



## Virginia Department of Planning and Budget **Economic Impact Analysis**

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**18 VAC 50-30 Individual License and Certification Regulations**  
**Department of Professional and Occupational Regulation**  
**Town Hall Action/Stage: 6075 / 10044**  
March 21, 2024

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The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with § 2.2-4007.04 of the Code of Virginia (Code) and Executive Order 19. The analysis presented below represents DPB’s best estimate of the potential economic impacts as of the date of this analysis.<sup>1</sup>

### **Summary of the Proposed Amendments to Regulation**

The Board of Contractors (Board) proposes to 1) create a new limited scope “residential journeyman” license that has reduced experience and training requirements compared to the current journeyman license, and which would only apply to residential plumbing or to heating, ventilation, and air conditioning (HVAC) work; 2) revise the experience and vocational training requirements for the journeyman licenses in the gas fitting trades, and revise the qualifications for those who seek to qualify for any journeyman license based solely on practical experience; 3) revise the experience requirements for the master license; 4) allow up to 40 hours of continuing education to substitute for the same amount of required hours of formal vocational training; and 5) allow one additional year of experience to substitute for twenty hours of the required vocational training for accessibility mechanics.

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<sup>1</sup> Code § 2.2-4007.04 requires that such economic impact analyses determine the public benefits and costs of the proposed amendments. Further the analysis should include but not be limited to: (1) the projected number of businesses or other entities to whom the proposed regulatory action would apply, (2) the identity of any localities and types of businesses or other entities particularly affected, (3) the projected number of persons and employment positions to be affected, (4) the projected costs to affected businesses or entities to implement or comply with the regulation, and (5) the impact on the use and value of private property.

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## Background

This regulation applies to licenses issued for six types of trades: electrician, plumber, HVAC technician, gas fitter, liquefied petroleum gas fitter, and natural gas fitter providers. It also provides distinct entry requirements for licensure or certification of other individuals, such as certification of accessibility mechanics.

The initial impetus for this action is Executive Directive Number One (2022), which directs Executive Branch entities under the authority of the Governor "...to initiate regulatory processes to reduce by at least 25 percent the number of regulations not mandated by federal or state statute, in consultation with the Office of the Attorney General, and in a manner consistent with the laws of the Commonwealth."<sup>2</sup>

Notably, the proposed amendments would create a new residential journeyman license that is limited to either plumbing or HVAC work in dwellings and townhouses. The scope of this license class would not include work on commercial, industrial, institutional, or government use structures.

The Board reports that when initially developing this regulatory proposal it had been considering a reduction in eligibility requirements for the two existing license classes (journeyman and master). However, during the review it became apparent to the Board that there was a distinction between the level of proficiency needed to perform work in residential systems compared to that needed to work on non-residential systems. For example, an individual who performs routine maintenance and/or repairs on residential HVAC systems does not require the same level of skill as an individual who installs commercial or industrial HVAC systems. It also became clear to the Board that some companies and/or individuals seek only to work on residential properties with no intention of ever working on commercial or industrial properties. In light of these observations, the Board decided to create a third license class, known as residential journeyman, to include HVAC and plumbing trades.

According to the Board, performance of trade-related work by those who lack sufficient expertise poses a risk to the public health, safety, and welfare. These risks include the potential for significant damage to property, personal injury, and death. In addition, the improper

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<sup>2</sup> <https://www.governor.virginia.gov/media/governorvirginiagov/governor-of-virginia/pdf/ed/ED-1-Regulatory-Reduction.pdf>

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performance of trade-related work can pose a substantial risk of financial harm to a property owner who may be responsible for assuming any costs needed to correct or complete defective work. Accordingly, electric work was intentionally excluded from the scope of the new residential-only license due to concerns that individuals would not be able to safely perform electrical work under the reduced training and experience standards for the residential journeyman license.

Additionally, the Board considered certain eligibility requirements in all trades and other areas of licensure as being potentially burdensome, and identified additional areas where the required years of experience or minimum education could be reduced while still ensuring minimum competency and protection of the health, safety, and welfare of the public. Those additional areas include revisions to the experience and vocational training requirements for journeyman licenses in the gas fitting trades; revisions to qualifications for those who seek to qualify for any journeyman license based solely on practical experience in a trade; qualifications for a master license; substitution of continuing education for vocational training; and substitution of one additional year of experience toward twenty hours of required vocational training for accessibility mechanics. Other changes are being proposed to remove outdated text, improve the clarity of the regulation, and ensure the regulation complements current Virginia law.

Currently, the journeyman license is the first of two levels of licensure available in order to enter a licensed tradesman profession in Virginia. Thus, the qualifications to sit for the journeyman tradesman examination comprise the minimum requirements to enter the relevant trade. This regulation currently requires applicants for the journeyman tradesman examination to furnish evidence that one of the following experience and education standards has been attained:

- 1. Four years of practical experience in the trade and 240 hours of formal vocational training in the trade. Experience in excess of four years may be substituted for formal vocational training at a ratio of one year of experience for 80 hours of formal training, but not to exceed 200 hours;*
- 2. Four years of practical experience and 80 hours of vocational training for liquefied petroleum gas fitters and natural gas fitter providers except that no substitute experience will be allowed for liquefied petroleum gas and natural gas workers;*

3. *An associate degree or a certificate of completion from at least a two-year program in a tradesman-related field from an accredited community college or technical school as evidenced by a transcript from the educational institution and two years of practical experience in the trade for which licensure is desired;*

4. *A bachelor's degree received from an accredited college or university in an engineering curriculum related to the trade and one year of practical experience in the trade for which licensure is desired; or*

5. *An applicant with 10 years of practical experience in the trade as verified by reference letters of experience from any of the following: building officials, building inspectors, current or former employers, contractors, engineers, architects, or current or past clients attesting to the applicant's work in the trade, may be granted permission to sit for the journeyman's level examination without having to meet the educational requirements.*

Currently, upon passage of the examination, applicants meeting one of these requirements are issued a journeyman license which allows them to perform work not only on residential but also on commercial, industrial, institutional, or government use structures.

According to the Board, the required experience is typically gained while working as a helper or laborer under a licensed tradesman, or as an apprentice through a registered apprenticeship. The courses that are acceptable to the Board to meet the vocational training requirements must be completed through accredited colleges, universities, junior or community colleges; adult distributive, marketing and formal vocational training; Virginia Apprenticeship Council programs; or proprietary schools approved by the Virginia Department of Education. In addition, formal vocational training can also include Board-approved training conducted by trade associations, businesses, the military, correspondence schools, or other similar training organizations.

### **Estimated Benefits and Costs**

The estimated benefits and costs of this proposal are discussed according to the type of change, beginning with the proposed changes that would create a new residential journeyman plumbing or HVAC license.

- 1) New residential journeyman plumbing or HVAC license

The proposed changes would allow applicants that have reduced experience and educational standards to enter either the plumbing or HVAC trades and be authorized to perform a limited scope of work that may only be performed on residential structures. The Board states that Arizona, Colorado, North Carolina, Utah, and Washington currently offer similar licenses to the residential journeyman license, and other states may also be considering this type of license. It appears this topic is being discussed by the National Association of State Contractors Licensing Agencies as a means of encouraging younger workers to enter the trades. Also, the Board was provided information during development of the regulation that indicates that fewer individuals are seeking to work in the trades.

To help address these issues in part and to reduce regulatory burdens in part, the proposal would allow applicants for examination to be licensed as a residential journeyman plumber or HVAC tradesman if they pass the examination and also furnish evidence that one of the following experience and educational standards has been attained:

Current Requirements (Journeyman)	Proposed Requirements (New Residential Journeyman)
Four years of practical experience in the trade and 240 hours of formal vocational training in the trade. Experience in excess of four years may be substituted for formal vocational training at a ratio of one year of experience for 80 hours of formal training, but not to exceed 200 hours.	Two years of practical experience in the trade and 160 hours of formal vocational training in the trade.
OR Ten years of practical experience in the trade.	OR Three years of practical experience in the trade and 120 hours of formal vocational training in the trade.
	OR Four years of practical experience in the trade and 80 hours of formal vocational training in the trade.
	OR Five years of practical experience in the trade and 40 hours of formal vocational training in the trade.
	OR Six years of practical experience in the trade, and no formal vocational training.

As indicated by the table, the proposed experience and educational standards for the residential journeyman license would be substantially lower as compared to those for the current journeyman license. For example, under the proposal an applicant with only two years of

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experience and 160 hours of vocational training would be allowed to perform HVAC or plumbing work on residential structures. This compares to four years of experience and 240 hours of vocational training that is required for the current journeyman license. The proposed reduction in this example translates to a 50 percent reduction in required experience and a 33.3 percent decrease in vocational training. Similarly, the proposal translates into a 40 percent reduction in experience for an applicant who has no vocational training, but who has six years of experience; in contrast, currently an applicant without any vocational training must have ten years of experience.

A reduction in the experience and vocational training required would lower the burden to sit for the exam for this new limited scope license. To the extent that these training and experience requirements discourage or prevent entry into the trades, a reduction in the requirements would increase the number of eligible applicants for the new residential journeyman license. The Board estimates that approximately 700 additional individuals annually would meet the qualifications for the proposed residential journeyman license consisting of two years of experience and 160 vocational hours. It is also estimated that approximately the same number of individuals would qualify based on having three years of experience and 120 vocational hours. Thus, it is anticipated the Board could receive up to 1,400 license applications for the new limited scope license after the proposed changes become effective. The Board further notes that even though these individuals would initially obtain licensure as a residential journeyman, they expect that most would subsequently obtain the journeyman license because the journeyman license is required to perform higher-paid commercial or industrial trade-related work.

The addition of 1,400 new licensees who can perform residential plumbing and HVAC work would create a chain of potential effects, in which the nature of any one effect partially depends upon its interaction with other effects. These potential effects include changes that will likely affect the following areas: the wages and employment of the newly licensed residential journeymen; enrollment in vocational trade schools; the wages and employment of licensed journeymen and unlicensed laborers currently working in the residential market; the prices paid by residential consumers; the revenues of plumbing and HVAC contracting firms; health and safety; the responsibilities of the agency, etc. Each one of these effects are discussed below in detail.

*i) Impact on residential journeymen and trade schools*

The newly qualified residential journeymen would likely benefit the most from the proposed new residential license class. These benefits include savings from reduced vocational training, the value of time that would be freed up from the reduction in training requirements, and higher earning potential.

The Board estimates that the cost difference between the 240-hour vocational training currently required and the 160-hour training under the proposal (or the value of an 80-hour reduction in the required vocational training), is \$3,518 per applicant. This estimate translates to over \$4.9 million annually in training-related savings for all of the expected 1,400 new applicants.

Conversely, this would result in a substantial revenue reduction for trade schools. Trade schools may also incur one-time costs adjusting their curriculum to accommodate residential journeyman candidates by shifting their coursework to focus more on the residential plumbing and HVAC topics.

The new residential journeymen applicants would also save the time that would be freed up by the 80-hour reduction in vocational training. The Board states that an unlicensed laborer or apprentice in these trades typically earns \$15 per hour.<sup>3</sup> Valued at that hourly wage, the value of an applicant's time savings for those 80 hours (prior to obtaining the license) would be \$1,200 per person, not including the time and travel costs involved in going to the locations where those training hours are earned. For the annual population of 1,400 expected new applicants, the total savings in terms of value of freed up time due to the 80-hour reduction becomes \$1.7 million.

Additionally, the experience requirement would be reduced by two years. As a result, new residential journeyman would be able to become licensed more quickly and also command higher wages than they previously did as an unlicensed laborer or apprentice in these trades. Therefore, the wage differential for two years would represent an additional benefit to the new residential journeymen. According to the Board, a newly licensed tradesman typically earns \$25

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<sup>3</sup> The pay range for an unlicensed laborer or apprentice ranges from \$10 to \$15 per hour, Office of Regulatory Management Economic Review Form, page 5.

per hour.<sup>4</sup> Based on a 30-hour work week,<sup>5</sup> on an annualized basis, this equates to \$39,000 per year (30 hours x 52 weeks x wage). An unlicensed laborer or apprentice in these trades typically earns \$15 per hour as mentioned above. Based on a 30-hour work week, on an annualized basis, this equates to \$23,400 per year. Thus, an individual who qualifies for the new license could earn approximately \$15,600 in additional income per year or \$31,200 over the two years. This translates to \$43.7 million in total additional income for all 1,400 expected new licensees each year.

However, while the assumed hourly rate of \$25 for a licensed journeyman is appropriate for comparing the status quo to the proposed changes, the magnitude of the benefits will likely be lower. The expected benefits would accrue only when the residential journeyman license is actually issued under the proposed changes, and when that occurs the \$25 an hour wage assumption may be somewhat inflated for two reasons. First, the supply and demand analysis discussed below indicates that prices of residential-only work would likely decline, which would drive down what employers are willing to pay for residential-only licensees. Second, the comparatively lower cost of obtaining a residential-only license would drive down the \$25 an hour wage that residential-only journeymen would be willing to accept. Since the \$25 per hour for journeyman assumption drives the largest portion of the expected benefit, the actual benefit may be lower.

In summary, newly licensed residential journeymen would be expected to benefit from a savings of up to \$35,918 per person (or up to \$50.6 million, annually, from all 1,400 new applicants combined), as a result of the proposed new residential-only journeyman license, assuming a \$25 per hour entry level wage.<sup>6</sup>

*ii) Impact on wages, incumbent journeymen, and unlicensed laborers and apprentices*

An influx of 1,400 residential journeymen licensees annually would considerably expand the pool of available tradesmen for hire by the contracting firms whose business is primarily residential construction. The total number of currently licensed plumbers and HVAC journeymen

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<sup>4</sup> The pay range for a newly licensed tradesman ranges from \$25 to \$35 per hour, Office of Regulatory Management Economic Review Form, page 4.

<sup>5</sup> The assumption of the 30-hour work week is based on the Board's definition of what is considered a "full-time employee" in 18VAC50-22.

<sup>6</sup>  $\$3,518 + \$1,200 + \$15,600 = \$35,918$  per person,  $1,400 \text{ applicants} * \$35,918 = \$50,582,200$  in total savings.



is 4,568. This 30 percent increase in the labor supply every year would likely result in a downward pressure<sup>7</sup> on all journeyman wages for residential jobs. Additionally, because of the decrease in the costs needed to obtain a residential-only license, residential journeymen would be more likely to accept jobs at reduced wages. Thus, the incumbent journeymen would be confronted with a marketplace in which lower wages are paid. Accordingly, the proposal would likely make those incumbent journeymen who mostly perform residential work worse off.

This result would create a competitive disadvantage for incumbent journeymen who are licensed to perform work on non-residential structures (e.g., commercial, industrial or government) but who mainly perform residential work currently. If they were to continue performing residential work, such incumbent journeyman may be forced to either accept lower wages or to accept slower wage growth until the relative wages between the incumbent and new licensees for residential work stabilize.

Another way incumbents can respond would be to perform, if they could, additional non-residential work. However, there are differences between residential, commercial, or industrial work that may limit this opportunity. To some degree, the main difference between residential and non-residential trade work in the trades is one of scale (i.e., the size of the system installed). However, non-residential systems can be more complex and require compliance with stricter building codes, which may require additional on-the-job practical experience or training.

Another potential spillover effect may be seen in the demand for unlicensed laborers or apprentices in the HVAC and plumbing trades. It is more than likely that some of the current unlicensed laborers or apprentices would qualify for a residential journeyman license and would likely be able to obtain it. To the extent this occurs, it would be expected that the pool of unlicensed laborers or apprentices would shrink. In addition, new residential journeymen would likely still need support from helpers or laborers, which would tend to increase the existing demand for unlicensed laborers or apprentices. To the extent these factors occur, the increased need for such workers may incentivize employers to increase their wages.

### *iii) Impact on consumers and suppliers of residential plumbing and HVAC services*

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<sup>7</sup> Supply curve of residential journeyman would shift to the right reducing the wage in that labor market.

As the number of licensed residential journeymen increases, the number of tradesmen willing to perform residential work through contracting firms would also increase. An expanded pool of workers would increase the competition for this work, which in turn would reduce the market price.<sup>8</sup> A decrease in market price would make some of the residential work that consumers were previously unwilling to take on more affordable. Generally speaking, a decrease in prices results in an increase in consumption, and therefore the amount of residential work that is performed would likely increase. The net impact of such a change would benefit consumers,<sup>9</sup> but the magnitude of this benefit would depend on other factors such as the responsiveness of consumers and suppliers to the change in the market price. Although there is not enough information to estimate the magnitude, we can say with certainty that directionally consumers would be better off because of a price decrease.

Unlike the benefit to consumers, the net impact on contracting firms would depend on two opposing factors. First, lower prices would reduce revenue from already existing customers in the market. However, this is offset by the second factor: the additional work that results from the increase in consumption. Thus, the impact on all contracting firms combined depends on the net effect of these two opposing factors: competition versus consumption. Accordingly, the actual impact on contracting firms may be positive or negative, depending on the relative responsiveness of consumers to the changes in the market price.

At a more granular level, there could be an indirect impact on individual contracting firms, and the impacts on individual firms are likely to be mixed. An individual firm makes its supply decisions based on its costs and the prevailing market price. When the market price declines, its profit (i.e. difference between revenues and costs) would also tend to decline. A firm by itself has no control over the market price in a competitive market and the only relevant factor it can control is its costs. If its new costs after this change would be still below the newly-reduced market price generating a net profit, it would continue providing services or even expand them. This would add to its overall revenues and increase its profit. However, if the market price falls below its unit costs generating a net loss, then that firm may have to reduce its unit costs or else cease operations. Given the likely reduction in the market price, some

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<sup>8</sup> An expanded pool of workers would shift the supply curve of residential plumbing and HVAC services to the right.

<sup>9</sup> Consumer surplus which is a measure of consumer well-being would be larger.

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individual firms may thrive, some may be forced to adjust their cost structure to survive, and some may exit the residential plumbing and HVAC market.

In short, the proposed residential journeymen license would benefit consumers by decreasing the cost of those plumbing and HVAC projects that require less experience or skill. However, the outcome for contracting firms is unclear. If consumers respond to lower prices by increasing their demand for residential services to a degree that offsets the reduction in industry revenue, then contracting firms would benefit from the proposed changes. If, however, demand for residential services increases to a lesser degree, then contracting firms would not benefit. Thus, the net impact on contracting firms as a whole (i.e., incumbents and newcomers all together) may be negative or positive, depending on the demand and supply characteristics of the residential plumbing and HVAC service markets. Finally, the potential impact on individual firms would depend on how their unit costs compare to the prevailing market price.

*iv) Impact on HVAC and plumbing industry structure*

To the extent that incumbent journeymen are crowded out of the residential service market into the non-residential service market, subsequent spillover effects could be seen in the commercial, industrial, government, and institutional service market. As residential journeymen respond to increased competition in the residential market and start looking for jobs in the non-residential market, the supply of tradesmen in the non-residential market could increase. This would make the non-residential jobs more competitive, which in turn could create a downward pressure on the prices of non-residential service work as well.

If the spillovers to the non-residential service market are significant, we may see more segmentation between the residential-only and non-residential service markets. According to the Board, some HVAC and plumbing companies already operate only in one market: either the residential or the non-residential service market. This proposal could cause a greater segmentation into two distinct markets due to expected price and wage differences. To the extent this occurs, residential and non-residential technicians may find it more challenging to switch between residential and commercial work, reducing their flexibility in the job market.

Furthermore, an increase in the specialization of the marketplace, combined with the differences between residential, commercial, or industrial work (as noted above) may lead to an unintended consequence. As written, the proposed experience and vocational training

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requirements do not address the differences between residential, commercial, or industrial work, and instead they treat all such work as being equivalent. As a result, a worker with minimal or no residential experience may satisfy the requirements for a residential journeyman license even if his two-year experience or 160 hours of vocational training consists entirely of commercial service. Similarly, after obtaining three years of experience as a residential journeyman, a worker would be eligible for a journeyman license; this new license would make him eligible to work on all commercial, industrial, government or institutional use structures even if his experience consisted only of residential work. Thus, there exists a potential for such individuals to be authorized by the Board to perform work in an area in which they do not have actual practical experience.

The Board counters this concern by pointing out that the training that is required to obtain a journeyman license (in any trade) is on the theory of the trade and the applicable building code, which is essentially the same regardless of the building type or use. And as noted above, the main difference between residential and non-residential trade work is one of scale (i.e., the size of the system installed). Additionally, contracting firms are more likely than sole proprietors to have management staff whose responsibilities include ensuring that the tradesman has the proper experience to match the type of work they will perform, which would offset such risks. However, a journeyman who is the sole proprietor is also likely to be concerned about liability and thus be mindful about the consequences of performing work for which he is not qualified. Therefore, although some incentives already exist to dissuade the performance of work by an unqualified individual, the regulation as currently written does not provide its own safeguards against such outcomes.

Notwithstanding the potential for any unintended consequences, an increased level of marketplace segmentation may lead to better allocation of scarce resources. This can enhance the overall quality of services if it allows tradesman to focus on specific areas of expertise. For example, a company that provides residential-only services would not have to train their employees on commercial projects. By being able to focus more closely on residential services, the company can improve its knowledge and efficiency. Similarly, a non-residential services company may redirect the resources that are freed up from residential services to non-residential services and become more proficient in that area. Similarly, homeowners may feel more

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confident hiring technicians with a residential-only license, as they would be perceived as experts in the specific needs of residential systems.

*v) Tradeoff between experience and training*

Another more subtle effect may result from the implied change that lies in the tradeoff between experience and formal training. The current regulation explicitly states that “*Experience in excess of four years may be substituted for formal vocational training at a ratio of one year of experience for 80 hours of formal training, but not to exceed 200 hours.*” Under the proposed language no such explicit statement would exist, but based on the requirements the implied tradeoff is that each year of experience in excess of two years may be substituted for 40 hours of vocational training. Thus, under the proposed changes each year of experience would be worth less relative to the training that it could substitute. Thus, someone with two years of experience, but less than 160 hours of vocational training, would likely shift their focus to obtaining training (in order to reach the 160 hours) rather than obtaining another year of experience. This could offset some of the revenue reduction for trade schools noted above. However, these individuals would likely reduce the total amount of vocational training they obtain by 40 hours compared to the incentives under the current regulation.

*vi) Impact on health and safety*

The proposal may also potentially affect health and safety. As previously mentioned, the Board appears to be fully cognizant that performance of trade-related work by those who lack sufficient expertise poses a risk to the public health, safety, and welfare in general. By proceeding with the proposal, we can also deduce that such risks do not outweigh the expected benefits in the Board’s collective opinion. However, it cannot be ruled out—and the Board concedes—that there is “the potential for increased risk of damage to property or injury to persons due to lower training and education requirements.”<sup>10</sup>

On the other hand, some of the health and safety risks may be mitigated by local building inspectors, who inspect finished installation work. Additionally, it is worth noting that although experience and training requirements would be decreased, residential journeymen would not be required to work on non-residential systems. Thus, the portion of the two-year reduction in

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<sup>10</sup> Source: Office of Regulatory Management Economic Review Form, page 5.

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experience and 80-hour reduction in training that would have been related to non-residential work should not raise safety concerns, assuming all work is performed on residential systems.

*vii) Impact on license reciprocity and portability*

Another concern the Board recognizes is the potential implications on license reciprocity and portability. The Board staff reports that there are two reciprocity agreements which might be affected by this change, and it is possible that these agreements may need to be amended.<sup>11</sup> Under the current agreements, an individual who is licensed as a residential journeyman would not be covered by these two existing reciprocity agreements. However, the Board does not know yet whether the other jurisdictions would agree to amending the existing agreements to incorporate the residential journeyman license. Thus, Virginia's ability to maintain existing agreements and to secure new reciprocity and portability agreements with other states may be negatively affected. Similarly, workers and businesses who only have a residential journeyman licenses, and who seek to temporarily perform work in other states, may encounter problems meeting the qualifications required by another state due to the decrease in requirements in Virginia. On the other hand, the lower costs associated with residential projects may provide an advantage if and when the other states are willing to recognize the equivalency of Virginia's residential-only license.

*viii) Impact on continuing education providers*

An influx of additional 1,400 applicants would also impact continuing education providers. Under the proposal, residential journeyman licensees will be required to complete three hours of continuing education every three years in order to renew a license. According to the Board, the average cost of a three-hour continuing education class is \$90. Assuming 75 percent of the expected 1,400 additional licensees would be renewed every three years, this would result in 1,050 licensees who would take continuing education every three years. Thus, the Board anticipates that the new licensees would have to spend approximately \$94,500 in total on continuing education every three years to keep current with their trade. While this amount represents a cost to the licensees it also represents a benefit to the continuing education providers. Continuing education providers may also be inclined to revise their curriculum for

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<sup>11</sup> These are reciprocity agreements with District of Columbia covering plumbing journeyman and with Maryland covering HVAC journeyman.

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residential journeyman licensees by expanding coverage of residential topics and decreasing or eliminating coverage of topics related to work on commercial or industrial or larger structures.

*ix) Impact on the agency*

The proposed changes would also affect the agency itself as the additional 1,400 applicants that the Board expects would increase the workload of the Board's licensing staff. The Board estimates that up to three additional licensing specialist positions would be needed to process additional applications. The estimated cost for the three positions is at least \$139,500 for the first year, and this cost is expected to increase by approximately two percent annually. According to the Board, this cost reflects estimated salary compensation only, and does not include benefits, taxes, or other related costs. The Board and its supporting staff are funded by fees collected from licensees. Based on initial application fee of \$130 and expected 1,400 additional applications annually, additional revenue from initial applications would be \$182,000 per year. Moreover, assuming 1,050 licensees renew triennially, the Board anticipates additional revenue of \$141,750 from renewals every three years. It is therefore unclear if this would require an increase in fees, which would require a fuller assessment of the Board's other revenues and costs.

2) Journeyman license

Several proposed changes in this category would provide more flexibility to sit for the journeyman license, and a few of the changes specifically apply to gas fitter licenses. The changes that affect all persons seeking a journeymen license would reduce the number of years of experience from 10 years to eight years for applicants who do not meet the educational requirements. This change would apply to journeymen licenses for all trades. However, there is no estimate on the number of potential new applicants that may be expected from this change.

Regarding gas fitter licenses, the changes would affect each of the three types of "gas fitter" licenses: gas fitter; liquefied petroleum gas fitter; and natural gas fitter provider. The distinctions between these types are detailed in the definitions section of the regulation. The terms "liquefied petroleum gas fitter" and "natural gas fitter provider" are terms created by statute in § 54.1-1128. One of the key distinctions is that someone licensed as a gas fitter can do work covered by the liquefied petroleum and natural gas fitter license, but persons with a

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liquified petroleum or natural gas fitter license cannot perform the work of a gas fitter. The proposed changes to these licenses are as follows.

For licensure as either a journeyman liquified petroleum gas fitter or as a natural gas fitter provider, the proposal would introduce a new option for those with “[f]ive or more years of practical experience in the trade and 40 hours of vocational training in the trade.” Currently, the only option is “[f]our years of practical experience in the trade and 80 hours of vocational training in the trade;” Therefore, the new option would allow substitution of one additional year experience for 40 hours of vocational training. However, the Board does not have an estimate on the number of applicants for the liquified petroleum gas fitter or natural gas fitter provider licenses that may qualify to sit for the journeyman exam as a result of this change.

The proposal would also revise the journeyman gas fitter license requirements. Currently, the regulation requires 240 hours of training; however, vocational training providers do not offer 240 hours of training for applicants because there is not enough content to cover in that many hours. The Board therefore views the current requirements as being overly burdensome because it reports that vocational gas fitting courses are not readily available. As a result, individuals have not been able to complete the required hours for gas fitting, and they either must obtain 10 years of experience or have their application reviewed by the board for a potential waiver/substantial equivalency. The result of the lack of training providers is that every applicant for a gas fitter license must come before the Board for approval. To address this, the Board proposes changes to journeyman gas fitter qualification to ease the burden. Under the proposal, for licensure as a journeyman gas fitter the applicant must satisfy either:

- a. Four years of practical experience in the trade and 120 hours of vocational training in the trade;*
- b. Five years of practical experience in the trade and 80 hours of vocational training in the trade; or*
- c. Six or more years of practical experience in the trade and 40 hours of vocational training in the trade;*

As partly mentioned before, the current requirements for the journeyman gas fitter are “[f]our years of practical experience in the trade and 240 hours of vocational training in the



*trade;*” Thus, the changes would reduce the education requirement from 240 hours to 120 hours (a 50 percent reduction) to become a journeyman gas fitter. The Board estimates that approximately 25 applicants may be newly qualified under this particular change. Additionally, proposed changes would newly allow applicants with five and six-year experience with a 160-hour and 200-hour reduction in the corresponding educational hours required, respectively. There is no estimate available on how many applicants may newly qualify with the five and six-year experience.

The changes that affect all persons seeking a journeyman license are expected to newly qualify some applicants who would not qualify under current rules. Although data generally are not available to estimate the number of additional applications that these changes would create, most of the economic effects would be similar to those discussed under residential journeyman license albeit at a smaller scale. For example, the Board expects additional 25 applications as a result of the proposed change to reduce educational training by 120 hours to sit for the journeyman gas fitter exam. Such an individual would save approximately \$5,330 from 120 reduced training hours. The total savings for the 25 individuals would be \$133,250 per year.

The other effects of the proposed changes for these newly qualified individuals would be similar to those discussed above for the residential journeyman, including: the value of their time that is freed up by the reduction in the training requirements; an increase in their ability to earn higher wages more quickly; an increase in competition for trades work, which would lead to lower prices, and thus a positive impact on consumers; a negative impact on existing journeymen in the relevant trade; potential effects on safety, license reciprocity and portability,<sup>12</sup> on continuing education providers, and on the Board’s staffing needs. The expected directional effects on these issues would be the same as for the residential journeyman analysis but at a smaller scale.

### 3) Master license

The master license represents the next level of qualifications above the journeyman license. The requirements to sit for the master license exam would be revised in two ways. First,

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<sup>12</sup> According to the Board, “Virginia really only has one true reciprocal agreement and that is with North Carolina and is limited to electricians.” In addition, Virginia has examination waiver agreements with Alabama, the District of Columbia (D.C.), Kentucky, Maryland, and West Virginia for licensed electricians. Virginia also has an agreement with D.C for plumbers and gas fitters journeymen, and with Maryland for HVAC journeymen.

the newly created residential journeyman licensees would be allowed to become a master tradesman if “*they have held a valid residential journeyman license in the trade for three years.*” The second change would reduce the required number of years of experience from 10 years to nine years for applicants who do not meet the educational requirements.

The change to qualify for a master license based on nine instead of 10 years of experience, for applicants who do not meet the educational requirement, would likely result in a small increase in the number of newly eligible applicants. In addition, the pathway for a residential journeyman to become a master would not affect the number of master applications after the first batch of residential journeymen applications are granted. After this three-year period elapses, some of the residential journeyman would start to qualify for the master license and thereby increase the population of masters. Thus, this change would benefit residential journeymen wishing to attain a master license and start earning higher wages.

Due to the influx of new masters, existing masters would face additional competition in the job market and the wages of masters may decline or their wage growth may decrease relative to what would have occurred if there were no additional applicants. However, no data are available to estimate the magnitude of the additional applicants this change would create. In addition, the agency does not have information on the master workforce characteristics. The current workforce may have too few masters, or an excess supply may exist at the time that residential journeymen start qualifying for the master licenses. The fact that master license requirements apply to all six trades requires even more granulated information about the specific market conditions for each of the six types of master tradesman, and these data are not available.

#### 4) Continuing education allowable as formal vocational training

The Board also proposes to allow an applicant to receive credit for a maximum of 40 hours for Board-approved continuing education training toward the formal vocational training that is required for residential journeyman, standard journeyman, and master vocational educational requirements.

Using data provided by the agency on the cost of training for the residential journeyman, the cost of 40 hours of vocational training and 40 hours of continuing education are extrapolated to be \$1,777 and \$1,200, respectively. Thus, it appears that allowing the requirement for 40 hours of vocational training to be fulfilled through continuing education would be less expensive,

and this would incentivize residential journeyman license applicants to utilize the continuing education option. To the extent that licensees choose the continuing education option, providers of this service would benefit from this change while formal vocational training providers would be expected to be worse off. Although no data exist to estimate the same costs for standard journeyman and master licenses, it appears that the same conclusion would hold true for the other license classes. Also, using continuing education to substitute for formal vocational training is optional. Therefore, this change would likely be beneficial for those who choose this avenue.

5) Allowing one more year of experience to substitute for vocational training for accessibility mechanics

Under the proposed changes, an individual seeking licensure as an accessibility mechanic, who has more than three years of experience, would be allowed to substitute one year of experience for 20 hours of formal vocational training (not to exceed 60 hours). The option to substitute one year of experience for 20 hours of vocational training with a 60-hour cap is also allowed under the current regulation, except that the individual must have more than four years of experience rather than the three years as proposed. The proposal would reduce the length of experience required to take advantage of this option by one year (25 percent) and would likely expand the pool of qualified applicants for this option. The available data indicates that the cost of 20 hours of vocational training for a residential journeyman is about \$889. If the cost of vocational training for an accessibility mechanic is similar, and if a mechanic with more than three years of experience substitutes an additional year in exchange for 20 hours of vocational training, he or she would be expected to save approximately \$889. This change is also optional, and individuals would likely to utilize it if it would be beneficial to them. On the other hand, to the extent this option is exercised, a reduction in demand for vocational training would occur.

### **Businesses and Other Entities Affected**

This regulation applies to all tradesman licensed in the Commonwealth. The number of existing journeyman licenses by trade are 453 gas fitter; 43 liquefied petroleum fitter; 22 natural gas fitter; 2,901 HVAC; 1,667 plumber; and 8,611 electrician. Similarly, the master tradesman licenses by trade are 3,974 gas fitter; 342 liquefied petroleum fitter; 310 natural gas fitter; 7,619

HVAC; 5,955 plumber; and 11,715 electrician. Also, 25 individuals are certified as accessibility mechanics.

Although the proposed changes are expected to have differential effects on tradesmen in different trades, none of the tradesman in the same category appear to be disproportionately affected.

Additionally, licenses granted under this regulation are issued to individuals, and not to business entities. Thus, the proposal does not directly affect the businesses. However, licensees are likely owners or employees of business entities in the trades regulated. Thus, potential effects expected on tradesman would likely indirectly affect trade businesses.

Moreover, revisions to vocational training hours and continuing education requirements would also have effects on entities providing training and education.

The Code of Virginia requires DPB to assess whether an adverse impact may result from the proposed regulation.<sup>13</sup> An adverse impact is indicated if there is any increase in net cost or reduction in net benefit for any entity, even if the benefits exceed the costs for all entities combined.<sup>14</sup> As noted above, the proposal would create a residential-only journeyman license and is expected to create an influx of new applicants for that license as well as make it easier to obtain a standard journeyman license and a master license. The expanded labor force in the trades as well as in different classes of licensure are expected to adversely affect incumbent tradesman competing for the same jobs. Additionally, all but one of the changes related to vocational training would reduce the hours required and would reduce such trade school revenues by as much as \$5 million per year. However, this estimate assumes that all 1,400 residential journeymen would have obtained vocational training hours currently required, which is not likely. Thus, the actual impact on vocational providers would likely be smaller but still be

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<sup>13</sup> Pursuant to Code § 2.2-4007.04(D): In the event this economic impact analysis reveals that the proposed regulation would have an adverse economic impact on businesses or would impose a significant adverse economic impact on a locality, business, or entity particularly affected, the Department of Planning and Budget shall advise the Joint Commission on Administrative Rules, the House Committee on Appropriations, and the Senate Committee on Finance.

<sup>14</sup> Statute does not define “adverse impact,” state whether only Virginia entities should be considered, nor indicate whether an adverse impact results from regulatory requirements mandated by legislation. As a result, DPB has adopted a definition of adverse impact that assesses changes in net costs and benefits for each affected Virginia entity that directly results from discretionary changes to the regulation.

substantial. For these reasons, an adverse impact on incumbent tradesmen as well as vocational training providers is indicated.

### **Small Businesses<sup>15</sup> Affected:<sup>16</sup>**

According to the Board, most of the trade businesses likely meet the definition of a small business, but the Board has no specific data. However, as discussed above, the regulation does not directly affect the businesses but may have an indirect effect as most tradesmen work for or own such businesses. Thus, no direct effect on small businesses is expected. In addition, the potential impact on businesses discussed in terms of industry revenues does not necessarily indicate a negative economic impact on them. Additionally, there is no information on whether any of the trade schools would meet the definition of a small business.

### **Localities<sup>17</sup> Affected<sup>18</sup>**

This regulation applies equally in all localities of the Commonwealth. The proposal does not introduce any direct costs on the localities. However, the Board notes that there may be an indirect cost imposed on local building departments. Local building departments rely on the Board's licensing records to determine license validity before issuing construction permits. Local building departments would need to become familiar with the new residential journeyman class of license and possibly need to train their staffs that issue building permits regarding the new license class. Additionally, the Board anticipates that the proposed change may indirectly benefit local schools as more students may seek out vocational training based on the potential to begin a career track sooner, possibly upon graduation.

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<sup>15</sup> Pursuant to § 2.2-4007.04 of the Code of Virginia, small business is defined as "a business entity, including its affiliates, that (i) is independently owned and operated and (ii) employs fewer than 500 full-time employees or has gross annual sales of less than \$6 million."

<sup>16</sup> If the proposed regulatory action may have an adverse effect on small businesses, Code § 2.2-4007.04 requires that such economic impact analyses include: (1) an identification and estimate of the number of small businesses subject to the proposed regulation, (2) the projected reporting, recordkeeping, and other administrative costs required for small businesses to comply with the proposed regulation, including the type of professional skills necessary for preparing required reports and other documents, (3) a statement of the probable effect of the proposed regulation on affected small businesses, and (4) a description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation. Additionally, pursuant to Code § 2.2-4007.1, if there is a finding that a proposed regulation may have an adverse impact on small business, the Joint Commission on Administrative Rules shall be notified.

<sup>17</sup> "Locality" can refer to either local governments or the locations in the Commonwealth where the activities relevant to the regulatory change are most likely to occur.

<sup>18</sup> § 2.2-4007.04 defines "particularly affected" as bearing disproportionate material impact.

### **Projected Impact on Employment**

The projected impact on employment is likely mixed. The proposed changes would increase the demand for and earning potential of individuals that would be licensed as residential journeyman; have a negative impact on supply of unlicensed laborers or apprentices in the trades and thus a positive impact on their wages; and have a possibly negative impact on the demand for and wages of incumbent journeymen who are primarily performing residential work. In addition, a negative revenue impact on vocational training providers may result and reduce their demand for instructors. In addition to those mixed effects, the net impact on total employment also largely depends on new persons entering the labor force to replace the helpers and laborers who are expected to leave their jobs to become a residential journeyman. Thus, the impact on total employment is not clear.

### **Effects on the Use and Value of Private Property**

The proposed changes do not have direct effects on contracting firms, and the likely indirect impacts do not necessarily indicate a negative revenue impact on them. If any of the vocational training providers are private institutions, their asset values may be negatively affected. Another plausible effect on the use and value of private property, and to a lesser extent on real estate development costs, may be through the improved quality of residential plumbing and HVAC services as well as lower service costs. No other impact on the use and value of private property is anticipated.