



**COLORADO**

**Department of  
Regulatory Agencies**

Colorado Office of Policy, Research &  
Regulatory Reform

**2018 Review:  
Proposal for Mandatory Continuing Education  
for Professional Land Surveyors**

*January 17, 2018*



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**Department of  
Regulatory Agencies**

Executive Director's Office

January 17, 2018

Members of the Colorado General Assembly  
c/o the Office of Legislative Legal Services  
State Capitol Building  
Denver, Colorado 80203

Dear Members of the General Assembly:

Section 24-34-901, Colorado Revised Statutes, directs the Executive Director of the Department of Regulatory Agencies to:

- Conduct an analysis and evaluation of any proposal to impose mandatory continuing education on a given profession or occupation, and
- Present a written report to the General Assembly that addresses whether the proposed continuing education requirement would likely protect the public.

The Colorado Office of Policy, Research and Regulatory Reform (COPRRR), located within my office, is responsible for fulfilling this statutory mandate. Accordingly, COPRRR has completed its evaluation of the proposal to impose mandatory continuing education requirements on professional land surveyors. I am pleased to submit this written report.

Sincerely,

Marguerite Salazar  
Executive Director



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## Background

Prior to introduction of legislation designed to impose a mandatory continuing education (MCE) requirement on a regulated occupation or profession, the proponents of the legislation must submit information concerning the need for such a requirement to the office of the Executive Director of the Department of Regulatory Agencies. The Executive Director has assigned this function to the Colorado Office of Policy, Research, and Regulatory Reform (COPRRR). As such, COPRRR is required to review, analyze, and evaluate the proposal and report in writing to the General Assembly whether mandatory continuing education would likely protect the public. Section 24-34-901, Colorado Revised Statutes, states:

***Proposed continuing education requirements for regulated occupations and professions - review by office of executive director.***

(1) Before any bill is introduced in the general assembly that contains, or any bill is amended to contain, a mandatory continuing education requirement for any occupation or profession, the practice of which requires a state of Colorado license, certificate, or registration, the group or association proposing such mandatory continuing education requirement shall first submit information concerning the need for such a requirement to the office of the executive director of the department of regulatory agencies. The executive director shall impartially review such evidence, analyze and evaluate the proposal, and report in writing to the general assembly whether mandatory continuing education would likely protect the public served by the practitioners. Proposals may include, but need not be limited to: Information that shows that the knowledge base for the profession or occupation is changing; that mandatory continuing education of this profession or occupation is required in other states; if applicable, that any independent studies have shown that mandatory continuing education is effective in assuring the competency of practitioners. The proposal may also include any assessment tool that shows the effectiveness of mandatory continuing education and recommendations about sanctions that should be included for noncompliance with the requirement of mandatory continuing education. The provisions of this section shall not be applicable to:

- (a) Any profession or occupation that, as of July 1, 1991, has mandatory continuing education requirements in place;
- (b) Any bill that is introduced as a result of a legislative interim committee and that as introduced in the general assembly includes a mandatory continuing education requirement.

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Before beginning the review, COPRRR staff evaluated the application to determine if the review was necessary under the requirements of the statute. The evaluation revealed that an MCE program for professional land surveyors did not meet any of the exemptions from the statute and, therefore, was subject to review.

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## Proposal for Continuing Education

The Professional Land Surveyors of Colorado (Applicant) submitted information on November 21, 2017, to the Department of Regulatory Agencies, proposing MCE for professional land surveyors (PLSs). The requirement would apply to all PLSs licensed through the State Board of Licensure for Architects, Professional Engineers and Professional Land Surveyors (Board).

The Applicant submitted proposed statutory changes and rule changes suggested by the National Council of Examiners for Engineering and Surveying. If enacted, the changes would require the Board to adopt rules requiring “professional development,” the Applicant’s term for MCE, prior to December 31, 2019. The changes included a condition that the professional development should be a prerequisite for license renewal. The proposed statutory changes made no recommendations concerning the appropriate number of hours, subject matter, or timeframe to complete the professional requirements. The Applicant posits that the Board should be empowered to adopt MCE requirements in rule.

In response to the statutory guidance that the Applicant provide information illustrating how the knowledge base for the profession or occupation is changing, the Applicant provided the following reflections:

- The science of measurement, the standards of proof affecting boundary location, and the rules that govern the standards of practice for surveying continuously evolve;
- The analysis and management of data requires skills in advanced mathematics and specialized software; and
- Previously, surveying crews as large as five people would go into the field and practical knowledge would be passed on through mentorship. Now, surveying is generally a one-person endeavor.

The statute also suggests that an Applicant provide independent studies that illustrate MCE’s efficacy in assuring competency. The Applicant provided subjective opinions rather than independent studies from professional surveyor advocacy organizations including the:

- Western Federation of Professional Surveyors,
- Indiana Society of Professional Surveyors,
- Nevada Association of Land Surveyors,
- Michigan Society of Professional Surveyors,
- National Society of Professional Surveyors,
- Professional Land Surveyors of Oregon, and
- Wisconsin Society of Professional Surveyors.

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Representatives from these organizations opined that the quality and professionalism of PLSs has improved with the addition of MCE, but no substantiation was provided.

According to other information supplied by the Applicant, 44 states require some level of MCE. Of those, New Hampshire and West Virginia have the lightest requirement at 8 MCE hours every two years and 21 states require 30 MCE hours every two years which is the heaviest.

The suggested rule changes provided by the Applicant and the National Council of Examiners for Engineering and Surveying include, among other things:

- 30 MCE hours is required during a biennium,
- 2 MCE hours must be in ethics,
- 10 MCE hours may be earned in self-directed study, and
- 15 MCE hours may be carried forward into the subsequent biennium if a licensee exceeds the biennial requirement in any cycle.

The recommended rule changes also specify that MCE hours should be earned by qualifying activities:

- Successfully completing college courses relevant to surveying;
- Successfully completing continuing education courses;
- Successfully completing short courses/tutorials and distance-education courses offered for self-study, independent study or group study through synchronous or asynchronous delivery methods such as live correspondence, archival or internet based instruction;
- Successfully completing ethics training, up to four hours per biennial renewal;
- Presenting or attending qualifying seminars, in-house courses, workshops, or professional or technical presentations made at meetings, conventions or conferences;
- Teaching or instructing;
- Writing published papers, articles, or books;
- Participating in professional or technical societies and their committees;
- Receiving patents relevant to the surveying profession;
- Reviewing articles from periodicals, books, video/audio cassettes, tutorials and other sources which contribute to the technical or professional education or competency of the licensee; and
- Participating in civic or community activities relevant to the surveying profession as a speaker, instructor, presenter or panelist.

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## Profile of Professional Land Surveyors

Surveyors make precise measurements to determine property boundaries. They use spatial information to support engineering, mapmaking, and construction projects.<sup>1</sup>

Surveyors label property borders utilizing a variety of measuring tools. When property is bought or sold, the information they develop may be used to prevent or resolve disputes.<sup>2</sup>

Technology plays a large part in modern surveying. Surveyors often use handheld Global Positioning Systems and automated systems known as robotic total stations to collect relevant information about the terrain they are surveying. After collecting the data, they interpret and verify the results on a computer. Surveyors also use Geographic Information Systems (GIS) to present spatial information visually as maps, reports, and charts. Surveyors sometimes combine images with GIS data and create digital maps. They then use the results to advise clients on where to plan changes.<sup>3</sup>

The U.S. Bureau of Labor and Statistics reports that in May 2016 the mean salary for a Colorado PLS was \$60,740 per year.<sup>4</sup>

### Colorado Licensing

There are multiple pathways for a surveyor to acquire a license in Colorado. An applicant may obtain a Colorado professional land surveyor license by **endorsement**, through **education, experience, and examination**, or through an **experience and examination** pathway.

An applicant qualifies for licensure by **endorsement** if he or she is licensed in good standing by another jurisdiction that has substantially equivalent qualifications to those required in Colorado and passes any Colorado-required examinations.<sup>5</sup>

To sit for the examination, if an applicant chooses the **education, experience, examination** pathway, the applicant must:<sup>6</sup>

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<sup>1</sup> U.S. Bureau of Labor and Statistics. *Occupational Outlook Handbook: Surveyors*. Retrieved December 5, 2017 from <https://www.bls.gov/ooh/architecture-and-engineering/surveyors.htm>

<sup>2</sup> U.S. Bureau of Labor and Statistics. *Occupational Outlook Handbook; Surveyors*. Retrieved December 5, 2017 from <https://www.bls.gov/ooh/architecture-and-engineering/surveyors.htm#tab-2>

<sup>3</sup> *ibid.*

<sup>4</sup> U.S. Bureau of Labor and Statistics. *Occupational Outlook Handbook: Surveyors*. Retrieved December 5, 2017 from <https://www.bls.gov/oes/current/oes171022.htm#st>

<sup>5</sup> § 12-25-214(1), C.R.S.

<sup>6</sup> § 12-25-214(2), C.R.S.

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- Have graduated from a Board-approved surveying program of at least four years;
  - Have two years of progressive land surveying experience under the supervision of a professional land surveyor or an exempted federal employee; and
  - Have been enrolled in Colorado as a land surveyor intern (LSI).

OR

- Have graduated from a surveying program of at least four years which has not been approved by the Board;
- Have four years of progressive land surveying experience with two of those under the supervision of a professional land surveyor or an exempted federal employee; and
- Have been enrolled in Colorado as an LSI.

OR

- Have graduated from a Board-approved two-year surveying curriculum or from a four-year engineering curriculum that included surveying coursework specified by Board rule;
- Have six years of progressive land surveying experience, with four years under the supervision of a professional land surveyor or an exempted federal employee; and
- Have been enrolled in Colorado as an LSI.

OR

- Have graduated with a Bachelor's degree from a non-surveying program;
- Have completed surveying and other related coursework specified by Board rule;
- Have six years of progressive land surveying experience, with four years under the supervision of a professional land surveyor or an exempted federal employee; and
- Have been enrolled in Colorado as an LSI.

To be admitted to the examination pursuant to the ***experience and examination*** pathway, the applicant must have a high school diploma or the equivalent, have been enrolled in Colorado as an LSI, and have 10 years of progressive land surveying experience with six years under the supervision of a professional land surveyor or an exempted federal employee.<sup>7</sup> This pathway is set to be repealed July 1, 2020.<sup>8</sup>

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<sup>7</sup> § 12-25-214(4), C.R.S.

<sup>8</sup> § 12-25-214(4)(e), C.R.S.

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In any pathway the Board may substitute one academic year in a curriculum approved by the Board for one year of experience. However, this substitution may not exceed three years.<sup>9</sup>

## **Seal**

Once a land surveyor receives a certificate of licensure, he or she may obtain a crimp, a rubber stamp, or an electronic seal. The seal must be of a design approved by the Board and contain the licensee's name, license number, and the designation "Colorado licensed professional land surveyor." All documents, plats, and reports resulting from the practice of land surveying must have the seal or facsimile, and signature of the land surveyor, and only when the work is performed under the "responsible charge" of the licensee.<sup>10</sup> The Land Surveyor Act defines "responsible charge" as personal responsibility for the control and direction of professional land surveying work.<sup>11</sup>

In addition to his or her seal, a land surveyor is responsible for maintaining control of any unused monument caps bearing his or her license number.<sup>12</sup> A survey monument is a permanent marker set by a PLS to reference a point. The cap identifies who placed the monument.

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<sup>9</sup> §§ 12-25-214(3), and 214(4)(d), C.R.S.

<sup>10</sup> § 12-25-217, C.R.S.

<sup>11</sup> § 12-25-202(10), C.R.S.

<sup>12</sup> 4 CCR § 730-1- 3.1.3.1.

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## Analysis

The Colorado Revised Statutes section that governs the consideration of MCE requirements posits that,

the group or association proposing such MCE requirement shall first submit information concerning the need for such a requirement.<sup>13</sup>

The statute also suggests that an applicant proposing the imposition of MCE upon a profession should provide the following information for analysis:

- Information that shows that the knowledge base for the profession or occupation is changing,
- Independent studies that show MCE is effective in assuring the competency of practitioners, and
- Any assessment tool that shows the effectiveness of MCE.

While the statute does not explicitly state that the onus to illustrate the need for MCE is on an applicant, considering these provisions, it is a reasonable inference.

The information submitted by the Applicant is summarized in the “Proposal for Continuing Education” section of this report. It bases the argument for MCE on two premises: statements concerning technical changes in the profession and a listing of states which currently have a mandatory continuing education requirement.

The first premise for MCE, the Applicant’s statement concerning changes to the profession, assumes a position that land surveying continually evolves and therefore PLSs need MCE. A statement of this nature advances the notion that without MCE, licensees will not perform competently. However, there is no substantiation provided to verify that this is a problem for those currently licensed and practicing. Changes in a profession alone are not a sufficient rationale for imposing MCE. Indeed, most professions and occupations change over time and market dynamics typically encourage professionals to keep abreast of innovation. There is no assertion, by the Applicant, that industry changes affect, or have affected, the foundational knowledge, training, or course content associated with the degree programs or the national examinations, which are the principal tools for determining competency under the Colorado licensing scheme. Nor does the Applicant address the competency of those licensed through experience and examination.

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<sup>13</sup> § 24-34-901, C.R.S.

In conjunction with this review, COPRRR staff contacted Board staff to test the notion of competency. Board staff provided licensing and disciplinary data to help determine the need for more competent land surveyors in Colorado. Tables 1 and 2 show data provided concerning the number of PLS licensees and the number of actions taken by the Board regarding those licensees.

**Table 1**  
**Active PLS Licensees**  
**Fiscal Years 14-15 through 16-17**

	<b>FY14-15</b>	<b>FY 15-16</b>	<b>FY 16-17</b>
Licensed Professional Land Surveyors	1,835	1,711	1,727

**Table 2**  
**Board Actions Taken**  
**Fiscal Years 14-15 through 16-17**

	<b>FY 14-15</b>	<b>FY 15-16</b>	<b>FY 16-17</b>
Dismissed	8	13	15
Dismissed with Confidential Letter of Concern	1	2	2
Cease and Desist Orders	2	0	1
Letter of Admonition	1	1	4
Practice Stipulation	7	7	4
License Suspension	1	0	0
Voluntary Surrender of License	4	1	0
License Revocation	0	0	0
<b>Total Actions Taken</b>	<b>24</b>	<b>24</b>	<b>26</b>

Table 1 shows that there was an average of 1,758 individuals licensed annually by the Board during the period examined. Table 2 reveals that there were actions taken on 1.3 percent of the licenses in fiscal year 14-15,<sup>14</sup> and 37.5 percent of those actions were dismissals;<sup>15</sup> in fiscal year 15-16, there were actions on 1.4 percent of the licenses, and 62.5 percent of those were dismissals; and in fiscal year 16-17 there were

<sup>14</sup> 24 Actions/1835 Licensees = 1.3%.

<sup>15</sup> 9 Dismissals/24 Actions = 37.5%.

actions taken on 1.5 percent of the total licenses, and 65.4 percent of those were dismissals.

However, that there are very few complaints levied versus the number of licenses issued is only part of the story. COPRRR examined the nature of complaint allegations made against licensees. This information is in Table 3.

**Table 3  
PLS Complaint Allegations  
Fiscal Years 14-15 through 16-17**

	<b>FY 14-15</b>	<b>FY 15-16</b>	<b>FY 16-17</b>
Unlicensed Practice	1	0	1
Practice w/ expired license	5	3	6
Standard of Practice - Technical	15	3	13
Standard of Practice - Rules of Conduct	1	3	9
Violation of Board Order	4	2	1
False or Misleading Advertising	0	0	1
False Attestation on Application	1	0	0
Disciplinary Action Take in Another State	1	1	0
Unlicensed Practice of Engineering by a Land Surveyor	2	0	0
<b>TOTAL</b>	<b>30</b>	<b>12</b>	<b>31</b>

Table 3 shows that considering the entire period examined for this report, 60 percent, of the complaints alleged standard of practice violations. Those are violations that question the competence of a licensee. In other words, approximately 0.8 percent of licensees had alleged competency issues.

Furthermore, considering the entire three-year period together reveals that there were no licenses revoked and only 18 licensees were ordered to work under a practice stipulation. Consequently, even when competency was an issue, it was not an egregious problem. Analysis of these data illustrate that the overwhelming majority of licensees performed competently.

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Under the Colorado licensing scheme, assuring a minimum, yet appropriate, level of competency is the means by which the public's interests and safety are protected. While it may be desirable for land surveyors across the spectrum of the profession to keep current with changes in the practice, such "desirability" does not equate to a sufficient basis for government to mandate additional regulatory requirements.

The Applicant must illustrate that there is a reasonable nexus for any proposed MCE to alleviate incompetencies not accounted for under the Colorado licensure regime. The Applicant does not establish any rational connection or relationship between advances in technology and the competency of PLSs licensed under the Colorado regulatory program.

Moreover, the Board has the ability to compel a licensee to work under a practice stipulation. A stipulation often means that a licensee must have work reviewed, must take a refresher class, or must work under the supervision of another PLS. This type of action most closely resembles one that would indicate the need for MCE. Still, the Board issued stipulations against very few licensees. While the number of stipulations ordered compared to complaints made appears high, at approximately one-quarter of the actions in any year, a stipulation was ordered against no more than 0.4 percent of the licensees during the period examined for this review. Again, the data indicate an extremely high level of competent practice by those issued a license.

Colorado is not alone in not requiring MCE. The Applicant provided information showing that 44 states currently carry an MCE requirement. Of those states, 21 require 30 MCE hours every two years. In spite of the number of states with a requirement, no objective data was provided that confirms an improvement in the quality of practice. What exists are subjective evaluations by interested parties in those states where MCE exists.

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## Conclusion

COPRRR is charged with determining whether MCE would likely protect the public served by professional land surveyors. With respect to the application submitted by the Applicant, an affirmative conclusion is not warranted based upon the information provided in the application and COPRRR review and analysis of that information. The Applicant did not establish that the public using the services of professional land surveyors would likely be better protected from current or predicted harm through the imposition of MCE.

Among the determinations made by this analysis are:

- The overwhelming majority of professional land surveyors currently licensed perform their jobs without incident;
- The Applicant failed to demonstrate that the knowledge base for the professions across the board is changing such that MCE is necessary to maintain the required minimum, yet appropriate, level of competency contemplated under a Colorado regulatory scheme;
- The Applicant failed to demonstrate the efficacy of MCE with respect to maintaining or assuring competency of practitioners; and
- The likelihood of a consumer being harmed by a PLS under the current licensing scheme is remote.

For these reasons, increasing the regulatory burden on licensees as proposed under the subject application is unjustified. The General Assembly should not impose a mandatory continuing education requirement on professional land surveyors.