June 1, 2009 with congressional members, FEMA officials, and State and local representatives involved in the recovery efforts in Louisiana.

**IV. FEMA's Current Inventory of THUs**

*Over 100,000 Housing Units Still Sit in Storage*

According to FEMA, its current need for THUs is approximately 4,000.<sup>14</sup> To satisfy this need, as of August 4, 2009, FEMA identified the following THUs to be retained in its inventory<sup>15</sup>:

Table 1

<u>Asset</u>	<u>RFD* Inventory</u>	<u>Not RFD or for disposal**</u>	<u>Total</u>
Manufactured Homes	1,949	33	1,982
Park Models	412	955	1,367
Travel Trailers	2,735	1,113	3,848

\* THUs "Ready for Dispatch" (RFD).

\*\* These include THUs that need some repair for use or that were newly purchased and require inspection.

FEMA also identified a significant number of THUs that are ready for disposal. In particular, as of July 24, 2009, FEMA identified the following for disposal<sup>16</sup>:

Table 2

<b>Manufactured Homes</b>	12,470
<b>Park Models</b>	4,791
<b>Travel Trailers</b>	104,401
<b>Total</b>	<b>121,662</b>

Examples of THU types include:<sup>17</sup>

Table 3

	<b>Travel Trailer</b>
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<sup>14</sup> Transportation and Infrastructure Committee Republican Staff discussions with FEMA in August 2009.

<sup>15</sup> Received by Committee staff via electronic mail from FEMA to Committee staff on August 4, 2009.

<sup>16</sup> Id.

<sup>17</sup> Photographs submitted to Committee staff by FEMA in August of 2009.

		<b>Travel Trailer</b>
		<b>Park Model with Loft</b>
		<b>Manufactured Home</b>

The THUs identified for disposal are assessed and then prepared for sale through GSA.<sup>18</sup> FEMA reports there are approximately 120,000 THUs stored in 18 storage and readiness sites that will be disposed. The current sites include<sup>19</sup>:

Readiness sites: Cumberland, MD; Selma, AL; Hope, AR.

Storage only sites: Baton Rouge, LA; Carnes, MS; Columbia, MS; Craig Field, AL; Deridder, LA; Fort Pierce, FL; Fort Pickett, VA; Fort Worth, TX; Frostburg, MD; Hickory Grove, MS; Bon Weir, TX; Lottie, LA; Lumberton, MS; Melville, LA; Purvis, MS.

FEMA leases these storage and readiness sites from the private sector, with the exception of the sites in Baton Rouge, LA and Fort Pickett, VA, which are owned by the GSA and the U.S. National Guard, respectively. FEMA leases space from these two agencies.<sup>20</sup>

***FEMA Was Unable to Account for the Actual Costs to Purchase, Store and Maintain the Unused Housing Units***

There are various costs associated with the THUs, including the initial purchase price and storage and maintenance costs. The Republican Staff of the Committee

<sup>18</sup> [www.gsaauctions.gov](http://www.gsaauctions.gov)

<sup>19</sup> Information Received by Transportation and Infrastructure Committee Republican Staff from FEMA via electronic mail on August 25, 2009.

<sup>20</sup> Transportation and Infrastructure Committee Republican Staff discussions with FEMA on August 26, 2009.

requested cost information from FEMA. However, FEMA indicated that it was unable to provide the actual amounts paid for each unit and, as of this report, was only able to provide limited information on the total costs associated with the storage and maintenance of the THU inventory, since their purchase. According to FEMA estimates reported by the DHS Inspector General, the costs over the lifespan of each travel trailer, park model, and mobile home is \$26,379, \$37,379, \$52,634, respectively.<sup>21</sup>

### ***FEMA Unable to Account for Actual Storage and Maintenance Costs***

FEMA previously provided estimated storage and maintenance costs to the Senate Homeland Security and Governmental Affairs Committee which were referred to in a Senate report issued on June 1, 2009<sup>22</sup>. At that time, FEMA estimated that storage and maintenance costs were \$1,000 per unit per year.<sup>23</sup> Based on this figure, the annual costs would exceed \$121 million annually. According to figures provided to the DHS Inspector General in July and September of 2009, FEMA estimated that it was spending approximately \$100 million annually in storage costs.<sup>24</sup> The DHS Inspector General also noted that at some sites the average costs were estimated to be as high as \$229,000 per unit.<sup>25</sup> However, staff discussions with FEMA indicate that it believes this estimate may not be accurate.<sup>26</sup> FEMA could confirm, however, that it has 25 open contracts for leased space, grounds maintenance, and site workforce, totaling over \$32 million per year.<sup>27</sup> The disparity in the figures raises real questions as to whether costs are being properly managed and accounted.

### ***FEMA Paid Billions of Dollars for Housing Units that Sit Unused***

Regarding the purchase costs of the THUs, FEMA indicated that it was unable to provide information on the actual overall cost of THUs in its inventory. They explained that because the THUs were purchased in a variety of ways, including “off-the-lot” as well as directly from the manufacturer, there was no way to provide a total cost for the acquisition of the THUs.<sup>28</sup> However, FEMA provided a range of what it likely paid for each type of THUs, as follows<sup>29</sup>:

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<sup>21</sup> Management Advisory Report: FEMA’s Housing Strategy for Future Disasters, Department of Homeland Security Inspector General, OIG-09-111, September 25, 2009, p. 3.

<sup>22</sup> Report of the Committee on Homeland Security and Governmental Affairs to accompany S. 713, U.S. Senate, Report No. 111-23.

<sup>23</sup> Id. at p.2.

<sup>24</sup> Statement of Richard L. Skinner, Inspector General, U.S. Department of Homeland Security Before the Committee on Homeland Security, U.S. House of Representatives, July 8, 2009; Management Advisory Report: FEMA’s Housing Strategy for Future Disasters, Department of Homeland Security Inspector General, OIG-09-111, September 25, 2009.

<sup>25</sup> Management Advisory Report: FEMA’s Housing Strategy for Future Disasters, Department of Homeland Security Inspector General, OIG-09-111, September 25, 2009, p. 3.

<sup>26</sup> Transportation and Infrastructure Committee Republican Staff discussions with FEMA in August 2009.

<sup>27</sup> List of Contracts dated September 14, 2009 provided by FEMA to Committee staff.

<sup>28</sup> Transportation and Infrastructure Committee Republican Staff discussions with FEMA in August 2009.

<sup>29</sup> Received by electronic mail from FEMA to Committee staff on August 4, 2009.

Table 4

<u>THU Type</u>	<u>Average Cost Range</u>
Mobile Home	\$23,500 - \$33,550
Travel Trailer from Manufacturer	\$10,000 - \$12,000
Travel Trailer “Off-the-lot” Retail	\$15,000 - \$19,000

In addition, FEMA provided an average cost of units purchased in 2007 and 2008, both “off-the-lot” and from manufactures, as follows:

Table 5

<u>THU Type</u>	<u>Average Cost (2007 – 2008)</u>
Manufactured Home	\$43,600
Park Model	\$21,111
Travel Trailer	\$19,537

Based on these estimated ranges, the costs to purchase the THUs currently in FEMA’s inventory likely exceeded \$2.6 billion. In 2008, the DHS Inspector General estimated that the 230,000 THUs purchased following the 2004 and 2005 hurricane seasons were \$2.9 billion, but noted that FEMA was “unable to provide an accurate count and dollar value...”<sup>30</sup> The Congressional Research Service (CRS), quoting DHS Inspector General Testimony on March 14, 2007, indicated that FEMA purchased over 145,000 THUs in response to Hurricane Katrina at a cost of approximately \$2.7 billion.<sup>31</sup>

While FEMA has been able to provide some figures related to purchases made from major manufacturers, such as those included in a House Oversight and Government Reform Committee Republican *Interim Staff Analysis of Formaldehyde and FEMA Trailers* in July 2008, that report highlighted the haphazard way in which FEMA purchased the THUs and noted that there was “anecdotal evidence to suggest FEMA’s database is incomplete and contains errors that might be impossible to reconcile.”<sup>32</sup>

***Despite the lack of a precise figure, it is clear FEMA paid billions of dollars for the large inventory of THUs that are slated for disposal.*** Given the large costs associated with the purchase, storage and maintenance<sup>33</sup>, the disposal or appropriate reuse of the excess inventory would be critical in helping to offset some of the costs

<sup>30</sup> Review of FEMA’s Use of Proceeds from Sales of Emergency Housing Units, Department of Homeland Security, Office of the Inspector General, OIG-08-23 February 2008, p. 2.

<sup>31</sup> *FEMA Disaster Housing and Hurricane Katrina: Overview, Analysis, and Congressional Issues*, Francis X. McCarthy, Congressional Research Service, August 8, 2008, p. 11.

<sup>32</sup> *Interim Staff Report, Formaldehyde and FEMA Trailers*, Republican Staff, U.S. House Committee on Oversight and Government Reform, July 2008, p. 16.

<sup>33</sup> In addition there have been costs associated with problems with oversight and mismanagement as described in a number of reports, including the General Accountability Office report on *Hurricane Katrina: Ineffective FEMA Oversight of Housing Maintenance Contracts in Mississippi Resulted in Millions of Dollars of Waste and Potential Fraud*, GAO-08-106, November 2007; the Department of Homeland Security, Office of the Inspector General in *Review of FEMA’s Use of Proceeds from Sales of Emergency Housing Units*, OIG-08-23 February 2008.

incurred by FEMA and the federal taxpayer. In addition, the DHS Inspector General notes that the compilation and maintenance of historical cost data is important to helping FEMA make more informed decisions on cost effective housing solutions for future disasters.<sup>34</sup>

However, while disposal or reuse of these excess THUs may appear to be a straightforward solution, there are a number of issues that have hampered this process, including the issue of formaldehyde and associated litigation. According to FEMA, the 100,000 plus travel trailers and some of the other models are impacted by these issues, limiting FEMA's ability to dispose of them.<sup>35</sup> However, instead of setting policy based on science and actual testing of the THUs, FEMA issued blanket policies impacting its ability to effectively use its existing THUs. Instead, FEMA has entered or is entering into contracts to purchase over 100,000 more units, if and when required by future disasters.

### ***FEMA Restricts Use of Housing Units, Despite Clear Standards and A Lack of Testing for Formaldehyde***

Following the deployment and use of THUs after Hurricane Katrina in 2005, various health-related complaints from occupants of the THUs were reported to FEMA and the media.<sup>36</sup> Additional concerns were raised when the Occupational Safety and Health Administration (OSHA) began conducting formaldehyde tests in the region, some of which were conducted in FEMA trailers, showing elevated levels of formaldehyde.<sup>37</sup> These concerns were further fueled by testing conducted by the Sierra Club and announced on May 17, 2006 which indicated "excessive" levels of formaldehyde in 31 FEMA trailers.<sup>38</sup>

Formaldehyde is a gas that is used to make various building materials and products. Reactions to higher levels of formaldehyde may include "irritation of the throat, nose, eyes, skin, and upper respiratory tract."<sup>39</sup> At the time of these tests, there were no standards for formaldehyde levels in residential settings because there were too

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<sup>34</sup> See Management Advisory Report: FEMA's Housing Strategy for Future Disasters, Department of Homeland Security Inspector General, OIG-09-111, September 25, 2009

<sup>35</sup> Transportation and Infrastructure Committee Republican Staff discussions with FEMA in August of 2009.

<sup>36</sup> *FEMA Disaster Housing and Hurricane Katrina: Overview, Analysis, and Congressional Issues*, Francis X. McCarthy, Congressional Research Service, August 8, 2008, pp. 12-13; *Interim Staff Report, Formaldehyde and FEMA Trailers*, Republican Staff, U.S. House Committee on Oversight and Government Reform, July 2008, p. 3.

<sup>37</sup> *Interim Staff Report, Formaldehyde and FEMA Trailers*, Republican Staff, U.S. House Committee on Oversight and Government Reform, July 2008, p. 15.

<sup>38</sup> *Interim Staff Report* at p. 3; *FEMA Response to Formaldehyde in Trailers* (Redacted), Department of Homeland Security, Office of the Inspector General, OIG-09-83, June 2009, p. 16.

<sup>39</sup> *Final Report on Formaldehyde Levels in FEMA-Supplied Travel Trailers, Park Models, and Mobile Homes*, Centers for Disease Control and Prevention, July 2, 2008, p. 4.

many variables that could impact an individual's sensitivity to formaldehyde.<sup>40</sup> There are, however, standards for certain wood products used in manufactured homes and work places through regulations promulgated by the Department of Housing and Urban Development (HUD) and the Occupational Safety and Health Administration (OSHA), respectively. The HUD regulations set a target of 0.2 and 0.3 parts per million (ppm) for products used in manufactured homes.<sup>41</sup> HUD's target guideline for indoor ambient air in manufactured homes is 400 parts per billion (ppb) (0.4 ppm).<sup>42</sup>

As a result of these concerns, FEMA initiated a review of this issue. Initially, in July of 2006, the Agency for Toxic Substances and Disease Registry (ATSDR) tested air samples collected by the Environmental Protection Agency (EPA) of 96 unoccupied travel trailers and found average formaldehyde levels of 1040 ppb (1 ppm), but noted that increasing ventilation decreased the levels to 90 to 390 ppb (.09 - 0.39 ppm),<sup>43</sup> well within the HUD guidelines.

Later, there were two other studies conducted: one by the Centers for Disease Control and Prevention (CDC) which was completed on July 2, 2008<sup>44</sup> and another by the Lawrence Berkley National Laboratory, completed in November of 2008.<sup>45</sup>

The CDC conducted testing from December 21, 2007 to January 23, 2008.<sup>46</sup> It tested 519 trailers from a FEMA-provided list of over 46,000 trailers in Louisiana and Mississippi that had been occupied.<sup>47</sup> The CDC report found formaldehyde levels in trailers at "higher than average levels in U.S. mobile homes and traditional homes reported in recent studies."<sup>48</sup> The CDC report concluded that the average level of formaldehyde in all trailers was 77 parts per billion (ppb) or .077 parts per million (ppm) with an overall range of 3 ppb – 590 ppb (.003 ppm - 0.59 ppm).<sup>49</sup> CDC also noted that a higher proportion of travel trailers than park models or mobile homes had formaldehyde levels greater than 100 ppb (0.1 ppm) and 300 ppb (0.3 ppm).<sup>50</sup> The testing conducted by the Lawrence Berkeley National Laboratory, while limited in scope to four units, also

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<sup>40</sup> Aldehyde and Other Volatile Organic Chemical Emissions in Four FEMA Temporary Housing Units – Final Report, Environmental Energy Technologies Division, Ernest Orlando Lawrence Berkley National Laboratory, November 2008, p. 5.

<sup>41</sup> 24 CFR 3280.308.

<sup>42</sup> *Interim Staff Report* at p. 3; *FEMA Response to Formaldehyde in Trailers* (Redacted), Department of Homeland Security, Office of the Inspector General, OIG-09-83, June 2009.

<sup>43</sup> *Interim Staff Report* at p. 6.

<sup>44</sup> *Final Report on Formaldehyde Levels in FEMA-Supplied Travel Trailers, Park Models, and Mobile Homes*, Centers for Disease Control and Prevention, July 2, 2008.

<sup>45</sup> *Aldehyde and Other Volatile Organic Chemical Emissions in Four FEMA Temporary Housing Units – Final Report*, Environmental Energy Technologies Division, Ernest Orlando Lawrence Berkley National Laboratory, November 2008.

<sup>46</sup> *Final Report on Formaldehyde Levels in FEMA-Supplied Travel Trailers, Park Models, and Mobile Homes* at p. 1.

<sup>47</sup> *Id.* at p. 6.

<sup>48</sup> *Id.* at p. 11.

<sup>49</sup> *Id.* at p. 13.

<sup>50</sup> *Id.*

found higher levels of formaldehyde in the trailers, but added that the “materials emission factors may be within those commonly found in the building industry.”<sup>51</sup>

Indeed, formaldehyde, according to the CDC report has been a longstanding issue in homes since it is frequently used in building products such as plywood, fiberboard, resins, carpets and glues. In addition, sensitivity to formaldehyde can vary widely from person to person. For example, at 800 ppb (0.8 ppm) most people will develop exposure symptoms, but some who may be especially sensitive to formaldehyde may develop symptoms with exposure to as low as 100 ppb (0.1 ppm).<sup>52</sup>

In addition, both studies also highlight other variables that can impact the levels of formaldehyde, most importantly human activity. For example, the report by the Lawrence Berkley National Laboratory, as mentioned, noted that the emissions may be within what is normally found in the products used for the trailers, but that the elevated levels could be due to the “extensive” use of composite wood products and a lower amount of fresh air.<sup>53</sup> The CDC report went further to state that “certain human activities were associated with higher formaldehyde levels.”<sup>54</sup> These activities include a lack of ventilation, smoking of the occupants, the presence of mold, increased indoor temperature, and cooking without outdoor venting range hoods.<sup>55</sup>

As a result of concerns raised about formaldehyde, a number of actions were taken that impacted the disposal and reuse of FEMA’s excess THU inventory, including new FEMA policies and litigation.

#### *Impact of Formaldehyde on Disposal and Use of THUs*

##### ***FEMA Places Restrictions That Limit the Return on Investment to the Taxpayer***

Notwithstanding the variables that may impact the levels of and effects of formaldehyde, FEMA made a number of decisions that impacted the use and disposal of THUs. On July 24, 2007, FEMA stopped reporting excess THUs for disposal through GSA.<sup>56</sup> Prior to July of 2007, FEMA asserts that it was reducing its inventory by 1,000 units per month through GSA’s disposal process and that between July 2006 and July 2007, 10,839 travel trailers were sold through GSA and 1,232 manufactured homes.<sup>57</sup>

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<sup>51</sup> *Aldehyde and Other Volatile Organic Chemical Emissions in Four FEMA Temporary Housing Units – Final Report*, Executive Summary, p. ix.

<sup>52</sup> *Final Report on Formaldehyde Levels in FEMA-Supplied Travel Trailers, Park Models, and Mobile Homes* at pp. 3-4.

<sup>53</sup> *Aldehyde and Other Volatile Organic Chemical Emissions in Four FEMA Temporary Housing Units – Final Report*, Executive Summary at p. ix.

<sup>54</sup> *Final Report on Formaldehyde Levels in FEMA-Supplied Travel Trailers, Park Models, and Mobile Homes* at p. 12.

<sup>55</sup> *Id.*

<sup>56</sup> *FEMA Begins Next Phase of Inventory Reduction of Excess Temporary Housing Units*, FEMA Fact Sheet, last modified July 31, 2009.

<sup>57</sup> *FEMA Begins Next Phase of Inventory Reduction of Excess Temporary Housing Units*, FEMA Fact Sheet, downloaded August 24, 2009.

In particular, since FY2007, the following are disposals made through GSA’s disposal program<sup>58</sup>:

Table 6

<u>Fiscal Year</u>	<u>Transfers*</u>	<u>Donations**</u>	<u>Sales</u>	<u>Proceeds</u>
FY07	3,392	7,254	15,347	\$109,092,111
FY08	1,195	243	78	\$529,338
FY09	1,619	1,158	4,086	\$18,202,469
<b>Totals</b>	<b>6,206</b>	<b>8,655</b>	<b>19,511</b>	<b>\$127,823,918</b>

\* “Transfers” refers to property transferred to other federal agencies. For THUs, the transferees have included military bases, the U.S. Border Patrol, and the U.S. Forest Service.

\*\* “Donations” refers to property transferred to States, local governments, and eligible non-profit organizations under GSA’s Federal Surplus Personal Property Donation Program.

Disposals by THU type are<sup>59</sup>:

Table 7

<u>Type</u>	<u>Number Disposed</u>	<u>Proceeds</u>
Travel Trailers	16,260	\$92,861,675
Manufactured Homes	5,689	\$34,168,523
Park Models	680	\$793,720
Others transferred or donated (no sales) with type not recorded	11,743	N/A
<b>Totals</b>	<b>34,372</b>	<b>\$127,823,918</b>

In addition, FEMA’s *National Disaster Housing Strategy* details that FEMA now requires all THUs meet indoor air levels for formaldehyde that are less than 16 ppb (.016 ppm),<sup>60</sup> well below the HUD standards for levels in manufactured home products and lower than past formaldehyde levels found in homes in studies conducted in 2000 and 2005. For example, in 2000 the average level of formaldehyde in site-built and manufactured homes was 36 ppb and 34 ppb, respectively.<sup>61</sup> In 2005, the average level in conventional homes and mobile homes ranged from 16 to 25 ppb.<sup>62</sup> In addition, FEMA has indicated that for all of the travel trailers that are being disposed of, none may be used for housing purposes even if sold through GSA,<sup>63</sup> possibly limiting the return on investment.

<sup>58</sup> Information received by the Transportation and Infrastructure Committee Republican Staff from the General Services Administration via electronic mail on August 26, 2009.

<sup>59</sup> Id.

<sup>60</sup> *National Disaster Housing Strategy*, Federal Emergency Management Agency, January 16, 2009, p. 59.

<sup>61</sup> *FEMA Response to Formaldehyde in Trailers* (Redacted), Department of Homeland Security, Office of the Inspector General, OIG-09-83, June 2009, p. 8.

<sup>62</sup> Id.

<sup>63</sup> Staff discussions with FEMA in August of 2009; *FEMA Begins Next Phase of Inventory Reduction Of Excess Temporary Housing Units*, FEMA Fact Sheet; However, in discussions with FEMA by Transportation and Infrastructure Committee Republican Staff on August 26, 2009, FEMA noted that it would not view the use of travel trailers for camping purposes as “housing.”

While FEMA indicates that it currently has identified manufacturers who can comply with the new indoor ambient air standard for formaldehyde of less than 16 ppb,<sup>64</sup> this does not address the ongoing issues associated with FEMA's existing inventory. ***Instead of testing existing housing units to determine suitability, FEMA has determined none of them can be used for housing. As a result, while FEMA continues to pay for maintenance and storage costs, it enters into new contracts with manufacturers for more units.***

The impact of these new policies and decisions severely limit the possible reuse and disposal of the over 100,000 excess travel trailers. There has been no indication that there will be testing of individual units to determine if some could, in fact, be used for housing. In addition, the relatively small sample tested by the CDC indicated a wide range of formaldehyde levels and there seems to be little consideration by FEMA that some levels may have been high due to temperature, ventilation or other factors, including not enough time for the formaldehyde to "off-gas" sufficiently prior to use or testing.<sup>65</sup>

***Some Housing Units are Impacted by Litigation,  
But Actual Testing Could Untangle Many for Reuse or Disposal***

Another issue impacting the use or disposal of excess THUs relates to litigation initiated as a result of the formaldehyde. In 2006, a number of lawsuits were filed in federal court against FEMA and a number of THU manufacturers. In particular, by October 2007, there were four pending lawsuits in the U.S. district courts of both the Eastern and Western districts of Louisiana and the potential for other cases. On October 24, 2007, all the pending cases were consolidated in the District Court for the Eastern District of Louisiana as one case, *In re: FEMA Trailer Formaldehyde Products Liability Litigation*.<sup>66</sup> The case is still pending before the court. The current number of defendants is 79, including FEMA.

In November of 2007, a federal court order was issued requiring the preservation of evidence in the case. FEMA was required to retain all THUs for possible testing.<sup>67</sup> That order expired in September of 2008; however, on June 29, 2009, another order was issued that prohibits the "sale, donation, or disposition of any housing unit which either is or presently can be matched to an identified plaintiff in this litigation, pending proper notification..."<sup>68</sup> This court order does not expire until January 1, 2010.

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<sup>64</sup> Transportation and Infrastructure Committee Republican Staff discussions with FEMA on August 26, 2009.

<sup>65</sup> As a gas, formaldehyde levels may decrease over time due to "off-gassing," resulting in the lowering of levels of formaldehyde in the building materials.

<sup>66</sup> In re: FEMA Trailer Formaldehyde Products Liability Litigation, MDL No. 1873, 528 F. Supp.2d 1350, October 24, 2007.

<sup>67</sup> In re: FEMA Trailer Formaldehyde Products Liability Litigation, Pre-trial Order #1.

<sup>68</sup> In re: FEMA Trailer Formaldehyde Products Liability Litigation, Order and Reason, June 29, 2009.

According to FEMA, a number of the THUs of various types can not be disposed of due to this lawsuit at this point in time.<sup>69</sup> In particular, FEMA has indicated that approximately 80% of the current THU inventory pending disposal, the majority of which are travel trailers, is subject to this court order. FEMA did, however, note that it is continuing with the disposal process for the remaining 20% and is taking steps to release additional THUs from the restriction.<sup>70</sup> However, actual testing of the THUs could help to hasten the release of many of the THUs.

## V. Legislation and Oversight

### *A Clear Plan for Housing After a Catastrophic Disaster Remains Elusive*

#### *Post-Katrina Emergency Management Reform Act*

Following Hurricane Katrina, the Committee on Transportation and Infrastructure, various other congressional committees and the Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina conducted investigations into the response to this major disaster. As a result of those investigations, Congress enacted the Post-Katrina Emergency Management Reform Act of 2006 (PKEMRA).<sup>71</sup>

That Act, among other things, re-established FEMA as a distinct entity within DHS and it made clear that FEMA is the lead federal agency responsible for leading the “Nation’s efforts to prepare for, protect against, respond to, recover from, and mitigate against the risk of natural disasters, acts of terrorism, and other man-made disasters, including catastrophic incidents.”<sup>72</sup>

In addition, section 636 of PKEMRA required FEMA to “develop an efficient, transparent, and flexible logistics system for procurement and delivery of goods and services necessary for an effective and timely response to natural disasters...”<sup>73</sup> As a result of FEMA’s reorganization of its logistics function, the Logistics Management Directorate (LMD) was created. The functions of LMD include storing, maintaining and deploying THUs.<sup>74</sup> While FEMA asserts a number of management and oversight issues related to the THUs are due, in part, to the predecessor offices of the LMD, problems appear to persist with regards to the management of THUs.<sup>75</sup>

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<sup>69</sup> Transportation and Infrastructure Committee Republican Staff discussions with FEMA in August of 2009.

<sup>70</sup> Information received by Transportation and Infrastructure Committee Republican Staff from FEMA via electronic mail on August 25, 2009.

<sup>71</sup> Public Law 109-295, title VI.

<sup>72</sup> 6 U.S.C. 313(2)(A).

<sup>73</sup> 6 U.S.C. 724.

<sup>74</sup> FEMA Fact Sheet on the Logistics Management Directorate, updated June 4, 2009.

<sup>75</sup> See *FEMA's Temporary Housing Unit Program and Storage Site Management*, Department of Homeland Security, Office of the Inspector General, June 2009, OIG-09-85.

Moreover, section 683 of PKEMRA required FEMA to develop a National Disaster Housing Strategy.<sup>76</sup> On January 16, 2009, the final Strategy was released by FEMA. Later, FEMA released a 2009 Disaster Housing Plan. Both of these plans have raised questions regarding the proper utilization of THUs during major disasters as well as adequate preparation for a catastrophic incident that may displace as many people, if not more, as Hurricane Katrina did. The DHS Inspector General also recommended that FEMA develop better housing solutions in the event of a catastrophic disaster.<sup>77</sup>

### *Oversight*

The Committee on Transportation and Infrastructure, Subcommittee on Economic Development, Public Buildings, and Emergency Management held nine hearings so far in 2009 related to FEMA.<sup>78</sup> In each of the hearings, issues related to ongoing housing concerns and the adequacy of the disaster housing plans were raised. FEMA has determined that 4,000 THUs will meet its planning needs; however, this number begs the question of how FEMA will manage interim housing needs following a disaster of similar size, scope, and magnitude as Hurricane Katrina.

In a hearing held by the Subcommittee on Economic Development, Public Buildings, and Emergency Management on July 27, 2009, Craig Fugate, FEMA Administrator, highlighted issues associated with large displacements of people following a catastrophic disaster. For example, he pointed out that “planning experts anticipate that following a New Madrid Seismic Zone no-notice earthquake, a projected 2.6 million people will require shelter. It is also estimated that following a Category 5 Hurricane in the most populous areas of Florida as many as 3.6 million households will seek either short- or long-term shelter.”<sup>79</sup> Administrator Fugate pointed out that such a widespread dislocation will require a combination of solutions, including, but not limited to, THUs. In particular, he noted that “[t]he bottom line is that neither the federal government nor the manufactured housing industry has the capacity to address all the anticipated housing

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<sup>76</sup> 6 U.S.C. 772.

<sup>77</sup> See Management Advisory Report: FEMA’s Housing Strategy for Future Disasters, Department of Homeland Security Inspector General, OIG-09-111, September 25, 2009,

<sup>78</sup> *Post-Katrina Disaster and Recovery: Evaluating FEMA’s Continuing Efforts in the Gulf Coast and Response to Recent Disasters*, February 25, 2009; *Disaster Capacity in the National Capital Region: Experiences, Capabilities, and Weaknesses*, March 27, 2009; *FEMA: Preparedness for the 2009 Hurricane Season*, May 1, 2009; *An Independent FEMA: Restoring the Nation’s Capabilities for Effective Emergency Management and Disaster Response*, May 14, 2009; *Still Post-Katrina: How FEMA Decides When Housing Responsibilities End*, May 22, 2009; *Post-Katrina: What it Takes to Cut the Bureaucracy and Assure a More Rapid Response After a Catastrophic Disaster*, July 27, 2009; *Final Breakthrough in the Billion Dollar Katrina Infrastructure LogJam: How is it Working*, September 29, 2009; *This is NOT a Test: Will the Nation’s Emergency Alert System Deliver the President’s Message to the Public*, September 30, 2009; *Looking Out for the Very Young, the Elderly and Other with Special Needs: Lessons from Katrina and other Major Disasters*, October 20, 2009.

<sup>79</sup> Written Statement of Craig Fugate, Administrator, Federal Emergency Management Agency, Before the House Transportation and Infrastructure Committee, Subcommittee on Economic Development, Public Buildings, and Emergency Management, Hearing on *Post-Katrina: What it Takes to Cut the Bureaucracy and Assure a More Rapid Response After a Catastrophic Disaster*, July 27, 2009.

needs in a timely manner in these types of situations.”<sup>80</sup> Concerns have also been raised about the adequacy of the current housing strategy by the DHS Inspector General.<sup>81</sup>

Notwithstanding this, FEMA has entered into contracts to provide a capability to purchase additional THUs should such a large-scale event reoccur. FEMA has indicated that it has the capability to purchase approximately 38,000 THUs and is currently in the contracting process to provide for the ability to purchase up to 135,000 to support a catastrophic event.<sup>82</sup> However, none of the more than 121,000 “excess” THUs identified by FEMA will be made available for current or future temporary housing needs.

### *Legislative Proposals for Excess THUs*

In congressional deliberations over the use of THUs, legislation was proposed in the 110<sup>th</sup> and 111<sup>th</sup> congresses by Representative John L. Mica (R-FL). In the 110<sup>th</sup> Congress, Rep. Mica introduced H.R. 3969 along with Reps. Sam Graves (R-MO) and Mike Ross (D-AR) on October 25, 2007. H.R. 3969 would have authorized FEMA to make available excess THUs to States and local governments in the event of a localized disaster that did not rise to the level of a declared major disaster or emergency. A version of this language was included in H.R. 6658, the Disaster Response, Recovery, and Mitigation Enhancement Act of 2008 introduced in the 110<sup>th</sup> Congress and re-introduced as H.R. 3377 in the 111<sup>th</sup> Congress.

The primary purpose of this legislation is to provide States and local communities with an additional resource to meet temporary housing needs. Instead of excess THUs sitting unused in storage facilities, waiting for disposal, this language would authorize FEMA to make use of them should such a disaster occur. This language would avoid the unfortunate situation in which a community is devastated by a localized disaster that may not rise to the level of an official declaration, but cannot have access to FEMA THUs that may be stored nearby, awaiting disposal.

While FEMA has identified over 121,000 excess THUs in its inventory, because of FEMA’s current policy regarding the use of the excess travel trailers as housing coupled with the impact of the litigation, only a limited number is able to be disposed of or reused.

## **VI. Findings and Conclusion**

Since Hurricane Katrina hit the Gulf Coast, many investigations, studies, and reports have been completed to identify lessons learned and improve our Nation’s response and recovery capabilities. In responding to a disaster, preparation and timely responses are critical in saving lives and protecting property. However, FEMA, as the

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<sup>80</sup> Id.

<sup>81</sup> Management Advisory Report: FEMA’s Housing Strategy for Future Disasters, Department of Homeland Security Inspector General, OIG-09-111, September 25, 2009.

<sup>82</sup> FEMA Response to Letter from House Committee on Homeland Security on June 8, 2009 and reaffirmed in Transportation and Infrastructure Committee Staff discussions with FEMA on August 26, 2009.

lead agency in response, must ensure the proper mechanisms are in place to minimize the chances for waste and mismanagement.

Key issues as they relate to FEMA's Temporary Housing Unit program include:

***Testing of unused THUs to determine if the housing restrictions are warranted***

The Centers for Disease Control and Prevention (CDC) conducted tests of 519 THUs for formaldehyde levels and the results varied dramatically by unit. As a result of the testing of just 0.5 % of the THUs, FEMA has made sweeping policy decisions that impact all of the 100,000 plus travel trailers, limiting their disposal and possible reuse opportunities.

While it is critically important to ensure people impacted by major disasters are not subjected to unhealthy and unsafe conditions in THUs, no widespread testing of the travel trailers has occurred to accurately determine their suitability. In fact, even the testing conducted showed a wide range of levels and the studies noted that various factors, including human activity, may have impacted the results.

FEMA should reassess some of these studies and its policies and determine if it would be beneficial to test excess units prior to restricting their use for housing purposes.

***Accountability for purchase costs***

In investigating the total costs of the existing THUs, precise numbers for the actual costs to purchase the unused THUs were not readily available from FEMA. Also, while FEMA had previously provided estimated storage and maintenance costs in response to other congressional requests, FEMA indicated that it was reevaluating those figures and, as of this report, could not provide those numbers to Committee staff.

Some of the lack of information may be due, in part, to FEMA's methods of purchasing the THUs following Hurricane Katrina. Reportedly, the purchases were haphazard, resulting in an inability to manage and account for costs. However, the need to properly account for and management purchase and storage costs is critical to good management principles. In addition, the lack of information raises concerns about transparency so that proper oversight and accountability can be facilitated.

With the new Administrator, along with reforms and reorganizations made since PKEMRA was enacted, FEMA appears to be taking steps to address some of these issues, particularly as it relates to newly purchased THUs; however, more accurate and readily accessible information is needed with respect to the existing THUs to better analyze solutions for moving forward.

***Improve accountability for storage and maintenance costs***

In addition to improving the internal databases and controls on costs, FEMA should work towards a more accurate assessment of actual storage and maintenance costs to help identify opportunities for cost reduction. There should be improved accounting and management of the costs associated with storage and management, an analysis of where costs could be reduced, and a strategy for managing storage for future catastrophic events, requiring large numbers of THUs.

As with the need to improve controls, FEMA appears to be working towards improving the management of storage and maintenance costs through the reorganization of its logistics function. However, given the difficulty in obtaining current figures on these ongoing costs, more work clearly needs to be done.

***Improve the National Disaster Housing Strategy to ensure adequate preparation for a catastrophic disaster***

FEMA released the National Disaster Housing Strategy in January 2009, pursuant to the Post-Katrina Emergency Management Reform Act of 2006 (PKEMRA), but clear temporary housing solutions to a catastrophic disaster remain elusive. While solutions to such an event would likely require a variety of solutions, including the use of THUs, those solutions should be analyzed and articulated in the Strategy.

Testimony of FEMA Administrator Craig Fugate demonstrates that he is keenly aware of the housing problems as it relates to catastrophic disasters. A review of the Strategy and associated policies should be done to focus on this issue and provide a clearer roadmap for meeting the temporary housing needs of communities that may be impacted by such a disaster in the future.

***Conclusion***

Temporary housing in the context of major disasters continues to be a challenging issue. While preparations can be put into place to be ready for potential housing needs, until a disaster strikes, the actual needs will not be known. It is for these reasons that FEMA must ensure that it has the strategies, systems, and controls in place to ensure clear protocols during such an event. Having these systems in place in advance will help to minimize the chances of wasteful spending and mismanagement. In addition, FEMA must continue to work towards solutions to the issues associated with existing, unused THUs in its inventory. While issues related to formaldehyde should be taken seriously, FEMA has failed to issue policies based on actual testing and concrete information.