MINUTES
MHCC MEETING

April 30 - May 2, 2019

Holiday Inn - Capital | Washington, DC

(Approved on October 29, 2019 at the MHCC Meeting in Washington D.C.)

MINUTES
MANUFACTURED HOUSING CONSENSUS COMMITTEE (MHCC) MEETING

April 30 – May 2, 2019

Holiday Inn - Capital | Washington, DC

DAY 1: Tuesday, April 30, 2019

Call to Order

MHCC Chairman, Tommy Colley, called the meeting to order at 9:01 a.m. (EDT) and welcomed new committee members: Bobby Parks, Robert Garcia, and Manny Santana. Chairman Colley addressed the attendees of the meeting and stated that public comments will be allowed only during the Public Comment Periods as noted in the agenda, and members of the public must sign up prior to each period to be recognized.

Roll Call

Kevin Kauffman, Program Manager of the Administering Organization (AO) Home Innovation Research Labs, called the roll and announced that a quorum was present. Stacey Epperson, Catherine Yielding, Loretta Dibble, and Peter James were unable to attend the meeting.

Introduction and Opening Remarks

Jason McJury, Designated Federal Officer (DFO), welcomed the MHCC members to Washington, DC. DFO McJury noted that this is a meeting of the Manufactured Housing Consensus Committee (MHCC) and that the meeting notice was published in the *Federal Register* dated February 14, 2019.

DFO McJury introduced the HUD staff present at the meeting. Guests were asked to introduce themselves. See Appendix A for a list of meeting participants.

Mr. Kauffman provided a summary of meeting procedures to ensure compliance with MHCC Bylaws and that Robert's Rules of Order would be followed. He noted that all MHCC actions would be followed-up by a letter ballot and that the actions would not be final until the letter ballot is complete. Thus, allowing members who were not present an opportunity to participate in the process.

Approval of the Minutes

MHCC Motion to Approve the Draft September 11-13, 2018 MHCC Committee Meeting Minutes.

Maker: Alan Spencer Second: Dave Anderson

The motion carried unanimously via voice vote.

Public Comment Period

The public comments during for this period focused on DOE's Energy Conservation Standards for Manufactured Housing.

Devin Leary-Hanebrink, Manufactured Housing Institute (MHI), noted that the DOE has the right to create the energy standard however the MHCC can influence how the energy standard is implemented and enforced with

their feedback. DOE needs to work with the MHCC to better understand how the energy standard will impact the manufactured housing industry.

Mark Weiss, Manufactured Housing Association for Regulatory Reform (MHARR), had previously sent an analysis conducted by MHARR regarding DOE's energy standard. The social cost of carbon should not have been included in the DOE's analysis as that provision is no longer in place and it invalidates the numbers that DOE reports. Therefore, the PD&R analysis of DOE's report was based on wrong assumption and in MHARR's opinion – not valid.

Report from the Regulatory Enforcement Subcommittee on DOE Energy Conservation Standards for Manufactured Housing.

Regulatory Enforcement Subcommittee Chair Michael Moglia introduced the DOE's Energy Conservation Standards issue. He provided a summary of the subcommittee's teleconference held on April 2, 2019. The subcommittee's responses to DOE's questions/issues were presented to the full committee. The MHCC discussed in detail the document presented by the subcommittee then accepted or modified the responses based on the MHCC input. The MHCC's final response to questions/issues listed in DOE's NODA on Energy Conservation Standards for Manufactured Housing to the Department of Energy can be found in Appendix B. After the completion of MHCC's response to DOE's Energy Conservation Standards for Manufactured Housing, MHCC made the following motion.

> **MHCC Motion: Approve and submit comments/answers to DOE's NODA on *Energy Conservation Standards for Manufactured Housing* to the Department of Energy. (Appendix B)**
>
> Maker: Bobby Parks Second: Joseph Sadler
>
> The motion carried unanimously via voice vote.

LUNCH BREAK

Public Comment Period

Lesli Gooch thanked the MHCC members for their time. Ms. Gooch mentioned the HUD Secretary Dr. Carson's interest in manufactured housing and its importance in providing affordable housing. Ms. Gooch stated that HUD will host its inaugural showcase event on the National Mall. DFO Payne confirmed that the "Innovative Housing Showcase" will be hosted the National Mall on June 1-5, 2019, to educate policy makers and the broader public on new housing innovations and building technologies that are addressing affordable housing challenges across the country. Ms. Gooch requested the MHCC request HUD rescind the Frost-free Foundation Interpretative Bulletin as it did in the last MHCC meeting. Ms. Gooch brought before the committee that carport ready and garage ready homes are required to get an alternative construction letter which is slowing down construction and is burdensome.

On-Site Completion of Construction Report and Related Deregulatory Comments

DFO Payne introduced Michael Hollar and Alastair McFarlane from HUD's Office of Policy Development and Research (PD&R) who answered questions on *Report to Congress on the On-Site Completion of Construction for Manufactured Homes* (Appendix C). The committee decided to review the Deregulatory Comments associated with On-Site Completion the following day.

The committee decided to review Proposed Changes (Log Items) and Deregulatory Comments (DRC). The categories (Appendix D) were organized by HUD prior to the meeting.

Regulatory Burden and Overreach

DRC 5: FR6030-N-01 – CFR part 3282 Subpart I

MHCC Motion: Reviewed and Considered – Refer to Regulatory Enforcement Subcommittee
Maker: Michael Wade Second: Russell Watson
The motion carried unanimously via voice vote.

The MHCC adjourned at 2:30 p.m. to allow the Technical Systems Subcommittee to meet to discuss Frost-free Foundation Issue.

DAY 2: Wednesday, May 1, 2019

Reconvene

MHCC Chairman, Tommy Colley, reconvened the meeting at 9:05 a.m. DFO Payne welcomed the committee back into session. Kevin Kauffman (AO) called the roll and announced that a quorum was present.

Public Comment Period

Mark Weiss, MHARR, read the following comment about the implementation of Public Comment Period and requested the comment in its entirety be included in the minutes:

> *Courts have ruled that the opportunity for public comment must be at a meaningful time and in a meaningful manner. The procedure imposed by HUD on this Committee -- and interested stakeholders -- yesterday, does not meet this standard. The debate over the energy comments yesterday is a perfect example. As a representative of program stakeholders, I (and presumably others) were barred from participating in the debate as it occurred. The so-called opportunity to comment after the debate was over, and after the final vote was taken, is, by definition, not an opportunity to participate at a "meaningful" time. Nor is an opportunity to comment before the debate takes place "at a meaningful time," when it is unknown what, if any, elements will be changed by the Committee or how they will be changed. The consensus process is inherently dynamic and only participation in the debate can fully protect the rights of all stakeholders. Thus, the limitations imposed by HUD are unacceptable.*

DFO Payne responded to Mr. Weiss stating that the Federal Register notice had a request for written public comment. The written comments were due on April 15th and HUD extended the due date to April 26th. The reason to limit public comment is to allow the MHCC more time to work on the DRCs and Logs. DFO Payne also noted that MHI was the only public commenter to provide written comments to the committee. MHI provided two sets of comments.

John Weldy, Clayton Homes, thanked the MHCC members for their time and expertise. Mr. Weldy stated that the top priority for HUD is to update the standards based on previous logs approved by the MHCC. As a previous MHCC member, Mr. Weldy explained the Frost-free foundation issues and the associated interpretative bulletin. On the foundation issue, the professional engineering designs should be taken seriously. There is a process to review and verify designs through 3rd party and HUD. These reviews hold engineers accountable and there is no need to change the federal standard related to frost-free foundation.

Report from the Technical Systems Subcommittee on Frost-free Foundation.

Technical Systems Chair Michael Wade recapped on the subcommittee's plan to address the frost-free foundation issues and related log items. The subcommittee was assigned ***Action Item 9: Recommendation on Frost-free Foundation Issues/Deregulation Comments*** and to address associated DRCs. The MHCC members discussed the need for more clarification on what constitutes acceptable engineering practices in the Interpretative Bulletin (IB). Based on the discussion, the MHCC adopted the subcommittee's recommendation on the IB.

> **MHCC Motion on Action Item 9: No changes are required to the current Part 3285—Model Manufactured Home Installation Standards regarding Frost-free Foundations. Request HUD to never finalize the proposed Interpretative Bulletin regarding Frost-free Foundations.**
> Maker: Michael Moglia Second: Michael Wade
> The motion carried unanimously via voice vote.

As the committee agreed with the subcommittee recommendations, which were all approved by the subcommittee unanimously, a motion was made to accept recommendations from the subcommittee on Frost-Free Foundation Deregulatory Comments (DRCs) with a subcommittee recommendation of Reviewed and Considered – No Further Action Required from the April 30th Technical Systems Subcommittee meeting.

> **MHCC Motion: Approve Technical Systems Subcommittee recommendations on all the Frost-Free Foundation DRCs with the following recommendation: Reviewed and Considered – No Further Action Required.**
> Maker: Kylin Parks Second: Michael Moglia
> The motion carried unanimously via voice vote.

The committee discussed alternatives to the IB such as FAQs, templated designs, or guidelines. The alternatives were considered as clarification on what constitutes as acceptable engineering practices. Manny Santana noted that any best practices document from HUD may turn into a de facto rule in the industry. The best practices document should come from the industry rather than HUD. HUD's job is to make rules and the industry needs to provide examples of what works within HUD's rules. The committee decided no to pursue any alternatives to the IB. MHCC's motion on Action Item 9 was sufficient to address the frost-free issue.

DRC 179: FR6075-N-01 – Frost-free

The comment is suggesting an alternative approach to address the issue that the IB is trying to address.

> **MHCC Motion: Reviewed and Considered – No Further Action Required**
> Maker: David Tompos Second: Cameron Tomasbi
> The motion carried via voice vote with one negative vote.

On-Site Completion Deregulatory Comments

DFO Payne explained the intent of providing the *Report to Congress on the On-Site Completion of Construction for Manufactured Homes* to the MHCC members. The intent of the report was to help the MHCC address the DRCs related to On-Site Report. Michael Moglia stated that the On-site rule placed too much burden on the local official and installers. Mr. Moglia also noted that the MHCC lacked representation from installers.

MHCC Motion: Refer DRC: 4, 17, 18, 28, 86-92, 97, 98, 100, 101, and 118 to the Regulatory Enforcement Subcommittee.

Maker: Bobby Parks Second: Joseph Sadler
The motion carried via voice vote with one negative vote.

DRC 19: FR6030-N-01 – Outdated Regulations
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Joseph Sadler Second: Bobby Parks
The motion carried unanimously via voice vote.

Mike Hollar asked for MHCC input to see if it is possible to consolidate inspection of installation and on-site completion of construction where possible. Mitchel Baker stated that California does 100% inspection which leads to duplication in the inspection and the on-site report didn't seem to address that duplication. It would be possible to consolidate inspection if there was extra training for the inspectors. Russell Watson and David Tompos highlighted the use of new technology that can allow the on-site installers to communicate with the IPIA through video conferencing and allows for each installation to be inspected without the IPIA representative being present in-person.

DRC 93: FR6075-N-01 – On-site Rule Burdens
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Alan Spencer Second: Michael Moglia
The motion carried unanimously via voice vote.

DRC 94: FR6075-N-01 – On-site Rule Burdens
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Joseph Sadler Second: Bobby Parks
The motion carried unanimously via voice vote.

DRC 95: FR6075-N-01 – On-site Rule Burdens
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Joseph Sadler Second: Russell Watson
The motion carried unanimously via voice vote.

DRC 96: FR6075-N-01 – On-site Rule Burdens
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Alan Spencer Second: Michael Wade
The motion carried unanimously via voice vote.

DRC 99: FR6075-N-01 – On-site Rule Burdens
MHCC Motion: Reviewed and Considered – Reject Premise and Conclusion
Maker: Michael Moglia Second: Michael Wade
The motion carried unanimously via voice vote.

DRC 102: FR6075-N-01 – Installation Manual
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Joseph Sadler Second: Michael Moglia
The motion carried unanimously via voice vote.

DRC 103: **FR6075-N-01 – Installation Manual**
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Michael Moglia Second: Russell Watson
The motion carried unanimously via voice vote.

DRC 104: **FR6075-N-01 – Installation Manual**
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Michael Moglia Second: Joseph Sadler
The motion carried unanimously via voice vote.

DRC 105: **FR6075-N-01 – Installation Manual**
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Michael Moglia Second: Bobby Parks
The motion carried unanimously via voice vote.

DRC 106: **FR6075-N-01 – Installation Manual**
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Joseph Sadler Second: Michael Moglia
The motion carried unanimously via voice vote.

DRC 107: **FR6075-N-01 – Installation Manual**
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Alan Spencer Second: Joseph Sadler
The motion carried unanimously via voice vote.

The MHCC discussed on how to better handle DRCs. The committee's focus should be on the Log items. The AO suggested to move to a consent agenda format by assigning DRCs to the appropriate subcommittee and voting on them in block as the committee did for the Frost-Free Foundation DRCs. The MHCC made the following motion on all the DRCs.

MHCC Motion: Refer the remaining DRCs to subcommittees.
Maker: Joseph Sadler Second: Russell Watson
The motion carried unanimously via voice vote.

The table below shows which DRC categories (Appendix D) were refer to the assigned subcommittee.

Regulatory Enforcement Subcommittee	General Subcommittee	Structure and Design Subcommittee
Carports	Financing Issues	Foundation Requirements
Alternative Construction Requirements	General Comments about Manufactured Housing Construction and Safety Standards	
Consumer Complaint Handling and Remedial Actions	Land Issues	
Dispute Resolution	MHCC Issues	
HUD Regulation	OMHP Administration	
On-Site Completion	Regulatory Benefits	
Preemption	Regulatory Burden and Overreach	
RV Rule	State Issue	
	Miscellaneous	

LUNCH BREAK

Public Comment Period

Devin Leary-Hanebrink, MHI, agreed with the committee that the review of Log Items brings the most value out the MHCC and the DRCs should be sent to the subcommittees. He noted that there are only four DRCs on the Formaldehyde category and addressing those DRCs will help close the formaldehyde issue.

After assigning all the remaining DRCs, the MHCC started reviewing the Log Items.

3280 Subpart B – Planning Considerations

LOG 150: **§ 3280.103(b) Light and ventilation**
MHCC Motion to Disapprove Log 150.
Maker: Manuel Santana Second: Michael Wade
The motion carried unanimously via voice vote.

LOG 156: **§ 3280.103(b)(5) & 3280.103(b)(6) Light and ventilation**
The committee debated the pros and cons of removing the "whole-house ventilation" label.
MHCC Motion to Approve Log 156.
Maker: David Tompos Second: Bobby Parks
The motion carried via voice vote with one negative vote.

LOG 157: **§ 3280.109 Room requirements**
MHCC Motion to Approve Log 157.
Maker: David Tompos Second: Joseph Sadler
The motion carried unanimously via voice vote.

LOG 173: **§ 3280.105 Exit facilities; exterior doors**
MHCC Motion to refer Log 173 to Structure and Design subcommittee.
Maker: Russell Watson Second: Bobby Parks
The motion carried via voice vote with one negative vote.

HUD Secretary Dr. Ben Carson Addresses the MHCC

HUD Secretary, Dr. Ben Carson attended the MHCC meeting to talk about manufactured housing. Secretary Carson thanked MHCC members for their work and time. Secretary Carson strongly believes that everyone needs safe and affordable housing. The need for affordable housing in this nation is a tremendous problem therefore new technologies and new techniques need to be adopted to build the housing stock of tomorrow and manufactured housing falls into that category.

Secretary Carson highlighted the importance of manufactured housing. Ten percent of single-family homes are manufactured homes and it is 1 in 5 in rural areas. By addressing the needs of families with incomes $ 30,000-$50,000, it allows a lot of hardworking individuals to achieve their American Dream. The average net worth of a renter is $5,000 whereas a home-owner's average net worth is $200,000. This is one of the reasons why HUD is such a strong ally of manufactured housing, and it is a vital tool in the battle for affordable housing.

Secretary Carson explained how HUD has taken large efforts to streamline the process and are working to get more efficient each day. Secretary Carson expressed his confidence in his dedicated staff to finish this monumental task. Manufactured housing is one of HUD's real priorities and HUD is looking to reduce the

regulatory barriers while keeping the high standards of affordability and safety. He was confident that MHCC and HUD can tackle the 300 Logs and DRCs. Secretary Carson once again thanked MHCC and the industry for its innovations and improvements to affordable housing.

3280 Subpart B – Planning Considerations continued

LOG 185: **§ 3280.106 Exit facilities; egress windows and devices**
MHCC Motion to Approve Log 185.
Maker: James Husom Second: Manuel Santana
The motion carried unanimously via voice vote.

LOG 187: **§ 3280.105 Exit facilities; exterior doors**
MHCC Motion to Disapprove Log 187.
Maker: Manuel Santana Second: Cameron Tomasbi
The motion carried unanimously via voice vote.

LOG 189: **§ 3280.113 Glass and glazed openings**
MHCC Motion to Approve Log 189.
Maker: Joseph Sadler Second: Michael Moglia
The motion carried unanimously via voice vote.

3280 Subpart C – Fire Safety

LOG 174: **§ 3280.203 and 3280.204 Fire protection and Kitchen Cabinet**
MHCC Motion to refer Log 174 to Structure and Design subcommittee.
Maker: Manuel Santana Second: Russell Watson
The motion carried unanimously via voice vote.

LOG 196: **§ 3280.208 Requirements for foam plastic thermal insulating materials**
MHCC Motion to refer Log 196 to Structure and Design subcommittee.
Maker: Michael Moglia Second: Russell Watson
The motion carried unanimously via voice vote.

3280 Subpart D – Body and Frame Construction Requirements

LOG 158: **§ 3280.309 Health Notice on formaldehyde emissions**
MHCC Motion to Disapprove Log 158.
Maker: David Tompos Second: James Husom
The motion carried unanimously via voice vote.

LOG 177: **§ 3280.305 and 3280.306 Structural design requirements and Windstorm protection**
MHCC Motion to Disapprove Log 177.
Maker: Manuel Santana Second: Bobby Parks
The motion carried unanimously via voice vote.

LOG 184: **§ 3280.304 (b)(1) Materials & 3280.307 Resistance to elements and use**
MHCC Motion to Approve Log 184.
Maker: Joseph Sadler Second: James Husom
The motion carried via voice vote with two negative votes.

3280 Subpart E – Testing

LOG 148: **§ 3286.411 (b) Certifying installation**
MHCC Motion to Approve Log 148.
Maker: Joseph Sadler Second: Bobby Parks
The motion carried unanimously via voice vote.

LOG 191: **§ 3280.404. Standard for egress windows and devices for use in manufactured homes**
MHCC Motion to Disapprove Log 191.
Maker: Bobby Parks Second: Alan Spencer
The motion carried unanimously via voice vote.

LOG 197: **§ 3282.404(a) Manufacturers' determinations and related concurrences**
MHCC Motion to refer Log 197 to Structure and Design subcommittee.
Maker: Michael Moglia Second: Bobby Parks
The motion carried unanimously via voice vote.

LOG 203: **§ 3280.404 Standard for egress windows and devices for use in manufactured homes**
MHCC Motion to refer Log 203 to Structure and Design subcommittee.
Maker: Alan Spencer Second: Manuel Santana
The motion carried unanimously via voice vote.

LOG 204: **§ 3280.405 Standard for swinging exterior passage doors for use in manufactured homes**
MHCC Motion to refer Log 204 to Structure and Design subcommittee.
Maker: Alan Spencer Second: Manuel Santana
The motion carried unanimously via voice vote.

LOG 206: **§ 3280.403 Requirements for windows, sliding glass doors, and skylights**
MHCC Motion to refer Log 206 to Structure and Design subcommittee.
Maker: Alan Spencer Second: Manuel Santana
The motion carried unanimously via voice vote.

3280 Subpart F – Thermal Protection

LOG 123: **§ 3280.511(a)(2) Comfort cooling certificate and information**
MHCC Motion to Disapprove Log 123.
Maker: Bobby Parks Second: Michael Moglia
The motion carried unanimously via voice vote.

LOG 155: **§ 3280.504(a)(1) & 3280.504(d)(i) Ceiling vapor retarders**
MHCC Motion to Approve Log 155.
Maker: Bobby Parks Second: Cameron Tomasbi
The motion carried via voice vote with one abstention.

LOG 205: **§ 3280.508 Heat loss, heat gain and cooling load calculations**
MHCC Motion to refer Log 205 to Technical Systems subcommittee.
Maker: Joseph Sadler Second: Manuel Santana
The motion carried unanimously via voice vote.

3280 Subpart G – Plumbing Systems

LOG 149: **§ 3280.609(c)(1)(iii) Water distribution systems**
MHCC Motion to Disapprove Log 149.
Maker: Alan Spencer Second: Michael Wade
The motion carried unanimously via voice vote.

LOG 171: **§ 3280.607(b)(5)(ii) Standpipes**
MHCC Motion to Approve Log 171.
Maker: Joseph Sadler Second: James Husom
The motion carried unanimously via voice vote.

LOG 188: **§ 3280.607(b)(3)(i) Plumbing fixtures**
MHCC Motion to Approve Log 188.
Maker: Manuel Santana Second: Alan Spencer
The motion carried unanimously via voice vote.

LOG 190: **§ 3286.803 State qualifying installation program & 3286.2 Applicability**
MHCC Motion to table Log 190.
Maker: Alan Spencer Second: Manuel Santana
The motion carried unanimously via voice vote.

The MHCC adjourned at 5:05 p.m.

DAY 3: Thursday, May 2, 2019

Reconvene

MHCC Chairman, Tommy Colley, reconvened the meeting at 9:02 a.m. DFO Payne welcomed the committee back into session. Kevin Kauffman (AO) called the roll and announced that a quorum was present.

Public Comment Period

Lesli Gooch, MHI, thanked the MHCC for their hard work. Ms. Gooch reemphasized the importance on this type of regulatory process. She thanked DFO Payne and her team in guiding MHCC through the Logs and DRCs. She noted that sending Logs to subcommittee will inadvertently delay a final action due to the federal process that HUD and MHCC need to follow. She urged to committee to act on the Formaldehyde comments and make decisions on Logs where possible. Ms. Gooch hoped to see more subcommittee calls to review and process the DRCs and Log items.

3280 Subpart H – Heating, Cooling and Fuel Burning Systems

LOG 175: **§ 3280.707 Heat producing appliances**
MHCC Motion to Approve Log 175.
Maker: Michael Wade Second: Bobby Parks
The motion carried unanimously via voice vote.

LOG 176: **§ 3280.714 Appliances, cooling**
MHCC Motion to Approve Log 176.
Maker: Michael Wade Second: Kylin Parks
The motion carried unanimously via voice vote.

LOG 183: **§ 3280.711 Instructions**
MHCC Motion to Disapprove Log 183.
Maker: David Tompos Second: Michael Moglia
The motion carried unanimously via voice vote.

Alternative Construction Requirements

After a couple failed attempts to approve Log 180 either as written or with various modifications the following motion was made:

LOG 180: **§ 3282.14(b) Alternative construction of manufactured homes**
MHCC Motion to table Log 180.
Maker: Cameron Tomasbi Second: Bobby Parks
The motion carried unanimously via voice vote.

LOG 181: **§ 3282.14(c)(3) Alternative construction of manufactured homes**
MHCC Motion to Approve Log 181.
Maker: David Tompos Second: Kylin Parks
The motion carried unanimously via voice vote.

Model Manufactured Home Installation Standards

LOG 146: **§ 3285.304 (b)(2) Pier configuration**
MHCC Motion to Approve Log 146.
Maker: Alan Spencer Second: David Tompos
The motion carried unanimously via voice vote.

LOG 147: **§ 3285.304 (c)(3) Pier configuration**
MHCC Motion to Approve Log 147.
Maker: Alan Spencer Second: Russell Watson
The motion carried unanimously via voice vote.

LOG 164: **§ 3285.2, paragraph (b)(4) Manufacturer installation instructions**
MHCC Motion to Approve Log 164.
Maker: Michael Moglia Second: Garold Miller
The motion carried unanimously via voice vote.

LOG 165: **§ 3285.5 Definitions**
MHCC Motion to Approve as Modified Log 165.
Maker: Joseph Sadler Second: Dave Anderson
The motion carried unanimously via voice vote.

LOG 166: **§ 3285.5 Definitions**
MHCC Motion to table Log 166.
Maker: Manuel Santana Second: Russell Watson
The motion carried unanimously via voice vote.

LOG 167: **§ 3285.102 Installation of manufactured homes in flood hazard areas**
MHCC Motion to Approve Log 167.
Maker: Joseph Sadler Second: Manuel Santana
The motion carried unanimously via voice vote.

LOG 168: **§ 3285.102(d) Installation of manufactured homes in flood hazard areas**
MHCC Motion to Approve as Modified Log 168.
Maker: Joseph Sadler Second: Manuel Santana
The motion carried unanimously via voice vote.

LOG 169: **§ 3285.301(a) General**
MHCC Motion to Disapprove Log 169.
Maker: Michael Moglia Second: Kylin Parks
The motion carried unanimously via voice vote.

LOG 192: **§ 3285.4(h)(2) Incorporation by reference (IBR)**
MHCC Motion to refer Log 192 to Regulatory Enforcement subcommittee.
Maker: Russell Watson Second: Kylin Parks
The motion carried unanimously via voice vote.

Procedural and Enforcement Regulations

LOG 163: **§ 3282.202 Definitions**
MHCC Motion to refer Log 163 to Regulatory Enforcement subcommittee.
Maker: Joseph Sadler Second: Dave Anderson
The motion carried unanimously via voice vote.

LOG 172: **§ 3282.255(a) Completion of information card**
MHCC Motion to Approve Log 172.
Maker: Michael Moglia Second: Manuel Santana
The motion carried unanimously via voice vote.

LOG 178: **§ 3282.352 State exclusive IPIA functions**
MHCC Motion to Approve Log 178.
Maker: Manuel Santana Second: David Tompos
The motion carried via voice vote with two abstentions.

LOG 182: **§ 3282.7 Definitions; 3282 Subpart I Consumer Complaint Handling and Remedial Actions**
MHCC Motion to refer Log 182 to Regulatory Enforcement subcommittee.
Maker: Michael Moglia Second: Bobby Parks
The motion carried unanimously via voice vote.

LOG 194: **§ 3282.7 (j), (x) and adding (lll) Definitions**
MHCC Motion to refer Log 194 to Regulatory Enforcement subcommittee.
Maker: Michael Moglia Second: Joseph Sadler
The motion carried unanimously via voice vote.

LOG 195: **3282 Subpart M - On-Site Completion of Construction of Manufactured Homes**
MHCC Motion to refer Log 195 to Regulatory Enforcement subcommittee.
Maker: Manuel Santana Second: Mitchel Baker
The motion carried unanimously via voice vote.

Formaldehyde DRCs

DRC 8: **FR6030-N-01 – 24 CFR 3280.309**
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Manuel Santana Second: Cameron Tomasbi
The motion carried unanimously via voice vote.

DRC 22: **FR6030-N-01 – Formaldehyde Notices**
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Cameron Tomasbi Second: Kylin Parks
The motion carried unanimously via voice vote.

DRC247: **FR6075-N-01 – Formaldehyde**
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Michael Moglia Second: Alan Spencer
The motion carried unanimously via voice vote.

DRC 248: **FR6075-N-01 – Formaldehyde**
MHCC Motion: Reviewed and Considered – No Further Action Required
Maker: Joseph Sadler Second: Manuel Santana
The motion carried unanimously via voice vote.

Wrap-up

Michael Wade thanked Chairman Colley, DFO Payne, and the AO for a successful meeting. Mr. Wade suggested a strict time limit for public commenter during the discussion of each item.

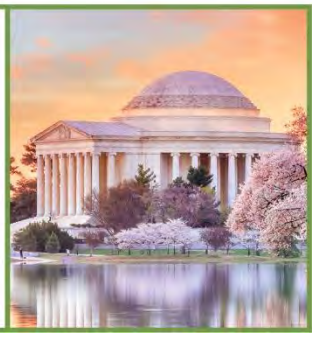
AO Kauffman reminded members to participate in the letter ballot and that the vote will be finalized after the final letter ballot. DFO Payne and Chairman Colley thanked the MHCC members, the HUD staff, the public participants, the AO and the meeting planners for a successful and productive MHCC meeting.

The MHCC meeting adjourned at 12:30 p.m.

MHCC MEETING

April 30 – May 2, 2019

APPENDIX A:
Participant List



HUD Manufactured Housing Consensus Committee Meeting

April 30–May 2, 2019
Holiday Inn Washington–Capitol • Washington, DC

Postmeeting Participant List

Manufactured Housing Consensus Committee Members

Dave Anderson
Executive Director
National Manufactured Home Owners Association
2380 Wycliff Street, Suite 200
St. Paul, MN 55114
Phone: 202-800-9795
Email: david.r.anderson.nmhoa@gmail.com

Mitchel Baker
Administrator
Division of Codes and Standards
California Department of Housing and Community Development
2020 West El Camino Avenue, Suite 250
Sacramento, CA 95833
Phone: 916-263-3221
Email: mbaker@hcd.ca.gov

Luca Brammer, P.E.
President
Hallmark Southwest
25525 Redlands Boulevard
Lomda Linda, CA 92354
Phone: 858-336-6627
Email: lbrammer@hallmarksouthwest.com

Tommy Colley
Assistant Administrator
Alabama Manufactured Housing Commission
511 Central Road
Eclectic, AL 36024
Phone: 334-850-0554
Email: tommy.colley@amhc.alabama.gov

Robert Garcia
Engineer
Fleetwood Enterprises
2275 Sampson Avenue, Suite 203
Corona, CA 92879
Phone: 602-283-9074
Email: robert.garcia@fleetwoodhomes.com

James Husom
President and Chief Executive Officer
PFS Corporation
1507 Matt Pass
Cottage Grove, WI 53527
Phone: 608-839-1372
Email: jim.husom@pfsteco.com

Garold Miller
President
Manufactured Housing Association of New Jersey
48 Boxwood Drive
Jackson, NJ 08527
Phone: 732-534-0085
Email: garnoldmiller@gmail.com

Michael Moglia
Program Manager
Housing Standards Division
Pennsylvania Department of Community and Economic Development
400 North Street, Fourth Floor
Harrisburg, PA 17120
Phone: 717-720-7416
Email: mmoglia@pa.gov

Kylin Parks
Organizing Consultant
Kylin Parks Consulting/Washington Association of Manufactured Home Owners
4515 176th Street, S.W., #43
Lynnwood, WA 98037
Phone: 425-318-2488
Email: kylinparks@gmail.com

Robert Parks
Consultant
P.O. Box 3127
West Monroe, LA 71294
Phone: 318-355-1918
Email: bobby@parksair.com

Joseph Sadler, Jr., P.E.
Deputy Commissioner
North Carolina Department of Insurance
1202 Mail Service Center
Raleigh, NC 27699
Phone: 919-647-0052
Email: joe.sadler@ncdoi.gov

Manuel Santana
Director of Engineering
Cavco Industries, Inc.
3636 N. Central Avenue
Phoenix, AZ 85012
Phone: 602-283-9228
Email: manuels@cavco.com

Alan Spencer
President
Dakotaland Homes
1301 S. Lyons Avenue
Sioux Falls, SD 57106
Phone: 605-201-3394
Email: aspencer@dakotalandhomes.com

Cameron Tomasbi, P.E.
Director of Engineering
The Commodore Corporation
1423 Lincolnway East
Goshen, IN 46527
Phone: 574-533-7100
Email: ctomasbi@commodorehomes.com

David Tompos
President
NTA, Inc.
305 North Oakland Avenue
Nappanee, IN 46550
Phone: 574-773-7975
Email: tompos@ntainc.com

Michael Wade
Director of Lean Manufacturing
Cavalier/Clayton
144 Corporate Way
Addison, AL 35540
Phone: 256-747-7504
Email: mwade@cavhomesinc.com

Russell Watson
Director at Large
Federation of Manufactured Home Owners of Florida Inc.
1771 Golden Ponds Road
Fort Pierce, FL 34945
Phone: 860-910-8259
Email: rsw_52@att.net

U.S. Department of Housing and Urban Development

Geraldine (Uju) Aguolu
Management Analyst
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-5599
Email: Geraldine.O.Aguolu@hud.gov

Barry Ahuruonye
Management Analyst
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-7306
Email: Barry.U.Ahuruonye@hud.gov

Dennaire Anderson
General Engineer
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-3282
Email: Dennaire.B.Anderson@hud.gov

Keith N. Becker
Chief Risk Officer
DAS, Office of Risk Management & Regulatory Affairs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9162
Washington, DC 20410
Phone: 202-402-3722
Email: Keith.N.Becker@hud.gov

Tommy Daison
Management Analyst
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-3720
Email: George.T.Daison@hud.gov

Alan Field
Management Analyst
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-2341
Email: Alan.J.Field@hud.gov

Dorian Hawkins
Attorney-Advisor
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9240
Washington, DC 20410
Phone: 202-402-5969
Email: Dorian.S.Hawkins@hud.gov

Leo Huott
Management Analyst
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-4538
Email: Leo.S.Huott@hud.gov

Patricia McDuffie
Manufactured Housing Specialist
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-5607
Email: Patricia.A.Mcduffie@hud.gov

Jason McJury
Senior Engineer
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-2480
Email: Jason.C.Mcjury@hud.gov

Gregory Miller
Architect
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-1472
Email: Gregory.W.Miller@hud.gov

Paul Olin
Management Analyst
Office of Housing
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-3672
Email: Paul.M.Olin@hud.gov

Teresa B. Payne
Acting Administrator
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-5365
Email: Teresa.L.Payne@hud.gov

Glorianna Peng
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-2122
Email: Glorianna.Y.Peng@hud.gov

Barton Shapiro
Senior Advisor
Office of Housing
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-5605
Email: Barton.X.Shapiro@hud.gov

Demetress Stringfield
Management Analyst
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-2239
Email: Demetress.E.Stringfield@hud.gov

Angelo Wallace
Civil/Structural Engineer
Office of Manufactured Housing Programs
U.S. Department of Housing and Urban Development
451 7th Street, S.W., Room 9170
Washington, DC 20410
Phone: 202-402-3848
Email: Angelo.M.Wallace@hud.gov

HUD Support Services Contractor Personnel

MHCC Administering Organization Staff

Kevin Kauffman
Research Engineer II
Home Innovation
400 Prince George's Boulevard
Upper Marlboro, MD 20774
Phone: 888-602-4663
Email: mhcc@homeinnovation.com

Nay Shah
Research Engineer
Home Innovation
400 Prince George's Boulevard
Upper Marlboro, MD 20774
Phone: 888-602-4663
Email: mhcc@homeinnovation.com

Meeting Planner Contract Staff

Allie Hanlon
Senior Meetings and Events Manager
JDC-Events
8720 Georgia Avenue, Suite 801
Silver Spring, MD 20910
Phone: 240-316-3202
Email: allie@jdc-events.com

Jane Hofilena
Program and Logistics Specialist
BLH Technologies, Inc.
1803 Research Boulevard, Suite 500
Rockville, MD 20850
Phone: 240-399-8742
Email: jhofilena@blhtech.com

Other Attendees

Kara Beigay
Senior Director, Government Affairs
Manufactured Housing Institute
1655 Fort Myer Drive, Suite 200
Arlington, VA 22209
Phone: 703-229-6208
Email: kbeigay@mfghome.org

Pam Brillhart
Manager
IBTS
45207 Research Place
Ashburn, VA 20147
Phone: 703-481-2000 ext. 260
Email: PBrillhart@ibts.org

Kelly Bennett
Manager
IBTS
45207 Research Place
Ashburn, VA 20147
Phone: 703-481-2000 ext. 196
Email: KBennett@ibts.org

John Britton
Quality Control Manager
Building Inspection Service Inc.
2475 Shetland Road
Waverly, KS 66871-9101
Phone: 620-794-5261
Email: jbritton@inspectpro.com

Eric L. Bers
General Public
1416 Sulphur Spring Road
Arbutus, MD 21227
Phone: 410-302-4231
Email: eric.l.bers@gmail.com

Todd Coleman
Environmental Protection Specialist
Environmental Protection Agency
1201 Constitution Avenue, N.W.
Washington, DC 20460
Phone: 202-564-1208
Email: coleman.todd@epa.gov

John Davis
Manager
IBTS
45207 Research Place
Ashburn, VA 20147
Phone: 703-481-2000 ext. 242
Email: JDavis@ibts.org

Vic Ferrante
Engineer
4108 25th Street N.
Arlington, VA 22207
Phone: 703-475-1314
Email: vic_sharon@hotmail.com

James Fry
Advisor (Retired)
AMHO
Phone: 425-338-5969
Email: frydaze4@gmail.com

Danny Ghorbani
Senior Advisor
Manufactured Housing Association for Regulatory Reform
1331 Pennsylvania Avenue, N.W., Suite 512
Washington, DC 20004
Phone: 202-783-4087
Email: dannyghorbani@aol.com

Lesli Gooch
Executive Vice President and Chief Lobbyist
Manufactured Housing Institute
1655 Fort Myer Drive, Suite 200
Arlington, VA 22209
Phone: 703-558-0660
Email: lgooch@mfghome.org

Matthew Helminiak
Commissioner, Division of Labor and Industry
State of Maryland
1100 North Eutaw Street, Room 600
Baltimore, MD 21201
Phone: 410-767-4037
Email: matt.helminiak@maryland.gov

Michael S. Henretty
Installation Program Manager
19100 Mockingbird Heights Road
Triangle, VA 22172
Phone: 703-407-1094
Email: michaelhenretty@hotmail.com

Parker Holloway
Program Analyst/Subject Matter Expert/ FAC-COR II
Federal Emergency Management Agency
U.S. Department of Homeland Security
500 C Street, S.W.
Washington, DC 20472
Phone: 202-714-3083
Email: parker.holloway@fema.dhs.gov

Don Iverson
Midwest Field Representative
National Electrical Manufacturers Association (NEMA)
1102 S. Eifert Road
Mason, MI 48854
Phone: 517-648-0939
Email: don.iverson@nema.org

Devin Leary-Hanebrink
Vice President and Counsel
Manufactured Housing Institute
1655 Fort Myer Drive, Suite 200
Arlington, VA 22209
Phone: 703-558-0400
Email: dlearyhanebrink@mfghome.org

Jeffrey T. Legault, P.E.
Director, Engineering
Champion Home Builders
2520 By-Pass Road
Elkhart, IN 46514
Phone: 574-206-3279
Email: jlegault@skylinecorp.com

Matthew Rabkin
Manufactured Home Program Manager
Federal Emergency Management Agency
U.S. Department of Homeland Security
500 C Street, S.W.
Washington, DC 20472
Phone: 202-212-1011
Email: matthew.rabkin@fema.dhs.gov

James Rios
Manager
IBTS
45207 Research Place
Ashburn, VA 20147
Phone: 703-481-2000 ext. 123
Email: JRios@ibts.org

William Sherman
Administrator
New York Department of State, Division of Building Standards and Codes
One Commerce Plaza
99 Washington Avenue, Suite 1160
Albany, NY 12231-0001
Phone: 518-486-5067
Email: william.sherman@dos.ny.gov

Rebecca Stabile
Senior Consultant
Savan Group
1676 International Drive, Suite 501
McLean, VA 22102
Phone: 609-410-3506
Email: rstabile@savangroup.com

Jeffrey Taylor
Realtor
Realty One Group
582 Lynnhaven Parkway, Suite 201
Virginia Beach, VA 23452
Phone: 757-675-1050
Email: TayloredVARealEstate@gmail.com

James Turner
Project Manager
IBTS
45207 Research Place
Ashburn, VA 20147
Phone: 703-481-2019
Email: JTurner@ibts.org

Norman Wang
Director, Building Codes Administration
State of Maryland
1100 North Euthaw Street, Room 606
Baltimore, MD 21201
Phone: 410-767-0548
Email: norman.wang1@maryland.gov

Mark Weiss
President
Manufactured Housing Association for Regulatory Reform
1331 Pennsylvania Avenue, N.W., Suite 512
Washington, DC 20004
Phone: 202-783-4087
Email: mmarkweiss@aol.com

John W. Weldy
Director of Engineering
Clayton Home Building Group
P.O. Box 1218
437 North Main Street
Wakarusa, IN 46573
Phone: 574-862-6210
Email: john.weldy@claytonhomes.net

Jun Zhao
Manager
Department of Labor, Licensing and Regulation
State of Maryland
1100 North Eutaw Street, Room 600
Baltimore, MD 21201
Phone: 410-767-2349
Email: jun.zhao@maryland.gov

MHCC MEETING

April 30 – May 2, 2019

APPENDIX B:

MHCC Answers on the DOE Energy Conservation Standards for Manufactured Housing Notice of Data Availability; RFI 09-17-2018

By MHCC

MHCC Answers on DOE's Notice of Data Availability on Energy Conservation Standards for Manufactured Housing

Docket Number: EERE-2009-BT-BC-0021

FR Vol. 83, No. 150, 38073 – August 3, 2018

On April 30, 2019, HUD's Manufactured Housing Consensus Committee (MHCC) met to review the DOE's NODA on *Energy Conservation Standards for Manufactured Housing*. As a result of their review and deliberations, the following answers on the NODA were developed and are being submitted to DOE on behalf of the Manufactured Housing Consensus Committee:

The committee reviewed each of the fifteen questions/issues from the NODA and provided a response to DOE. The issues/questions have been abridged and are shown as *italicized* and **bolded**. The MHCC's answers are in RED.

June 2016 Proposal's Assumptions

1. ***What analytical aspects related to DOE's June 2016 proposal – aside from those specifically noted later in this document (NODA) – should DOE consider re-examining as part of its ongoing consideration of a final rule for manufactured housing? (Within this context, this request also encompasses whether DOE's analysis sufficiently addresses the cost-effectiveness of standards based on the current IECC code when considering the code's impact on both the purchase price of manufactured housing and on total life-cycle construction and operating costs. Why should DOE reconsider these aspects and what specific changes, if any, should DOE make to them? As part of this request, DOE is interested in any specific supplemental supporting data regarding any changes that commenters may suggest.) [Refer to 83 FR 38075 – Issue 1]***
    - Windows and Insulation would be a larger cost increase than predicted. R values/U values requirements in the table deviate (are lesser) than the requirements in the 2018 IECC table R402.1.2
    - The lower cost packages would require manufacturers to carry/provide multiple different options for each window. Manufacturers are more likely to only stock the windows meeting the most stringent requirements, which simplifies the inventory for the manufacturer.

2. ***a. DOE seeks comment regarding the CFPB's findings (CFPB Report on "Manufactured-Housing Consumer Finance in the United States"). Are these findings reasonably accurate or are there other factors that DOE should consider when determining the economic impact of energy conservation standards on the ability of purchasers to buy manufactured homes? Assuming that these findings are reasonably accurate, what role, if any, should they play in shaping the standards that DOE ultimately adopts for manufactured housing and why? If the CFPB's findings are not accurate, what specific shortcomings do they have and what***

assumptions/changes should DOE apply when determining the stringency and types of standards the agency should establish for manufactured housing? [Refer to 83 FR 38076 – Issue 2a]

b. DOE's own data from its Residential Energy Consumption Survey of 2015 suggests that manufactured housing households pay about 60% more for their energy per square foot than the entire housing stock. Is this estimate accurate—and if so, why? What specific factors contribute to this condition? If this estimate is not accurate, why—what specific factors are being overlooked in the survey that contribute to this inaccuracy? [Refer to 83 FR 38076 – Issue 2b]

- This report is from 2015, perhaps the installation/construction techniques have improved since then, which could lead to some inaccuracies.
    - Air sealing with respect to climate zone
    - Duct leaking/sealing / location of duct system
- Reliance on square footage for primary basis of comparison for energy usage is not a proper metric. The energy usage cost for the dwelling may be more per sq. ft than a traditional site-built home, but the total energy usage cost of the dwelling is generally less, which is important for the value proposition for manufactured homes.

Ownership-Related Costs

3. ***Manufactured housing owners tend to be lower-income than other homeowners,[10] and are also likely to finance their manufactured housing purchase using high-rate chattel loans. As a result, the Department is particularly interested in comments and data regarding the affordability of manufactured housing and how the options outlined in this NODA would affect upfront manufactured housing affordability. DOE also seeks comment on whether and how the different approaches outlined in this NODA would differently affect the affordability of manufactured homes. [Refer to 83 FR 38076 – Issue 3]***

DOE seeks public input on each of the following items:

- ***Affordability is a combination of upfront cost, which may price out some consumers at time of purchase, and operating costs, which will affect all manufactured housing owners over a longer time horizon. The Department seeks comments that provide information on how to weigh these components in defining ''affordability,'' with particular focus on affordability for low-income consumers.***
    - Upfront cost should be considered more important when defining affordability. (60% upfront cost, 40% operating cost) End result of keeping initial cost to consumers low.

- ***While the cost of site-built home efficiency upgrades may be recouped when an owner sells the home, the same may not be true of manufactured homes because (1) manufactured housing owners have relatively short tenancies and (2) the resale market for manufactured housing is highly constrained, such that the original owner will likely not recoup upfront efficiency investments if the payback period exceeds tenancy. DOE seeks additional information from commenters on the manufactured housing resale market that would inform the Department's consideration of what a reasonable payback period would be. If available, the Department also seeks information on the distribution of manufactured housing tenancy rates.***

- Reasonable payback period should be no longer than 6-8 years

- ***The Department is also interested in comments that inform whether special consideration should be given to affordability, particularly given that low-income and older consumers are disproportionately represented among manufactured housing owners.***
    - Affordability should remain a major consideration for manufactured housing
- ***The Department seeks data and information regarding basing standards on the most recent version of the IECC, in particular, whether standards based on the most recent version of the IECC would not be cost effective or that standards more stringent than the most recent version of the IECC would be cost effective, in either case based on the impact of the adoption of the IECC standards on the purchase price of manufactured housing and on total lifecycle construction and operating costs.***
    - IECC does not necessarily take all aspects of affordability into account when revising/updating construction codes which are statutory requirements to any home constructed under the Manufactured Home Construction and Safety Standards Title 24 CFR Part 3280(MHCSS). A jump from the current standards to the most recent version of the IECC is a monumental leap unlike the historical development/adoption of the IECC.

4. ***DOE is aware that efficiency standards for manufactured housing may affect consumers in different regions differently and seeks information on (1) the disparate regional effects of a standard, and (2) whether these effects are mitigated by use of tiered standards or a tiered labeling program. [Refer to 83 FR 38077 – Issue 4]***

5. ***DOE seeks to better understand the market for manufactured homes. Available sources provide information regarding the average or median manufactured housing purchase price [15] or the proportion of manufactured housing owners who borrowed different amounts to finance their manufactured housing purchase, but do not directly show the distribution of manufactured housing prices across the market and the percentage of consumers who purchase at each price category. DOE is interested in such information, particularly to the extent that such information could inform the consideration of threshold standards. [Refer to 83 FR 38077 – Issue 5]***

Prescriptive and Performance-Based Standards

6. ***DOE is interested in feedback regarding whether any aspects of its 2016 proposal need further consideration and if so, why. For comments pointing to weaknesses or strengths with respect to DOE's proposal, the agency seeks any supporting data in addition to that which DOE has already made public as part of the manufactured housing standards rulemaking docket. [Refer to 83 FR 38077 – Issue 6]***
    - Forcing the exclusive use of a prescriptive standard vs offering the alternative of a performance-based code is potentially not desirable, they both should remain as optional paths as in the IECC. This will affect the various aspects of affordability (cost of construction, installation, upfront, operation etc.) of the home.

Alternative Approaches

7. ***DOE seeks comment on whether it should consider and implement a cost-based tier structure with respect to regulating the energy efficiency of manufactured housing. DOE notes that a tiered approach could better address some of the concerns that may exist with respect to the first-time costs that purchasers may encounter with more efficient—but more expensive—manufactured homes. If so, why—and if not, why not? [Refer to 83 FR 38078 – Issue 7]***
    - The standard should remain a minimum with respect to each climate/thermal zone. The ability to build an above code home should remain at the discretion of the manufacturer.

8. ***Consumers may fail to optimize the efficiency of their homes due to a lack of available information on the benefits of energy savings. The Department is seeking comments on the benefit of providing consumers with such information, which preserves consumer choice, and the best way to provide consumers with information that they can easily understand and put to use. [Refer to 83 FR 38078 – Issue 8]***

    - ***What information is available to consumers when they make manufactured housing purchasing decisions, and what additional information would be useful? Further, how can the Department add value in the provision and display of information?***
        - Information regarding the available insulation packages and optional programs are typically provided to the consumer prior to purchase.
    - ***DOE seeks comments regarding whether access to information is a barrier to manufactured housing consumers, and if so, what is the magnitude of this barrier (i.e. to what extent does the lack of information prevent consumers from purchasing efficient homes)?***
        - The MHCC does not believe there is a barrier.

9. ***DOE is also considering a number of approaches that would increase consumer access to information and increase the efficiency of manufactured homes. [Refer to 83 FR 38078 – Issue 9]***

    - ***In weighing these approaches, the Department seeks comment on the advantages and disadvantages of using a tiered approach for efficiency standards versus using a single national standard that would apply to all manufactured homes within a single climate zone. DOE also seeks information regarding what a labeling framework would need to consider if a tiered approach were used and what the costs of such an approach would likely be. The Department further seeks comment on the advantages and disadvantages of using a tiered approach to labeling requirements versus a single national labeling standard for manufactured homes.***
        - The standard should remain a minimum with respect to each climate/thermal zone. The ability to build an above code home should remain at the discretion of the manufacturer.
        - Use of the current three MHCSS thermal zones would be beneficial.
    - ***Within the tiered options discussed above, the Department seeks public input on what the appropriate criteria are to use for establishing thresholds (e.g., price, cost, region, etc.) and how best to define these criteria (e.g., manufacturer added cost, retail price, etc.). DOE also seeks public input on other factors that it should consider when establishing tiered standards.***
        - The standard should remain a minimum with respect to each climate/thermal zone. The ability to build an above code home should remain at the discretion of the manufacturer.

10. ***Is new information available on the relationship between tightening the home envelope and indoor air quality? If so, what is the nature of that information, why should DOE consider it, and how should the agency integrate it into its analyses? [Refer to 83 FR 38079 – Issue 10]***
    - The MHCSS already adequately addresses these issues.

11. ***DOE is particularly interested in baseline measures of air flow in recently-built manufactured housing against which to measure any potential reductions in air changes per hour (''ACH''). DOE also seeks information related to what the appropriate ACH threshold is for maintaining adequate indoor air quality. [Refer to 83 FR 38079 – Issue 11]***

    - The MHCSS already adequately addresses these issues.

12. ***What potential health and safety costs of incremental reductions in ACH and/or indoor air quality should the Department consider when evaluating this approach and why? What steps should DOE consider taking to reduce these costs while preserving indoor air quality for manufactured home residents and what disadvantages, if any, are there to each of these specific steps? [Refer to 83 FR 38079 – Issue 12]***

    - The MHCSS already adequately addresses these issues.

13. ***Regarding the overall structure of DOE's approach to its proposed climate zones, should these zones be reconsidered—and if so, why? Should DOE use HUD's existing climate zones? If DOE were to develop its own climate zones, what factors should it consider in doing so? What factors would support the continued use of the proposed climate zones and how do those factors weigh against using HUD's existing climate zones or in favor of adjusting them further? [Refer to 83 FR 38079 – Issue 13]***

    - DOE should use the existing three thermal zones in HUD's MHCSS. Implementation of additional climate/thermal zones would have a negative impact on cost, transportation, initial installation location, relocation, and flexibility.

Compliance Lead-Times

14. ***Should DOE continue to apply a one-year lead-time to the energy conservation standards for manufactured housing? Does the approach—i.e. single uniform national standard versus a multi-tiered national standard—impact the amount of lead-time manufacturers would require to meet the applicable standards? If so, why—and if not, why not? If DOE were to adopt an approach that presented different compliance options in the form of cost-based tiers, would manufacturers require more, less, or the same amount of lead-time as the agency's proposal (i.e. one year)? Why or why not? [Refer to 83 FR 38079 – Issue 14]***

    - Once the new standard(s) are adopted into the MHCSS and regulations, the lead time should reflect the complexity of the new energy standards, manufacturers should have a minimum of 24 months to comply.

15. ***With respect to the manufactured housing standards that DOE promulgates, DOE seeks comment on what enforcement mechanism would be the most appropriate to apply and why. In considering enforcement***

mechanisms, DOE is interested in information concerning the burden and cost impacts for suggested approach(es), as well as the compliance lead-time needed by the industry. Further, DOE seeks information as to whether enforcement cost of any suggested approach may extend beyond the manufacturing industry to the sales and distribution channels that interface with prospective purchasers. [Refer to 83 FR 38079 – Issue 15]

- In accordance with 5403 g. HUD is the enforcement entity for manufactured housing energy standards. Enforcement of these new standards should fall under HUD's manufactured housing program (HUD, the third parties, SAAs etc.) and should be consistent with the cost benefit requirements of the Manufactured Housing Act. DOE should not be included in the implementation or enforcement of these new standards.

MHCC MEETING

April 30 – May 2, 2019

APPENDIX C:
REPORT TO CONGRESS ON THE ON-SITE COMPLETION OF CONSTRUCTION FOR MANUFACTURED HOMES

By U.S. Department of Housing and Urban Development

Report to Congress on the On-Site Completion of Construction for Manufactured Homes

U.S. Department of Housing and Urban Development

Clearance Draft for Prepublication Release

Pre-1976 Mobile Homes

Source: https://clickamericana.com/topics/home-garden/mobile-homes-hot-housing-trend-50s-60s

Source: http://www.whitehouse51.com/vintage-kropf-mobile-homes/17/1960-kropf-121802/

Manufactured Homes of Today

The Captain Jack by Clayton Homes
Source: Clayton Homes

Catalina Model by Cavco Durango
Source: Cavco Durango

Table of Contents

I. Purpose of Report

As part of the Consolidated Appropriations Act, 2018 (Pub.L. 115–141), Congress directed the U.S. Department of Housing and Urban Development (HUD) to review the final rule, On-Site Completion of Construction of Manufactured Homes (FR-5295-F-02), published on March 7, 2016 (75 FR 35901).[1] In addition to a review of the On-Site Completion of Construction rule, Congress directed HUD to "develop a solution that ensures the safety of consumers and minimizes costs and burdensome requirements on manufacturers and consumers." One of the alternatives HUD was directed to consider is whether "state and local planning and permitting agencies should have jurisdiction over on-site completion" (Congressional Record, 2018).

This report provides background information concerning manufactured housing standards and the market for manufactured housing, a description of the impact of the on-site completion of construction rule, a discussion of the efficiency of considered alternative policies, and policy recommendations. The on-site completion of construction represents a very small portion of the market (approximately 1 percent of annual manufactured home shipments). It is an important niche: design features completed on-site offer many advantages to consumers. Because of the price sensitivity of consumers and cost sensitivity of manufacturers, policies that minimize regulatory burden are necessary to preserve this submarket. The goal of HUD's on-site completion of construction regulation was to reduce regulatory burden, yet there is potential for more efficient regulatory alternatives. The alternatives explored in this report have advantages and disadvantages; any regulatory action would merit a careful consideration of the potential costs and benefits of each approach. Chief among those considerations is whether the alternatives support federal superintendence of the manufactured housing program, which allows for a smoothly-functioning national factory-built housing market.

The principal findings and policy recommendations of this report are:

- Delegating full authority for on-site completion of construction inspections to local jurisdictions is not an advantageous regulatory alternative for most jurisdictions and would add to the burden of local governments, manufacturers, and consumers.
- The HUD Manufactured Housing Construction and Safety Standards should be updated regularly in order to reduce costs and regulatory burden to manufacturers and increase consumer protection.
- IPIA Inspections of on-site completion of construction should be reduced to less than 100 percent. HUD should consult with the MHCC to determine an appropriate minimum inspection frequency.
- HUD and the MHCC should consider reclassifying some on-site completion of construction features as installation, removing them from the on-site inspection process.

[1] Specifically, the Explanatory Statement that accompanied the Consolidated Appropriations Act stated, "The Department has issued a final rule, interpretive bulletin, and memorandum regarding the onsite completion of construction of manufactured homes cited in section 424 of H.R. 3354 that has caused concern among various stakeholders. The agreement directs the Department to review such rule, interpretive bulletin, and memorandum, and develop a solution that ensures the safety of consumers and minimizes costs and burdensome requirements on manufacturers and consumers." Despite the reference to on-site completion of construction, the memorandum, dated June 12, 2014, concerns the construction of on-site installation of add-ons, such as a garage or carport. The interpretive bulletin, FR-6023, concerned installation requirements for foundations, but was not finalized. Since these features are not governed by the on-site completion of construction regulation, but rather installation, they are not discussed in this report. States already maintain responsibility for monitoring installation standards, with the option of delegating this responsibility to HUD.

II. History of Manufactured Housing Legislation and Regulation

This section describes federal manufactured housing policy, both legislative and regulatory, preceding the on-site completion of construction rule.

Manufactured Housing Statutes

Federal regulatory policy is derived from two statutes: the Manufactured Housing Construction and Safety Standards Act and the Manufactured Housing Improvement Act.

The Manufactured Housing Construction and Safety Standards Act

In 1974, Congress passed the National Manufactured Housing Construction and Safety Standards Act (42 U.S.C. 5401 et seq.), which authorized the U.S. Department of Housing and Urban Development (HUD) to establish and enforce construction and safety standards for factory-built manufactured housing. Congress provided this authority to HUD primarily to ease the burden on manufacturers while establishing consumer protections, allowing manufacturers to build to a single construction standard that preempts state and/or local codes. At the time, there were three model building codes in the United States with many local modifications. In addition, federal superintendence of manufactured home building standards reduced the burden on states that lacked resources to adequately perform this role. Finally, by establishing a uniform code applicable to all states, manufacturing costs could be decreased while ensuring a minimum level of safety, thus reinforcing manufactured housing as a safe and affordable housing option. The 1974 Act also establishes (refer to 42 U.S.C. 5415) the requirements for every manufacturer of manufactured homes to provide a self-certification with each manufactured home that the home conforms with the Federal Manufactured Home Construction and Safety Standards. Such certification is required to be in the form of a label or tag permanently affixed to each transportable section (floor) of a manufactured home.

The Manufactured Housing Improvement Act

Congress made significant statutory changes through the Manufactured Housing Improvement Act (MHIA) in 2000. The changes included authority for HUD, for the first time, to establish model installation standards for manufactured homes that would become nationwide minimum standards. *The Act defines "manufactured home construction" to mean all activities relating to the assembly and manufacture of a manufactured home including but not limited to those relating to durability, quality, and safety.* The Act defines "installation standards" to mean reasonable specifications for the installation of a manufactured home at the place of occupancy, to ensure proper siting, the joining of all sections of the home, and the installation of stabilization, support, and anchoring systems.

The installation standards do not have the same preemptive effect of the construction and safety standards but establish minimum requirements for manufacturers to address through home installation instructions. The MHIA, among other statutory changes, also created the Manufactured Housing Consensus Committee (MHCC). The MHCC is a Federal advisory committee composed of 21 voting members representing manufactured housing producers, retailers, consumers, and organizations and public officials with an interest in manufactured housing. The MHCC meets regularly to consider and recommend changes in both the construction and safety code and the installation standards. Appendix I lists HUD's regulatory actions affecting the construction and safety standards and installation standards since the creation of the MHCC.

HUD's Regulatory Implementation of Statutes

HUD's manufactured housing program, implementing the statutory distinctions, differentiates between construction and installation activities. The construction and safety standards—authorized by the National Manufactured Housing Construction and Safety Standards Act of 1974—provide requirements that must be met *before* a home may be shipped from the production facility and generally cover the design and construction of manufactured homes. HUD's model installation standards, authorized by the Manufactured Housing Improvement Act of 2000 (Pub. L. 106-569), provide requirements affecting manufacturers installation instructions and work performed at the place of occupancy as part of the placement of the home, such as construction of the foundation, close-up work, and post-placement connections of some appliances and utility systems.

Surveillance and Inspection of Design and Construction

In order to ensure consumer safety, HUD requires that each manufactured home be self-inspected and self-certified by the manufacturer to ensure compliance with the federal construction and safety standards before a home can leave the production plant and ship across state borders. The regulatory scheme consists of multiple levels of assurance to satisfy code compliance and result in the manufacturer's self-certification of compliance. First, manufacturers must receive approval for home designs and quality assurance manuals[2] from a Design Approval Primary Inspection Agency (DAPIA) before construction can begin. The DAPIA-approval ensures designs conform to the federal standards and adhere to acceptable engineering practices. Second, the Production Inspection Primary Inspection Agencies (IPIAs) conduct plant approvals and perform in-plant surveillance during the various stages of production to ensure that the plant is following its approved quality assurance manual and the designs that conform to the Federal construction and safety standards. The surveillance procedures that IPIAs must conduct include inspection of each transportable section (floor) during at least one stage of production and inspection of each phase of production during each surveillance visit.

The stages of production are defined by the manufacturer's quality assurance program and most manufacturers have 10 to 20 stages of production depending upon the complexity of the product and the quality assurance process. Typical stages of production include frame, floor, plumbing, interior wall build, interior wall set, exterior walls, rough electrical, final electrical, exterior covering, roof build, roof set, roof covering, testing, and final finish. Before a floor can be shipped, the manufacturer, based on assurances from the IPIA that the manufacturer's quality program is effective, must certify that the floor meets HUD's manufactured housing construction and safety code.

The IPIA, upon concluding that the manufacturer is conforming to the approved designs and quality assurance program, may then allow the manufacturer to affix the HUD-required certification label, which serves as the manufacturer's self-certification that the floor complies with the Federal standards.[3] DAPIAs and IPIAs can be state agencies or third-party agencies. Eight states currently serve as IPIAs. Nebraska is the only state that serves as both an IPIA and DAPIA. Five third-party companies provide IPIA and DAPIA services.[4]

[2] As defined in 24 CFR 3282.7.
[3] The Manufactured Home Procedural and Enforcement Regulations (24 CFR Part 3282) require all manufactured home floors (i.e. transportable sections) receive and display the HUD-required certification label prior to leaving the factory.
[4] See https://www.hud.gov/program_offices/housing/rmra/mhs/mhsid.

Installation Standards

In 2007, HUD published model installation standards in 72 FR 59338 and codified in 24 CFR Part 3285 national minimum standards.[5] In 2008, through separate rulemaking, HUD established the Manufactured Home Installation Program regulations in 24 CFR Part 3286. Prior to 2007, states and local governments were fully responsible for regulating installation. Under the Installation Program, states may choose to retain full responsibility for regulating installation activities, which includes both establishing installation standards and licensing and monitoring installers. States that choose not to administer their installation program may defer to HUD. HUD's model installation standards do not pre-empt state and local requirements, but state programs must provide protections to residents that meet or exceed the protections provided by the model standards. Thirty-six states administer installation programs and HUD currently administers the requirements of the federal installation program in fourteen states.

Design and Construction Innovations: Alternative Construction Process

In 1984, HUD established the Alternative Construction (AC) process[6] to encourage innovation and the use of new technology in manufactured homes that are otherwise not permitted by the construction and safety standards. Manufacturers may submit requests to HUD to use alternative construction methods and approvals are generally allowed for use in a specific number of homes and for an initial period of up to two years, now generally five years to help reduce regulatory burden. . Historically, AC requests include, for example, attached garages, homes with second floors, tankless water heaters and wheelchair accessible showers. Some of the features allowed through the AC process are eventually incorporated in the construction standards. All AC letters that allow for construction work to be completed at the site require the IPIA to conduct 100 percent inspection of the features.

The number of AC letters issued has fluctuated year to year. The AC process is intended to allow innovative designs or features that would not comply with the standards once completed, either at the factory or at the final occupancy site. As the product improved and changed in the late 1990s and early 2000s to meet consumer demands and compete with other housing products, some features and characteristics became more common such as higher pitched roofs and a wider variety of exterior siding materials. However, due to the inability to transport homes with steep roof pitches under highway overpasses or ship homes with heavier exterior siding materials that may crack or damage in transport, the industry faced regulatory challenges. Without complete roofs and siding materials, the homes were not in compliance with the standards and could not be self-certified by the manufacturers at the factory.

Therefore, at the time of these product changes and improvements, the AC letter was the only available means that would allow for the homes to be completed beyond the confines of the production facility. The intent of the AC process, however, was to allow for innovative designs or features that would not comply with the standards once completed. The AC process was temporarily allowed to facilitate the design and construction of site-completed features that would fully comply with the construction and safety standards upon completion. Consistent with HUD's requirements for AC letters, the work to be completed at the site required 100 percent inspection by the IPIA. HUD's allowance of the AC process for the site-completed work was to be eventually replaced by a process initially recommended by the MHCC through its

[5] Prior to HUD's model installation standards, the National Conference of States on Building Codes and Standards (NCSBCS) maintained installation standards that were voluntary and served as a basis for the MHCC's recommended model standards.

[6] Regulations concerning alternative construction of manufactured homes are codified in 24 CFR Section 3282.14

consensus development process. The interim step represented a courtesy to industry in recognition that the rule was taking a very long time to finalize.[7]

More recently, HUD's program administration, has begun to make industry-favorable changes to the terms and conditions of AC letters. These changes include extending the approval period to as long as five years, significantly increasing production limits, and reducing reporting burdens by allowing manufacturers to retain records at manufacturing facilities for submission on an annual rather than quarterly basis.

On-Site Completion of Construction

In an effort to reduce the burden of requesting approvals through the AC process, HUD introduced the concept of pre-approved on-site completion of construction for certain features (summarized in Appendix II) through a final rule in 2015. This regulatory action and its implementation are the subjects of the report.

[7] The first draft of the rule was presented to the MHCC in 2002, the Proposed Rule was published on June 23, 2010, (75 FR 35903) and the Final Rule was published on September 8, 2015 (80 FR 53712). The rule was finalized 13 years after first consideration.

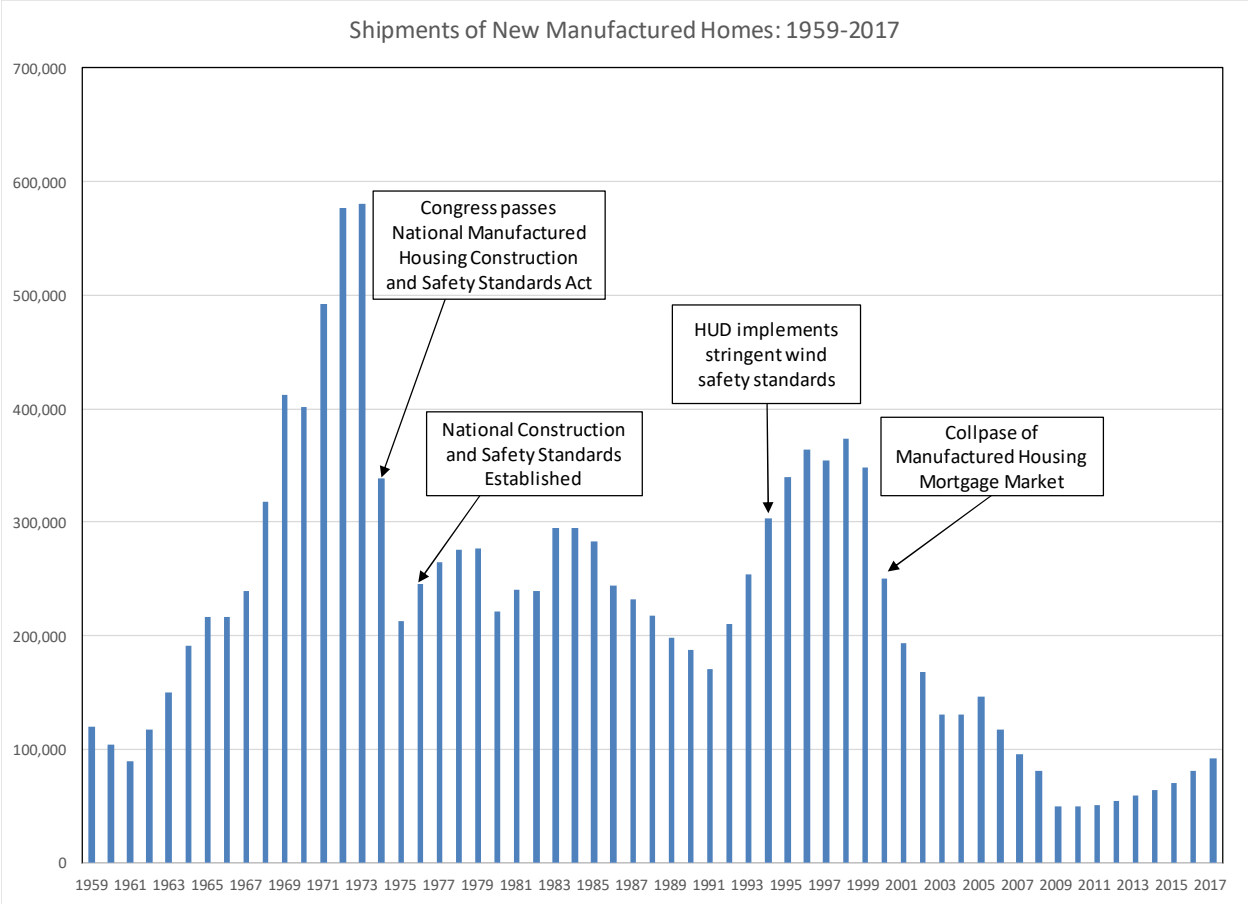
III. Manufactured Housing Market

The manufactured housing market is distinct from site-built housing in the characteristics of both supply and demand. Overall, the characteristics of structures and demographics of residents are more similar between manufactured homes and single-family homes than between manufactured homes and multi-family homes. On the other hand, the cost of housing and incomes of tenants are more similar between manufactured homes and multi-family homes. Knowledge of the similarities and differences guide predictions of the impact of manufactured housing policy.

Production of Manufactured Housing

The market for mobile and manufactured housing has experienced several large boom-and-bust cycles over the past 60 years. During the 1960s, mobile homes grew in popularity as a viable lost-cost alternative to site-built housing. Annual shipments of new mobile homes increased from 120,400 in 1959 to a peak of 579,500 in 1973. In response to the growth in the industry and the need for consistency in production standards, Congress passed the National Manufactured Housing Construction and Safety Standards Act of 1974 (42 U.S.C. 5401-5426). Production from the mid-1970s to the mid-1990s was relatively stable as HUD established construction and safety standards, including testing for formaldehyde in plywood and particleboard panels in 1984[8] and strengthening of wind standards in 1994.[9] The industry experienced a large, rapid expansion in new shipments during the 1990s, peaking at 373,700 in 1998, due to a loosening of mortgage standards for manufactured housing.[10] As a result of the lax mortgage standards, many owners could not afford their mortgage payments and defaulted. This resulted in the severe decline in shipments beginning in 1999 and continuing through the mortgage crisis experienced by the larger housing market a decade later. Since 2009, the market for new manufactured housing has experienced a steady growth, averaging about 10 percent annually since 2012 with shipments of 85,700 in 2017. With continued growth in 2018, which through August was 10 percent higher than the same period in 2017, the manufactured housing industry is experiencing the longest period of expansion in the industry's history.

[8] See 49 FR 32012.
[9] See 59 FR 2456.
[10] See Consumer Financial Protection Bureau. "Manufactured-Housing Consumer Finance in the United States" September 2014.



Source: U.S. Census Bureau Manufactured Housing Survey

In 2017, according to the Manufactured Housing Survey conducted by the U.S. Census Bureau, manufacturers shipped 92,900 floors. Since the on-site completion of construction rule became effective, manufacturers have shipped approximately 1,000 on-site completion of construction homes per year: 828 from July 2016 to June 2017 and 903 from July 2017 to June 2018. Total shipments for those periods equaled 87,900 units and 97,100 units. Thus, production of on-site completion of construction homes represents approximately 1 percent of total shipments.

Manufactured Housing Stock

The 2017 American Housing Survey (AHS) indicates that there are 8.4 million manufactured homes (6.1 percent of all housing units), of which 6.7 million were occupied at the time (5.5 percent of occupied units). The median manufactured home is between 1,000 and 1,500 square feet, and has 5 rooms, including 3 bedrooms. On average, manufactured homes are smaller than single-family homes but larger than multi-family units (for a detailed comparison of bathrooms, bedrooms, average number of rooms, and square footage, see Appendix IV). The median number of bathrooms is greater for manufactured housing than for multi-family units. These basic data on the characteristics of manufactured homes indicate that there is a strong demand for housing features. At the same time, the median total monthly housing costs in manufactured homes is just slightly over $600 (lower than for either multi-family or

single-family homes), indicating that manufactured housing is a choice for those households who want to minimize housing costs.

Tenants of Manufactured Housing

In total, 17.5 million people live in manufactured housing, or 5.5 percent of the U.S. population.[11] The 2017 American Community Survey (ACS) estimates that 12.1 million people live in owned manufactured housing (an ownership rate of 69 percent), corresponding to 5.8 percent of the owner-occupying population. An additional 5.4 million live in rented manufactured housing, or 4.9 percent of the renting population.

Manufactured home households have similar incomes to households in multi-family units, but both are much lower than single-family household incomes. The median manufactured home household has household income of $33,600 or 192 percent of the federal poverty threshold. However, at these lower incomes, manufactured home households are able to live in houses of similar in size and room count to single family homes, at lower cost than either multi-family or single-family homes.

The median household size in manufactured homes is two people, and exactly two adults live in 47 percent of manufactured homes. The median age of the head of household is 54 in manufactured housing, which is the same as for single-family homes but older than for multi-family units (45 years). An elderly person lives in 31 percent of manufactured homes, the same as for single-family homes, but more than for multi-family units (21 percent are elderly). Just over 54 percent of heads of households in manufactured homes are married or widowed. 85 percent of manufactured housing heads are white only, 9 percent are black only. The next largest category is American Indian or Alaska Native only (3 percent), followed by a combination of white and American Indian or Alaska Native (2 percent). The median date of the most recent move is 2008 to 2009 in manufactured housing, compared with 2015 in multi-family households and 2007 in single-family homes. (For a detailed comparison of tenant demographics, see Appendix IV)

[11] Table B25033, ACS 2017 1 year).

IV. On-Site Completion of Construction Regulation and Implementation

This section provides a summary of the development of the on-site completion of construction regulation, a description of the on-site completion of construction approval and inspection process, a discussion of the regulatory impact of the rule, and an exploration of market impacts.

Development of On-Site Completion of Construction Rule

The MHCC first discussed the On-Site Completion of Construction provisions in 2003 and approved them approximately seven years later. The initial on-site completion of construction proposal was submitted to the MHCC for consideration in March 2003. Discussions between HUD and the MHCC continued through 2010, when the proposed rule was published in the Federal Register (75 FR 35903). The procedure and standards became final and were published in 80 FR 53712 and codified in 24 CFR part 3282 Subpart M.

The requirements included in the On-Site Completion of Construction Rule were designed and intended to set forth a regulatory process consistent with the construct of the federal manufactured home program, including protection of preemptive standards and federal superintendence. Maintenance of these protections was designed to reduce potential for regulatory confusion and reduce potential for discriminatory practices and locally-required fees, professional qualifications, and technical standards that can result from local authority involvement.

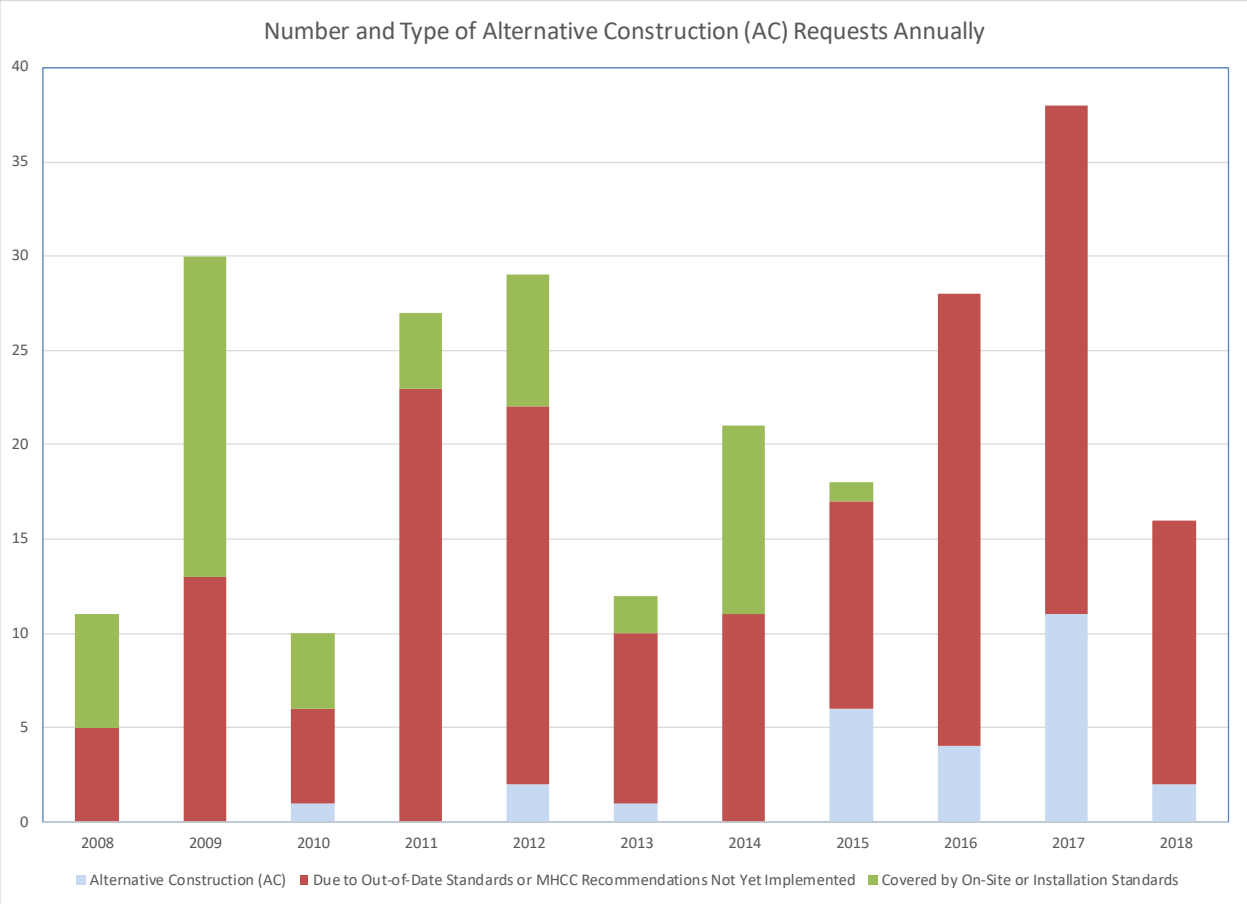
The On-Site Completion of Construction Rule establishes a process by which manufacturers are allowed to complete discrete aspects of the construction of a manufactured home at the placement site. This process extends the manufacturer's production process to the home site. The site construction must result in a home that complies with HUD's construction and safety standards, must be limited to discrete aspects of construction that do not constitute substantial completion of the home at the site, and the construction must be self-certified by the manufacturer that the construction complies with the federal standards, consistent with statute.

Since HUD also established minimum installation standards prior to the On-Site Completion of Construction rule, HUD re-classified some aspects of work as close-up[12] work to be regulated as part of installation rather than as completion of construction. The re-classification of such work as installation saved the industry significant burden and resulted in a significant reduction of the number of AC letters, inspections, and reporting. HUD's actions eliminated the need for about 25 AC letters. In addition, through implementation of the On-Site Completion of Construction rule, another 25 AC letters were eliminated, reducing industry burden resulting from HUD's review process, processing durations, and reporting burdens.

Between FY 2008 and FY 2018,[13] HUD received 240 new AC requests. Features that now qualify for on-site completion of construction and have been re-categorized as installation accounted for 50 of these requests, or 21 percent. Almost two-thirds of these requests, 162, related to standards that the MHCC recommended but that have not yet been codified. Since the on-site completion of construction rule went into effect in FY 2015, more than three-quarters of the AC requests continue to be for standards that have not yet been codified in the federal standards. Updating the manufactured housing safety and

[12] Close-up consists of the work and activities for completing the assembly of the manufactured home. It is the work of joining up of all sections of a multi-section manufactured home. (See 24 CFR part 3285, subpart I.)
[13] Totals for FY 2018 include requests through September.

construction codes as recommended by the MHCC would decrease the regulatory burden on manufacturers by eliminating the need to apply for AC permission simply to build to what is considered current practice.



In response to the proposed rule "On-Site Completion of Construction of Manufactured Housing" (75 FR 35903), HUD received comments from state and local authorities, including Arizona, California and Minnesota, that view HUD's on-site completion of construction final rule as interference by the federal government into a domain best left to state and local governments. While HUD views on-site completion of construction as the final stage of the production process, some state and local agencies view the process as a local building activity, similar to construction of add-ons after the home is placed, that should be governed by local regulations and inspected by local inspectors. Some believe that once a manufactured home leaves the factory, federal regulations should no longer apply. This view of limitations of federal jurisdiction would be consistent with similar objections to HUD's regulatory actions concerning Alternative Construction, installation, and on-site completion of construction as "usurping" state and local authority.

Regulatory Processes for Site-Completed Manufactured Homes

The manufacturer is responsible to develop and carry out an effective quality assurance program "which commits the manufacturer to make adequate inspections and tests of every part of every manufactured

home produced."[14] The IPIA is responsible for inspecting each floor during at least one stage of its production in the factory. Before the floor can be shipped, the manufacturer, based on its own quality assurance inspections and assurances from the IPIA that the manufacturer's quality assurance program is effective, must certify that the floor complies with HUD's manufactured housing construction and safety code. The on-site completion of construction process, however, extends the production process from the factory to the home site and allows manufacturers to legally ship floors that are not fully compliant with the construction and safety code because certain pre-approved features are not yet complete.[15] On-site completion of construction is limited to systems or components that would not be practical to complete in the factory and, when completed at the site, result in conformity to the standards.

For homes fully completed in-plant, IPIAs are required to conduct representative inspections. IPIAs must inspect every transportable section of a manufactured home during at least one stage of production and, during each surveillance visit to a plant, the IPIA must inspect all stages of production at the plant. For homes completed on-site, IPIAs must inspect every transportable section in the plant during at least one in-plant stage and all the on-site work at the home's final site. Thus, on-site completion of construction is the only stage of production during which all units must be inspected.

To complete construction on-site, manufacturers must obtain approval from the Design Approval Primary Inspection Agency (DAPIA). The approval includes among other items, instructions for completing construction of the home on-site and an inspection checklist to be used by the final site inspectors. The manufacturer is required to inspect and certify that the on-site completion of construction work is completed in accordance with the federal standards and the IPIA is responsible for designating an inspector to inspect the work completed on-site according to the DAPIA's approved design and the DAPIA-approved quality assurance manual. The IPIA may inspect the work or designate an independent qualified third-party inspector to inspect the work that was completed according to the standards. Only after the IPIA has indicated the construction complies with the standards may the manufacturer provide its final self-certification that the construction complies.

The most common on-site completions of construction involve innovations for the roof of the manufactured home, such as hinged roofs, dormer windows, and features installed with completion of the roof such as roof jacks, vent stacks, and eaves. A hinged roof allows a roof to be steeper than a design that could be transported without requiring on-site completion of construction. Roof dormers are windowed or window-less structures protruding through and above a pitched roof. Roof jacks cover venting and exhaust pipes from appliances such as gas-fired furnaces and kitchen and bath exhaust fans. Vent stacks provide ventilation for the plumbing system. Eaves are the edges of a roof overhanging the face of a wall. Other examples of items completed on-site are exterior French doors, gable and bay windows, stucco, stone, brick, or other siding, a fireplace hearth that spans a multi-section manufactured home, and appliances that are listed or certified for use in manufactured homes, such as a cooking range, furnace, or water heater (for a complete list, see Appendix II).

Through an extensive outreach campaign conducted by HUD before the effective date of the rule, HUD educated industry on the requirements of the Rule and developed, published and circulated Frequently Asked Questions (FAQs). Through a continuous feedback and solutions-based approach, HUD provided significant regulatory discretion and industry-favorable guidance through the FAQs and specifically

[14] See 24 CFR § 3282.361(a).
[15] Regulations concerning on-site completion of construction of manufactured homes are described in 24 CFR Part 3282.601 - 3282.611.

permitted some construction work to be completed as installation work, such as tiled tub surrounds and stairwell plug removals.

In order to further facilitate and encourage the use of the On-Site Completion of Construction process, HUD also clarified through the outreach process and FAQ document that the manufacturer could delegate its on-site completion of construction responsibilities. HUD allows the manufacturer to designate another qualified entity to complete the construction work and complete the inspection and self-certification on behalf of the manufacturer. This decision significantly reduced costs and burdens by eliminating otherwise required time and travel for plant personnel to travel from the factory to each affected home site.

Impact of On-Site Completion of Construction Rule

The analysis of the incremental effect of the 2015 on-site completion of construction regulation adopts the pre-existing Alternative Construction (AC) process as the point of reference. However, the use of the AC process was never intended to be a permanent solution. Instead, it was implemented to ease the burden on manufacturers that wanted to increase the number of on-site completions of construction while a permanent solution was developed. This procedure, however, was in place long enough to consider it as the comparison for the published regulations.

Table 1 below compares the various phases of construction highlighting the differences in approval, inspections, and reporting between factory-completed homes, homes with alternative construction and site-completed homes, Compared to factory-completed homes, using alternative construction methods requires an application process to HUD, an IPIA inspection after the home is installed and the AC work is completed, and additional reporting by the manufacturer and IPIA. Homes that are site-completed require the manufacturer to self-certify after the site work is completed, an IPIA inspection after the self-certification, and additional reporting by the manufacturer and IPIA.

Manufacturers who have difficulty scheduling the on-site inspection have responded by altering how French Doors are packaged for transportation. French Doors were addressed in the On-Site completion of Construction Rule because of known transportation issues resulting in damage to the doors. Successful transportation of manufactured homes is a requirement of the Standards, and as such, designs should have addressed aspects of construction that were being damaged in transit. However, since the On-Site Completion of Construction Rule requires shipped loose doors to be addressed in an AC approval, manufacturers have started to install the French Doors at the factory with additional reinforcement and bracing to avoid transportation damage and avoid obtaining AC approval.

Table 1: Phases of Construction of Manufactured Homes

Phase	Factory-Completed	Alternative Construction (AC)	Site Completed (SC)
Product Design	Manufacturer designs home that will be fully completed at the plant and comply with the standards before the home is shipped from the factory.	Manufacturer designs home that may not be fully completed at the plant and will not fully comply with the standards before the home is shipped, due to AC features.	Manufacturer designs home that may not be fully completed at the plant and will not fully comply with the standards when the home is shipped from the factory. (Certain features may be removed for transport, taking the home out of compliance.)
DAPIA Review and Approval	DAPIA reviews and approves design for full completion in plant.	DAPIA reviews design with AC features and approves with features that are not in compliance with current standards.	DAPIA reviews design with SC features and approves with features that will be completed at final site of home.
AC Application		Manufacturer applies to HUD for approval to build with exceptions to the construction and safety standards.	
Factory Construction	Home is built and completed with quality control inspections by the manufacturer. The IPIA provides surveillance of the manufacturer's quality assurance system.	Home is built, minus any field work permitted by the AC, and all factory work is inspected by the manufacturer with special quality control inspections as may be required by the AC letter. The IPIA provides surveillance of the manufacturer's quality assurance system.	Home is built, minus the SC work, and all factory work is inspected by the manufacturer with special quality control inspections as may be required by the SC letter. The IPIA provides surveillance of the manufacturer's quality assurance system.
Self-Certification	Manufacturer self-certifies that the home complies with the standards before the home leaves the factory, allowing the HUD-required certification label to be affixed.	Manufacturer self-certifies that home complies with standards before the home leaves the factory. The AC letter allows the HUD-required certification label to be affixed before the home is shipped, subject to an IPIA inspection at the site for work done at the site.	Manufacturer self-certifies that home complies with standards, minus the features completed at site, before the home leaves the factory. The SC approval document allows the HUD-required certification label to be affixed before the home is shipped, subject to the manufacturer and IPIA inspection of work done at the site.
Transportation	Home transported to retailer or final site.	Home transported to retailer or final site.	Home transported to retailer or final site.
Installation	Home is sited and installed.	Home is sited and installed.	Home is sited and installed.
Site Construction		If necessary, AC work completed, possibly in parallel with the home's installation.	SC work completed, possibly in parallel with the home's installation.
Post-Installation Inspection(s)	Installer certifies for installation purposes.	Installer certifies for installation purposes. Manufacturer does not self-certify again for AC items do not always comply with the Standards. IPIA inspects the AC work	Installer certifies for installation purposes. Manufacturer, or designated agent, inspects and self-certifies the SC work complies with the Standards. IPIA inspects SC work.
Post-Inspection Reporting	Manufacturer reports production and destination information to IPIA.	Manufacturer reports 1) production and destination information to IPIA; 2) completion of AC field inspection to HUD or SAA; and 3) AC "Cumulative Production Status Reports" to HUD.	Manufacturer reports 1) production and destination information to IPIA; 2) findings of SC inspections to IPIA; and 3) after approval from IPIA, final inspection findings and self-certification to IPIA, lessor/purchaser and retailer.
	IPIA reports production information to HUD.	IPIA reports production information and AC inspection findings to HUD.	IPIA reports production information and SC inspection findings to HUD.
	Retailer reports home location to HUD or SAA.	Retailer reports home location to HUD or SAA.	Retailer reports home location to HUD or SAA.
Occupancy	Consumer takes ownership of home.	Consumer takes ownership of home.	Consumer takes ownership of home.

Notes: AC = Alternative Construction; DAPIA = Design Approval Primary Inspection Agency; HUD = U.S. Department of Housing and Urban Development; IPIA = Production Inspection Primary Inspection Agency; SAA = State Administering Agency; SC = Site Completed.

The current on-site completion of construction rule produces both benefits and costs compared to the previous temporary process of using the AC regulation. The net impact of the rule on the manufactured housing industry depends upon the relative size of the regulatory savings and burden of the rule.

First, manufacturers gained from eliminating or reducing the delay inherent in the AC process. The AC process existed to encourage innovation of design and the use of new technology in the manufactured housing industry. However, the AC process requires manufacturers to regularly apply for and receive permission for any alternative construction. Application involves submitting design plans and supporting information to HUD. If the AC application is approved, manufacturers may produce a limited number of homes under the approval authority. Manufacturers have to rely on HUD for issuance of AC approval letters and the time may vary greatly depending on HUD's resources, priorities, budget, and leadership. At one point, there were extreme delays in issuing such approvals, which caused additional burdens on industry. Savings to manufacturers stem from moving an approval from an AC to an SC. The SC review and approval process is more efficient than the AC review and approval process because technical and administrative review and maintenance is completed by third parties rather than HUD. These savings are experienced up-front in the process, reduce the fixed costs of design, and expand standard design options. HUD estimates that applying for an AC request requires about 40 hours per request for each manufacturer to compile and coordinate the documentation required. The current on-site completion of construction rule reduced new AC requests by an average of 7 per year. This saved an estimated 280 hours in aggregate across all manufacturers each year in paperwork burden.

Second, manufacturers gained because the rule no longer requires an approval (AC or SC) for some design features. Certain types of finishing were reclassified from requiring an AC approval to being allowed as installation work. This removed the burdens of the AC review and approval process and also eliminated an inspection by the IPIA.

Third, manufacturers experience indirect gains because they can design a standard product that incorporates features to be completed on-site. Through the AC process, approvals are usually limited to specific home models, a specific number of homes or for a specific period of time. This deters manufacturers from marketing a home with standard features that are best completed on-site. The value of this benefit equals the increased revenue from the home with design options that are completed on-site.

Fourth, manufacturers experience a burden from documenting the required inspection. The inspection itself, or even scheduling the inspection, is not an incremental cost of the rule. The AC process also requires an inspection of work performed on-site by the IPIA and that the inspection report be sent to various parties. The AC inspection process, like the SC process, required that 100 percent of homes modified on-site be inspected. The difference is that the SC requires that manufacturers document the inspection. Manufacturers complain of a "dual inspection" because of the additional requirement to complete self-certification paperwork. The manufacturer's documented inspection, and the manufacturer's certification statement, are intended to adhere to the statutory requirement for manufacturer self-certification. HUD has allowed a manufacturer-designated agent, like the retailer or installer, to do the inspection and make that certification on the manufacturer's behalf.

The up-front cost of design approval fell but the variable cost of inspection documentation increased as a result of the rule. The net impact of the rule on a manufacturer depends on the variety of designs and the number of units completed on-site. A rough estimate of the burden can be achieved by drawing from the analysis of regulatory savings (280 hours) during the design phase and the level of production (1,000 SC

units). If documenting one inspection requires more (less) than approximately 20 minutes, then the net impact of the rule would be to increase (decrease) regulatory burden (Change in Cost = -280 + 1000 X hours per inspection). This estimate is speculative and is intended to illustrate the trade-off between the front-end fixed costs and back-end variable costs.

The impact of the rule on consumers depends on the net impact, which is ambiguous, of the rule on the cost to manufacturers. Some, if not all, of an increase (or decrease) in cost would be passed onto the consumer. If the cost, and thus the price, increases (or decreases), then a site-completed unit will become less (more) affordable and the consumers will buy less (more) manufactured housing that is site-completed. If manufacturers any cost changes, then they will adjust their production of site-completed units. Product variety would shrink (expand) with an increase (decrease) in costs.

Beyond the affordability of the housing itself, a change in the price of a home completed on-site could also affect the cost of housing finance. There are better financing opportunities of homes with site-completed features. Fannie Mae's MH Advantage allows mortgage loans with a loan-to-value (LTV) up to 97 percent and reduced fees for manufactured housing with site-completed features including higher pitched roofs and dormer windows. Thus, increasing (decreasing) the availability of site-completed features augments (diminishes) the potential for homeowners of obtaining a lower cost mortgage.

HUD promulgated the on-site completion of construction rule in order to reduce the regulatory burden related to the AC process. However, it may be possible to further improve the efficiency of this policy by reducing the burden on industry without sacrificing safety standards. The following sections explore two cost-reducing strategies: first, delegate authority to state and local agencies, and second, allow fewer inspections. For each cost-reducing strategy, there exists a range of specific policy alternatives. Delegating authority to state and local governments could range from full regulatory authority to responsibility only for a limited number of functions, such as inspections. Allowing fewer inspections could include reducing the proportion of on-site completion of construction that requires inspection or reclassifying a limited number of design features as installation. An exploration of the market impact of adopting a less costly regulation concludes our discussion of alternatives.

V. Alternative Policy: Delegate Authority to State and Local Agencies

HUD was directed by Congress to "develop a solution that ensures the safety of consumers and minimizes costs and burdensome requirements on manufacturers and consumers" and to "explore if state and local planning and permitting agencies should have jurisdiction over on-site completion." The first alternative considers delegating authority over on-site completion of construction to state and local agencies. This could range from full regulatory authority to responsibility only for administering inspections.

The Consolidated Appropriations Act directed HUD to examine whether state and local planning and permitting agencies should have jurisdiction over construction that is completed on-site. This delegation could entail full authority over the regulatory environment, allowing state and/or local agencies to set standards for on-site completion of construction, similar to the way the local building code is enacted and enforced, or delegating the authority to a state program, similar to how the installation program is administered.[16] Either of these changes could be accomplished through regulation by identifying features covered by the HUD construction and safety code that could be left incomplete when the home leaves the factory and still qualify the home to receive the manufacturer's self-certification required by the Act and evidenced by the certification label. State and local agencies would need to adopt standards for these features and establish an inspection process that currently does not exist. Local authorities would follow either an existing local building permitting and inspection process or the current installation inspection process but may be confused with the bounds of federal design and construction standards versus standards implemented locally for non-HUD code homes.

The federal manufactured housing program already relies on HUD-state partnerships to carry out various aspects of the program. In fact, states are provided the right to participate in all aspects of the federal program, depending on the desire of the state. However, the preemptive nature of the federal construction and safety standards and the principle of federal superintendence complicates local government participation in the regulation of manufactured housing. Any alternative would significantly broaden the responsibilities of both state and local agencies.

This section outlines arguments for and against the delegating of more authority over on-site completion of construction to state and local jurisdictions and describes the current role of state and local governments in the administration of the HUD manufactured housing code.

Advantages of Delegating Authority to State and Local Jurisdictions

The primary justification for delegating complete jurisdiction over on-site completion of construction to state and local agencies is the elimination of 1) perceptions of confusion between the on-site completion of construction and installation work and 2) the difficulty of scheduling inspections. Consumers would be the primary beneficiary through expanded choice of optional features that could be completed on site, but are currently limited or not offered at all due to industry's opinion that the regulation is over-burdensome. Allowing state and local control over the on-site completion of construction could also allow the regulatory process to be better tailored to local conditions and environments.

A common complaint in response to HUD's on-site completion of construction rule was confusion between items considered on-site completion of construction, such as hinged roofs in certain geographic locations and of certain pitches, and items considered part of installation, such as non-hinged pitched

[16] Currently, IPIAs may delegate inspection authority to local or third-party inspectors, but none use this method.

roofs and lower-slope hinged roofs with no penetrations in certain geographic locations. Streamlining the standards for installation and on-site completion of construction, or at least allowing the same local inspector to review both types of work, could reduce the confusion that exists. In addition, allowing inspections by local building inspectors or the state's installation inspectors could improve the availability, convenience, and affordability of an inspection because of their proximity to the site.

The primary benefits of delegating full authority for on-site completion of construction are greater sensitivity to local needs and greater ease of scheduling inspections. Drawbacks include an increased number of standards that manufacturers must follow, increased risk of defects if safety standards are lowered, increased risk of additional zoning barriers, and de-centralized record-keeping. This section discusses the effects on the three groups that would be most affected by the delegation of on-site completion of construction authority to state and local agencies.

Potential Advantage: Reducing direct cost of inspections and inspection scheduling

Relying on state or local agencies to conduct on-site completion of construction inspections could decrease the cost associated with scheduling on-site IPIA inspections, which in turn would increase the supply of features completed on-site. Many manufacturers have indicated that because of the costs and potential delays caused by scheduling the IPIA's inspection, they do not even offer certain features that are preferably completed on-site. Thus, by decreasing the costs and confusion of scheduling a separate inspection for a small number of features completed on site, this option would also benefit consumers by increasing the available design options. Many of the on-site completion of construction features are aesthetic enhancements that add value by conforming the appearance of manufactured homes to site-built homes.

Allowing local authorities to manage the inspection process could, under certain conditions, reduce the cost of on-site completion of construction inspections. An inspector's proximity to the inspection site is a predominant factor affecting the cost of an inspection. A local inspector could be less expensive if the costs of travel, both direct costs and time costs, are lower. Some IPIAs and IPIA-delegated independent inspectors explicitly charge for travel, including mileage costs as part of their fees. Others implicitly charge by limiting their service area to nearby counties. This limits competition in areas with a thinner manufactured home market.

The option is not likely to lower inspection costs in states in which the larger private IPIAs or the state-exclusive IPIAs have a spatially-dispersed network of site completion of construction inspectors. Allowing local governments to appoint inspectors for site completion of construction could, however, introduce more competition in the industry. In communities where local building inspectors have to visit the site to inspect other work at the home's site, allowing them to inspect completion on construction would eliminate duplicative travel.

Proximity could also increase the ease of coordinating an inspection, which requires administrative costs by the manufacturer and the IPIA. Many manufacturers limit or do not even offer features that are preferably completed through an on-site completion of construction approval because they experience difficulties in scheduling the IPIA's inspection. Thus, delegating inspection authority to local governments could benefit consumers by having the impact of increasing the range of design options.

Potential Advantage: Reducing Delay and/or Increasing Features Offered

Another cost created by the difficulty of scheduling a separate inspection, especially if it cannot occur the same day as the manufacturer conducts its inspection(s), is a delay in the completion of the SC process.

A longer inspection process could postpone a local authority's issuance of an occupancy permit. Such holdups may delay receipt of final payment for manufacturers and retailers and delay occupancy for consumers. To avoid such delays, many manufacturers stopped offering features that are best completed on site and are highly demanded by consumers, such as French doors and dormer windows. Several commenters, including Clayton Homes, the Alabama Manufactured Housing Association, and the Pennsylvania Manufactured Housing Association, stated that these types of on-site completed features are generally no longer offered. Allowing local building inspectors or state installation inspectors to also conduct the on-site completion of construction inspections could eliminate or reduce this delay and, more likely, increase the features that are offered to consumers. Current regulations do not prohibit the use of local building or installation inspectors, but the local inspectors would need to inspect as an agent of the manufacturer's IPIA. To be effective, these local inspections would need direct authority separate from the authority provided as an IPIA-designated agent.

Potential Advantage: Sensitivity to Local Needs

In addition to these direct benefits, delegating jurisdiction to state and local agencies could enable them to tailor regulations to their local areas. Federal regulation may not be optimal if certain aspects of the local housing market make it unique. For example, communities exposed to frequent natural hazards may want to require more rigorous inspection standards to ensure safety, while other areas may achieve the same safety standard with fewer requirements. HUD attempts to impose efficient regulations through its wind, snow, thermal, and energy guidelines but localities may be better positioned to address these issues.

The demand for design features completed on-site may vary by region. For example, California was an early leader in the placement of manufactured homes with on-site modifications and had to develop an acceptable inspection process (NAHB, 2000). In addition, the size of home shipments, in terms of sections, varies by region. Local authorities could decide to ease the regulatory burden for less complex, single-section homes when safety can be maintained. Local authority would permit such variation. Of course, if state or local agencies do not have the capacity to administer this work, these benefits would not emerge, and both manufacturers and consumers could be worse off.

Disadvantages of Delegating Authority to State and Local Jurisdictions

There are four primary disadvantages of delegating the responsibility of regulating on-site completion of construction. Much of the costs discussed below, however, could be minimized if on-site completion of construction were completed concurrently with installation inspections.

Potential Disadvantage: Increased Complexity of Site-Completion

One of the most significant aspects of the HUD code is that HUD's standards preempt, or trump state and local standards related to the design and construction of the homes. This fundamental aspect of the program defines a clear separation between what is regulated by HUD and what can be regulated by state and local authorities. If authority is delegated to the local level to allow local building inspectors to set requirements for and inspect on-site completion of construction, then manufacturers would need to coordinate with possibly thousands of local governments to learn the required on-site completion of construction standards, potentially causing significant disruption to the industry. Facilitating interstate commerce is the fundamental reason Congress created the provisions of the National Manufactured Housing Construction and Safety Standards Act. Allowing regulatory practices to vary by locality would be counter to the intent of the establishment of national standards and nationwide program regulations

required by the Act and would curtail the efficiency of the federal code with respect to the production of manufactured housing. Regulations and enforcement authority should reflect the principle of federal superintendence to implement congressional intent and to continue to reduce or eliminate regulatory confusion at all levels.

General-purpose governments include approximately 3,000 counties, 20,000 municipalities, and 16,000 townships.[17] A manufacturer shipping across state and local jurisdiction lines conceivably would have to deal with many slight variations of the same process, similar to circumstances present prior to the implementation of the Act. Decentralizing on-site completion of construction standards inspections would weaken the benefits of uniformity and predictability that led to the creation of the national standards in 1974. Such a change would also shift the burden of training, inspection and reporting from thirteen IPIAs to tens of thousands of local governments. As long as the code itself is not overly burdensome, it is easier for manufacturers to comply with one building code as opposed to a multitude of local ones. Introducing local complexity could produce the same outcome that currently exists where manufacturers do not offer features best completed on-site due to differing standards and differing inspection processes.

Potential Disadvantage: Restriction of Placement of Manufactured Housing

Second, increasing local authority could decrease consumer safety or potentially further restrict the placement of manufactured housing. The national construction and safety standards exist to provide a product that ensures a minimum level of product safety, quality and durability to consumers in all states. Delegating authority of inspection to include thousands of local governments could impede the collection of inspection information that is used to monitor the performance of the program and the frequency of defects that informs on the integrity and effectiveness of the federal program. Allowing local variation could potentially lead to lowering standards in an effort to reduce regulatory burden on manufacturers, but at the expense of consumers. In many cases, consumers would be unaware of the lower standards and increased safety risk, creating an environment of asymmetric information between manufacturers and consumers.

Local governments may also use this authority to discourage or restrict the placement of manufactured housing in their communities. Koebel, et al. (2011) discusses how local governments use zoning and building codes to discourage the placement of manufactured housing. Local governments currently use various regulatory barriers such as permitting requirements, fees, fire codes, zoning codes, subdivision regulations, environmental regulations, design standards such as snow load standards, and the lack of by-right zoning, to exclude or restrict manufactured housing. Although state regulations can protect and promote manufactured housing, the existence of regulatory barriers by state and local jurisdictions and the diversity of the level of protection provided by state regulations could further distort the placement of HUD-code units.

States and local jurisdictions that do not support manufactured housing could use their expanded authority over on-site completion of construction to further limit the supply of affordable manufactured housing. HUD recognizes that most communities have an interest in encouraging the supply of affordable housing, but at the same time, the industry must be alert to the potential of purposeful exclusion and consider such issues when redefining the scope of federal interest.

[17] Census of Governments, 2012. The Census Bureau has not announced the release date of 2017 Census of Governments.

Relying on local government to conduct inspections would also undermine the intent of federal standards. The local inspection process could delay rather than hasten the process in some localities. Indeed, some localities might use on-site inspections as an explicit method of delaying or discouraging manufactured housing. If inspections were discovered to be faulty in some regard, then it would be more difficult to remove a local inspector if the local government were provided legal authority over the process.

A final potential disadvantage of delegating the inspection responsibilities to local governments could be delay. A local government may not have the resources to retain a qualified, knowledgeable inspector who is available at the convenience of the on-site completion of construction process. The inspector would likely have duties related to site-built housing that may take precedence. In addition, some localities might use on-site completion of construction inspections as a method of delaying the placement of manufactured housing. Delay would represent a cost only if a local government were the exclusive inspector. Otherwise, a manufacturer could choose a different one that is more efficient.

Potential Disadvantage: Burden on Local Governments

Third, the burden of regulatory enforcement would be significantly compromised and complicated if transferred from the federally authorized IPIAs to state and local agencies. This includes transition costs of establishing on-site completion of construction standards and enforcement procedures as well as on-going enforcement and follow up responsibilities for defects. Currently, only eight states serve as IPIAs. To provide benefits to manufacturers in terms of easier scheduled inspections, more qualified inspectors would be required. Thus, either state or local agencies would need to train, and possibly hire, staff to accommodate this need, or third-party inspectors would need to be locally licensed for this work. Depending on the code being enforced, training would likely be minimal if current building inspectors are used. State and local agencies would still be required to establish not only construction standards, but also training and qualification requirements. Some states may choose to minimize this burden by using the existing IPIAs, but continued use of IPIAs would negate the purpose and benefit of allowing local authority to regulate the on-site completion of construction work. Finally, if authority is delegated to local agencies that have limited resources, delays in scheduling inspections may still occur.

At a high level, the building codes adopted and enforced at the local level are similar to the HUD Code. In practice, the model International Residential Code (IRC), versions of which have been adopted by all local governments is substantially different from the HUD Code. that would place a significant training burden on local code officials to prepare them for this function.

The additional cost to state and local agencies, and the impact on manufacturers and consumers, would depend on how the standards are established and how the inspection responsibility is implemented. If local authorities are granted exclusive inspection authority, similar to how local building codes are enforced, then some non-competitive practices could arise. If, however, a manufacturer or consumer is able to choose from a list of independent inspectors, as is the case with installation in some states, then inspection fees could be lower.

In the absence of competition, it is possible that local inspectors will not be as effective and efficient as the current third-party inspectors. There could be costs associated with training. One commenter responding to the proposed on-site completion of construction rule suggested that HUD should authorize local government building inspectors to perform on-site completion of construction inspections, but HUD did not agree because state and local jurisdictions are often unfamiliar with the requirements of the manufactured housing standards and therefore may not conduct adequate inspections. There are

significant differences between the national manufactured housing code and the International Residential Code (IRC), which is primarily used for site-built homes. Differences between the two sets of codes exist because the manufactured housing standards are generally performance-based whereas the IRC is prescriptive. Also, the HUD code as well as the standards incorporated by reference has not been regularly updated. For example, the current standards for electrical work in manufactured housing reference requirements of the 2005 National Electrical Code whereas many state and local authorities require and enforce construction in accordance with the 2014 or later editions.

Many on-site completion of construction features such as French doors and dormer windows will be familiar to local building inspectors. Other features are unique to manufactured homes, including hinged roofs and siding designed specifically for manufactured homes. Depending on the standards of the local authority, significant education may be required for inspectors to become familiar with the HUD code. Learning the differences should not be an insurmountable barrier for a professional with an education in building and engineering, yet the training and education nonetheless impose a cost and burden.

State and local agencies would bear increased costs, some temporary, as these agencies adopt procedures and standards to regulate on-site completion of construction, and some permanent, as inspection and oversight responsibilities increase. State and local agencies could minimize the transition costs by adopting the existing rules governing on-site completion of construction inspections, but some areas may prefer to review the existing rules and adopt changes. The permanent costs of oversight, including the enforcement of training standards, would add costs for agencies that already may face limited resources. Costs of resource-constrained agencies would likely increase, which would result in higher inspection fees.

The costs of delegating inspections to state and local agencies would vary by state based on their current approach to enforcement. States that have successfully delegated installation inspections to the local governments would likely experience less incremental burden from delegating authority, because they have already initiated the policy. The California Department of Housing and Community Development (HCD), the state's administering agency (SAA), has chosen not to function as an IPIA within manufacturing plants in the state and allows counties to establish installation requirements and perform installation inspections. Florida's SAA, the Department of Highway Safety and Motor Vehicles, serves as the exclusive IPIA for manufacturers within the state and also administers the installation program, establishing standards and licensing installers. States such as California may be better positioned to allow local jurisdictions to conduct on-site completion of construction inspections since they already conduct installation inspections. No states acting as state exclusive IPIAs, however, designate their IPIA authority to local jurisdictions. Thus, delegating responsibility for inspections of on-site completion of construction would increase the burden on all local jurisdictions. Although many states require a local building permit to install a manufactured home, there are a few places where there is no local authority to manage the permitting and inspection process. Even in places where there is an established administrative process, the local issuing agency may not have the expertise or resources to conduct inspections of on-site completion of construction for manufactured homes.

To represent a gain, the upfront costs of training local authorities/inspectors would have to be more than offset by the benefits of proximity. Training costs would be a consideration only if the local authority were exclusive and did not permit third-party inspectors. Local governments would charge fees to pay for the inspections and these fees may vary more than the current fees of third party IPIAs or state-exclusive

IPIAs. Some governments will process the inspections efficiently, but others may not feel any competitive pressure as a third-party IPIA would.

Potential Disadvantage: Loss of Centralized Information

Fourth, HUD, the industry, and consumers would likely lose important reporting information regarding the enforcement standards. The system of design approvals and inspections used for on-site completion of construction are based on federally preemptive standards and quality control processes which differ in most cases from the code provisions and inspection processes that local authorities apply to other residential structures. Collecting inspection information to monitor the performance of the program and the frequency of defects could be impeded by increasing the number of inspection agencies to include thousands of local agencies. It is vital to the integrity of production to maintain quality assurance in all stages of production, including the final stages. There is much greater variability in the qualifications and knowledge of personnel completing on-site work and much greater variability in the processes implemented at each home site to complete each home's construction. Therefore, HUD may need to maintain its reporting and enforcement standards in order to implement and facilitate uniformity and preserve consumer safety. Currently HUD partners with SAAs and third-party agencies to ensure that manufacturers comply with inspection standards and retain records of inspection. If local authorities held jurisdiction, HUD could lose access to similar records or would have increased costs to obtaining them.

A decentralized approach to inspection of on-site completion of construction would increase recordkeeping costs to the agencies charged with enforcing national standards. The extent of these costs depends on the extent of decentralization. If full authority were assigned state and local agencies, then HUD, the SAAs, DAPIAs and IPIAs would no longer be required to collect inspection reports. Reporting would be maintained, however, if only inspection authority were delegated. In this case, decentralization would increase recordkeeping costs, which would rise with the number of agencies. If inspections were combined with the installation program, then recordkeeping would rise only minimally. However, if authority were fully decentralized to thousands of local governments, obtaining reports would be more time-consuming and costly.

Potential Disadvantage: Weaker Consumer Protection

The fundamental purpose of building codes is to ensure building safety for consumers who expect safety but are unable to adequately assess the construction process. While the affordability of housing is central to the mission of HUD, any cost-reducing measure must be weighed against additional risk imposed on inhabitants from reducing the level of quality assurance provided by the current on-site completion of construction rule. State and local authority over on-site completion of construction could increase the number of defects that remain following installation. This would produce costs to consumers in scheduling repairs and increase risk that could affect the health and safety of the consumer. If local agencies use the authority to discourage manufactured housing in their communities, then consumers would incur costs ranging from delay of home placement to higher housing costs to the disappearance of manufactured housing as a local affordable housing option. HUD would need to clearly define the scope of authority and establish clear lines of regulatory responsibility for consumer safety by separating jurisdiction over factory construction and on-site completion of construction by local authorities.

Further Considerations: Current Role of State and Local Governments

Many state governments and some local governments are involved in the administration of the HUD manufactured housing code. The participation of state and local governments is voluntary. Their

responsibilities include assistance with quality assurance of design and construction, and regulation of installation, sales and transportation of manufactured homes. Nevertheless, HUD's standards related to the design and construction of the manufactured homes supersede state and local standards.

State Governments

State agencies currently play an important role in the administration of HUD's manufactured housing program serving as State Administrative Agencies (SAAs) and as primary inspection agencies enforcing the national construction and safety standards. Thirty-three states have agencies that currently partner with HUD to serve as the SAA for the manufactured housing program. The chief responsibilities of an SAA are to oversee handling of consumer complaints related to failures to conform to the federal standards and imminent safety hazards that are found to result from the manufacturing process. An SAA's responsibilities include critical consumer protections for overseeing manufacturer notification and correction campaigns for classes of manufactured homes found to be similarly affected.

States also have the opportunity to provide the in-plant function of overseeing implementation of the manufacturer's quality control programs as the IPIA. States that have SAAs may make them the exclusive IPIA for all manufacturers in the state. SAAs that are an exclusive IPIA serve as the sole in-plant inspection agency in the state. Of the 13 HUD-approved IPIAs, eight are SAA exclusive IPIAs. These eight state agencies serving as IPIAs work with HUD to manage the inspection of aspects covered by on-site completion of construction approvals. Such agencies are permitted to delegate their inspection authority to a qualified and independent inspection agent so long as the individual or entity is not involved in the actual construction work and does not otherwise represent the manufacturer. The remaining states are served by five private IPIAs. To receive approval from HUD, any organization including a private third party and an SAA must demonstrate that it has the necessary capacity: qualified personnel without conflicts of interest; legal authority to implement the proposed plan; a plan for collecting reports from manufacturers, distributors, and retailers; sufficient resources; and inspection fees consistent with HUD's guidelines.[18]

Even if a state does not have an SAA, it may choose to provide the functions of an IPIA in competition with private third-party IPIAs within the state. States may also choose to operate agencies as a DAPIA, conducting the design approval process for any manufacturers that choose to use the state for DAPIA services.

Aside from their potential roles within the design and construction aspects of the national manufactured housing program, states also have the right to regulate installation of manufactured housing. Thirty-six states, either as a function of their SAA authority or as an independent state function, have chosen to regulate all aspects of manufactured housing installation work. This regulatory function, however, does not include authority to inspect aspects of home construction. In the remaining 14 states, the program defaults to the requirements implemented by HUD in those states. The states that administer their own installation programs would be the most likely to welcome authority over on-site completion of construction.

States, either as a function of their SAA authority or as an independent state function, may also decide to provide Dispute Resolution services for instances where manufacturers, retailers, and or installers have not agreed on who is responsible to correct certain defects reported within the first year after a home's

[18] See 24 CFR Part 3282, Subpart G for complete requirements and responsibilities of SAAs.

installation. Twenty-five states have chosen to perform the Dispute Resolution function while the remaining 25 states and the District of Columbia have deferred that program to HUD.

States also typically monitor and regulate other areas of the manufactured housing market, including retailer performance, the sale of used manufactured homes, and the transportation of manufactured homes. These roles are outside of the scope of the federal manufactured housing design and construction and installation programs.

Local Authorities

Local agencies, for a variety of reasons and consistent with statutory intent, have no direct influence or authority over the design and construction aspects of manufactured housing that have a federally established design and construction safety standard. All aspects of construction of manufactured homes are governed by the Federal construction and safety code and are monitored by HUD in partnership with state agencies or HUD-approved third parties. The only regional differences that exist in the national manufactured housing code address snow and roof load, wind load, and thermal protection. This is the opposite of site-built housing, for which local agencies typically have full authority over building codes with guidance by state agencies. Local building codes are generally based on versions of recognized standards, most often the International Residential Code (IRC).

Local governments may set standards for limited aspects related to manufactured housing construction that are outside the scope of the national standards, for example, defining energy efficiency performance, but the national code is "superintendent"[19] such that localities must accept manufactured housing built to Federal standards.

Some states allow local governments to set requirements for installation rather than setting state-wide standards. A few states set mandatory state-wide requirements and allow localities to make them more stringent. Many states set standards for installation without allowing local modifications of the standards.[20] In the 14 HUD-administered states, local governments are allowed to set inspection requirements and more stringent technical standards for the installation of homes. Therefore, the involvement of local governments in regulating the installation of manufactured housing varies by state. Installation, not to be confused with on-site construction, constitutes placing the home on its foundation, anchoring the unit, and connecting the home to utilities. Local regulations govern inspection requirements and professional qualifications.

In addition to their role in the installation process, local agencies can influence the placement of manufactured homes through land-use zoning. Local governments are discouraged by HUD from enacting zoning ordinances that explicitly exclude manufactured housing. The manufactured housing code does not, however, preempt local authorities from implementing zoning regulations unfavorable to manufactured housing unless applied unequally to manufactured housing (Mandelker 2016). An example would be an architectural aesthetics standard that requires all residential buildings to possess a steeply-sloped roof, a feature that historically had been less common for manufactured housing than site-built

[19] Superintendence implies that a sub-national government cannot set safety standards less stringent than federal standards; and that if a local government implements a more restrictive building code than the federal one, then the local authority is not permitted by the state government to refuse placement of a unit that meets the federal code (https://www.gpo.gov/fdsys/pkg/FR-1997-05-05/html/97-11535.htm).

[20] See NAHB 1998 for a comparison of different types of regulatory processes.

housing due to transportation height limitations. Local authorities also regulate the construction of free-standing structures on a property such as an unattached garage or porch.

VI. Alternative Policy: Allow Fewer IPIA Inspections

HUD was directed by Congress to "develop a solution that ensures the safety of consumers and minimizes costs and burdensome requirements on manufacturers and consumers." Although the current regulations produced net benefits over the previous practice, more efficiencies could be gained from altering the process. The first alternative involves delegating authority over on-site completion of construction to state and local agencies. The second alternative considers adjusting the number and extent of inspections conducted by IPIAs to ensure compliance with the Federal construction and safety standards and maintaining the federal superintendence created by the National Manufactured Home Construction and Safety Standards Act. The second alternative, which was supported by commenters to the on-site completion of construction proposed rule, would not require every home be inspected by the IPIAs.

Reduce the Required Rate of Inspection for On-Site Construction

The current in-plant surveillance requirements include requirements that the IPIAs conduct representative inspections over the various stages of production. Not all stages of production are inspected for any single home, and some homes are inspected only once during an early stage of production.[21] Similar to in-plant surveillance, HUD could treat the on-site completion of construction as a stage of production that requires a minimum percentage of surveillance inspections by the IPIA. The IPIA could also be required to act, including by increasing the frequency of inspections and withholding the certification labels at the factory, if the IPIA finds defects in the on-site completion of construction— through its own inspection data, manufacturer inspection records, or through consumer complaint data— that indicate systemic issues are present.

This process would be similar to IPIA actions required for in-plant inspection and quality system findings. This process would require a minimum percentage of on-site completion of construction surveillance inspections for each on-site completion of construction approval. IPIAs would be responsible to decide whether increased frequency of inspections would be required above the minimum. This decision could be based on the nature of features completed on site, such as roof jacks that provide necessary exhaust and ventilation, and the failure or defect rate of items completed on site.

On-site completion of construction may require a higher minimum rate of inspections compared to the in-plant construction stages of production because the construction does not occur in a controlled environment, it may be less standardized, and faces wider variability of conditions, including personnel completing the work. The required percentage would be one that provides a representative sample in the same way that not every stage of production of every unit is inspected in the factory. The necessity for an increase to the minimum percentage would be determined from the results of previous on-site inspections as the IPIA, HUD, or the SAA receives information concerning incorrect or improper on-site completion of construction.

Inspection rates could vary by design feature and the risk that associated defects pose to the consumer. Some design features are cosmetic and defects in construction pose little harm to the consumer. This type of defect would be recognized by the consumer and does not endanger residents if not immediately resolved. The inspection rate could remain at the minimum percentage for design features that could not be dangerous if not completed correctly. French doors are an example of an item that some believe may

[21] Technically, IPIA inspections are conducted on a per unit or per transportable-section basis, not per home.

not require an increased inspection rate because incorrectly installed French doors may pose merely an inconvenience. Improperly installed French Doors, however, also may create safety hazards if the doors will not open or if water leaks develop leading to health hazards such as mold. Regardless of how the minimum required inspection rates are determined; manufacturers would continue to certify all on-site completion of construction and would be required to address complaints in accordance with regulatory requirements.

Re-classify Aspects of On-site Completion of Construction as Installation

There is another way of reducing the time devoted to inspections of work completed on-site. HUD could reclassify some features that are currently part of the on-site completion of construction standards as instead part of the installation standards. This strategy has been pursued by HUD in the past to reduce regulatory burden. When HUD drafted the proposed on-site completion of construction rule, several aspects of the close-up work, which includes joining all sections of a multi-section home, were included under the scope of the installation standards rather than the on-site completion of construction standards such as completion of hinged roofs in certain locations. Also, some design elements for which the work is completed on-site do not require specific SC inspection and approval. Such features include chimneys, tiled-tub surrounds, and interior French doors.[22]

Further consideration of this concept could include reclassification of decorative items such as interior French doors that span multiple home sections (floors) and fireplace hearths that may not pose a significant safety hazard. This option would not increase the risk or cost to homeowners but would decrease the cost and difficulty associated with scheduling an on-site completion of construction inspection if other on-site work is not required.

This partial solution would require the MHCC to consider the types of construction that are currently permitted to be completed at the site and make recommendations for those that can be re-classified. In addition, the MHCC would need to recommend associated installation standards that would provide minimum standards for a manufacturer's installation instructions for those reclassified aspects of installation that would be regulated in accordance with a state or federal installation program. If this approach reduced the burden of inspections, then the impact, advantages, and disadvantages of reclassification would be similar to those of allowing IPIAs to reduce the rate of inspection.

Advantages of Fewer Inspections by IPIAs

The quality-control approach is consistent with the approach for in-plant surveillance inspections and would reduce inspection costs and the associated difficulties of scheduling inspections. This may result in expanding the number of manufacturers that offer site-completed features and may also increase the options available to consumers while ensuring a consistent standard across all states and homes. The primary benefit of fewer inspections by IPIAs is the reduced cost from fewer inspections. Inspection fees are generally passed directly to the consumer. Thus, fewer on-site completion of construction inspections would reduce costs for consumers that are not required to have the inspection. The extent of this advantage would ultimately depend on how many homebuyers choose options that are completed on site

[22] The exceptions to on-site completion of construction inspection are justified by HUD's experience in implementing the HUD code. HUD determined that some of the design features (carports and garages) required further research before requiring on-site completion of construction inspection and approval. Others were not commonly requested AC items at the time the on-site completion of construction regulation was developed and therefore were not included.

and the frequency of on-site completion inspections required by the IPIA. Fewer on-site completion IPIA inspections would also reduce the cost and difficulty of scheduling the inspections. To the extent that fewer inspections allow for more responsive inspection scheduling, this may permit inspection to occur during the placement of the home and not days or weeks after placement. Manufacturers, retailers and consumers would benefit from completing the sale sooner.

As mentioned above, the burden and difficulty of scheduling on-site completion of construction inspections prevented some manufacturers from offering features that would be completed on-site, even though these features are often desired by consumers. With fewer and less costly inspections, manufacturers would again offer these options.

Maintaining federal oversight of on-site completion of construction would ensure a consistent safety standard across the country. A primary drawback to delegating authority to state and local agencies is the potential loss of a national minimum level of safety. This type of quality control approach, however, has the benefit of adjusting the number of inspections based on previous inspection results and audit findings for certain features or manufacturers. By allowing only a minimum number of inspections on features that pose little or no risk to consumers, inspections can be refocused on features that pose a higher safety risk or have a higher rate of defects. A performance-based system has the advantage of rewarding attentiveness to quality and safety and adjusting the rates to risk-appropriate levels. This risk-based approach would maintain consumer safety at an acceptable level while reducing the overall costs of inspection.

Finally, reducing the number and/or extent of inspections could lead to increased safety as inspectors are more focused on items and features that require the most attention. This is more likely to affect states that have limited resources but still chose to serve as IPIAs. As demand for on-site completion of construction increases, state IPIAs may not have the resources to increase its inspector staff to meet this demand, resulting in either more difficulty in scheduling inspections or less time spent conducting inspections. Similarly, work site congestion may limit the ability to conduct a proper inspection. Manufacturers and retailers prefer that on-site completion of construction inspections occur as soon as the features are completed. However, congestion between installers, and the various inspectors, for installation, add-ons, and on-site completion construction, may occur.

IPIAs can more easily plan and schedule in-plant inspections because plant locations are fixed, and production generally takes a known period of time based on each manufacturer's product and quality assurance process. Inspections for on-site completion of construction are more difficult to plan for since the location and date of completion may not be known until days or weeks after the home is shipped from the plant. Lowering the number and extent of inspections will alleviate planning and scheduling complexities and may increase the quality of each individual inspection.

Disadvantages of Fewer Inspections by IPIAs

Consumers gain from 100 percent inspection through greater quality, safety, product durability, and reliability. The disadvantage to fewer or more limited on-site completion of construction inspections is inconvenience and potentially reduced consumer safety. Defects that otherwise would have been identified by the IPIA and corrected by the manufacturer during on-site completion of construction inspections would require identification and action by the consumer and an additional repair visit by the manufacturer. On-site completion of construction includes both decorative items, such as French doors, and critical safety features, such as a roof jack installed to vent a gas furnace. Although inspections

would remain focused on features that pose the highest safety risk and highest occurrence of defect, some percentage of on-site completions of construction items would not be verified by the IPIA. The impact of this could range from the inconvenience of scheduling the repair, to additional damage caused by the defect, to a life-threatening situation.

Defective or improperly installed features, such as a fireplace hearth or brick façade, that otherwise would have to be identified and corrected during the on-site completion of construction inspection, would require the consumer to know what to look for and would require the consumer to report the problem and the manufacturer to make one or more repair visits depending on the extent of repair needed. This would impose time costs on consumers and manufacturers. An inspection that results in the correction of problems that occur during the installation of items completed on-site, will eliminate the cost of reporting the problem to the manufacturer and scheduling a mutually agreeable time to examine and eventually fix the problem. These inconvenience problems likely could be fixed at the time of installation with less involvement of the homeowner.

Some features, however, could cause additional damage to the home if completed improperly. Improperly completed dormer windows or exterior French doors could lead to leaks and water damage to the home. Consumers may also experience higher heating or cooling costs and moisture penetration until the repair is completed.

Finally, some features completed on site could increase the safety risk to consumers if not properly completed, therefore justifying higher inspection frequencies. Many features completed on-site involve vents through a hinged roof, such as roof jacks for a gas furnace. An improperly vented furnace could result in a build-up of carbon monoxide in the home, causing health effects ranging from headaches and dizziness to hospitalization or death. A study commissioned for the Consumer Product Safety Commission estimated that the mean hospital cost for carbon monoxide poisoning in 2007 was about $15,000, or $20,096 in 2016 dollars.[23] Thus, inspection of safety features is potentially more beneficial to consumers due to the potential health risks. This is an important concern, as certain safety features, including installation of carbon monoxide detectors and updated venting standards, are not yet incorporated in HUD's construction and safety code despite their inclusion in the International Residential Code (IRC) and the recommendation for a HUD-code update by the MHCC.[24]

Further Considerations: Determining the Minimum Percentage of IPIA Inspections

The alternatives discussed above vary by extent of the inspection effort and by the party responsible for conducting and monitoring the inspection. The inspection of manufactured homes is complex. The inspection process must ensure quality along a variety of dimensions from aesthetics to reliability to safety. Inspections must examine the various stages of production during which an error can occur, from initial design to on-site completion of construction. Quality control plans must be designed to diagnose the causes of variation and thus contribute to improving the efficiency of production (Deming, 2018).

Quality control leads to less repair, fewer complaints, better reputation, and avoidance of warranty costs and liability for defective products. Detecting a failure before it occurs is good business. Despite the inherent market incentive for a manufacturer to implement their own inspection process, there are good reasons for requiring verification inspections by independent entities. Asymmetric information

[23] https://www.cpsc.gov//Global/Research-and-Statistics/Injury-Statistics/Carbon-Monoxide-Posioning/IncidenceandCostofCarbonMonoxidePoisoningPoolandSpaSubmersionandLeadPosioning.pdf.
[24] U.S. GAO (2012) discusses the need to update ventilation standards for manufactured housing.

concerning product quality generally leads to market failure (Akerlof, 1978) and can be a justification for imposing quality standards (Leland, 1979). In effect, by requiring a rigorous inspection by an IPIA and a process for addressing complaints, the federal government removes most doubts concerning the quality of a manufactured home. There are many benefits: the consumer can expect greater safety and performance; a lender will have collateral with a higher expected value; and a community gains housing that is less likely to depreciate quickly and create blight. In the rare event of an injury or even death resulting from an unsafe structure, families face high transaction costs of compensation. A well-managed quality control program, which reduces variation of quality, would limit the severity and risk of injury-causing failures. Manufacturers benefit from the greater confidence provided by the federal program that ensures a minimum level of quality. Customers are more likely to trust an independent entity to provide an impartial inspection of construction.

An efficient inspection program would minimize the total costs of a manufacturer. The simplest cost function includes the total cost of inspection and the cost of delivering defective units to customers. Increasing inspection activity would increase inspection costs but also result in a reduction of the number and severity of defects. Not every unit needs to be inspected at every stage of the process. Knowing the average probability of a defect occurring would allow an inspector to draw a sample that would detect any faults in the production process with a high degree of confidence. Unless the manufacturer or inspection entity has a reason to be extremely risk averse, conducting a surveillance inspection of every aspect of every unit is inefficient.

The optimal inspection strategy will balance all the benefits and costs of inspection. There is a trade-off between inspections costs, internal cost of detecting a failure, and the cost of delivering a defective product. The best inspection strategy will depend upon characteristics of the inspection method, manufacturing process, and the product itself (Zaklouta, 2011). Manufactured housing is a multi-dimensional product and so different inspection strategies may be preferable for different stages of production. The cost of inspecting on-site completion of construction is more expensive than in-factory production because it requires travel for every unit that needs to be inspected at each home site. On its own, this would argue for a lower inspection rate for on-site completion of construction. However, there are other issues to consider. First, there are additional sources of variation such as environment that are easier to control in factory settings. More frequent inspections would control for that variation and provide better information on the inspection process. Second, the external costs of a defect vary by feature. A cracked hearthstone neither inconveniences nor significantly endangers the occupant whereas the faulty installation of a roof jack creates significant safety concerns.

Although unlikely, improper on-site completion of construction features affecting ventilation could lead to carbon monoxide poisoning; the HUD code currently does not require carbon monoxide detectors in manufactured homes. Potentially hazardous flaws would merit closer scrutiny in determining increased inspection rates or even multiple inspections, especially when manufacturers are risk averse and inspectors can make mistakes (**Duff**uaa and Raouf. 1989; Sheu et al, 2003; Zaklouta, 2011). Efficient oversight of the on-site completion of construction process requires setting a minimum inspection percentage, such as 25 percent, and IPIAs to increase this percentage based on the determination of manufacturer performance.

There is limited inspection information that could be used to set inspection rates for on-site completion of construction, HUD's Office of Manufactured Housing Programs published a summary of audit findings for DAPIAs, IPIAs and the Manufactured Housing Dispute Resolution Program in two editions of their

newsletter, *The Facts*, dated September 2016 and March 2017.[25] None of these summaries include on-site completion of construction, which at the time would have been completed under the AC process,[26] but the information is instructive for the types of defects or deficiencies that occur, distinguishing between safety concerns and less-serious concerns, and between defects that are obvious to consumers and those that are less apparent.[27]

In the larger sample of audits, from May 2015 to April 2016, there were 116 audits conducted. The most common defect related to inadequately installed siding, which poses a low safety risk and could possibly be detected by a consumer without a particular background in any type of housing construction. Across both sets of audit periods, many of the findings related to electrical problems, which would not be easily detectable, but could cause significant damage. Across the audit findings in this period and the reported disputes, plumbing issues were identified less frequently. Although plumbing defects usually would be fairly easy to find by consumers, they also could be very costly to repair depending on the resulting damage.

The minimum rate of on-site inspection for a design feature completed during on-site completion of construction would be determined in consultation with MHCC. The minimum rate should be based on the risk of failure and the health risk of items completed on-site and could vary between decorative and safety-related items. An IPIA would increase its inspection rate of on-site completion of construction if merited by harmfully high error rates.

[25] See HUD (September 2016) and HUD (March 2017)
[26] The audits were conducted May 2015 through April 2016 (116 audits) and June 2016 through December 2016 (20 audits). The Dispute Resolution Program summary includes all reported defects since the program began in 2015.
[27] A copy of the findings from one of the audits is included in Appendix V.

VII. Impact of Efficient Alternatives on the Market for On-Site Completion of Construction

The previous sections of this report discussed two alternatives, (1) delegating authority to state and local government and (2) allowing fewer inspections. HUD found both advantages and disadvantages of the two policy alternatives. n alternative should be pursued only if it is more efficient than the current regulation. One of the cost-reducing measures of any policy would be to reduce the cost of inspection. Reducing the cost would make site-completed designs more profitable for manufacturers and affordable for consumers.

Requiring an inspection for a site completed (SC) unit raises the cost of production of design features that are most efficiently completed on-site. To continue production in the presence of inspection costs, manufacturers require a higher price from consumers to compensate them for that cost and as a result, consumers will be able to afford less site-completed housing. The inspection cost can be passed onto consumers, absorbed fully by manufacturers, or shared. The precise impact of the cost increase on the SC units delivered, their market price, and who bears the burden of the inspection cost depends upon the characteristics of consumers and manufacturers. The more flexible a consumer or manufacturer is, the lower the portion of the cost increase they bear. Economists measure the degree of flexibility to market changes by the price elasticity of demand of consumers (or price elasticity of supply of manufacturers), which is equal to the percentage change in quantity demanded (or supplied) that results from a one percent increase in price. HUD expects that the price elasticities of demand and supply will vary across different site-completed features.

To understand the market impact of reducing the cost of the on-site completion of construction rule requires thinking of the manufactured home as a complex bundle of attributes rather than a product that is unvaried. When manufactured homes are differentiated, an implicit market for every attribute of a home arises. For example, although there is no explicit market for hinged roofs; the presence of a hinged roof will influence the observed price of a manufactured home. The added value to a manufactured home of the hinged roof is the implicit price (often referred to as the “hedonic value”) of the hinged roof. The manufactured housing market determines the implicit price of every attribute from French doors to hinged roofs and thus the amount of each design feature that manufacturers are willing to produce.

Housing economists have analyzed housing data to uncover hedonic prices for housing attributes such as square footage and number of bathrooms, and neighborhood characteristics such as air quality and public services. Unfortunately, hedonic analyses of manufactured housing have not been pursued. For this analysis, HUD draws from the empirical literature on site-built homes. One study (Parsons, 1986) estimated the demands for housing size, housing features, housing quality, and neighborhood quality. Housing features represents best the set of manufactured housing attributes affected by the on-site completion of construction rule. The price elasticity of demand was found to be -1.1, which is more price elastic than the other categories of attributes. Greater price sensitivity of housing features conforms with economic reasoning. The price elasticity of demand of a good depends upon the availability of substitutes. A design feature such as French doors is not as consequential for most consumers’ satisfaction as location or the size of home. The same research finds that the expenditure elasticity for housing features is greater than one, implying that housing features are a luxury attribute.

Applying the price elasticity of demand for housing features of site-built housing to manufactured homes could be inaccurate. First, site-completed features confer benefits to consumers such as advantageous financing and the possibility of surmounting regulatory barriers in the form of aesthetic standards. The demand could be less sensitive to price changes. There are also reasons that demand could be more

elastic. The purchasers of manufactured housing are generally lower income, and so would be more sensitive to price changes than site-built homebuyers. Despite low housing costs, the rent-to-income ratio for manufactured housing is not below that of tenants of single-family homes. Second, the buyers of more expensive and site-completed manufactured homes might be on the margin of being able to afford substitutes such as a site-built single-family home. HUD will retain -1.1 as its primary estimate of the price elasticity of demand but consider a range from -0.5 to -2.5. [28] Inspections cost anywhere from $500 to $1,000. For design features that are lower cost such as French doors, the percentage increase in price will be high and almost double, in which case demand will be extinguished. The demand for more expensive features such as dormers will also decline but not by the same proportion because an inspection represents a smaller fraction of the pre-regulation original price. Whatever the precise price elasticity of demand, lowering the cost of inspection should have an expansive impact on the demand for design features completed on-site.

The increased cost of production of SC designs will lead manufacturers to reduce the amount of SC features offered in a manufactured home or even to completely cease offering SC homes. Relative to a more efficient alternative, the SC rule increases the cost of production of an SC home by requiring paperwork, time to arrange and coordinate the inspection, and travel by the inspector. The regulatory burden per manufactured home does not vary with the type or combination of design features. The cost effect of SC inspections is similar to that created by a lump sum tax. There are economies of scale; the cost per design feature is lower as the amount of SC features increase. According to economic theory, the fixed cost of an SC design will not affect which SC designs are the most profitable; but it will change whether an SC design yields positive profits. From the preceding discussion of demand elasticity, it is unlikely that a manufacturer will be able to pass on the full cost of inspection for lower value SC designs without stifling demand. If manufacturers are not able to pass on the cost of the inspection to consumers, then manufacturers would cease production of unprofitable designs. However, SC designs that include high-value features will survive, albeit at reduced production levels.

[28] The minimum and maximum price elasticities of demand are equal to minimum and maximum price elasticities of demand by consumers for a manufactured housing unit (Marshall and Marsh, 2007; Meeks, 1993).

VIII. Recommendations for Reducing the Burden of the On-Site Completion of Construction Regulation

There are several options that could reduce costs to manufacturers and benefit consumers by ensuring safety and increasing product availability. Our specific alternatives follow from the major findings of this report: delegating full authority for on-site completion of construction inspections to local jurisdictions is not an advantageous regulatory alternative for most jurisdictions and would add to the burden of local governments, manufacturers, and consumers; the HUD Manufactured Housing Construction and Safety Standards should be updated regularly in order to reduce costs and regulatory burden to manufacturers and increase consumer protection; IPIA Inspections of on-site completion of construction should be reduced to less than 100 percent; and HUD and the MHCC should consider reclassifying some on-site completion of construction features as installation, removing them from the on-site inspection process.

1. **Update HUD Code**: HUD's construction and safety codes are outdated. When manufacturers want to build units beyond the scope of HUD's current regulations, they must ask for permission by submitting a letter of Alternative Construction (AC). The AC process introduces administrative costs of applying for approval on the front-end and inspection costs during on-site completion of construction.

   HUD should update the national construction and safety standards with the recommendations of the MHCC. Updating standards would lower the costs on manufacturers, who currently must apply for AC approval to build what is otherwise considered current building standards and would benefit consumers by ensuring a higher level of safety. The MHCC has approved three sets of updated standards that have not been promulgated. The first set was approved by the MHCC in 2006 and 2007 and proposed in FR-5739. This set of updated standards were published as a proposed rule, but not in final form. A second set of standards were approved by the MHCC in 2012 and have not yet been proposed by HUD due to the delay in implementing the previous set. The third set contains a series of updates to referenced standards. To facilitate the promulgation of code updates, HUD should develop a separate priority rulemaking track for purely manufactured housing standards updates that have been approved by the MHCC. This would expedite the process within the Department and benefit both producers and consumers of manufactured housing.

2. **Establish minimum inspection frequency for on-site completion of construction**: Inspecting the on-site completion of construction of manufactured housing imparts both safety and convenience benefits to the consumer. Although a practice of rigorous inspection improves the level of product quality; the benefits can be offset by an increased cost of housing and dampening of innovation of homes with design features completed on-site. The extensive analysis of on-site completion of construction included in this report suggests that the optimal rate of inspection should be positive, but not necessarily 100 percent. The MHCC should determine the need to adjust inspections based on safety risks. On-site completion of construction involves both safety features, such as roof vents, and other construction features, such as French doors. The required inspection rate should be tailored by the MHCC to match the safety risk to consumers.

3. **Use the installation program to conduct on-site completion of construction inspections:** HUD's manufactured housing program differentiates between construction and installation. The construction and safety standards provide requirements for the design and construction of a manufactured housing unit. Installation, not to be confused with on-site construction, includes joining multi-section units, placing the home on its foundation, anchoring the unit, and connecting the home to utilities. Installations govern the "set-up" of manufactured housing and can be considered a continuation of the production process. States are allowed to choose their own installation standards, as long as the state standards are as rigorous as HUD's minimum standards.

   Formally, the inspection of installation and on-site completion of construction are two separate processes. Reclassifying some features that are currently part of the on-site completion of construction standards as part of the installation standards would reduce the cost of production by eliminating otherwise duplicative inspections. This strategy has been pursued by HUD to reduce the regulatory burden of some common design features. This option would not increase the risk or cost to homeowners but would decrease the cost and difficulty associated with scheduling an on-site completion of construction inspection if other on-site work is not required.

   HUD should consult with MHCC to consider including some aspects of on-site completion of construction as part of installation. For example, work involving tiled tub-surrounds and stairwell plugs are informally exempt from on-site completion of construction. Codifying this exemption and classifying this work as installation would remove regulatory uncertainty. In addition, the completion of a hinged roof in Wind Zones II and III, or high-pitched hinged roofs in Wind Zone I, could be reclassified as part of the installation process, as they already are for low-pitched hinged roofs in Wind Zone I. However, this type of reclassification would first require an assessment of the risk imposed upon the occupants of manufactured housing in different wind zones. If acceptable, then reclassification of some design features would reduce the number of inspectors on-site without sacrificing the safety of homeowners. This strategy would also maintain federal superintendence without decentralizing the inspection authority or burdening local authorities with expanding or creating an inspection regime.

References

Akerlof, George A. "The market for “lemons”: Quality uncertainty and the market mechanism." In Uncertainty in Economics, pp. 235-251. 1978.

Celano, Giovanni. "On the constrained economic design of control charts: a literature review." Production, 21, no. 2 (2011): 223-234.

Consumer Financial Protection Bureau. “Manufactured-Housing Consumer Finance in the United States” September 2014. https://files.consumerfinance.gov/f/201409_cfpb_report_manufactured-housing.pdf

Dacquisto, David J. and David T. Rodda, Housing Impact Analysis, Prepared for the Office of Policy Development and Research, January 2006.

Deming, W. Edwards. Out of the Crisis. MIT press, 2018.

Duffuaa, S. O., and A. Raouf. "Mathematical optimization models for multicharacteristic repeat inspections." Applied Mathematical Modelling, 13, no. 7 (1989): 408-412.

DRM International. “A Review of Manufactured Housing Installation Standards and Instructions” Prepared for U.S. Department of Housing and Urban Development. September 2003. https://www.huduser.gov/portal//Publications/PDF/Report_DRM.pdf

“Explanatory Statement Submitted by Mr. Frelinghuysen, Chairman of the House Committee on Appropriations, Regarding the House Amendment to Senate Amendment on H.R. 1625,” Congressional Record, Proceedings and Debates of the 115th Congress, Second Session, Vol. 164, No. 50-Book III, Washington, Thursday, March 22, 2018,

Follain, James R., and Emmanuel Jimenez. "Estimating the demand for housing characteristics: a survey and critique." Regional science and urban economics 15, no. 1 (1985): 77-107.

Jeang, Angus. "Economic tolerance design for quality." Quality and Reliability Engineering International, 11, no. 2 (1995): 113-121.

Koebel, Theodore, Marilyn Cavell, Casey Dawkins, Steve Hullibarger, David Hattis, and Howard Weissman. “Regulatory Barriers to Manufactured Housing Placement in Urban Communities.” January 2011. https://www.huduser.gov/portal//Publications/pdf/mfghsg_HUD_2011.pdf

Leland, Hayne E. "Quacks, lemons, and licensing: A theory of minimum quality standards." Journal of political economy, 87, no. 6 (1979): 1328-1346.

Mandelker, Daniel. “Zoning Barriers to Manufactured Housing” 48 The Urban Lawyer 233 (2016); Washington University in St. Louis Legal Studies Research Paper No. 16-08-01.National Conference of State on Building Codes and Standards. “American National Standard Manufactured Home Installations” NBSBCS A 225.1, January 4, 1994.

Marshall, Maria and Thomas Marsh. “Consumer and Investment Demand for Manufactured Housing Units” Journal of Housing Economics, Volume 16(1), March 2007, p.59-71.

Meeks, C. (1993) “Price Elasticity of Demand for Manufactured Homes: 1961 to 1989,” Mimeo, April 25.

McClave, J., J.T. Benson, and T.T. Sincich, Statistics for Business and Economics, 12th Edition, Pearson, 2014.

NAHB Research Center. “Factory and Site-Built Housing: A Comparison for the 21st Century” Prepared for U.S. Department of Housing and Urban Development. October 1998.

NAHB Research Center. “Home Builders' Guide to Manufactured Housing” Prepared for U.S. Department of Housing and Urban Development” Prepared for U.S. Department of Housing and Urban Development. May 2000. https://www.huduser.gov/portal//Publications/PDF/buildergd.pdf

Palmquist, Raymond B. "Estimating the Demand for the Characteristics of Housing." The review of economics and statistics (1984): 394-404.

Parsons, George R. "An almost ideal demand system for housing attributes." Southern Economic Journal (1986): 347-363.

Sheu, Shey-Huei, Yan-Chun Chen, Wen-Ying Wang, and Neng-Hui Shin. "Economic optimization of off-line inspection with inspection errors." Journal of the Operational Research Society, 54, no. 8 (2003): 888-895.

U.S. Department of Housing and Urban Development (HUD). *The FACTS: HUD's Manufactured Housing Newsletter*. September 2016. Retrieved March 26, 2019, from https://www.hud.gov/sites/documents/MHS-NEWSLETTER-SEP-16-16.PDF [A copy of the audit findings are included in Appendix V of this report.]

U.S. Department of Housing and Urban Development (HUD). *The FACTS: HUD's Manufactured Housing Newsletter*. March 2017. Retrieved March 26, 2019, from https://www.hud.gov/sites/documents/MHS-NEWSLETTER-JAN-27-17.PDF [A copy of the audit findings are included in Appendix V of this report.]

U.S. Government Accountability Office (GAO). "Manufactured Housing Standards: Testing and Performance Evaluation Could Better Ensure Safe Indoor Air Quality" GAO-13-52, October 2012. Accessed at https://www.gao.gov/assets/650/649683.pdf

Zaklouta, Hadi. "Cost of quality tradeoffs in manufacturing process and inspection strategy selection." PhD diss., Massachusetts Institute of Technology, 2011.

Appendix I: Regulatory Actions since the Creation of the Manufactured Housing Consensus Committee (MHCC)

Manufactured Housing Improvement Act of 2000, (Pub. L. 106-569) established the Manufactured Housing Consensus Committee (MHCC) to provide recommendations on construction and safety standards to HUD. The following regulatory actions were promulgated since the creation of the MHCC.

Manufactured Home Construction and Safety Standards I (FR-4886)

- The first group of recommendations submitted by MHCC to improve various aspects of the Construction and Safety Standards.
- Proposed Rule (12/01/2004)
- Final Rule (11/30/2005)

Manufactured Home Dispute Resolution Program (FR-4813)

- Established the federal manufactured home dispute resolution program.
- Proposed Rule (10/20/2005)
- Final Rule (05/14/2007)

Model Manufactured Home Installation Standards (FR-4928):

- Established Model Manufactured Home Installation Standards.
- Proposed Rule (04/26/2005)
- Final Rule (10/19/2007)

Manufactured Home Installation Program (FR-4812):

- Established the federal manufactured home installation program.
- Proposed Rule (08/10/2006)
- Final Rule (06/20/2008)

Manufactured Home Construction and Safety Standards: Test Procedures for Roof Trusses (FR–5222)

- Updated the required truss testing procedures in order to improve the performance and safety of trusses in high wind areas and to enhance the reliability and durability of trusses.
- Proposed Rule (06/16/2010)
- Final Rule (01/18/2013)

On-Site Completion of Construction of Manufactured Homes: FR–5295

- Established a procedure whereby construction of new manufactured housing can be completed at the installation site rather than in the factory.
- Proposed Rule (06/23/2010)
- Final Rule (09/08/2015)

Construction and Safety Standards II (FR–5221)

- The second group of recommendations submitted by MHCC to improve various aspects of the Construction and Safety Standards.
- Proposed (07/13/2010)
- Final (12/09/2013)

Model Manufactured Home Installation Standards: Ground Anchor Installations (FR–5631)

- Revised existing requirements for ground anchor installations and established standardized test methods to determine ground anchor performance and resistance.
- Proposed Rule (07/26/2013)
- Final Rule (09/10/2014)

Interpretative Bulletin for Model Manufactured Home Installation Standards Foundation Requirements in Freezing Temperature Areas Under 24 CFR 3285.312(b) (FR-6023)

- Guidance for designing and installing manufactured home foundations in areas subject to freezing temperatures with seasonal ground freezing wherever soil conditions are susceptible to frost heave.
- Notice (06/21/2017), Still under consideration as of December 2018

Appendix II. Design Features Classified as On-Site Completion of Construction

Many common features require an on-site completion of construction approval and inspection. The most common reason for the need to complete construction on site is that there are some elements that would be damaged in transit if completed in the factory. In other cases (such as dormers or a hinged roof), it would be impossible to transport the unit as designed because of height restrictions (bridges and tunnels).

Site-completion of additional structures

- retailer changes to the home on-site including add-ons that when placed next to the home expands the footprint of the home (for example, an enclosed porch or a site-built sunroom.) [29]

Site-completion of hinged roof

- high-pitch (i.e., roof pitch equals or exceeds 7:12) hinged roof construction; or
- flue/vent or intake/exhaust or other piping that penetrates the hinged or other site-completed portion of a roof, regardless of roof slope or Wind Zone.
- For any home designed for Wind Zone II or Wind Zone III (See Appendix III for wind zones)

Site-completion of exterior components or assemblies subject to damage in transit or height restrictions

- roof dormers, including windows in dormers;
- eaves that are not hinged;
- stucco, stone, brick, or other siding;
- exterior doors (such as French doors); or
- exterior windows (such as sidewall bay windows).

Site-completion of interior components or assemblies subject to damage in transit or that cross a mate line

- fireplace hearth.[30]

Site completion of appliances and venting

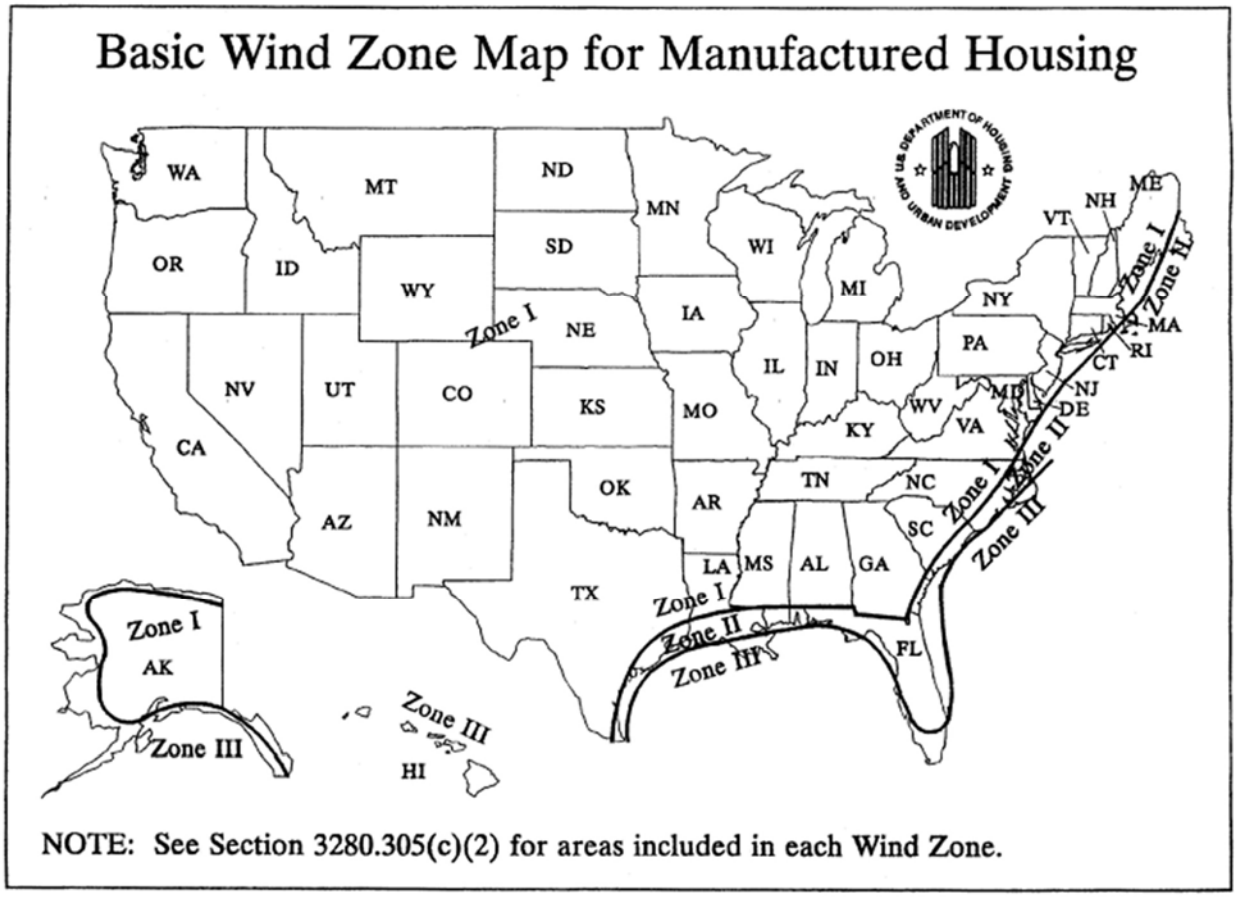
- water heater, including site completion of venting;
- heating system internal to the manufactured home, including site completion of venting.
- other optional appliance such as a fireplace when on-site completion of construction requires connection of exhaust/venting; or
- home shipped with electric appliances, but factory constructed with optional gas risers provisioned for the possibility of gas appliance conversion before retail sale.

Sources

- Department of Housing and Urban Development, “On-Site Completion of Construction of Manufactured Homes Frequently Asked Questions,” July 06, 2016, https://www.hud.gov/sites/documents/ONSITE07062016.PDF
- Department of Housing and Urban Development, “On-Site Completion of Construction of Manufactured Homes,” Final Rule, September 8, 2015

[29] Carports and garages do not require on-site completion of construction and are considered AC, not SC. Requiring AC design approval is being rescinded so that carports and garages will not require AC nor SC.
[30] HUD made an administrative decision (see FAQ document, item 19) to allow homes with unfinished tiled tub-surrounds and removable stairwell plugs to be approved without an SC approval.

Appendix III: HUD Basic Wind Zone Map



Appendix IV: Who Lives in Manufactured Housing?

Characteristic	Manufactured Housing	Site-Built Multi-family	Site-Built Single-Family
Median Size of Unit (sq. ft)	1000-1499	750-999	1500-1999
Number of Rooms	5	4	6
Median Number of Bedrooms	3	2	3
Median Number of Bathrooms	3	1	3
Head of Households: Female (%)	50	54	46
Median Age, Head of Household	54	45	54
Head Households Married (%)	40	23	58
Head Households Never Married	17	42	14
% of Head of Households: White	85	66	82
% of Head of Households: Black	9	22	11
Median Year of Last Move	2009	2015	2007
Median Ratio Income to Poverty Level (%)	192	222	367
Median Household Size	2	2	2
Median Number of Adults in Household	2	1	2
Households with Elderly Member (%)	31	21	31
Monthly Median Total Housing Cost ($)	600-699	800-999	1000-1249
Households receiving food stamps (%)	17	16	6
Median HH income, past 12 months ($)	33,600	35,720	66,400
Median Family income, past 12 months ($)	30,550	31,000	62,500

Source: 2017 American Community Survey and 2017 American Housing Survey

Appendix V: Findings from Audit of Production, Design, and Quality Control

Most Common In-Plant Monitoring Audit Findings – Production Process
Computer Code Items (CCIs) are used to facilitate cataloging and tracking of the audit findings, observed by the monitoring contractor, that relate to the manufacturer's production process.
Period: May 2015 – April 2016
Number of Audits Conducted: 116
Average Number of Items per Audit: 3.3

Audit Finding, Organized by Attribute and Detailed Description	Rate of Occurrence (%)
Horizontal metal and vinyl siding installation. - Loose or missing fasteners in the vinyl siding - Inadequate installation of vinyl siding trim around doors and windows	16.4
Homes permitted to be constructed under an active alternative construction (AC) approval authorization were identified and met the requirements of the AC letter issued by the Secretary. - Inadequate reporting of AC homes - Use of expired AC letters	12.1
Floor system compatibility with chassis, set-up instructions and spacing of floor joists. - Missing pier location identification under wide sidewall openings	10.3
Truss or rafter construction and application. - Inadequate gang-nail plate sizes on trusses - Inadequate gang-nail plate location and placement on trusses - Inadequate embedment depths of the gang-nail plate teeth in trusses	10.3
Installation and repair of bottom board. - Insufficient repairs of holes and penetrations through the bottom board	9.5
Other plumbing fixture and material applications and installation. - Improperly installed fixtures - Improper water heater pan drain installation	9.5
All electrical connections are to be made in a workmanlike manner. - Over-stripping of electrical wires - Inadequate connections around binding posts - Loose electrical wire connections	9.5
Hardwood and/or wood product siding installation. - Exposed (untreated) raw lumber used for decorative finish of porch post	8.6
Installation of service equipment and raceway. - Inadequate identification of electrical circuit breakers	8.6
Bonding of noncurrent-carrying metal parts. - Loose ground connections - Improper connection of ground wires in a box (i.e. under a single wire nut) - Multi-gang box with different sized grounds not connected	8.6

Source: U.S. Department of Housing and Urban Development (HUD). *The FACTS: HUD's Manufactured Housing Newsletter*. September 2016.

Most Common Audit Findings - Design Review

Design review attributes are used to facilitate cataloging and tracking of the design review findings, observed by the monitoring contractor, that relate to the effectiveness of the DAPIA's design review and approval process.
Period: August 2014 – May 2016
Number of Design Reviews Conducted: 73
Average Number of Findings per Review: 3.9

Audit Finding, Organized by Attribute and Detailed Description	Percentage of Top 10 Design Finding Categories (%)
Receptacle Outlets -Required receptacles not provided (69%) -No ground fault protection for heat tape outlets (19%) -No ground fault protection for bathroom outlets (12%)	41
Appliance Branch Circuits -Appliance branch circuits serving other than permitted locations (58%) -Kitchen countertop supplied by only one small appliance branch circuit (26%) -Inadequately sized small appliance branch circuit (11%) -No ground fault protection for small appliance circuit (5%)	18
Natural Light & Ventilation -Inadequate lighting and ventilation for habitable rooms (88%) -Windows over tub not provided with safety glazing (12%)	8
Egress Provisions -Lockable doors not allowed in the path of egress (57%) -Egress exterior doors are not allowed in the same room or group of rooms (29%) -Removal of window sash is not allowed to meet egress size requirements (14%)	7
Mechanical (Miscellaneous) -Improper location of thermostat (100%)	6
DWV Systems design -Inadequately sized wet-vent pipe for toilet and other fixtures (80%) -Inadequately sized drain pipe (20%)	5
Fuel Supply Design -Inadequately sized gas pipe (75%) -Inadequately sized gas inlet (25%)	4
Component U-values -Inadequate compressed insulation in ceiling (25%) -Inadequate insulation for crossover ducts (75%)	
Smoke Alarm Locations - Improper location of smoke alarms in bedroom or living areas (100%)	
Water Supply Design - Inadequately sized pipes pipe supplying five or more fixtures (100%)	3

Source: U.S. Department of Housing and Urban Development (HUD). *The FACTS: HUD's Manufactured Housing Newsletter*. September 2016.

Most Common Audit Findings - Manufacturer's Quality Control Process

Quality System Items (QSIs) are used to facilitate cataloging and tracking of the audit findings, observed by the monitoring contractor, that relate to the effectiveness of the manufacturer's quality control process and IPIA's surveillance.

Period: May 2015 – April 2016

Number of Audits Conducted: 116

Average Number of QSIs per Audit: 3.5

Audit Finding, Organized by Attribute and Detailed Description	Rate of Occurrence (%)
Monthly review of service & inspection records - Lack of distinguishing between the initial and class determinations - Lack of bases for each initial and class determinations - Lack of identifying the persons making the determinations - Improper use of terminology for initial determinations	52.3
Receipt & storage of materials - Improper use of unapproved, new materials - Inadequate acceptance of materials - Inadequate storage and rotation of materials	27.6
Manufacturer thoroughness of inspection - Failures to conform observed after the completion of accountable inspections	25.9
Use of approved checklists - Use of unapproved, new quality control checklists	19.8
Installation of materials - Improper compliance with the product manufacturer's installation instructions - Inadequate monitoring of the temperature for foam adhesives	19.0
Quality operations - Inadequate internal plant auditing - Inadequate investigations of failures to conform - Inadequate investigations to determine sources of failures to conform	17.2
Training - Inadequately trained personnel conducting the accountable inspections	16.3
In-plant procedures. - Inadequate IPIA surveillance procedures: - Verification of other homes potentially affected by the same failures to conform - Review of the manufacturer's service records on a monthly basis	14.7
Evaluation of quality system issues - Lack of correlation between the manufacturer's quality assurance (QA) manual and the sources of failures to conform	13.8
Verification that other homes do not contain the same failures to conform - Inadequate verification of potentially nonconforming homes - Insufficient documentation of complete follow-up inspections of homes at the plant	13.8

Source: U.S. Department of Housing and Urban Development (HUD). *The FACTS: HUD's Manufactured Housing Newsletter*. September 2016.

MHCC MEETING
April 30 – May 2, 2019

APPENDIX D:
PROPOSED CHANGES AND DEREGULATION COMMENTS ORGANIZED BY CATEGORIES

MHCC

Proposed Changes and Deregulation Comments Organized by Categories

April, 2019

Carports

DRC 16 DRC 126

Frost-Free Foundations

DRC 11 DRC 154 DRC 173

DRC 13 DRC 156 DRC 174

DRC 14 DRC 157 DRC 175

DRC 31 DRC 158 DRC 176

DRC 150 DRC 169 DRC 177

DRC 151 DRC 170 DRC 178

DRC 152 DRC 171 DRC 179

DRC 153 DRC 172

Multi-family vs. Single-family Homes

Log 198

3280 Subpart A - General

Log 193

3280 Subpart B - Planning Considerations

Log 150 Log 173 Log 189

Log 156 Log 185

Log 157 Log 187

3280 Subpart C - Fire Safety

Log 174 Log 196

3280 Subpart D - Body and Frame Construction Requirements

Log 158 Log 177 Log 184

3280 Subpart E - Testing

Log 148 Log 202 Log 206

Log 191 Log 203

Log 197 Log 204

3280 Subpart F - Thermal Protection

Log 123 Log 155 Log 205

3280 Subpart G - Plumbing Systems

Log 149 Log 151 (W) Log 171

DRC 164
DRC 165
DRC 166
DRC 167
DRC 168
DRC 180
DRC 181
DRC 182
DRC 183

General Comments about Manufactured Housing Construction and Safety Standards

DRC 25
DRC 30
DRC 32
DRC 33
DRC 34
DRC 35
DRC 36
DRC 37
DRC 38
DRC 39
DRC 41
DRC 42
DRC 43
DRC 44
DRC 45
DRC 46
DRC 47
DRC 49
DRC 50
DRC 51
DRC 52
DRC 53
DRC 54
DRC 55
DRC 56
DRC 57
DRC 60
DRC 61
DRC 62
DRC 64
DRC 65
DRC 66
DRC 67
DRC 68
DRC 69
DRC 70
DRC 71
DRC 72
DRC 73
DRC 74
DRC 75
DRC 76
DRC 77
DRC 78
DRC 79
DRC 82
DRC 83
DRC 84
DRC 85

HUD Regulation

DRC 1
DRC 184
DRC 185
DRC 186
DRC 187
DRC 188
DRC 189
DRC 190
DRC 191
DRC 192
DRC 193
DRC 194
DRC 195
DRC 196
DRC 197

Land Issues

DRC 287
DRC 288
DRC 289

DRC 290
DRC 291
DRC 292
DRC 293

MHCC Issues

DRC 281
DRC 282
DRC 283
DRC 284
DRC 285
DRC 286

Model Manufactured Home Installation Standards

Log 146
Log 147
Log 164
Log 165
Log 166
Log 167
Log 168
Log 169
Log 192

OMHP Administration

DRC 254
DRC 255
DRC 256
DRC 257
DRC 258
DRC 259

On-Site Completion

DRC 2
DRC 4
DRC 17
DRC 18
DRC 19
DRC 28
DRC 86
DRC 87
DRC 88
DRC 89
DRC 90
DRC 91
DRC 92
DRC 93
DRC 94
DRC 95
DRC 96
DRC 97
DRC 98
DRC 99
DRC 100
DRC 101
DRC 102
DRC 103
DRC 104
DRC 105
DRC 106
DRC 107
DRC 108
DRC 109
DRC 110
DRC 111
DRC 112
DRC 113
DRC 114
DRC 115
DRC 116
DRC 117
DRC 118

Preemption

DRC 130
DRC 131
DRC 132
DRC 133
DRC 134
DRC 135
DRC 136
DRC 137
DRC 138

Procedural and Enforcement Regulations

Log 163
Log 172
Log 178
Log 182
Log 194
Log 195

Regulatory Benefits

DRC 266
DRC 267
DRC 268
DRC 269
DRC 271
DRC 273
DRC 274
DRC 275
DRC 276
DRC 277
DRC 278
DRC 279
DRC 280

Regulatory Burden and Overreach

DRC 3
DRC 7
DRC 15
DRC 20
DRC 21
DRC 23
DRC 198
DRC 199
DRC 200
DRC 201
DRC 202
DRC 203
DRC 204
DRC 205
DRC 206
DRC 207
DRC 208
DRC 209
DRC 210
DRC 211
DRC 212
DRC 213
DRC 214
DRC 215
DRC 216
DRC 217
DRC 218
DRC 219

RV Rule

DRC 219
DRC 220
DRC 221
DRC 222
DRC 223
DRC 224
DRC 225
DRC 226
DRC 227
DRC 228

State Issue

DRC 29
DRC 228
DRC 260
DRC 261
DRC 262
DRC 263
DRC 264
DRC 265

Miscellaneous

DRC 294	DRC 296	DRC 298
DRC 295	DRC 297	DRC 299