

Feasibility of Online Permitting for HVAC Alterations

Summary

This document summarizes five memos developed in 2017 on the subject of online permitting: Minimum Legal Requirements for a Building Permit, Legislative and Regulatory Policy Issues, Review of Best Practices in Online Permitting, 2017 WHPA Online Permitting Jurisdiction Survey Results, and 2017 WHPA Online Permitting Contractor Survey Results.

The memo also offers the conclusion that an Online Permitting System (OPS) is a viable approach to address the compliance gap for HVAC change-outs. However, while OPS is viable, there are many potential challenges that need to be considered, with additional detail in the aforementioned five memos (WHPA Work Products).

Finalized: November 8, 2017

Use of this document

This document can be useful, in conjunction with the greater detail in the five base memos, in providing substantive information for use by public policy organizations, legislators, licensing agencies, jurisdictions, product developers, and the broader HVAC community the development of public policy and for evaluating and potentially improving current OLS. While the surveys and research are largely based in California, the nature of the HVAC business makes this document useful far beyond the state of California.

It is based on an official [WHPA Work Product](#) of November 8, 2017 titled “Feasibility of Online Permitting.” This Work Product was developed by the Online Permitting Working Group, which reports to the WHPA Compliance Committee.

This document, and also the WHPA Work Product, may be used in part or whole at no charge. Attribution to the Western HVAC Performance Alliance is requested.

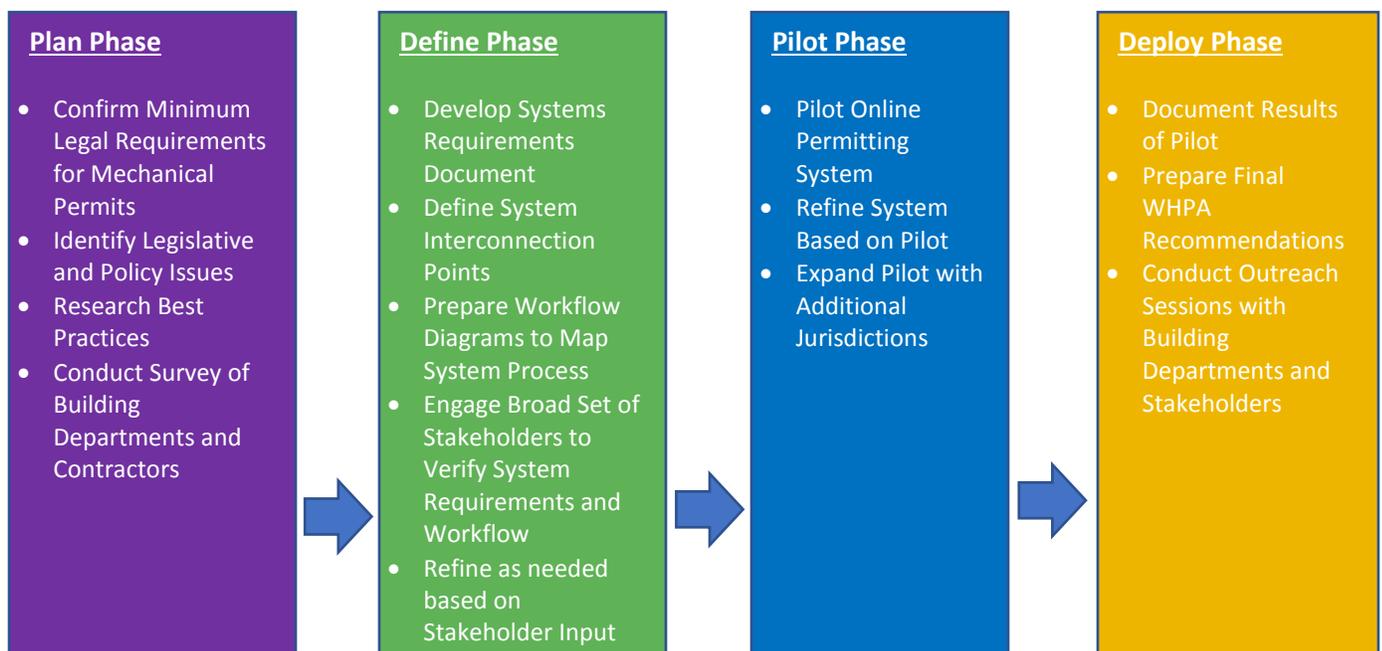
Background

The Compliance Committee of the Western HVAC Performance Alliance (WHPA) has been tasked with providing input to the California Energy Commission (Energy Commission) about “the compliance gap” that exists within the market for alterations to mechanical systems in existing buildings. The Committee’s primary focus has been on the permitting process with part of the discussion centered on online permitting.

Given the fact that current compliance rates are estimated to be the same as ten years ago at less than 10% this seemed to merit further study to determine whether technology could be applied. In 2006, Mohasci¹ estimated compliance rates between 2.7% and 4.9% while more recently in 2017, DNV GL estimated compliance rates between 8% and 29%².

To fully address the topic of improving compliance rates, the Compliance Committee established the Online Permitting Working Group (OPWG) that was tasked with studying the feasibility of implementing a statewide online permitting system (OPS) for heating, ventilation and air conditioning (HVAC) alterations. To this end, the Committee developed a work plan, the [Online Permitting for Residential HVAC Alterations, An Industry Stakeholder Roadmap](#). The “Roadmap” directs the OPWG to oversee four project phases: Plan, Define, Pilot, and Deploy (Figure 1).

Figure 1: Action Items to meet Goal 1-1 of Strategic Plan



For the Planning Phase, the OPWG researched, discussed and prepared the following five work products:

- [Legislative & Regulatory Policy Issues](#)
- [Minimum Legal Requirements for a Building Permit](#)
- [WHPA Review of Best Practices in Online Permitting](#)
- [2017 WHPA Online Permitting Jurisdiction Survey Results](#)
- [2017 WHPA Online Permitting Contractor Survey Results](#)

¹ Enforcement of T-24 Compliance Pertaining to Residential Alterations, Steve Mohasci, August 2006, p 4.

² Draft Report: 2014-2016 HVAC Permit and Code Compliance Market Assessment (Work Order 6) Volume I Report, DNV GL, June 2017, p. 4.

This *Feasibility of Online Permitting Memo* summarizes the five work products listed above and presents the OPWG’s assessment if a statewide online permitting system for HVAC change-outs is needed and is feasible in California. Change-outs were defined as either: (1) alterations that include new/replacement HVAC components or (2) alterations that include entirely new or replacement HVAC systems (that is, all HVAC equipment and ducts are new/replaced).

The Work Product - “Feasibility of Online Permitting.”

Background

The Compliance Committee recently began preparing a White Paper entitled *Understanding the Residential HVAC Compliance Shortfall* in response to the Energy Commission’s interest in better understanding why high rates of permit compliance are so elusive in California:

“When the California Energy Efficiency Strategic Plan was first released in 2008, it was identified that less than 10 percent of HVAC systems obtain legally required local building permits. Nearly 10 years later, little has changed and the number of permitted systems are still well below California’s goal of 50% by 2015 and 90% by 2020.”

At the time of writing this memo, that White Paper was still in development, but provides some additional information suggesting that online permitting may help close the compliance gap. Specifically, the White Paper lists five “specific gaps” addressing why the majority of residential HVAC replacement work continues to remain unpermitted, which are:

1. Insufficient Data
2. Insufficient Tools
3. Lack of Effective Enforcement
4. Low Stakeholder Value Proposition
5. Motivating Behaviors.

This document further defines each of these gaps and suggests actions to reduce the contribution of each gap to the compliance shortfall. However, the remedies suggested for four of the five gaps are not workable in the short term.

The solution to **Insufficient Data** is to consider a data-driven approach to compliance and then put this information in the hands of jurisdictional authorities to help them perform their duties more effectively.

Lack of Effective Enforcement is the result of a current system that relies on several stakeholders to play an assumed role, but has little leverage to ensure these roles are actually carried out, and there is even disagreement as to whether municipalities have legal authority for enforcement. Persuading 593 independent entities to do anything that doesn't directly benefit their agency is problematic – at best.

Low Stakeholder Value Proposition and **Motivating Behaviors** are difficult to influence because they require changing attitudes of industry participants and the public and would require a long-term strategic public outreach and continuous marketing campaign to have any positive impact.

Given the difficulty of addressing these four more abstract gaps, the OPWG focused its efforts on the more explicit fifth gap, **Insufficient Tools**. One potential tool that can help simplify and standardize the permitting process is statewide deployment of a common online permitting platform.

This addresses many issues identified in the other four gaps, and is customizable for the purpose of reducing the compliance gap. While there are issues to be worked out in its implementation, an Online Permitting System for HVAC alterations embraces technology already available and is a critical component of a larger statewide plan to improve the energy efficiency of California's existing buildings. The extreme diversity of permitting systems and requirements is chaotic and unmanageable for the average contractor or property owner. A user-friendly online permitting system that implements a standardized process will help simplify the process for all users.

Successful deployment of an OPS will require careful change management and extensive stakeholder outreach. To this end, it is recommended that state regulatory and legislative bodies fund, or find a mechanism to fund, a division under CSLB that would provide guidance and/or advocate for permit compliance education and training for contractor licensees, jurisdictions, and the public. The goal of such training should be to reduce misunderstanding of code requirements, compliance and reduction of possible fraudulent activities in the market. This could provide a more level playing field for navigating the multitude of regulations and laws in place to police the construction industry in California. This division could actively involve industry stakeholders to gain better insight as to how current regulations impact construction trades and unintentionally result in lower compliance rates.

Summary of Five Memos

Following is a summary of the five memos produced as a result of the WHPA's Compliance Committee's evaluation of online permitting systems.

Memo 1: Minimum Legal Requirements for a Building Permit

Assembly Bill 2335 (AB 2335, 2008) outlines minimum requirements for a building permit, which apply throughout California regardless of jurisdiction. All 105 municipalities contacted in the study also require submittal of a Certificate of Compliance document (CF-1R) in addition to the requirements of AB 2335. For mechanical alteration permits, many municipalities require information above and beyond what is

required in AB 2335 and the CEC approved energy documents for a mechanical permit (CF-1R) but these vary widely.

This memo suggested that, for an OPS, the following three fields be added to the CF-1R to satisfy AB 2335 requirements for a building permit:

- Property owner's name
- Property owner's mailing address
- Property owner's telephone number

The memo suggested these fields be added to the CF-1R form for consistency and to reduce redundancy.

Memo 2: Legislative and Regulatory Policy Issues

The OPWG found three legislative measures to be relevant to improving the energy efficiency of existing buildings:

- AB 802 – Normalized Metered Energy Consumption and tracking thereof
- SB 350 – Doubling Energy Efficiency by 2030
- SB 1414 – HVAC alteration permit closure

The OPWG evaluated these three measures for their purpose and potential implications for an online permitting system. Only SB 1414 pertains specifically to HVAC alterations.

In summary, the memo concludes:

“ . . . permitting and compliance are typically treated as secondary issues in existing legislation with the possible exception of SB 1414, which treats several aspects of compliance more directly. However, in order to achieve the significant improvements to compliance rates envisioned by the California Energy Efficiency Strategic Plan, a more concerted legislative effort will likely be required.”³

Memo 3: Review of Best Practices in Online Permitting

The purpose of this memo was to “identify online permitting systems that are currently in use and document best practices from these systems . . .”⁴ This study did not evaluate each available online permitting system currently in use or available today. Rather, it is more a survey of several of the existing online permitting systems.

The memo is based on a review of the resources listed below:

- California Solar Permitting Guidebook⁵

³ Legislative and Regulatory Policy Issues, WHPA Online Permitting Working Group, March 2017, p. 2

⁴ Review of Best Practices in Online Permitting, WHPA Online Permitting Working Group, September 2017, p. 1

⁵ https://energycenter.org/sites/default/files/docs/nav/policy/research-and-reports/Solar_Permitting_Guidebook_2017.pdf

- Green It Forward – Imperial Valley Streamlined Online HVAC Permitting Pilot Program⁶
- Energy Code Ace Application Guidelines⁷
- Recent examples of OPS implementations
 - State of Oregon
 - City of San Francisco
- Input from jurisdictions that currently utilize and OPS (online permitting system)
- Contractor and Jurisdictional Surveys

The OPWG developed 20 conclusions from the resources reviewed. Those most pertinent to online permitting systems include:

- A single Online Permitting System should be developed and made accessible for all jurisdictions statewide to maintain procedural consistency and expedite the permitting process with standardized data. It should be easy for Building Departments to use and should integrate with current systems and processing by allowing an open API interface. This work may be of value to additional online permitting activities;
- Standardization has served to decrease permit time and increase utilization for many jurisdictions in the state;
- The system should be 100% online including payment of fees, thus significantly reducing the need for in-person application and management at the building department by permit applicants; and
- The system should integrate with other state-implemented systems (e.g. HERS registries) and agencies (e.g. CSLB for license verification) to facilitate permit approvals;
- A funding mechanism must be a part of this implementation.
- Implementation should be managed to minimize the potential for cost overruns;

The last item on the above list deserves particular attention. Several people involved in implementing OPS projects told harrowing stories about cost overruns, unmet schedules, and disappointing deployments. (These projects involved implementing comprehensive online permitting systems, not just HVAC alteration permits.)

Memo 4: 2017 WHPA Online Permitting Jurisdiction Survey Results

This survey assessed the status of individual jurisdictions' online permitting systems (OPS) and their receptivity to a statewide OPS specifically for HVAC alterations. Of the 532 individual "contacts," 59 (11%) of building jurisdiction representatives responded (11%. While this response rate is low, the OPWG considers that responses for which the majority of respondents agreed are credible. Examples include:

- Of the 43 respondents, 81% (n=35) indicated that if an "apply for permit system" were made available, they would expect personnel within the jurisdiction to fully embrace it.⁸

⁶ https://www.greennet.com/media/case_study/EnergyCloud.Online.Permitting.Best.Practices.pdf

⁷ https://energycodeace.com/content/resources-ace/file_type=application-guide

⁸ Online Permitting Jurisdiction Survey Results, Online Permitting Working Group, August 2017, p.2

- Overall, building department permit processors, other building department staff, contractors, and the general public have responded positively to the OPS, with 29 of respondents giving ratings of three (positive) or four (very positive).⁹
- Over half (59%) of respondents who answered this question indicated that it would be desirable for the State of California to provide a statewide “apply for permit system” that could be redirected to their jurisdiction’s website.¹⁰

Memo 5: 2017 WHPA Online Permitting Contractor Survey Results

This survey was emailed to 1822 HVAC contractors in California who held valid C-20 licenses. Only 45 contractors responded to the survey, and not all 45 addressed every question. Like the jurisdictional survey, the results are not statistically significant, but are revealing. Two of the most interesting results include:

- Of the 35 contractors who responded, 89% (n=31) want a standardized permitting system across California. This is something the Air Conditioning Contractors of America (ACCA) and Institute of Heating and Air Conditioning Industries, Inc. (IHACI) have been advocating.¹¹
- Of the 36 contractors who responded, 86% (n=31) indicate that a completely online HVAC permitting system would save them time in their day-to-day activities.¹²

Contractors also mentioned that an online permitting system would streamline the permitting process and increase productivity.

Conclusion

The OPWG’s conclusion is that an online permitting system targeted for HVAC alterations is feasible and it will improve the poor compliance rates in California. Our research shows that a carefully designed and implemented OPS system will be welcomed by both the HVAC industry and building departments. Further, our analysis suggests a statewide OPS is one of the very few definable methods of reducing the compliance gap.

Fortunately, California’s private sector and jurisdictions have implemented online permitting systems several of which are in use or have undergone successful field trials.

It also appears that implementation of a standardized system can be done at low or no cost to individual municipalities. The contractor survey revealed that contractors are sensitive to added cost related to an

⁹ *Ibid* p.2

¹⁰ *Ibid*, p.2

¹¹ Online Permitting Contractor Survey Results, Online Permitting Working Group, August 2017, p.2

¹² *Ibid* p. 2

OPS. OPWG members suggest that such costs would be far less than contractors now spend on obtaining permits. Similarly, an OPS would not only reduce municipalities' cost of permitting HVAC alterations, but are likely to see an increase in municipal revenues from permitting HVAC alterations.

Perhaps most importantly, a statewide OPS would be a big step toward improving compliance rates because it would establish consistent rules across the state that can be verified with technology on a real-time basis. It would help change the "culture" of non-compliance that has fostered much of the conversation in the Compliance Committee since its inception. A system that is used consistently across California would establish a base from which standardized training and enforcement activities could be built. Use of public funds for education and outreach could be leveraged to off a cost-effective education and outreach effort. Overall, a statewide OPS would level the playing field and provide clarity so that contractors will better understand what is required to conform with governing codes and this lack of clarity was stated as a barrier by more than 90% of building industry.¹³

¹³ Codes and Standards Compliance Improvement Program Years 2013-2014 Process Evaluation Final Report, CALMAC Study ID CPU0129, DNV GL, April 2016, p 12