

**STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS
AND PROFESSIONAL LAND SURVEYORS**

Submitted by the
Colorado Department of Regulatory Agencies
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Executive Summary

Colorado has regulated engineers since 1919 and land surveyors since 1921. The link between the two professions is a historic one, as years ago both engineers and land surveyors could practice as land surveyors. Today, public land surveying has been removed from most engineering academic programs, so engineers may practice as land surveyors only if they have been licensed as a professional land surveyor. Presently, the State Board of Registration of Professional Engineers and Professional Land Surveyors regulates the two professions.

The Department of Regulatory Agencies has completed a sunset evaluation of the current program and has established a need for the continuation of the program. During the evaluation process, it was determined that certain statutory changes are necessary to clarify the law and to allow for improved enforcement of the program.

The report makes the following key findings and recommendations:

1. The engineering exemptions in the statute are outdated and in some cases do not adequately provide for public protection, therefore the "municipal exemption" should be deleted.
2. The Board should be given greater flexibility in imposing penalties by allowing fines to be imposed.
3. To ensure that land surveyors are qualified to practice, improved education and experiential requirements are proposed.
4. Cease and desist authority is recommended as a much faster and less expensive way to halt unlicensed activity.
5. Currently, engineers and land surveyors must notify the Board of a final judgment or settlement against them. It is recommended that insurance companies also be required to notify the Board of such actions.
6. It is recommended that the articles regarding land surveying record requirements, minimum standards for land surveys and plats, and perpetuation of land survey monuments be substantially revised.
7. The requirements for the corporate practice of engineering and land surveying should be amended to require that the professional engineer or land surveyor in responsible charge be a corporate officer of the corporation.

I. Background

Sunset Process

The regulation of Professional Engineers and Professional Land Surveyors pursuant to article 25 of title 12, C.R.S. is scheduled to terminate on July 1, 1994 unless continued by the General Assembly. During the year prior to that date, it is the responsibility of the Department of Regulatory Agencies to conduct a sunset review and evaluation of that regulatory program.

During this review, the Director of the Division of Registrations must demonstrate that there is a need for the continued existence of the program and that the regulation it provides is the least restrictive consistent with the public interest. The Department's findings and recommendations are submitted via this report to the Joint Legislative Sunrise and Sunset Review Committee of the Colorado General Assembly. (Statutory criteria used in this sunset review may be found in Appendix A of this report).

The sunset review process includes an analysis of the statute and rules, interviews with Board members, staff, state officials, professional association members, licensees, assistant attorneys general, and industry representatives. Research on related statutes and regulation in other states is also included.

Historical Perspective

Concern over the profession of engineering goes back to ancient civilization and the laws of Hamurabi over 3,000 years ago.

"If a builder erects a house for a man and does not make its construction firm and the house which he built collapsed and caused the death of the owner of the house, the builder shall be put to death. If it causes the death of the son of the owner of the house, they shall put to death a son of the builder."

While regulation of engineers in the United States does not carry with it such severe penalties for malpractice, by 1947, all 50 states had laws regulating the practice of engineering.

The Colorado State Board of Engineer Examiners was first created in 1919, consisting of four members appointed by the Governor. Two years later, that law was repealed and the State Board of Examiners for Engineers and Land Surveyors was created, consisting of five engineers. Both licensed engineers and licensed land surveyors were authorized to practice land surveying. At this time, exemptions to the law were granted to employees of the federal government and any political subdivision.

In 1927, the terms "licensed engineer" and "licensed land surveyor" were changed to "registered engineer" and "registered land surveyor". It was made a misdemeanor to use the term "engineer" or "engineering" preceded by "chemical", "civil", "consulting", "electrical", "heating", "mechanical", "mining", "sanitary", "structural", "ventilating", or other prefix in attempting to mislead or deceive the public as to the nature of the service offered.

The law was repealed and reenacted in 1951 with substantial changes. "Engineer" became "professional engineer"(PE). Exemptions to the registration law were added for persons who operate or maintain machinery or equipment, who perform engineering services for themselves, who perform engineering services under the control and direction of a registrant, or who's work is strictly agricultural and is not required to be of public record.

The reenacted law also initiated the certification of engineers-in-training (EIT) and mandated that only registered land surveyors, not professional engineers, could practice land surveying.

In 1953, the name of the board was changed to the State Board of Registration for Professional Engineers. The experience requirement for engineering applicants was amended and registered engineers could now be disciplined for conviction of a felony based upon a plea of guilty or nolo contendere.

County surveyors were required to be registered in 1963. The amended law in 1963 also required registered land surveyors to be high school graduates with six years of experience and to pass a written examination on specified subjects with a score of at least 70%. At this time land surveying was redefined.

The 1965 revision of the Engineering Practice Act further expanded the grounds for disciplinary action, increased the number of board members to seven engineers and amended the requirements for certification of EITs and registration of PEs.

In 1967, a number of land surveyor provisions were amended to expand the definition of the practice and the governing board became the State Board of Registration for Professional Engineers and Land Surveyors. In addition, the composition of the Board was changed to require that two board members have both engineering and land surveying licenses. Three new articles were enacted regarding minimum standards for land surveys and plats, a "Colorado coordinate system", and perpetuation of land survey monuments.

The definition of the practice of engineering was amended in 1975 to exclude superintendence of any contractor's or subcontractor's processes, equipment or personnel for the purpose of maintaining a safe work place, unless that responsibility was specifically assumed by contract. In addition, the three land surveying articles added in 1967 were amended.

Both the engineer and land surveyor practice acts were repealed and reenacted in 1981. The board's name was changed to the State Board of Registration for Professional Engineers and Professional Land Surveyors and its composition was changed to its current status. The surveyor quorum of the board was also created to administer the land surveyor statute and was composed of, at least, two land surveyor members of the board and one PE board member. In addition to other grounds for disciplinary action, the board was authorized to take action for any crime deemed by it to render a registrant unfit to practice. The registration and certification requirements for PEs, EITs, and PLSs were changed, certification for surveyors-in-training was initiated, and minimum age requirements were eliminated for all applicants.

The statute was again repealed and reenacted in 1985. One major change was that the experience requirements for PE licensure were again increased. In 1987, the section on disciplinary proceedings for both engineers and land surveyors was amended to provide for administrative hearings by administrative law judges.

Legislation enacted in 1988 was a result of the recommendations made during the Sunset Review process. The law was revised to include an exemption for persons employed by and performing engineering services for the federal government. Several provisions were added as grounds for discipline for both engineers and land surveyors, including the use of false, deceptive, or misleading advertising; performing services beyond one's competency, training, or education; failure to report to the board any registered engineer known to have violated any provision of the act; excessive use of any habit-forming drug; or failure to report to the board any malpractice claim regarding engineering services that is settled or in which judgment is rendered. The revisions in 1988 also authorized the board to issue letters of admonition, and eliminated "good character" requirements for licensure. At this time, the land surveying statute was amended to grant the board the authority to enforce violations of Title 38.

Recent Proposed Legislation Affecting Land Surveyors

House Bill 93-1087, introduced and defeated during the 1993 legislative session, would have empowered the Board to require that professional land surveyors, through continuing education, demonstrate continuing professional competency as a condition of renewal or relicensure.

As part of the communication that occurred between the Department of Regulatory Agencies (DORA) and the Professional Land Surveyors of Colorado (PLSC), the society requested that DORA include a discussion of continuing education in this sunset report. The association specifically asked that the continuing education requirement be a recommendation of this review.

The Department of Regulatory Agencies firmly believes in the importance of both initial and continuing education for land surveyors. Education clearly benefits the public and the practitioner and helps to assure that land surveying services will be provided competently. However, the question to be answered in this review is not whether education is valuable but whether the State of Colorado should involve itself in the business of creating a market for purveyors of continuing education courses.

Tying mandatory continuing education requirements to licensure renewal often gives the public false assurances about the competency of the practitioner. Boards generally have no way to maintain any internal integrity in mandatory continuing education programs and usually relegate themselves to monitoring attendance (which they cannot, in fact, monitor), granting general approval to programs and other record keeping functions. Many of the benefits of mandatory continuing education have accrued to the providers of these programs, rather than to the public.

There is no objective study or proof which shows that mandatory continuing education translates into continued competency for land surveyors. That connection is critical to establishing the state's obligation to enforce such requirements. Until that connection is clearly established, the Department encourages alternatives to mandatory continuing education.

In Colorado, only six of the 22 boards within the Division of Registrations still have continuing education requirements. Boards in the Division can also use continuing education as a remedial tool in disciplinary procedures under 24-34-106, C.R.S. Such use would target a practitioner's weak areas of practice and could reasonably be expected to benefit the practitioner and protect the public, whereas state mandated general continuing education requirements fulfilled for purposes of obtaining license renewal generally do not. The Department of Regulatory Agencies is not suggesting that continuing education is not beneficial. In fact, the Department supports the concept that all persons in various occupations should keep abreast of new developments in their occupations and keep their skills current. The Department recommends, however that such continuing education not be legislatively mandated.

II. Summary of Current Statute and Rules

Engineering Statute

The Legislative Declaration creating the regulatory scheme declares that, "In order to safeguard life, health, and property and to promote the public welfare, the practice of engineering is declared to be subject to regulation in the public interest. It shall be deemed that the right to engage in the practice of engineering is a privilege granted by the state through the registration board; that the profession involves personal skill and presupposes a period of intensive preparation, internship, due examination, and admission; and that a professional engineer's license is solely his own and nontransferable." (12-25-101, C.R.S.)

Scope of practice

The statute defines the practice of engineering as any professional service or creative work requiring engineering education, training, and experience and the application of special knowledge of the mathematical and engineering sciences. Only licensed or exempt persons and corporations may use the titles civil engineer, structural engineer, chemical engineer, petroleum engineer, mining engineer, mechanical engineer or electrical engineer. It does not prohibit the general use of the words "engineer", "engineered" and "engineering", as long as the person or corporation is not unlawfully practicing engineering.

Exclusions

The statute provides for the following exclusions from the requirement of licensure as an engineer:

- * persons who normally operate and maintain machinery or equipment;
- * persons who perform engineering services for themselves;
- * professional associations, firms or their employees who perform engineering services for themselves or their affiliates;
- * persons performing engineering under the control and direction of a registrant;
- * work of a strictly agricultural nature which is not required to be of public record;
- * professional land surveying;
- * employees of county or municipal governments;

- * other legally recognized professions; or
- * employees of the federal government performing engineering services solely for the federal government.

Professional service corporations

Firms, partnerships and corporations are not registered to practice engineering. PEs may practice through these entities provided at least one person in responsible charge is a licensed PE, and all plans, drawings, designs, specifications and reports bear the PE's seal (12-25-104, C.R.S.).

Board composition

The Statute sets up a nine member type 1 policy autonomous board in the Division of Registrations of the Colorado Department of Regulatory Agencies. Four of the members are professional engineers (PE) with no more than two in the same discipline of engineering. One member is both a professional engineer and land surveyor and two members are professional land surveyors (PLS). Two members of the Board are public members.

Powers of the board

The board is empowered to perform the following duties under 12-25-107, C.R.S.:

- * Promulgate rules and regulations;
- * Conduct examinations;
- * Require PE applicants to demonstrate competence by examination, education and examples of work;
- * Adopt an official seal;
- * Adopt rules of professional conduct for professional engineers and land surveyors;
- * Keep a record of proceedings and all applications;
- * Prepare an annual fiscal year report;
- * Publish a roster of licensees annually to be given to each licensee;

- * Provide information to the public regarding the engineering laws;
- * Give examinations;
- * Discipline registrants;
- * Have at least six regular meetings each year;
- * Participate in the affairs of the National Council of Engineering Examiners and send a minimum of one delegate to the national meeting annually;
- * Employ at least one "consultant" qualified to investigate complaints relative to the provisions of the Engineering Practice Act (Act).

Qualifications for the engineering license

A person who wishes to become licensed as a professional engineer in Colorado must meet the qualifications established in 12-25-114, C.R.S.:

- * Pass the principles and practice of engineering examination. To be admitted to the examination an application must either;
- * Graduate from a board-approved engineering curriculum of four or more years, have eight years of progressive engineering experience (of which educational study may be a part), and be a Colorado engineer-in-training (EIT); or
- * Graduate from a board-approved engineering technology curriculum of four or more years, have ten years of progressive engineering experience (of which educational study may be a part), and be a Colorado engineer-in-training (EIT); or
- * Graduate from an engineering curriculum of four or more years not approved by the board or from a related science curriculum of four or more years, have ten years of progressive engineering experience (of which educational study may be a part), and be a Colorado engineer-in-training (EIT); or
- * Graduate from an engineering curriculum of four or more years or from a related science curriculum of four or more years and have twenty years of progressive engineering experience (of which educational study may be a part); or
- * Have twelve years of progressive engineering experience, of which educational study may be a part and have been enrolled as an engineer-in-training in the state of Colorado.

The Board has the discretionary power to waive the examination requirement for persons licensed in other states if the license was issued on the basis of requirements not in conflict with Colorado law and standards which were comparable to those in effect in Colorado at the time the license was issued.

Grounds for discipline

The Board is authorized to suspend, revoke, deny, or refuse to renew a license (12-25-108, C.R.S.). The Board is also empowered to issue a letter of admonition or impose probation on any professional engineer or engineer-in-training. Some grounds for disciplinary action under the Act are:

- * Using fraud or deceit in obtaining a license;
- * An act or omission which fails to meet the generally accepted standards of engineering practice;
- * Conviction of or pleading guilty to a felony, pursuant to 24-4-101, C.R.S.;
- * Violation of the rules of conduct adopted by the board;
- * Performing services beyond one's competency, training, or education;
- * Habitual intemperance in the use of any habit-forming drug, any controlled substance, or any alcoholic beverage; and
- * Failure to report to the board any malpractice claim that is settled or in which judgment is rendered.

Disciplinary proceedings

The State Board of Registration for Professional Engineers and Professional Land Surveyors is empowered to conduct hearings regarding any of the matters within its purview, either on its own motion or on the complaint of any person. Such hearings are required to be conducted pursuant to the Administrative Procedure Act (APA) (12-25-109, C.R.S.). In connection with such complaints, the Board has the power to conduct investigations, to issue subpoenas to compel the attendance of witnesses and the production of documents, and to apply for injunctive relief to restrain any violation.

Land Surveying Statute

The Legislative Declaration creating the regulatory scheme declares that, "in order to safeguard life, health, and property and to promote the public welfare, the practice of professional land surveying in Colorado is declared to be subject to regulation. The practice of professional land surveying shall be deemed a privilege granted by the state of Colorado based on the qualifications of the individual as evidenced by his licensing and registration."

Scope of practice

The statute defines the practice of land surveying as any service or work which involves "the application of special knowledge of the principles of mathematics, the related physical and applied sciences, and the relevant requirements of law for measuring and locating the points, lines, angles, elevations, and man-made features in the air, on the surface of the earth, within underground workings, and on the beds of bodies of water for determining relative position and areas as they pertain to the monumenting of property boundaries, condominium measurements, and for the platting and layout of lands and subdivisions thereof, including the topography, alignment, and grades of streets and for the preparation and perpetuation of maps, record plats, field note records, and property descriptions that represent these surveys.

Exclusions

The statute provides for the following exclusions from the requirement of licensure as a land surveyor:

- * persons performing land surveying under the control and direction of a registrant;
- * other legally recognized professions; or
- * employees of the federal government performing surveying services solely for the federal government.

Professional service corporations

Firms, partnerships and corporations cannot be licensed to practice land surveying. A PLS may practice through these entities provided at least one person in responsible charge is a licensed PLS, and all documents, plats, and reports bear that PLS's seal.

Qualifications for the land surveyor license

A person who wishes to become licensed as a land surveyor in Colorado must meet the qualifications established in 12-25-214, C.R.S.:

- * pass the principles and practice of surveying examination and the legal aspects of surveying examination. To be admitted to the examination an applicant must either:
- * graduate from high school or its equivalent, have six years of progressive land surveying experience (of which educational study may be a part), and be a surveyor-in-training (SIT); or
- * graduate from a board-approved surveying curriculum of four or more years, have two years of progressive land surveying experience, and be a surveyor-in-training.

A professional land surveyor licensed in another jurisdiction may be licensed in Colorado if the license was issued on the basis of requirements and standards which were comparable to those in effect in Colorado at the time the license was issued. All such licensees must take and pass the Colorado examination on Colorado land surveying laws.

Grounds for discipline

The board is authorized to suspend, revoke, deny, or refuse to renew a license. The Board is also empowered to issue a letter of admonition or impose probation on any professional land surveyor or surveyor-in-training. Some grounds for disciplinary action under the Act are:

- * using fraud or deceit in obtaining a license;
- * an act or omission which fails to meet the generally accepted standards of the practice of land surveying;
- * conviction of or pleading guilty to a felony that is related to the ability to practice land surveying;
- * violation of the rules of conduct adopted by the board;
- * performing services beyond one's competency, training, or education;
- * habitual intemperance in the use of any habit-forming drug, any controlled substance, or any alcoholic beverage;

- * failure to report to the board any malpractice claim that is settled or in which judgment is rendered.

Any person practicing land surveying in the State of Colorado who is not statutorily exempt under 12-25-203, C.R.S., is engaged in the unlawful practice of land surveying. Pursuant to 12-25-205, C.R.S., any person found guilty of the unlawful practice of land surveying commits a class three misdemeanor and upon conviction can be punished as provided in 18-1-106, C.R.S. (minimum sentence \$50 fine; maximum sentence 6 months imprisonment or \$750 fine or both. In addition to the above criminal penalties, 12-25-209(8), C.R.S. permits the board to apply for injunctive relief in the manner provided by the Colorado Rules of Civil Procedure to prevent the unauthorized practice of land surveying.

Surveys and Boundaries

In addition to Title 12, Article 25, Part 2, C.R.S., the practice of land surveying is regulated by the following:

Title 13, Article 80, C.R.S. - Limitation of Actions Against Land Surveyors: Details the statute of limitations for legal disputes against a land surveyor.

Title 18, Article 4, C.R.S. - Entry to Survey Property with Exception to Criminal Trespass: Provides an exception to the trespass laws.

Title 38, Article 44, C.R.S. - Establishing Disputed Boundaries: Details procedure for resolving disputed boundaries.

Title 38, Article 50, C.R.S. - General Provisions for Surveys and Boundaries: Discusses the authority of the County Surveyor and the Board of County Commissioners.

Title 38, Article 51, C.R.S. - Minimum Standards for Land Surveys and Plats: Describes procedures for monumentation of land surveys, requirements for land survey plats, and guidelines for improvement location certificates.

Title 38, Article 52, C.R.S. - Colorado Coordinate System: Establishes the Colorado Coordinate System, which is an international method of locating points on the earth's surface. The use of the Colorado Coordinate System by surveyors is optional.

Title 38, Article 53, C.R.S. - Perpetuation of Land Survey Monuments: Establishes the filing of monument records. Requires that a land surveyor file the monument record with the board within six months of the date on which the monument was established, restored, or rehabilitated.

Summary of Rules and Regulations

Pursuant to its authority under the Act, the Board has promulgated 17 pages of rules and regulations, plus a Code of Professional Conduct in order to interpret and explain more fully the provisions of the Act. The rules and regulations discuss applications and reapplications, experience requirements, examinations, educational requirements, sealing of documents, expired licenses, registration by endorsement, declaratory orders, physical standards for monumentation, standards for property boundary surveys, and horizontal and vertical controls for mapping. Since many important provisions governing the practice of engineering and land surveying in the State of Colorado are specified and further clarified in the Board's rules and regulations, and since these rules and regulations have the force of law, it is often necessary to consult both the Statute and its related rules in order to fully understand Colorado's requirements for land surveying and engineering.

Rule One of the regulations deals with applications and reapplications. It provides for the requirements for application, eligibility for board review, verification of college education, verification of licensure in another state, and qualifications for admittance to the engineering examination. Rule Two discusses applications from candidates with degrees from foreign schools. Rule Three specifies the retention period for applications for enrollment, certification or registration in both engineering and land surveying. Verification of references is detailed in Rule Four.

Rule Five sets out the specific type of experience which is required for a land surveyor or engineer license to be issued. It details rules determining whether experience is progressive, based on quality, responsibility, and length of time practicing. This rule specifically states that experience may not be anticipated and must have been received at the time the application was made.

Rule Six discusses educational requirements and is intended to verify exactly what constitutes an acceptable education for engineers and land surveyors for the purpose of State licensure. These rules establish minimum standards which apply to all examination candidates. The rule defines the specific hour and coursework requirements necessary for being granted credit in engineering and land surveying.

Rule Seven of the regulations provides specific examination information, from failure to attend an examination to the procedure for furnishing examination results.

Rule Eight further defines the requirements for sealing of documents found in C.R.S. 12-25-117 and 12-25-217. These requirements include the specifics of the type of seal to be used. It details the type of documents that require an engineer or land surveyor's seal and requires that the seal and signature only be used when the work being stamped was under the licensee's direction and control.

Rule Nine discusses the procedure for reinstating expired licenses. Rule Ten defines the term "malpractice claim" pursuant to 12-25-108(k), C.R.S., which addresses the requirement that professional land surveyors and engineers must report claims which have been settled or upon which judgment has been rendered. Rule Eleven describes the procedure to follow when seeking registration by endorsement from a foreign country.

In order to comply with Section 24-4-105(11) of the Colorado Administrative Procedure Act (APA), the Board has promulgated Rule Twelve, which discusses its role in issuing declaratory orders. The Board will issue such orders under certain circumstances upon petition. In the event the Board makes a ruling, the Board action constitutes final agency action subject to judicial review pursuant to the State APA.

Rule Thirteen refines the requirements for physical standards for monumentation found in 38-51-101, C.R.S., while Rule Fourteen establishes horizontal and vertical controls for aerial and topographic mapping. Rule Fifteen sets the standards for property boundary surveys by discussing records, procedural techniques, monumentation, publication of results, and precision and accuracy standards. Rule Sixteen details the minimum standards for improvement location certificates.

The Code of Professional Conduct promulgated by the Board sets out standards for conduct by land surveyors and engineers who are licensed in Colorado and, like the other regulations, carries the force of law.

III. Interface Between the Board and Other Colorado Agencies

Rules, regulations and policies of other state departments may permit unlicensed engineers to perform certain functions that are contradictory to the Engineering Practice Act. The practice of land surveying has also been found to conflict with requirements of other state agencies.

The Board of Registration of Professional Engineers and Professional Land Surveyors has adopted memoranda of understanding and resolutions relating to other state departments to address these concerns. The following summaries illustrate:

Department of Transportation. The Memorandum of Understanding signed between the Board and the Department of Transportation clarifies the policy of professional land surveying within the Colorado Department of Transportation as it applies to preliminary surveys, control survey diagrams, right of way plans, legal descriptions, and the placement of right of way markers along the boundaries of Colorado Department of Transportation right of way.

The intent of the memorandum was to bring the Colorado Department of Transportation into compliance with state statutes, Board bylaws and Rules of Procedure and Rules of Professional Conduct as applied to professional land surveying. The original memorandum was effective July 1, 1985 for all preliminary surveys, right of way plans, and placement of right of way markers. The most recent memorandum of understanding was updated as of January 1, 1992.

Department of Health. The State Board of Registration for Professional Engineers and Professional Land Surveyors adopted a resolution regarding the Colorado Department of Health (DOH) rules and regulations pertaining to the engineering design of solid waste disposal sites and facilities. The Department of Health rules and regulations possibly permitted unlicensed engineers and other unregulated professionals to engage in the design of solid waste disposal sites.

The Board recommended to the DOH that it promulgate rules and regulations that recognize the requirements established by the Engineering Practice Act. In addition, the Board encouraged the DOH to require that the engineering design of all solid waste sites and facilities in the State of Colorado be coordinated under the direction and control of Colorado licensed professional engineers in accordance with established engineering design criteria and protocol.

The State Board of Health is currently considering the recommendation made by the Board of Engineers and Land Surveyors as part of their rule-making process.

Colorado Oil and Gas Commission. The Colorado Board of Professional Engineers and Professional Land Surveyors objected to a rule draft proposed by the Colorado Oil and Gas Commission that well location plats need not be prepared by a licensed land surveyor. The State Board of Professional Engineers and Professional Land Surveyors argued that preparation of a well location plat is the practice of land surveying. The Board further argued that from a public policy standpoint, ensuring that wells are correctly located and meet Commission location and set back requirements protects the fee owner, lease owner, and operator. Furthermore, public health, safety, and welfare concerns are better addressed prior to the commencement of the drilling of a well.

The Board requested that the Commission require applicants for well location permits to acknowledge the Board's authority by requiring such applicants to comply with statutory requirements. In the Board's opinion, any rule adopted by the Commission which fails to require compliance with 12-25-201, C.R.S. *et seq.*, but requires that a well location plat be drawn to supply the same information currently required by the land survey plat law (38-51-102, C.R.S.) essentially condones the unauthorized practice of land surveying.

The Colorado Oil & Gas Commission, however, adopted rules that do not require that the preparation of a well location plat be performed by a licensed land surveyor.

IV. Other State and International Regulation

Other States' Regulation

Laws regulating the practice of land surveying and engineering are common to all 50 states as well as Puerto Rico, Guam, Northern Mariana Islands and the U.S. Virgin Islands. The District of Columbia does not license land surveyors. In most cases, these laws set out various requirements for obtaining licensure, including education, examination, and experience requirements. According to a 1992 survey conducted by the National Council of Examiners for Engineering and Surveying (NCEES), thirty-seven states license engineers and land surveyors under the same board (eight of those 37 boards also license architects) and thirteen license them separately.

The corporate practice laws of the various states vary a great deal from jurisdiction to jurisdiction. While almost every state permits the corporate practice of engineering, the language used in each of the state statutes is very different.

Overall there is more national uniformity in the licensure of engineers than land surveyors, although there is still diversity in terms of acceptable educational and experiential backgrounds. Among the important similarities in state engineering and land surveying laws are the following:

1. All 50 states license engineers and land surveyors.
2. All 50 states use the NCEES "fundamentals" and "principals and practices" examination for engineers.
3. All but seven states restrict the use of the term "engineer".
4. Only one state (Iowa) requires mandatory continuing education for engineering license renewal, while six states require mandatory continuing education for land surveying license renewal.
5. A significant majority of the states, 39, register the professional engineer status only (PE). The remaining states license by specific engineering discipline.
6. Approximately one-third of states recognize an engineer registration exemption for state government and municipal government.

7. Almost every state requires that all drawings, plans, specifications, plats, reports, and similar documents, involving the practice of engineering and land surveying must be dated, signed and bear the seal and registration number of the professional engineer or professional land surveyor in responsible charge of the engineering or surveying work or activity.

Colorado's regulatory scheme appears to be about average in terms of restrictiveness. Colorado law does not license by discipline nor does the law require continuing education for renewal. The presence of an active State Board of Registration for Professional Engineers and Professional Land Surveyors provides a significant measure of competency assurance, through enforcement and monitoring activities.¹

Reciprocity and the North American Free Trade Agreement

The advent of the North American Free Trade Agreement (NAFTA) illustrates the need for professional engineers to achieve international mobility without undue constraints and a continuing need for monitoring standards for professional practice. While procedures and processes may vary from jurisdiction to jurisdiction, the major elements of education, experience, and examination need to be determined to enable engineers to practice internationally. To address the issue of NAFTA, the Professional Engineers Council of North America (PECNA), a consortium of representatives from Canada, Mexico and the United States, was formed. PECNA, which includes representatives from the Canadian Council of Professional Engineers (CCPE), from the United States Council for International Engineering (USCIEP), and from the Mexican engineering group, became the informal negotiating group of the three countries. PECNA is currently developing and negotiating an agreement regarding international exchange of engineering services.

In 1992, Canada and the United States signed an interim Free Trade Agreement (FTA) that incorporates trade in services, including trade in engineering services. This was the first time professional services had been incorporated into such an agreement. The Canadian Council of Professional Engineers (CCPE) and the United States Council for International Engineering Practice (USCIEP) developed a set of procedures to put into effect the provisions of the Free Trade Agreement with respect to engineering services. The agreement acknowledged the two countries' credentials regarding engineers under the following conditions:

- * licensed in a least one state or province;
- * obtained an accredited engineering degree;
- * acquired at least 15 years of working experience.

¹ Source: NSPE, *State Engineering Legislation and Regulation, 1992*
NCEES, *1992 Survey Information*

Additionally in 1992, a Mexico-United States Engineering Roundtable was held in June and November of 1992. Among issues discussed were:

- * potential benefits of the engineering professions of Mexico and the United States working together;
- * trade possibilities and demographics in Central America;
- * NAFTA issues and opportunities;
- * accreditation systems in the United States and Mexico;
- * examination systems in the United States and Mexico;
- * Canadian Engineering Licensing Law.

Canada, the United States, and Mexico continue to exchange issues and concerns regarding the advent of NAFTA. Meetings are planned for June, 1993 in Austin, Texas and Fall, 1993 in Canada to further explore the conditions under which a favorable agreement can be reached between the three countries regarding the international mobility of the practice of engineering.

V. Regulatory Efforts of the Board of Registration for Professional Engineers and Professional Land Surveyors

The State Board of Registration for Professional Engineers and Professional Land Surveyors administers and enforces the engineering and land surveying laws in the State of Colorado. The daily functions of the Board are carried out by its staff of 5.8 full time equivalent (F.T.E.) employees in the Division of Registrations of the Department of Regulatory Agencies.

Licensing

There are currently 14,859 licensed engineers and 1,720 licensed land surveyors in the State of Colorado. This number has varied over the course of the last five years as indicated on the chart below. However, since there are so many licensure exemptions in the statute for engineers, this number is not an accurate reflection of the number of engineers practicing in Colorado.

Total Number of Licensed Engineers and Land Surveyors in Colorado, 1988-1992		
YEAR	LICENSED LAND SURVEYORS	LICENSED ENGINEERS
1988	1,666	14,919
1989	1,732	15,004
1990	1,695	14,596
1991	1,705	14,580
1992	1,720	14,859

**Total Number of New Licenses Issued Each Year
in Colorado 1988-1993 (to date)**

Year	Land Surveyors	Engineers
1988	57	572
1989	61	616
1990	29	621
1991	44	646
1992	71	654
1993 (to date)	0	268

Examinations

The Board currently administers five examinations, four of which are developed and controlled by the National Council of Examiners for Engineering and Surveying (NCEES). The Board has used the NCEES examinations since 1981. The minimum passing score is determined by the NCEES and is a national standard adhered to by all state licensing boards.

The four NCEES examinations used include the Fundamentals of Land Surveying (SIT), the Principles and Practice of Land Surveying (formerly the PLS Principles and PLS Public Domain), Fundamentals of Engineering (EIT), and the Principles and Practice of Engineering (15 disciplines). The only examination developed by the state of Colorado is the PLS Colorado examination which tests applicants' knowledge of land surveying records, legal principles, and local history. The Colorado examination has gone through standard psychometrics, has been evaluated and successfully fulfills those standards. The table on the next page provides the number of persons who passed and failed each examination during the period of 1988 through 1992.

EXAMINATION RESULTS 1988 THROUGH 1992					
Examinations	No. Examinees	No. Passed	(%)	No. Failed	(%)
EIT Fundamentals	4278	2922	68%	1356	32%
PE Principles/ Practice	2209	1230	56%	979	44%
SIT Fundamentals	358	222	62%	136	38%
PLS Principles *	285	214	75%	71	25%
PLS Public Domain *	346	257	74%	89	26%
PLS Colorado	457	290	63%	167	37%
* PLS Principles and PLS Public Domain Examinations were combined into one exam beginning October 1992.					

Complaint and Investigation Procedure

One of the responsibilities of the staff is the handling of complaints. Complaints against the practices of professional engineers and land surveyors are received by phone and mail at the Board office. The Board itself can also initiate a complaint, as demonstrated by the chart on the following page. The Board Administrator routinely screens complaints to make sure that the Board has jurisdiction to respond and that the complaint at least arguably rises to the level of being a violation of the law. After this initial screening, complaints are either referred to the Complaints and Investigations Section of the Division of Registrations in the Department of Regulatory Agencies or some complaints may be referred directly to the Board.

At this point, the Board or the investigator contacts the licensee, stating the terms of the complaint and requesting a response in writing within 20 days. Once the investigator has had an opportunity to gather facts on the matter, a report of the complaint and the findings of the investigator is prepared and sent to the Board for further action.

The Board has several options it can pursue with respect to each complaint. It can order further study of the complaint by an investigator or by a designated "expert", who in complicated cases performs an evaluation of the technical issues and makes recommendations to the Board. The Board has increasingly addressed violations through letters of admonition or, when appropriate, through stipulations wherein a plan of corrective action is agreed to by the Board and the licensee. If the licensee does not comply with the stipulation, the Board vigorously pursues suspension or revocation of the license.

SOURCE OF COMPLAINTS				
CALENDAR YEAR	CONSUMER	BOARD	ANOTHER LICENSEE	OTHER
1988	9	10	9	0
1989	12	16	12	2
1990	5	40	7	1
1991	14	22	13	2
1992	17	16	21	0
1993 to Date	4	2	4	0

The chart below summarizes the complaints received and investigated by the Board for the last five years.

BOARD OF ENGINEERS AND LAND SURVEYORS SUMMARY OF COMPLAINTS 1988-1993 to date					
CARRY OVER AS OF JULY 1ST	RECEIVED	LAND SURVEYORS	ENGINEERS	COMPLETED INVESTIGATIONS	PENDING HEARING
9 (1988-89)	38	75% of 38 (29)	25% of 38 (9)	28	18
19 (1989-90)	36	75% of 36 (27)	25% of 36 (9)	37	29
18 (1990-91)	65	81% of 65 (53)	19% of 65 (12)	56	12
27 (1991-92)	45	65% of 45 (29)	35% of 45 (16)	61	14
40 (1992-93)	42	43% of 42 (18)	57% of 42 (24)		

Note: The process of complaint, investigation, and hearing may span from one fiscal year until the next. For that reason, formal disciplinary actions taken by the Board in a fiscal year, combined with the dismissals may not equal the total number of complaints for that year. Data reflect cases investigated by the Division of Registrations, Complaints and Investigations Section.

Note: Reason for the increased number of Board filed complaints in 1990 was due to the monumentation research project performed by PLSC. Sections 12-25-108(h) and 208(h), C.R.S. which requires that engineers and land surveyors report to the Board any known violation of the Act by any registered land surveyor or engineer, is also a reason the number of complaints filed by the Board and other licensees is high.

The 1987 Sunset Review of this regulatory program reported that the six year period between July 1981 and April 1987 saw 133 complaints against licensed persons sent to investigations by the Board. The overall rate of complaints during this period was about two per month. Of those, 65% were dismissed (87 of 133). The remaining 35% received further investigation and Board attention and resulted in 6 license revocations. In addition, two licenses were summarily suspended and six licenses were placed on probation.

Current statistics for complaints processed by the Board during the period January, 1988, through April, 1993 show that the rate of complaints has increased, now averaging about 3 1/2 per month. During the last 5 1/2 years, the Board has received approximately 226 complaints total. There is no discernible trend in the number of complaints lodged, except for the increase in 1990 due to the monumentation research project and the enactment of the violation reporting requirements. During the fiscal year 1988-89, 38 complaints were made. The total number of complaints during 1989-90 dropped to 36 but rose to 65 during 1990-91. In 1991-92, there were 45 complaints and 42 complaints during 1992-93.

In response to the complaints received from 1988 through April 1993, Board disciplinary action, as shown on the chart below, has been significant and more vigorous than that indicated in the prior sunset report. Fifty-nine percent of complaints were dismissed during that period as compared to a 65% dismissal rate during the period between 1981 to 1987. The increase in disciplinary actions demonstrates that the Board takes its responsibility seriously and has recommended a strong disciplinary response when violations occur. In fact, 66 cases were referred to the Attorney General for formal disciplinary action resulting in 6 suspensions, 42 stipulations, and 13 revocations (a 100% increase from the period 1981 to 1987). The Board also issued a total of 37 letters of admonition.

Board of Engineers and Land Surveyors Summary of Disposition of Complaints 1988 - 1993 to date						
Disposition Type	1988	1989	1990	1991	1992	1993
Dismissed	14	19	21	42	21	17
LOA*	1	6	8	8	11	3
Stipulation	0	7	3	14	14	4
Suspension	1	0	3	1	1	0
Revocation	0	1	1	2	8	1
Refer to Hearing~	13	6	16	10	19	2

* Letter of Admonition

+ Often the dismissed complaints occur because the respondent has voluntarily corrected the work (most often in land surveying cases).

~ Numbers do not include LOA's because those are usually issued without a referral to hearing unless the LOA is done as part of a stipulation. Numbers may also reflect the referral of multiple complaints against the same licensee.

~
Includes three revocations and 5 licenses surrendered. Licensees who surrendered were previously on stipulations.

VI. Should State Regulation of Engineers and Land Surveyors Continue?

This Board regulates two very different occupations -- engineering and land surveying. The link is a historic one, as years ago both engineers and land surveyors could practice as land surveyors. Today, public land surveying has been removed from most engineering academic programs, so engineers may practice as land surveyors only if they have been licensed as a professional land surveyor.

The Board regulates very different occupations even within the practice of engineering, with the statutory definition of engineering including aeronautical engineers, ceramic engineers, environmental engineers, structural engineers, mechanical engineers, automotive engineers, computer engineers, architectural engineers, and many other specialties. It includes some work in which the potential danger to the public health and safety is very clear, such as with structural engineering and many others in which the potential danger is more obscure.

According to engineers, the common link among the various types of engineering is that engineers apply scientific and technical knowledge to design everything from dams and buildings to electronic instruments.

Professional engineers are licensed practitioners who directly shape both Colorado's physical environment and the quality of life of its citizens. Allowing unlicensed persons to practice engineering and design structures or systems which are intended to be used by the public presents a genuine potential for both physical and economic harm to the public. In contrast, minimum competency standards ensure that the design of structures and systems by engineers in Colorado are safe, cost-effective and suitable for their intended uses. Specific examples of such structures and systems include water systems, sewer systems, landfills, roadways, bridges, building structures, and heating, air-conditioning, and ventilation systems.

However, one argument against mandatory licensing for engineers focuses on the word "public". Clients of engineers are distinguished from the general public because users of major engineering services are likely to know something about the particular industry and business practices generally and will probably require more evidence of competency than mere licensure.

The direct client may be an "informed user" but this is not true, however, of the public who may use the system or structure constructed for a client by an engineer. Licensure acts to protect the using public as well as the direct purchaser of services.

The licensing of engineers benefits all people in Colorado by providing some assurance that substandard service and resultant harm to persons, property, and environment are avoided because licensed engineers are qualified, competent professionals who have met certain minimum education and experience requirements and have demonstrated competency through examination. The regulatory process of the Board provides for protection to the public; initially through the licensing process which ensures minimum competency and, after licensure in those instances when enforcement is necessary, by providing public protection to the consumer through appropriate disciplinary action.

Regulation of Land Surveyors is Needed Also

It is also recommended that the licensure of land surveyors be continued, for the practice of land surveying also impacts the public welfare. There is a long history of licensure of land surveyors both nationally and in Colorado. Colorado land surveyors would be disadvantaged in other states if they were not licensed, especially with regard to reciprocity laws. In addition, given the need for certainty of property boundaries and the value of land statewide coupled with the fact that technical expertise is necessary to properly practice surveying, state regulation should continue.

As demonstrated on page 23 of this report, an average of 68% of the complaints filed in a given year with the Board between 1988 and 1993 to date involved the practice of land surveying. The regulatory process does provide assistance to the public through the disciplinary process. Many of the land surveying cases are settled through the stipulation process, whereby an agreement is reached between the Board and the licensee. It is the standard procedure of the Board to require the licensee to go back and fix the problem that was the basis of the complaint. Typically, if that means that the land surveyor, at his/her own expense, must resurvey a piece of property, have the amended plat approved by the Board and file the amended plat with the county, then that is what is required by the stipulation.

It is the surveyor who has the necessary skill to carefully examine the lands in question, the title deeds, the property descriptions of adjoining lands and subdivisions, in order to locate the boundaries, and ascertain by calculation, the angles and measurements necessary to avoid costly mistakes and prevent needless boundary disputes.

Conclusion

The absence of regulation creates the potential for harm to the public in a number of ways. As previously noted, the consumer would not be able to gauge the competency of engineers and land surveyors because of the absence of licensing requirements and practice standards. The disciplinary process would be lost, which is the primary way to prevent engineers and land surveyors from continuing to provide substandard service.

While there are other methods of regulation available, it is doubtful that these methods would adequately protect the public. The present method of licensure is somewhat restrictive, however, most of the requirements appear necessary to protect the public from potential harm. Applicants for state licensure must satisfy certain educational and practical experience requirements and pass a licensure examination. Licensees must abide by the rules adopted by the Board.

It is the conclusion of the Department of Regulatory Agencies that regulation of professional engineers and professional land surveyors is needed and should continue. The present scheme, with some changes, seems to be the most efficient approach to regulation. The Department also recommends in this report certain changes to the statute and Board promulgated rules and regulations to improve the practice of professional engineering and land surveying in Colorado should the General Assembly choose to continue this regulatory program.

Recommendation 1: The General Assembly should continue the regulation of engineers and land surveyors, pursuant to Article 25, Section 12 of the Colorado Revised Statutes and establish a 10 year Sunset Date.

VII. Statutory and Administrative Recommendations

Introduction:

If the General Assembly decides to continue the regulation of professional engineers and land surveyors under the State Board of Registration of Professional Engineers and Professional Land Surveyors pursuant to C.R.S. 12-25-101, et. seq., the following statutory and administrative recommendations are offered to clarify the statute and improve the regulatory performance of the Board.

DELETION OF EXEMPTIONS

Recommendation 2: The General Assembly should amend the exemption section, 12-25-103, C.R.S. by adding one exemption and deleting several others. The amended section should read as follows:

(1) This part 1 shall not be construed to affect any of the following:

~~(a) Persons who normally operate and maintain machinery or equipment;~~

(b) Persons who perform engineering services for themselves;

(c) Partnerships, professional associations, joint stock companies, or corporations, or the employees of any such organization, who perform engineering services for themselves or their affiliates;

(d) Persons who perform engineering services under the control and direction responsible charge of a registrant;

~~(e) Work of a strictly agricultural nature which is not required to be of public record;~~

(f) Professional land surveying as defined in section 12-25-2-02(6)

~~(g) Any person who is employed by and performs engineering services solely for a county, city and county, or municipality;~~

~~(h) Other legally recognized professions;~~

(i) Any person who is employed by and performs engineering services solely for the federal government.

(j) Practice of architecture as defined in section 12-4-102 (5);

The provisions of C.R.S. 12-25-103, which pertain to exemptions, are outdated and in some cases do not adequately provide for public protection. The current exemptions specified in Paragraphs (a,e,and h) are not relevant to the current practice of engineering. In fact, the Board has encountered public confusion over the appropriate interpretation and application of these exemptions.

The addition of paragraph (j) exempts the practice of architecture from the practice of engineering. These two professions are distinct and the Legislature has seen fit to regulate them separately. The Architecture Practice Act 12-4-112 (5), C.R.S. currently exempts the practice of professional engineering. This recommendation will conform with the exemption section in the Architecture Practice Act.

Paragraph 12-25-103(1)(g) exempts any person who is employed by and performs engineering services for a county, city and county, or municipality from engineering licensure requirements. This provision is commonly known as the "municipal exemption" clause. Federal employees are similarly exempted.

Municipal Exemption

A top priority, in terms of statutory changes, for many engineering professional associations (i.e. Professional Engineers of Colorado, Consulting Engineers Council of Colorado, the American Society of Mechanical Engineers, and the Colorado Engineering Council) is the elimination of the "municipal exemption". They state that this provision does not serve and is at odds with the best interests of the public given the fact that a fundamental purpose of counties, cities and counties, and municipalities is to protect the life, health, property and the public welfare.

The engineering associations argue that in many municipal governments, the head of the public works organization is often an individual not educated in the sciences or engineering and frequently is not licensed as a professional engineer. They further maintain that it is important to distinguish between practicing engineering as an unlicensed individual and managing a municipal organization such as a department of public works. The associations view the latter role as a managerial and administrative position only. By promoting the elimination of the "municipal exemption" clause, they contend that they are not advocating that the heads of public works organizations be licensed professional engineers. Instead, they argue that those individuals employed by municipalities to have responsible charge of the engineering work of the municipality should be licensed professional engineers, and, in all other respects the municipalities should comply with the Engineering Practice Act.

They also point out that many facilities used by the public are designed, constructed and operated by municipalities, counties and the state. In addition, they believe that it is illogical and inappropriate to provide a blanket exemption to such public entities and public facilities given the paramount concern of public safety.

A survey of engineering practice in the public sector was sponsored by the Colorado Sections of the American Society of Mechanical Engineers and the Professional Engineers of Colorado in 1992. The purpose of the survey was to determine and identify those areas of difference in the practice of engineering in the public sector from those in the private sector. Questionnaires were sent to each of the 63 counties in Colorado and to 47 municipalities whose populations were 5,000 or greater. In the case of municipalities, questionnaires were sent to city engineers, when listed, and also to public works directors. In the case of counties, the county engineer was the first choice to receive the questionnaire. If no county engineer was designated, the county director of public works was questioned.

The authors of the "Survey of Engineering Practice in the Public Sector" prepared an analysis of the survey. They concluded from the response to the survey that large cities and counties already employ registered professional engineers and would therefore not be impacted by elimination of the "municipal exemption". In addition, smaller cities and counties with populations below 50,000 generally do not employ licensed professional engineers but generally contract out their engineering design work to a professional engineer. Appendix B further summarizes the responses to the questionnaire and illustrates the conclusions of the questionnaire.

The Colorado Municipal League and Colorado Counties, Inc., have both expressed opposition to the elimination of the exemption. Representatives of both organizations maintain that local government officials are capable of deciding when a licensed engineer is needed for a project, and that the current system is working well. They argue that there are just as many examples of licensed engineers doing improper work as unlicensed local government workers. Local government representatives further state that the scope of engineering is so broad that operations and maintenance activities, such as curb and gutter construction, water and sewer line repair, bike path construction, street maintenance and repair, and sidewalk installation, may fall under the purview of the "practice of engineering".

Both sides agree that the large municipalities and counties already employ licensed engineers and that smaller communities frequently hire engineering consultants. A 1992 survey sponsored by the Colorado Municipal League indicated that 77% of the responding municipalities contract out engineering work. So, if removing the exemption would increase costs, then they would be borne by the smaller, rural communities.

Generally speaking, it makes sense to ensure that qualified people design public projects. Also, it does not make sense that the state would hold an engineer in private practice to one standard, and a local government employee to a lesser standard. It has been argued that no harm has come to the public with the municipal exemption in effect. If this argument is based solely on fatalities from inadequate design then this statement is true. However, the responsibility of public safety does not limit itself to mortality issues.

In most instances, the small community which uses unlicensed personnel to provide

engineering services does not noticeably harm the public. However, how does one really know if the public is damaged when fire hydrants are not properly spaced or a valve is left out of a water distribution system, or a storm sewer or drainage culvert is one size too large or too small? What damage does the public suffer when a road base is not properly evaluated or when a bridge contractor pours concrete in cold weather? The public can suffer financial harm and often does, when such municipal projects are poorly designed and constructed. The financial impact of improper fire protection is most obvious. A valve left out of a water distribution system can cause dozens of homes to be without water when a section of a water main needs to be shut down for repair. The placement of gravel base and asphalt over an improper subbase can cost citizens thousands of dollars.

The public should be assured that they receive the same protection from those who work within the public sector as they presently do from those who work in the private sector. Consequently, the Department of Regulatory Agencies recommends the deletion of the "municipal exemption" effective July 1, 1995. This delayed implementation date would provide a one year transition period for municipalities to comply with the new law.

ANNUAL ROSTER

Recommendation 3: The General Assembly should amend 12-25-107(e) and 12-25-207(d), C.R.S. by deleting the requirement to publish a complete roster annually for both professional engineers and professional land surveyors.

The State Board of Registration for Professional Engineers and Professional Land Surveyors publishes an annual directory which is mailed to all registrants.

In Fiscal Year 1992-93, the Board spent \$40,000 to print and mail the rosters. Due to budgetary constraints and cutbacks in FY 93-94, there are no longer adequate funds to publish the roster.

Professional engineering organizations argue that the roster is used to:

- verify registration status of job applicants;
- verify qualifications of designers for municipal/county projects;
- verify qualifications of the authors of technical engineering reports;

In fact, the use of the roster to verify registration and qualifications is a misuse of the document. The professional engineer listed could have an expired license or prior disciplinary history, which would not be evident from the roster listing. In addition, an assumption should not be made that people are not licensed because their names do not appear in the roster.

The Board presently maintains an updated, computerized listing of Colorado licensed engineers and land surveyors. Therefore, interested parties can contact the Board by phone or mail for information on professional engineers and land surveyors. In addition, the Board will continue to print and distribute the Numerical Listing of Professional Land Surveyors that is currently included in the annual roster.

ADMINISTRATIVE FINING AUTHORITY

Recommendation 4A: The General Assembly should amend C.R.S. 12-25-108 and 12-25-208 to give the Board fining authority in addition to the penalties already provided under the act for violation of any provision of Article 12-25-101 et. seq. and 12-25-201 et. seq. or for any violation of a Board rule or regulation promulgated pursuant to the Act. The amended section should read:

(4) In addition to any other penalty which may be imposed pursuant to this section, any person violating any provision of this article or any rule or regulation promulgated pursuant to this article may be fined upon a finding of a violation by the board as follows:

(a) In the first administrative proceeding against a registrant, a fine of not less than fifty dollars nor more than five hundred dollars for each violation proven;

(b) In any subsequent administrative proceeding against a registrant determining that a violation of this article has occurred, a fine of not less than two hundred fifty dollars nor more than two thousand five hundred dollars for each violation proven.

(c) All fines collected pursuant to this section shall be credited to the general fund.

This recommendation is intended to give the board greater flexibility in imposing penalties by allowing fines to be imposed in appropriate cases as an alternative, or in addition to suspension or revocation of licenses. A fine imposes a penalty without affecting the licensee's ability to stay in business. It would greatly assist the Board in enforcing the Professional Engineer and Land Surveyor Statute if the power to levy fines against violators were granted. Numerous other boards exercise the fining power under Colorado law. This ability assists in tailoring the punishment to the crime, as a small fine can be levied for a minor violation without requiring action against the license itself. As with other Boards which exercise the fining power, all fines collected would be credited to the General Fund.

Recommendation 4B : The General Assembly should amend section 108 and 208 of the Act by adding as grounds for discipline the failure to pay any fine or penalty levied by the Board.

This provision will allow the Board to take action against the license of a professional engineer or land surveyor who refuses to pay a lawfully imposed fine.

PENALTIES FOR UNLICENSED ACTIVITIES

Recommendation 5: The General Assembly should amend 12-25-105 and 12-25-205, C.R.S. to provide the board with authority to fine unlicensed persons practicing land surveying and engineering.

The Board is required to prosecute violations of the Engineering and Land Surveying Practice Act, including acts of unauthorized practice by unlicensed persons. During the past eighteen months, the Board has investigated 30 complaints of unlicensed activity. The purpose of the licensing program is to provide a minimum standard of competency that offers protection to the health, safety, and welfare of the public. Unlicensed practitioners often do not adhere to the same standards that licensed practitioners do. This recommendation will enable the Board to take action against "unlicensed activity".

ELIMINATION OF EIT AND SIT CERTIFICATE

Recommendation 6: The General Assembly should amend C.R.S. 12-25-115(2) and 12-25-215(2) by deleting the requirement to issue EIT and SIT certificates to qualified engineers-in-training and land surveyors-in training.

There is no legal authority to practice engineering or land surveying attached to an EIT or SIT certificate. It merely represents the successful completion of the in-training examination. The elimination of the certificates would streamline operations for the Board. Most of the candidates for these certificates are students and tend to leave Colorado after graduation. It is often very time consuming and difficult trying to locate them in order to issue their certificates.

CORPORATE PRACTICE OF ENGINEERING AND LAND SURVEYING

Recommendation 7: The General Assembly should amend 12-25-104(1)(c) and 12-25-204(2), C.R.S. to require that the engineer or land surveyor in responsible charge of the engineering or land surveying activities of an incorporated business be an officer of the corporation. The amended section should read as follows:

(c) In the case of the practice of engineering (land surveying) through a joint stock association or corporation, engineering (land surveying) services or work involving the practice of engineering (land surveying) may be offered through such joint stock association, LIMITED LIABILITY COMPANY or corporation if the person in responsible charge of the engineering (land surveying) activities of the joint stock association, LIMITED LIABILITY COMPANY or corporation is a professional engineer (land surveyor) licensed and registered pursuant to this part 1 AND IS A CORPORATE OFFICER OF THE CORPORATION.

The current law has been interpreted to mean that the person in responsible charge of engineering (land surveying) activities of the firm must be a registered engineer (land surveyor). However, there is no requirement that this engineer (land surveyor) in responsible charge be an officer of the corporation.

The recommended requirement exists currently in both the Architecture Practice Act and the Accountancy Practice Act. The architecture statutes permit the practice of architecture by corporations under the direct supervision of an architect, licensed in Colorado, who is an officer of the corporation. The accountancy law requires that each partner or shareholder of a partnership or professional corporation in Colorado, in the practice of public accounting must be a certified public accountant in good standing.

Through ownership and managerial control of an engineering or land surveying firm, a professional engineer or land surveyor will be permitted to freely act in the best interest and welfare of the public without having to take direction from, or compromise with, a non-engineer owner who may only see a business profit, loss or opportunity regardless of ethics or public welfare and safety.

In addition, the term "limited liability company" is a recognized type of corporation under Colorado law and should be included in the section regarding forms of organizations permitted to practice engineering and land surveying.

PLS LICENSURE REQUIREMENTS

Recommendation 8: The General Assembly should amend the professional land surveying licensure requirements in C.R.S. 12-25-212- Qualifications for surveyors-in-training and 12-25-214 - Qualifications for professional land surveyor, to expand the education and experience requirements. The amended section should read as follows (new language has been highlighted):

12-25-212. Qualifications for land surveyor-intern. (1)(a) An applicant may qualify for certification as a land surveyor-intern by endorsement if he is enrolled in good standing in another jurisdiction requiring qualifications substantially equivalent to those currently required of applicants under this part 2 or if, at the time of initial enrollment in such jurisdiction, he met the requirements for enrollment then in existence in Colorado law.

(b) Upon completion of the application and approval by the board, the applicant shall be enrolled as a land surveyor-intern if the applicant is otherwise qualified pursuant to section 12-25-211.

(2)(a) An applicant may qualify for enrollment as a land surveyor-intern by graduation and examination if he passes the fundamentals of surveying examination. In order to be admitted to such examination, the applicant must have graduated from a four year board-approved surveying curriculum.

(b) Upon passing the examination the applicant shall be enrolled as a land surveyor-intern if the applicant is otherwise qualified pursuant to section 12-25-211.

(3)(a) An applicant may qualify for enrollment as a land surveyor-intern by education, experience and examination if he passes the fundamentals of surveying examination. In order to be admitted to such examination, the applicant must:

- (I) Have graduated from high school or the equivalent; and
- (II) Have a cumulative record of two years of progressive land surveying experience, of which a maximum of one year of educational credit may be substituted for one year of experience.

(b) Upon passing the examination, the applicant shall be enrolled as a land surveyor-intern if the applicant is otherwise qualified pursuant to section 12-25-211.

12-25-214. Qualifications for professional land surveyor. (1)(a) An applicant may qualify for licensing and registration as a professional land surveyor by endorsement and examination if he passes the required examination pertaining to Colorado law. In order to be admitted to any such examination, the applicant must be licensed in good standing in another jurisdiction requiring qualifications substantially equivalent to those currently required of applicants under part 2 or, at the time of initial licensure in such jurisdiction, have met the requirements for licensure then in existence under Colorado law.

(b) Upon passing the examination, the applicant shall be licensed and registered as a professional land surveyor if the applicant is otherwise qualified pursuant to section 12-25-213.

(2)(a) An applicant may qualify for licensure as a professional land surveyor by education, experience and examination if he passes the principles and practice of land surveying examination and the examination pertaining to Colorado law. In order to be admitted to such examinations, the applicant must:

- (I)(A) have graduated from a board-approved four year surveying curriculum; and
- (B) have two years of progressive land surveying experience under the supervision of a professional land surveyor or an exempted federal equivalent as determined pursuant to 12-25-203(1)(b); and
- (C) have been enrolled as a land surveyor-intern in this state; or
- (II)(A) have graduated from a four year surveying curriculum not approved by the board; and
- (B) have four years of progressive land surveying experience, of which two years must be under the supervision of a professional land surveyor or an exempted federal equivalent as determined pursuant to 12-25-203(1)(b); and
- (C) have been enrolled as a land surveyor-intern in this state; or

(III)(A) have graduated from a board approved two year surveying curriculum or from a four year engineering curriculum which included the equivalent of 24 semester hours in surveying coursework as approved by the board; and

(B) have six years of progressive land surveying experience, of which four years must be under the supervision of a professional land surveyor or an exempt federal equivalent as determined pursuant to 12-25-203(1)(b); and

(C) have been enrolled as a land surveyor-intern in this state.

(b) Upon passing the examination, the applicant shall be licensed and registered as a professional land surveyor if the applicant is otherwise qualified pursuant to section 12-25-213.

(3)(a) An applicant may qualify for licensure as professional land surveyor by experience and examination if he passes the principles and practice of land surveying examination and the examination pertaining to Colorado law. In order to be admitted to such examinations, the applicant must:

(I) have graduated from high school or its equivalent; and

(II) have ten years of progressive land surveying experience, of which six years must be under the supervision of a professional land surveyor or an exempted federal equivalent as determined pursuant to 12-25-203(1)(b); and

(III) have been enrolled as a land surveyor-intern in this state.

(b) Upon passing the examination, the applicant shall be licensed and registered as a professional land surveyor if the applicant is otherwise qualified pursuant to 12-25-213.

SUMMARY OF PROPOSED REQUIREMENTS

FOR SURVEYOR IN TRAINING		
EDUCATION	YEARS OF EXPERIENCE	YEARS UNDER PROFESSIONAL LAND SURVEYOR
4 year approved Land Surveyor Degree	0	0
High School Diploma	2 (1 may be education)	0

FOR PROFESSIONAL LAND SURVEYOR		
EDUCATION	YEARS OF EXPERIENCE	YEARS UNDER PROFESSIONAL LAND SURVEYOR
4 Year Approved Land Surveyor Degree	2	2
4 Year Unapproved Land Surveyor Degree	4	2
4 Year Engineering Degree (includes surveying courses)	6	4
2 Year Approved Land Surveyor Degree	6	4
High School Diploma or other Degree (may still be eligible for some education credits)	10	6

Recommendation 8 would expand the education and experience requirements for professional land surveyors. Currently, no education beyond high school is required to qualify for enrollment as a surveyor-in-training. In addition, the statutory requirements for eligibility to take the land surveying examination are very restrictive. Greater recognition of post-secondary education in land surveying and additional experience requirements for those who choose not to obtain further education is needed to provide greater flexibility for applicants who want to take the examination.

As mentioned above, the combination of education and experience is a very important aspect of the regulatory program for land surveyors. The main purpose for requiring surveyors to have a combination of both practical experience and advanced education is to improve the surveying services offered to the public. Professional land surveyors need to have a thorough knowledge of surveying and current technological advancements, legal doctrines, and business trends.

Formal education can provide one with a solid foundation in the basic technical and legal aspects of land surveying. However, only through applying this fundamental knowledge to the various problems and situations encountered in the field, does one acquire the necessary expertise to become qualified as a professional land surveyor. Land surveyors must have a combination of education and field experience to become licensed.

Land surveyors account for approximately ten percent of the total licensees of the Board of Registration for Professional Engineers and Professional Land Surveyors but they also account for an average of sixty-eight percent of complaints registered with the Board for the period January, 1988 to April, 1993.

The purpose of this recommendation, in the long run, is to have in place better experiential and educational requirements which may result in the reduction in the number of complaints against land surveyors and better protection of the public.

REVISE DEFINITION OF "PRACTICE OF ENGINEERING"

Recommendation 9: The General Assembly should amend the definition of the "practice of engineering" found in C.R.S. 12-25-102(10), as follows:

"Practice of engineering" means the performance for others of any professional service or creative work requiring engineering education, training, and experience and the application of special knowledge of the mathematical and engineering sciences to such professional services or creative work, including consultation, investigation, evaluation, planning, design, surveying, and supervision of construction for the purpose of assuring compliance with specifications and design (but supervision of construction shall not include, unless responsibility therefor is specifically assumed by contract, superintendence of any contractor's or subcontractor's processes, means, methods, equipment, or personnel for the purpose of maintaining a safe place to work or safety in or about the site of the work) and the observation of construction to evaluate compliance with plans and specifications in connection with the utilization of the forces, energies, and materials of nature in the development, production, and functioning of engineering processes, apparatus, machines, equipment, facilities, structures, buildings, works, or utilities, or any combination or aggregations thereof, employed in or devoted to public or private enterprise or uses.

This revised definition clarifies and modernizes the definition of engineering as it relates to supervision of construction. The recommended new language is closely aligned with the NCEES definition that appears in the model law. The old definition was very confusing to the public and talked parenthetically about what supervision of construction was not, rather than offering an affirmative definition. The new definition explains supervision of construction in the proper context in which it occurs in the practice of professional engineering.

GOVERNMENTAL IMMUNITY

Recommendation 10: **The General Assembly should amend 12-25-118 and 12-25-218, C.R.S., the governmental immunity section to read as follows:**

Any member of the board, board staff, any person acting as a consultant to the board, any witness testifying in a proceeding authorized under this article, and any person who lodges a complaint pursuant to this article shall be immune from criminal liability and suit in any civil action brought by any person based upon an action of the board, if such person, board member, staff person, consultant or witness acts in good faith within the scope of this article, has made a reasonable effort to obtain the facts of the matter as to which he acts, and acts in the reasonable belief that the action taken by him is warranted by the facts. The immunity provided shall also extend to any person participating in good faith in any investigative proceeding pursuant to this part 1.

Governmental immunity should be extended to consultants who provide "expert" testimony with respect to disciplinary matters and for any person lodging a complaint pursuant to the Act. The General Assembly has regularly extended this type of immunity to Board members and other persons participating in disciplinary matters when those persons are acting in good faith in their official capacities. Since lawsuits are becoming a more common occurrence, immunity from retaliatory suits would assist the state in attracting and maintaining high quality consultants who may be requested by the Board to give an expert opinion in the context of a disciplinary proceeding. Also, the statute (12-25-108(h) and 208(h), C.R.S.) currently requires that engineers and land surveyors report violations to the Board. By providing immunity to anyone who lodges a complaint in good faith, it encourages compliance with the law and provides the Board with additional information regarding substandard practice. The General Assembly has given all Boards that have gone through sunset review this immunity.

TITLE CHANGE FOR ENGINEERS AND LAND SURVEYORS IN-TRAINING

Recommendation 11: The General Assembly should amend C.R.S. 12-25-102(6) and 12-25-202(11) by changing the term "engineer-in-training" to engineer intern and "land surveyor-in training" to land surveyor-intern. Conforming amendments should also be made wherever the terms appear in Title 12, Article 25, Parts I and II.

The new term "intern" more adequately reflects the educational achievement of candidates for registration and their progression toward professional engineer and land surveyor status. The National Council of Examiners for Engineering and Surveying (NCEES) approved this provision of the model registration law which changed the title of Engineer-in-Training to Engineer Intern and Surveyor-in-Training to Surveyor Intern.

DISCIPLINARY ACTIONS FOR FAILURE TO RENEW LICENSE

Recommendation 12: The General Assembly should add the following grounds for disciplinary action to 12-25-108, C.R.S. and 12-25-208, C.R.S. The board shall, at a minimum, issue a letter of admonition to any professional engineer (professional land surveyor) who fails to renew his or her license within two years and continues to actively engage in the practice of engineering (land surveying) in Colorado with an expired license.

It is very rare that the Board will take any type of disciplinary action against a licensee for failure to renew a license on time. The Board often reviews reinstatement applications from licensees who failed to renew their professional licenses yet continued to practice engineering/surveying in Colorado. With rare exception, the Board grants the license renewal request and only requires the licensee to pay the reinstatement fee as provided for in 12-25-108 and 12-25-208, C.R.S.

It is the professional responsibility of engineers and land surveyors to make sure that their licenses are current and active. The State of Colorado has established a licensing program to protect the citizens of the state. If licensees cannot take responsibility for renewing their licenses, and continue to practice in Colorado, disciplinary action is appropriate.

HABITUAL INTEMPERANCE

Recommendation 13: The General Assembly should amend 12-25-108(1)(i) and 12-25-208(1)(i), C.R.S. by repealing subparagraph (i) and replacing it with the following language:

(i) Is addicted to or dependent on alcohol or habit-forming drugs or is a habitual user of controlled substances, as defined in section 12-22-303(7), or other drugs having similar effects.

C.R.S. 12-25-108 and 12-25-208 enumerate the grounds for discipline and specify the Board's powers to deny, revoke, suspend or refuse to renew a license to practice. Subsection (i), currently provides that "habitual intemperance with respect to or excessive use of any habit forming drug, as defined in section 12-22-102(13), any controlled substance, as defined in section 12-22-303(7), or any alcoholic beverage," is vague and subjective and difficult to prove, making it practically unenforceable. The proposed language currently exists in the Nursing Practice Act.

RETIRED STATUS

Recommendation 14A: The General Assembly should repeal the provisions for retired status found in 12-25-114(4), C.R.S.; or

Recommendation 14B: If the General Assembly chooses not to adopt recommendation 14A, 12-25-114(4) and 12-25-214, C.R.S. should be amended, as follows:

(4) A professional engineer who has been duly registered and licensed to practice engineering in this state and who is over sixty-five years of age, upon application, ~~may be listed separately in the roster of engineers as a retired professional engineer~~ may be classified as a retired professional engineer. Persons who are so listed classified shall lose their registration and shall not practice engineering but shall be required to pay the required fee ~~for a roster listing as a retired professional engineer~~ to retain the status of retired professional engineer. A retired professional engineer shall be reinstated to the status of a professional engineer upon payment of the registration fee for the current year renewal, and no other fee shall be assessed against him as a penalty, ~~nor shall he be required to take any oral, written, or practical examination for such reinstatement.~~ After two years, the board may require reexamination or recertification, unless

the retired engineer satisfies the board of his continued competence.

This sunset review found no evidence that the retired status provision protects the public's health, welfare, or safety. However, in recognition that the General Assembly may decide to continue this provision, the amended provision will guarantee that reinstatement provisions for retired engineers are in accord with the provisions for renewal of an expired license pursuant to C.R.S. 12-25-115(4). If the General Assembly decides to adopt this amended retired status provision, the land surveyor statute should be similarly amended.

PROFESSIONAL SEALS

Recommendation 15A: The General Assembly should amend 12-25-117(3) and 12-25-217(3), C.R.S. to replace the term "complete direction and control" with "responsible charge". The amended section should read as follows:

The seal and signature shall be used by an engineer (land surveyor) only when the work being stamped was under the engineer's (land surveyor's) RESPONSIBLE CHARGE.

The term "responsible charge" is currently defined in statute and this revision would clarify the intent of this subsection.

Recommendation 15B: The General Assembly should repeal 12-25-117(4), C.R.S. that sets forth the provisions for the use of an engineer's seal. The Board should promulgate rules and regulations regarding the use of the engineer's seal.

With the increasing transfer of information through computers and the use of computer aided design programs (CAD), it is important that the Board have flexibility to address the changing state-of-the-art technology in the engineering profession. This recommendation does not delete the statutory requirement for signing and sealing documents but allows the Board flexibility to change its rules regarding the appropriate use or procedures applying to signing and sealing documents.

DISCIPLINARY ACTIONS

Recommendation 16: **The General Assembly should amend 12-25-108(1), C.R.S., as follows:**

The board has the power to deny, suspend, revoke, LIMIT THE SCOPE OF PRACTICE, or refuse to renew the license and certificate of registration of, or place on probation, any professional engineer or engineer-in-training who is found guilty of:

The Board currently limits the scope of practice of registrants by stipulation. There have been several cases where the Board has determined that a professional engineer was performing engineering services outside his/her competency, training or education and public safety was compromised. However, if the Board wanted to limit the scope of a professional engineer's practice as a disciplinary sanction after an administrative hearing, it would not have the authority to do so under current law.

Rule II of the Rules of Professional Conduct states that registrants shall perform services only in the areas of their competence. Further, 12-25-108(1)(g), C.R.S. states that performing services beyond one's competence, training and expertise is grounds for discipline.

Granting the Board the power to limit the professional engineer's scope of practice is consistent with the Board's current powers to limit the scope of a professional land surveyor's practice under 12-25-208(1), C.R.S.

CEASE AND DESIST AUTHORITY

Recommendation 17: **The General Assembly should amend 12-25-109 and 12-25-209, C.R.S. by adding cease and desist authority, as follows. If the board has reason to believe that any person has engaged, is engaging, or threatens to engage in an act or practice which constitutes a violation of any provision of this article, the board may initiate proceedings to determine if such a violation has occurred or threatens to occur. Hearings shall be conducted in accordance with the provisions of article 4 of title 24, C.R.S. After notice and hearing and upon a finding by the majority of the board that a violation of any provision of this article has occurred, the board may issue an order to cease and desist the act or acts violating any provision of this article. A copy of the cease and desist order shall be furnished to each party.**

In any legal action brought under this article, evidence of the commission of a single act prohibited by this article is sufficient to justify an injunction.

The authority to issue cease and desist orders will aid the Board in halting unauthorized practitioners, who are often an imminent threat to the public. Cease and desist authority is a much faster and much less expensive way to halt unlicensed practice than an injunction.

MAKE STATUTE GENDER NEUTRAL

Recommendation 18: The General Assembly should direct drafters to revise language to ensure gender neutrality.

All statutes are being revised to ensure that gender neutral language is used.

DISCIPLINARY ACTION IN OTHER STATES

Recommendation 19: The General Assembly should delete Sections 12-25-108(3) and 12-25-208(3), C.R.S. that read:

(3) Any disciplinary action concerning licensure or enrollment in another state or jurisdiction on grounds substantially similar to those that would constitute a violation under this part 1 (2) shall be prima facie evidence of grounds for disciplinary action, including denial of licensure, under this part 1 (2)

And amend 12-25-108(1) and 208(1), C.R.S. by adding a new disciplinary ground, to read:

(l) Disciplinary action concerning licensure or enrollment in another state or jurisdiction. "A plea of nolo contendere, or its equivalent, accepted by another state Board in a disciplinary action concerning licensure or enrollment shall be considered to be the same as a finding of guilty for the purposes of any hearing under this part 1 (2).

Sections 12-25-108(3) and 12-25-208(3) currently empower the Board to discipline its registrants who have been subject to disciplinary action in another state on grounds substantially similar to those that would constitute a violation of the Colorado Act. The current

law provides that evidence of such disciplinary action is prima facie evidence of grounds for disciplinary action in Colorado. The current language creates needless impediments for the Board to pursue disciplinary action when a registrant has been disciplined in another state. For instance, often other jurisdictions issue consent decrees which impose discipline without making sufficient findings for the Colorado Board to determine if the "grounds are substantially similar" nor do these decrees contain admissions of guilt, yet the licensee agrees to the suspension, surrender or revocation of the license.

In such cases, the Board has the burden of proof to show the violation was substantially similar to that which would be grounds for discipline in Colorado. Because the violation occurred on work performed outside the state, to meet this burden the Board must expend substantial funds to ensure successful prosecution. This seems to be wasteful given that a licensee knows that by entering into a consent decree he/she may be placing his Colorado license in jeopardy (12-25-108(3) and 208(3), C.R.S.). Further, if a licensee is considered to be a public threat sufficient to warrant suspension, revocation or denial of license in one jurisdiction, then it is reasonable to assume that licensee may be a threat to the health, safety, and welfare of the citizens of Colorado regardless of any lack of admission of wrong doing in the consent decree.

Changing the language as recommended will allow a shift in the burden of proof to the licensee who may present evidence of rehabilitation or mitigation during disciplinary proceedings.

DEFINITION OF LAND SURVEYING

Recommendation 20: The General Assembly should replace the term "property descriptions" in the definition of "professional land surveying" with the term "legal description".

The recommended revised articles 51 and 53 of title 38 contain a comprehensive listing of definitions. The term "legal description" has been added and defined and is used consistently throughout the amended sections. For clarification and consistency, the term "property description" in the definition of professional land surveying should be replaced with the term "legal description".

RENEWAL PROVISIONS

Recommendation 21: The General Assembly should clarify the renewal provisions in Sections 12-25-115(4) and 12-25-215(4), C.R.S. by the addition of the following phrase (highlighted):

The license of any professional engineer (land surveyor) who fails to pay timely the license renewal fee shall expire. An expired license may be renewed within two years after its expiration upon payment of all fees in arrears and such payment shall be for the expired period, and, after two years, in addition to the payment of fees, the board may require reexamination or recertification, unless the professional engineer has maintained an active engineering (land surveying) practice in another jurisdiction or otherwise satisfies the board of continued competence.

Sections 12-25-115(4) and 12-25-215(4), C.R.S., establish license renewal provisions. The statute currently allows professional engineers and land surveyors to renew their licenses within the first two years of expiration by paying the appropriate fees. The law needs to be clarified to indicate that when a license is renewed during this two year period, the renewal payment is for the expired period.

GRAMMATICAL CORRECTION

Recommendation 22: The General Assembly should add correct punctuation, the addition of a comma, to 12-25-208(1)(e), C.R.S. to satisfy the legislative intent of that paragraph. The amended section reads as follows:

Violation of, attempting to violate, or aiding or abetting in the violation or attempted violation of the provisions of this part 2, any rule or regulation adopted the board in conformance with the provision of this part 2, or any order of the board issued in conformance with the provisions of this part 2, or article 50, 51, 52, or 53 of title 38, C.R.S.

The addition of the comma before the word "or" clarifies this section of the statute and conforms with its legislative intent. Statutes should be construed according to the rules of grammar and common usage. When the term "or" is used, it is presumed to be used in the disjunctive sense unless legislative intent is clearly contrary. When comparing 12-25-108(1)(e), C.R.S. of the Engineering Practice Act to 12-25-208(1)(e), C.R.S. of the Land

Surveying Practice Act, a slight inconsistency is apparent. The legislative intent of 12-25-208(1)(e) can be clarified by the addition of a comma so that the use of the word "or", which commonly indicates permissible alternatives, is interpreted to mean any violation of the part 2 or articles 50, 51, 52 or 53 is grounds for discipline under the Act.

RESPONSIBLE CHARGE

Recommendation 23: The General Assembly should amend 12-25-103(d), C.R.S. to replace the term "control and direction" with "responsible charge". The amended section should read as follows:

(d) Persons who perform engineering services under the ~~control and direction~~ responsible charge of a licensee;

The term "responsible charge" is defined in the statute and is used consistently throughout. This revision would clarify the intent of this exemption.

REPORTING JUDGMENTS AND SETTLEMENTS

Recommendation 24: The General Assembly should amend 10-1-124, C.R.S. to require insurance companies to report to the Board any payments made in any settlement or judgment against any engineer (land surveyor) involving the malpractice of engineering (land surveying).

Sections 12-25-108(1)(k) and 12-25-208(1)(k), C.R.S. currently require the engineer and land surveyor to notify the Board of a final judgment or settlement against the licensee. Insurance companies should also report to the Board any payments made in any settlement or judgment against any professional engineer or land surveyor involving malpractice or the improper practice of engineering and land surveying. Such reporting is required of insurance companies under section 10-1-124, C.R.S. for numerous occupations, including physicians, podiatrists, architects, and others.

The Board has only received sixty-seven reports from licensed engineers and land surveyors since the statute was amended in 1988 to require notification of settlements or judgments regarding licensees. The notification of final judgment or settlement is a source of information on harm to the public. It can play an important role in protecting the public against incompetent practitioners.

LAND SURVEYING PROVISIONS FOR SURVEYS AND BOUNDARIES

- Recommendation 25:**
- (A) The General Assembly should repeal and reenact Article 50 - Surveys and Boundaries, Article 51 - Minimum Standards for Land Surveys and Plats, and Article 53 - Perpetuation of Land Survey Monuments of Title 38.**
 - (B) Provisions found in Title 38, Article 50 pertaining to the duties of County Surveyor related to "disputed boundaries" should be moved to title 30, article 10, C.R.S., County Officers.**

For the past year, an ad hoc committee (Committee) comprised of a county surveyor, members of the Board's Surveyor Quorum, and professional representatives from land surveyor associations, met for the purpose of revising Articles 50, 51, and 53 of Title 38. The revisions included with this recommendation were a result of consensus building among members of this committee.

Articles 50, 51 and 53 have been revised and restructured to improve the Board's ability to enforce the standards. There is currently enough ambiguity in the law to make interpretation and enforcement difficult. Specifically, Article 50 was reorganized so there would be one section that addresses all record keeping requirements of land surveying. The Committee recommended that those provisions pertaining to the specific duties of the county surveyor that currently appear in this section should be moved to title 30, article 10 (Elected Officials and their Requirements). Additionally, a major change to Section 38-50-103(1) gives the Board the authority to employ personnel at the expense of its licensees to maintain a monument record filing system for all monument records filed in accordance with 38-53-104, C.R.S. (formerly 38-53-103, C.R.S.). The monument record system has grown over 40% in the last five years, and there has not been adequate staff to maintain the system. A monument record is a written and illustrated document describing the physical appearance of a survey document and its accessories, which must be filed with the Board pursuant to 38-53-103, C.R.S., (Perpetuation of Land Survey Monuments). The Board maintains the only complete record in the state of all monument records. Professional land surveyors have acknowledged that the state filing system is an extremely valuable resource.

Article 51, Minimum Standards for Land Surveys and Plats, retains its current title. This section has been arranged more logically so to allow for easier understanding of the procedures that land surveyors must follow to subdivide sections and to monument land surveys. In addition, for clarification, a comprehensive listing of definitions are added to this section to conform to the same definitions that are used in Article 53.

The revised Article 53 increases the penalty for a violation of any provisions of the article to a class 3 misdemeanor, punishable by a fine of not less than \$150.00 nor more than \$1500. The previous penalty for a violation of the article was a misdemeanor punishable by a fine not less than twenty-five dollars nor more than two hundred fifty dollars. This increased penalty is more commensurate with the economic damage that the public might suffer due to an incorrect or illegal survey.

Recommendation 25(A): The reenacted statutes should read as follows:

ARTICLE 50
Survey Plats and Monument Records - General Provisions

38-50-101. Survey plat records file and index system - informational purpose.

(1) Survey plats submitted for deposit in accordance with section 38-51-106 and this section shall:

(a) Conform to the requirements set forth in section 38-51-105;

(b) Depending on the location of the land, contain the following information in the title block:

(I) For parcels of land located within the United States rectangular survey system, the section, township, range and principal meridian; or

(II) For grants and unsurveyed parcels of land, information relating to the system of indexing the county assessor already has in place.

(c) Be deposited with the public office designated by the county commissioners within six months from the date the monument was accepted in the field or set by the professional land surveyor.

(2) The county commissioners of each county shall designate the county surveyor to create and maintain a survey plat records file and index system for the plats. If a county surveyor has not been elected or appointed or if the office is vacated, another county official shall be designated to create and maintain such system. The survey plat records file and index system shall be prepared and be operational prior to July 1, 1989. Each plat deposited shall be given a reception number or a book and page number, or both, which shall be set forth on the plat. Surveyed lands located within the United States rectangular survey system shall be indexed by section, township, range, and principal meridian. Grant lands and unsurveyed lands shall be indexed by the system of indexing the county assessor already has in place. Survey plats submitted for depositing shall be indexed in a timely manner, but in no case shall indexing exceed ten working days from the date the survey plat was deposited. If the county surveyor is unable to do the indexing in a timely manner, the county surveyor may designate another county official to do such indexing.

(3) Each plat submitted for depositing in accordance with this section shall bear original

signatures and seals and shall be made of a dimensionally stable polyester sheet such as cronar or mylar or other product of equal quality, three mils or greater in thickness with nonfading permanent print. The dimensions of each plat shall be as specified by county requirements but shall not be less than eighteen inches in width by twenty-four inches in length or not more than twenty-four inches in width by thirty-six inches in length and shall have a minimum of a two-inch margin on the left (width) side and a minimum of one-half inch margins at the top, bottom, and right side of the plat. A county may make aperture cards or film-processed copies capable of legible reproduction from said polyester for the purpose of recording, subject to approval by the board of county commissioners.

(4) The fee for depositing plats in accordance with this section shall be in an amount not to exceed the amount of the fee collected for the recording of subdivision plats, as such fee is established in section 30-1-103(2)(f), C.R.S. The fee for the county surveyor, or if a county surveyor has not been elected or appointed or if the office is vacated, another county official to index and maintain the plats as designated by the county commissioners, shall be in an amount not in excess of the amount of the fee collected for the recording of subdivision plats as such fee is established in section 30-1-103(2)(f), C.R.S. The fees provided for by this subsection (5) shall be collected by the public office where said plats are deposited.

(5) Plats shall be deposited in accordance with this section for the sole purpose of recording information on surveying monumentation in order to provide survey data for subsequent land surveys and shall neither be construed as affecting, in any manner whatsoever, the description of a subdivision, line, or corner contained in the official plats and field notes filed and of record nor as subdividing property. No plat deposited in accordance with this section shall constitute notice pursuant to section 38-35-109. Subdivision plats which create parcels of land of thirty-five acres or more must be filed in the clerk and recorder's office wherein the property is located pursuant to section 38-35-109.

38-50-102. Public Records - original field notes, plats.

(1) The board of county commissioners of each county in the state of Colorado are authorized, whenever they deem it expedient and necessary, to employ some competent person, at the expense of the county, to make copies of the original field notes and plats of surveys of all lands surveyed or to be surveyed after March 14, 1877, by the officers appointed by the federal government, within their respective counties.

(2) The board of county commissioners shall procure the necessary books in which such copies shall be made and stationery for the purpose provided in this section, and by contract or otherwise shall fix the compensation of the person employed to procure and make such copies of said field notes and plats, to be paid out of the county treasury in the same manner as other expenses are paid.

(3) The copies of such field notes and plats, when so made, shall be filed in the office of the county clerk and recorder of the proper county and shall thereafter be a part of the public records of said county; and such records or copies thereof, certified by the county clerk and recorder, shall be evidence in all courts and places.

38-50-103. Public Records - Monument Records.

(1) The State Board of Registration for Professional Engineers and Professional Land Surveyors shall employ personnel at the expense of its licensees, to maintain a monument record filing system for all monument records filed in accordance with 38-53-104, C.R.S.

(2) The board shall transmit without fee to the county clerk and recorder of the county wherein the monument is located a copy of each monument record accepted for filing. Each county clerk and recorder shall keep these copies in a file and, upon receipt of each such monument record, shall list it in a master index included with each such file. These records shall be open to public inspection during normal business hours.

(3) Board certified copies of monument records shall be evidence in all courts and places.

(4) There shall be no fee charged by the Board for the filing of monument records. The cost of maintaining the monument record files shall be recouped as part of the renewal fee for licensees. This fee shall pay for the costs of staffing and equipment to maintain the monument record filing system.

**Recommendation 25(B): REPEAL THESE SECTIONS FROM TITLE 38, ARTICLE 50
AND REENACT THEM IN TITLE 30, ARTICLE 10**

30-10-903(3) (**Formerly 38-50-102**). County surveyor to administer oaths. County surveyors shall have authority to administer an oath or affirmation to deputies and assistants acting under them faithfully and impartially to discharge their duties as deputies and assistants.

30-10-903.5 (**Formerly 38-50-107**). Disputed boundaries - notice. (1) Whenever the proper location of any section corner or quarter section corner is in dispute, the corner monument shall be established in the following manner: The county surveyor of the county in which said corner is located, upon the application of any of the parties in interest, accompanied by the estimated payment provided for in subsection (3) of this section, shall within two weeks give notice in writing to all the parties whose property rights might be affected by the establishment of said monument, naming a day when he will be in the vicinity of the disputed corner to gather evidence and start the necessary surveys to establish the said monument, and, if such service of written notice cannot be made upon all said parties or their agents by reason of nonresidence or if there are more than fifty known landowners whose property rights might be so affected, then such notice shall be published for four consecutive weeks in some newspaper published in the county or, if there is no newspaper published therein, then in some newspaper of general circulation published nearest such county. The county surveyor shall also notify, to the extent practical, all professional land surveyors who have filed a monument record on the disputed corner or on any aliquot corner within one mile thereof and all professional land surveyors known by him to have performed land surveys in the vicinity of the disputed corner.

(2) The proper notice having been given, the county surveyor, upon the day named in the said notice, shall proceed to establish such monument in accordance with the rules laid down for the subdivision of sections in section 38-51-102, and with the field notes of original surveys made by the United States, he shall firmly plant a monument at the points so found by him, shall accurately take and note courses and distances from said point to one or more prominent objects of a permanent nature if there are any in the vicinity, shall make a plat or map of the survey made by him, and shall record the same, together with a statement of the whole proceedings, including the application, notice, and names of the parties in interest, in the records of his office. Such monument established as provided in this section shall be the true and legal monument defining the boundary corner as stated in the record of said survey.

(3) The reasonable fees and expenses of the county surveyor in establishing a corner shall be paid by the party applying therefor. At the time the original application is made, the county surveyor shall estimate the probable fees and expenses which will be incurred in establishing the corner, and he shall collect this amount from the applicant at the time the application is filed. After the corner has been established, if the estimated amount exceeds the actual fees and expenses, the excess shall be refunded. If the fees and expenses exceed the estimated amount, the applicant shall pay the difference to the county surveyor.

Recommendation 25(A) - Continued
ARTICLE 51
Minimum Standards for Land Surveys and Plats

38-51-100. Applicability - state - county - local - persons. The provisions of this article shall apply to all agencies of state, county, and local government as well as to individuals, corporations, and partnerships engaged in the private practice of land surveying. This article shall not apply to the location or relocation of mining claims pursuant to article 43 of title 34, C.R.S. 1973.

38-51-101. Definitions. As used in this article, unless the context otherwise requires:

(1) "Accessory" means any physical evidence in the vicinity of a survey monument, the relative location of which is of public record and which is used to help perpetuate the location of the monument. Accessories shall be construed to include the accessories recorded in the original survey notes and additional reference points and dimensions furnished by subsequent professional land surveyors or attested to in writing by persons having personal knowledge of the original location of the monument.

(2) "Aliquot corner" means any section corner or quarter section corner and any other corner in the public land survey system created by subdividing land according to the rules of procedure set forth in section 38-51-102.

(3) "Bench mark" means any relatively immovable point on the earth whose elevation above or below an adopted datum is known.

(4) "Block" means a parcel of land within a platted subdivision bounded on all sides by streets or avenues, other physical boundaries such as a body of water or the exterior boundary of a platted subdivision.

(5) "Board" means the state board of registration for professional engineers and professional land surveyors.

(6) "Control corner" means any land survey monument whose position controls the location of the boundaries of a tract or parcel of land. The control corner may or may not be included within the perimeter of said tract or parcel.

(7) "Exemption plat" or "subdivision exemption plat" means a subdivision plat which includes all of the information required by 38-51-105 and depicts a division of land or the creation of an interest in property for which the board of county commissioners has granted an exemption from subdivision regulations pursuant to section 30-28-101(10)(d).

(8) "Improvement location certificate" means a representation of the boundaries of a parcel of land and the improvements thereon, prepared pursuant to section 38-51-107.

(9) "Improvement survey plat" means a land survey plat resulting from a monumented land survey and showing, in addition to the location of all structures situated on the described parcel, easements, visible encroachments, and any fences, hedges, or walls on or within two feet of both sides of all boundaries of said parcel. In addition, an improvement survey plat may show the location of all visible utilities situated on said parcel and all underground utilities for which there is visible surface evidence or for which information is available from the appropriate utility company or client. Such plat must also show the location of easements, underground utilities, or tunnels, for which record evidence is available from the county clerk and recorder or other source as specified on the improvement survey plat.

(10) "Irregular parcel" means a parcel of land which is not uniquely defined on a subdivision plat but which is described by any of the following methods:

- (a) An aliquot part of a section;
- (b) A metes and bounds description;
- (c) A book and page or reception number reference;
- (d) Any so-called "assessor's tract";
- (e) A description which calls only for the owner's or adjoiner's name.

(11) "Land survey" means a series of observations and measurements made by a professional land surveyor pursuant to sections 38-51-102, 38-51-103 and 38-51-104 for the purpose of establishing, locating or restoring any real property boundary.

(12) "Land survey plat" means a plat which shows the information developed by a land survey and shall include all information required by section 38-51-105.

(13) "Legal description" means a written, narrative description, in words, of a parcel of real property or easement for the purpose of perpetuating location or title.

(14) "Monument record" means a written and illustrated document describing the physical appearance of a survey monument and its accessories or of a bench mark.

(15) "Monumented land survey" means a land survey in which monuments are either found or set pursuant to sections 38-51-102, 38-51-103 and 38-51-104, C.R.S. to mark the boundaries of a specified parcel of land.

(16) "Platted subdivision" means a group of lots, tracts, or parcels of land created by recording a map which meets the requirements of section 38-51-105 and which shows the boundaries of said lots, tracts, or parcels and the original from which they were created.

(17) "Professional land surveyor" means a person registered or licensed pursuant to part 2 of article 25 of title 12, C.R.S. 1973.

(18) "Public land survey monument" means any land boundary monument established on the ground by a cadastral survey of the United States General Land Office or Bureau of Land Management and any mineral survey monument established by a United States mineral surveyor and made a part of the United States public land records.

(19) "Responsible charge" means control and direction of surveying work.

(20) "Subdivision plat" means a map of a platted subdivision recorded for the purpose of creating land parcels which can be identified uniquely by reference to said map including all information required by section 38-51-105.

38-51-102. Procedure for subdividing section. Whenever a professional land surveyor conducts a survey for the purpose of locating a parcel of land which is described in terms of the nomenclature of the public land survey system, he shall proceed according to the applicable rules contained in the current "Manual of Instructions for the Survey of the Public Lands of the United States" published by the United States government printing office; except that monumentation shall conform to section 38-51-103. A section may be subdivided by surveying all necessary aliquot lines in the field or by computing the location of the required aliquot corners after making a field survey which includes all required control corners of the section, but in either case all such control corners that were originally monumented by the United States government must either be found or be restored in the field according to the standards set forth in section 38-51-103, and monument records must be filed pursuant to section 38-53-104, describing each such corner. In all cases, the location of original aliquot corners of, and procedures used in, the governing official United States government survey, where applicable, shall take precedence.

38-51-103. Monumentation of land surveys. (1) The corners of lots, tracts, or other parcels of land, aliquot corners not described in section 38-51-103(4), and any line points, control corners or reference points which are set to perpetuate the location of any land boundary or easement shall, when established on the ground by a land survey on and after July 1, 1975, be marked by reasonably permanent markers solidly embedded in the ground. Affixed securely to the top of each such marker shall be a durable cap bearing the Colorado registration number of the professional land surveyor responsible for the establishment of said marker.

(2) In the event that points designated in subsection (1) of this section fall on solid bedrock or on concrete or stone curbs, gutters, or walks, a durable metal disk or cap shall be securely anchored in the rock or concrete and stamped with the survey point and the Colorado registration number of the professional land surveyor responsible for the establishment of the monument or marker.

(3) In the event that monuments or markers required by subsection (1) of this section cannot practically be set because of steep terrain, water, marsh, or existing structures, or if they would be lost as a result of proposed street, road, or other construction, one or more reference monuments shall be set. Affixed to the monument, in addition to the professional

land surveyor's registration number, shall be the letters "RM" or "WC". Such reference monuments shall be set as close as practical to the true corner and shall meet the same physical standards that would be required for the true corner were it set. If only one reference monument is used, it must be set on the actual boundary line or a prolongation thereof. Otherwise, at least two reference monuments shall be set.

(4) If any monument required by this section marks the location of a section corner, quarter section corner, or sixteenth section corner, the monument shall meet the physical standards specified by rule and regulation promulgated pursuant to section 24-4-103, C.R.S., by the state board of registration for professional engineers and professional land surveyors.

(5) If any corner required by this section falls within the traffic area of a publicly maintained, dedicated or deeded street, road, or highway, the top of the monument shall be placed one-half foot below the roadway surface, and, if such surface is any form of pavement two inches thick or greater, the monument shall be provided with a monument box the top of which shall be set flush with the surface of the pavement.

(6) No marker required by this section shall bear the registration number of more than one professional land surveyor but may bear the name of an individual professional land surveyor or surveying firm in addition to the required registration number.

38-51-104 Monumentation of subdivisions. (l) The external boundaries of all platted subdivisions shall, prior to the recording of any plat thereof, be monumented on the ground by reasonably permanent monuments solidly embedded in the ground. Affixed securely to the top of each such monument shall be a durable cap bearing the Colorado registration number of the professional land surveyor responsible for the establishment of said monument. These monuments shall be set not more than fourteen hundred feet apart along any straight boundary line, at all angle points, at the beginning, end, and points of change of direction or change of radius of any curved boundaries defined by circular arcs, and at the beginning and end of any spiral curve.

(2) It is the responsibility of the professional land surveyor who prepares the original subdivision plat, exemption plat or subdivision exemption plat to provide external boundary monuments as required in subsection (1) of this section.

(3) Before a sales contract for any lot, tract, or parcel within a subdivision, recorded on and after July 1, 1967, is executed, all boundaries of the block within which said lot, tract, or parcel is located shall be marked with monuments similar to those required in subsection (1) of this section. It is the responsibility of the seller of the lot, section or parcel to provide for the services of a professional land surveyor to establish block monumentation and lot markers as required pursuant to subsection (4) of this section.

(4) Block monumentation may be set on the center lines of streets or on offset lines therefrom as designated on the recorded plat. In addition, the corners of any lot, tract, or parcel sold separately shall be marked within one year of the effective date of the sales contract. If any structure is to be built on the lot, tract or parcel before the corners have been marked as provided in this section, the seller of said lot, tract, or parcel shall provide for the services of a professional land surveyor to establish on the ground such control lines as may be necessary to assure the proper location of the structure.

(5) If any complete block is sold as a unit, it shall become the responsibility of the subsequent seller of any separate lot, tract, or parcel within such block to provide for the services of a professional land surveyor to establish lot markers as required pursuant to subsection (4) of this section.

(6) In the event that points designated in subsections (1), (2) or (3) of this section fall on solid bedrock or on concrete or stone curbs, gutters, or walks, a durable metal disk or cap shall be securely anchored in the rock or concrete and stamped with the survey point and the Colorado registration number of the professional land surveyor responsible for the establishment of the monument or marker.

(7) In the event that monuments or markers required by subsection (1), (2) or (3) of this section cannot practically be set because of steep terrain, water, marsh, or existing structures, or if they would be lost as a result of proposed street, road, or other construction, one or more reference monuments shall be set. Affixed to the monument, in addition to the professional land surveyor's registration number, shall be the letters "RM" or "WC". Such reference monuments shall be set as close as practical to the true corner and shall meet the same physical standards that would be required for the true corner were it set. If only one reference monument is used, it must be set on the actual boundary line or a prolongation thereof. Otherwise, at least two reference monuments shall be set.

(8) If any monument required by this section marks the location of a section corner, quarter section corner, or sixteenth section corner, the monument shall meet the physical standards specified by rule and regulation promulgated pursuant to section 24-4-103, C.R.S., by the state board of registration for professional engineers and professional land surveyors.

(9) If any corner required by this section falls within the traffic area of a publicly maintained, dedicated or deeded street, road, or highway, the top of the monument shall be placed one-half foot below the roadway surface, and, if such surface is any form of pavement two inches thick or greater, the monument shall be provided with a monument box the top of

which shall be set flush with the surface of the pavement.

(10) No marker required by this section shall bear the registration number of more than one professional land surveyor but may bear the name of an individual professional land surveyor or surveying firm in addition to the required registration number.

38-51-105. Land survey plats. (1) All land survey plats prepared on and after July 1, 1988, shall include at least the following items:

- (a) A scale drawing of the boundary line or lines of the land parcel;
- (b) (I) Recorded and apparent rights-of-way and easements, and, if research for recorded rights-of-way and easements is done by someone other than the professional land surveyor who prepares the plat, the source from which said recorded rights-of-way and easements were obtained must be clearly shown; or

(II) If the client wishes not to show rights-of-way and easements on the land survey plat, said land survey plat shall contain a statement showing clearly that the client did not want rights-of-way and easements researched and shown;
- (c) All dimensions necessary to establish the boundaries in the field;
- (d) A statement by the professional land surveyor that the survey was performed by him or under his direct responsibility, supervision, and checking;
- (e) A statement by the professional land surveyor explaining how bearings, if used, were determined;
- (f) A description of all monuments, both found and set, which mark the boundaries of the property, and a description of all control monuments used in conducting the survey;
- (g) A statement of the scale or representative fraction of the drawing and a bar-type or graphical scale;
- (h) North arrow;

(i) A written legal description as defined in C.R.S. 38-51-101(13) which shall contain at a minimum a reference to the county and state together with the section, township, range and principal meridian or established subdivision, block and lot number or any other method of describing the land as established by the General Land Office or Bureau of Land Management or as set forth in 38-50-101(1)(b)(II);

(j) Signature and seal of the professional land surveyor; and

(k) Any conflicting boundary evidence.

38-51-106. Survey plat - deposit - records file and index system - informational purpose. (1) On and after July 1, 1994, every professional land surveyor who accepts a monument while performing a monumented land survey and such monument is not of record either in the clerk and recorder's office of the county wherein the monument lies or in the public office designated by the county commissioners pursuant to 38-50-101(2) or who sets a monument pursuant to section 38-51-103 shall prepare a plat. A plat need not be prepared where monuments fall within a platted subdivision filed after July 1, 1975.

(2) Plats as required in paragraph (1) of this section shall:

(a) Conform to the requirements set forth in section 38-51-105;

(b) Depending on the location of the land, contain in the title block the following information:

(i) For parcels of land located within the United States rectangular survey system, the section, township, range, and principal meridian; or

(ii) For grant or unsurveyed parcels of land, information relating to the system of indexing the county assessor already has in place.

(c) Be deposited with the public office designated by the county commissioners within six months from the date the monument was set or accepted in the field.

38-51-107. Improvement location certificate. A professional land surveyor may, based upon his general knowledge of land boundaries and monuments in a given area, prepare an improvement location certificate for the use of a specific client, and, if the client is not the owner or buyer, a copy of such certificate shall be provided to such owner or buyer. Such certificate shall be prominently labeled "improvement location certificate" and shall not be designated as nor construed as being a land survey plat or improvement survey plat, and the statement furnished on the certificate shall be in the following form:

IMPROVEMENT LOCATION CERTIFICATE

I hereby certify that this improvement location certificate was prepared for ...(individual or firm)...., that it is not a land survey plat or improvement survey plat, and that it is not to be relied upon for the establishment of fence, building, or other future improvement lines.

I further certify that the improvements on the above described parcel on this date,...(insert date)...., except utility connections, are entirely within the boundaries of the parcel, except as shown, that there are not encroachments upon the described premises by improvements on any adjoining premises, except as indicated, and that there is no apparent evidence or sign of any easement crossing or burdening any part of said parcel, except as noted.

Stamp By(Signed)..
or
Seal Date.....

The professional land surveyor will assume full liability for each improvement location certificate that is done by him or under his direct supervision.

38-51-108. Unlawful sale. (1) It shall be unlawful for any person to offer to sell, to sell, or otherwise to receive remuneration for any map or plat which purports to be a survey map or plat unless said map or plat conforms with the standards, requirements, and terminology of the provisions of this article.

(2) It shall be unlawful for any person to offer to sell, to sell, or otherwise to receive remuneration for any document, sketch, or diagram which purports to be an improvement location certificate unless said document, sketch or diagram conforms with the standards, requirements, and terminology of the provisions of this article.

38-51-109. Violations. (1) It is the responsibility of all district attorneys of this state in all cases of suspected willful and knowing violation of any of the provisions of this article to prosecute the person committing such violation.

(2) Any person, including the responsible official of any agency or state, county, or local government, who willfully and knowingly violates any of the provisions of this article is guilty of a class 3 misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than 150 dollars nor more than 1500 dollars.

(3) The state board of registration for professional engineers and professional land surveyors may revoke the registration of any professional land surveyor convicted under the provisions of this article. Such a person is entitled to a hearing on the revocation, pursuant to article 4 of title 24, C.R.S. 1973.

ARTICLE 53
Perpetuation of Land Survey Monuments

38-53-101. Legislative declaration. It is hereby declared to be a public policy of this state to encourage the establishment and preservation of accurate land boundaries, including durable monuments and complete public records, and to minimize the occurrence of land boundary disputes and discrepancies.

38-53-102. Applicability - state - county - local - persons. The provisions of this article shall apply to all agencies of state, county, and local government as well as to individuals, corporations, and partnerships engaged in the private practice of land surveying.

38-53-103. Definitions. As used in this article, unless the context otherwise requires:

(1) "Accessory" means any physical evidence in the vicinity of a survey monument, the relative location of which is of public record and which is used to help perpetuate the location of the monument. Accessories shall be construed to include the accessories recorded in the original survey notes and additional reference points and dimensions furnished by subsequent professional land surveyors or attested to in writing by persons having personal knowledge of the original location of the monument.

(2) "Aliquot corner" means any section corner or quarter section corner and any other corner in the public land survey system created by subdividing land according to the rules of procedure set forth in section 38-51-102.

(3) "Bench mark" means any relatively immovable point on the earth whose elevation above or below an adopted datum is known.

(4) "Block" means a parcel of land within a platted subdivision bounded on all sides by streets or avenues, other physical boundaries such as a body of water or the exterior boundary of a platted subdivision.

(5) "Board" means the state board of registration for professional engineers and professional land surveyors.

(6) "Control corner" means any land survey monument whose position controls the location of the boundaries of a tract or parcel of land. The control corner may or may not be included within the perimeter of said tract or parcel.

(7) "Exemption plat" or "subdivision exemption plat" means a subdivision plat which includes all of the information required by 38-51-105 and depicts a division of land or the creation of an interest in property for which the board of county commissioners has granted an exemption from subdivision regulations pursuant to section 30-28-101(10)(d).

(8) "Improvement location certificate" means a representation of the boundaries of a

parcel of land and the improvements thereon, prepared pursuant to section 38-51-107.

(9) "Improvement survey plat" means a land survey plat resulting from a monumented land survey and showing, in addition to the location of all structures situated on the described parcel, easements, visible encroachments, and any fences, hedges, or walls on or within two feet of both sides of all boundaries of said parcel. In addition, an improvement survey plat may show the location of all visible utilities situated on said parcel and all underground utilities for which there is visible surface evidence or for which information is available from the appropriate utility company or client. Such plat must also show the location of easements, underground utilities, or tunnels, for which record evidence is available from the county clerk and recorder or other source as specified on the improvement survey plat.

(10) "Irregular parcel" means a parcel of land which is not uniquely defined on a subdivision plat but which is described by any of the following methods:

- (a) An aliquot part of a section;
- (b) A metes and bounds description;
- (c) A book and page or reception number reference;
- (d) Any so-called "assessor's tract";
- (e) A description which calls only for the owner's or adjoiner's name.

(11) "Land survey" means a series of observations and measurements made by a professional land surveyor pursuant to sections 38-51-102, 38-51-103 and 38-51-104 for the purpose of establishing, locating or restoring any real property boundary.

(12) "Land survey plat" means a plat which shows the information developed by a land survey and shall include all information required by section 38-51-105.

(13) "Legal description" means a written, narrative description, in words, of a parcel of real property or easement for the purpose of perpetuating location or title.

(14) "Monument record" means a written and illustrated document describing the physical appearance of a survey monument and its accessories or of a bench mark.

(15) "Monumented land survey" means a land survey in which monuments are either found or set pursuant to sections 38-51-102, 38-51-103 and 38-51-104, C.R.S. to mark the boundaries of a specified parcel of land.

(16) "Platted subdivision" means a group of lots, tracts, or parcels of land created by recording a map which meets the requirements of section 38-51-105 and which shows the boundaries of said lots, tracts, or parcels and the original from which they were created.

(17) "Professional land surveyor" means a person registered or licensed pursuant to part 2 of article 25 of title 12, C.R.S. 1973.

(18) "Public land survey monument" means any land boundary monument established on the ground by a cadastral survey of the United States General Land Office or Bureau of Land Management and any mineral survey monument established by a United States mineral surveyor and made a part of the United States public land records.

(19) "Responsible charge" means control and direction of surveying work.

(20) "Subdivision plat" means a map of a platted subdivision recorded for the purpose of creating land parcels which can be identified uniquely by reference to said map including all information required by section 38-51-105.

38-53-104. Filing of monument record required. Whenever a professional land surveyor conducts a survey which uses as a control corner any public land survey monument or any United States geological survey or United States coast and geodetic survey (now the national ocean service/national geodetic survey) monument, he shall file with the board a monument record describing such monument, but said monument record need not be filed if the monument and its accessories are substantially as described in an existing monument record previously filed pursuant to this section. A professional land surveyor shall also file a monument record whenever he establishes, restores, or rehabilitates any public land survey monument or section corner, quarter section corner, or sixteenth section corner as defined by the nomenclature of the United States public land survey system. Each monument record shall describe at least two accessories or reference points. Monument records must be filed within six months of the date on which the monument was used as control or was established, restored, or rehabilitated.

38-53-105. Professional Land Surveyor must rehabilitate monuments. Whenever a monument record of a public land survey corner is required to be filed under the provisions of this article, the professional land surveyor shall, if field conditions require it, restore or rehabilitate the corner monument so as to leave it readily identifiable and reasonably durable.

38-53-106. Forms to be prescribed by board. The board shall establish and revise, whenever necessary, the forms to be used for monument records and shall prescribe the information to be presented on said forms. These forms and necessary instructions shall be furnished to all professional land surveyors without charge.

38-53-107. Monument records to be certified. No monument record shall be accepted for filing unless it is properly completed and signed and sealed by the professional land surveyor who was in responsible charge of the work.

38-53-108. Filing permitted on any survey monument. A professional land surveyor may file with the board a monument record describing any land survey monument, accessory, or

bench mark.

38-53-109. Fees. For filings on public land survey monuments and their accessories and for filings on aliquot corners or bench marks there shall be no fee charged. For all other filings there shall be a fee as established pursuant to section 24-34-105, C.R.S. 1973, payable to the board at the time of filing.

38-53-110. Violations. (1) It is the responsibility of all district attorneys of this state in all cases of suspected willful and knowing violation of any of the provisions of this article to prosecute the person committing such violation.

(2) Any person, including the responsible official of any agency or state, county, or local government, who willfully and knowingly violates any of the provisions of this article is guilty of a class 3 misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than 150 dollars nor more than 1500 dollars.

(3) The state board of registration for professional engineers and professional land surveyors may revoke the registration of any professional land surveyor convicted under the provisions of this article. Such a person is entitled to a hearing on the revocation, pursuant to article 4 of title 24, C.R.S. 1973.

APPENDIX A

SUNSET STATUTORY EVALUATION CRITERIA

- (I) Whether regulation by the agency is necessary to protect the public health, safety and welfare; whether the conditions which led to the initial regulation have changed; and whether other conditions have arisen which would warrant more, less or the same degree of regulation;
- (II) If regulation is necessary, whether the existing statutes and regulations establish the least restrictive form of regulation consistent with the public interest, considering other available regulatory mechanisms and whether agency rules enhance the public interest and are within the scope of legislative intent;
- (III) Whether the agency operates in the public interest and whether its operation is impeded or enhanced by existing statutes, rules, procedures and practices of the Department of Regulatory Agencies and any other circumstances, including budgetary, resource and personnel matters;
- (IV) Whether an analysis of agency operations indicates that the agency performs its statutory duties efficiently and effectively;
- (V) Whether the composition of the agency's board or commission adequately represents the public interest and whether the agency encourages public participation in its decisions rather than participation only by the people it regulates;
- (VI) The economic impact of regulation and, if national economic information is available, whether the agency stimulates or restricts competition;
- (VII) Whether complaint, investigation and disciplinary procedures adequately protect the public and whether final dispositions of complaints are in the public interest or self-serving to the profession;
- (VIII) Whether the scope of practice of the regulated occupation contributes to the optimum utilization of personnel and whether entry requirements encourage affirmative action;
- (IX) Whether administrative and statutory changes are necessary to improve agency operations to enhance public interest.

APPENDIX B

The following chart shows the responses from the counties and municipalities to the questions on the survey regarding professional engineering services.

SURVEY OF ENGINEERING PRACTICE IN THE PUBLIC SECTOR

Rating Scale

- "1" Strongly Disagree
- "2" Disagree
- "3" Neutral Opinion
- "4" Agree
- "5" Strongly Agree

The public's health, safety, and welfare is protected through the registration and licensing of Professional Engineers.

Ratings Counties 4.28 Municipalities 4.08

The quality of engineering services provided by licensed Professional Engineers is generally higher than those provided by unlicensed personnel.

Rating Counties 4.16 Municipalities 3.81

Engineering designs which impact the public's health, safety, and welfare should be reviewed by licensed P.E.'s.

Rating Counties 4.44 Municipalities 4.48

In order to protect the public's health, safety, and welfare, municipal engineers who design projects "in-house" should be subject to the same Professional Engineer licensing requirements as engineers who perform the same work in the private sector.

Rating Counties 4.23 Municipalities 4.14

In order to protect the public's health, safety, and welfare, municipalities should not be exempted from the laws regulating the practice of engineering.

Rating Counties 4.00 Municipalities 3.75