PERFORMANCE AUDIT

BOARD OF TECHNICAL REGISTRATION

Report to the Arizona Legislature
By the Auditor General
February 1985
85-3

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STATE OF ARIZONA
OFFICE OF THE
AUDITOR GENERAL

February 12, 1985

Members of the Arizona Legislature
The Honorable Bruce Babbitt, Governor
Mr. Ronald Dalrymple, Executive Director
Board of Technical Registration

Transmitted herewith is a report of the Auditor General, A Performance Audit of the Board of Technical Registration. This report is in response to an April 27, 1983, resolution of the Joint Legislative Oversight Committee. The performance audit was conducted as a part of the Sunset Review set forth in A.R.S. §§41-2351 through 41-2379.

This performance audit report is submitted to the Arizona State Legislature for use in determining whether to continue the Board of Technical Registration beyond its scheduled termination date of July 1, 1986. The report makes recommendations to 1) terminate licensing for geologists, assayers and landscape architects, 2) improve the Board's ability to develop licensing examinations, and 3) strengthen enforcement activities.

My staff and I will be pleased to discuss or clarify items in the report.

Respectfully submitted,

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SUMMARY

The Office of the Auditor General has conducted a performance audit of the State Board of Technical Registration in response to an April 27, 1983, resolution of the Joint Legislative Oversight Committee. This performance audit was conducted as part of the Sunset Review set forth in Arizona Revised Statutes (A.R.S.) §§41-2351 through 41-2379.

The Board of Technical Registration regulates architects, engineers, assayers, land surveyors, geologists, and landscape architects. The Board is responsible for examining and licensing members of these professions and enforcing laws governing their practice. Current Board membership consists of two architects, three engineers, one landscape architect, one land surveyor, one geologist or assayer, and one public member.

State Regulation Of Geologists Is Unnecessary (see pages 11-16)

State licensure of geologists could be eliminated without significantly affecting the public health, safety and welfare. Evidence suggests that little harm has resulted from the practice of geology. Furthermore, users of geological services are largely commercial, institutional and industrial clients who are able to assess the qualifications of geologists they use. To the extent that the practice of geology poses any threat to the public, the American Institute of Professional Geologists offers a voluntary certification process that appears adequate to protect the public. The Legislature should consider deleting A.R.S. §32-101.B.11 through 32-101.B.13, which requires the licensing of geologists, and other pertinent portions of the statutes relating to geologists.

State Regulation Of Assayers Is Unnecessary (see pages 17-22)

Arizona does not need to license assayers. No other state regulates assayers in any form. Assaying poses no potential harm to the general

public. Although mining fraud is cited as a potential danger of the assaying practice, the general public has effective recourse for resolving mining fraud cases through the Securities Division of the Arizona Corporation Commission. Moreover, the general public rarely uses assaying services. Users are largely commercial institutions, which can and do use a variety of routine procedures to identify reliable assayers and assay labs. The Legislature should consider deleting A.R.S. §32-101.B.4 through 32-101.B.6, which requires the licensing of assayers, and other pertinent portions of the statutes relating to assayers licensed by the Board of Technical Registration.

State Regulation Of Landscape Architects Is Unnecessary (see pages 23-32)

The public receives little protection from the licensure of landscape architects. Little harm to the public actually results from the practice of landscape architecture because most potentially harmful conditions are not serious, and can be readily identifed and corrected. Existing Federal, State, and local government regulations adequately protect the public from any threats posed by landscape architecture. Most users of landscape architectural services are commercial and institutional users who can assess the qualifications of landscape architects. However, current statutes provide the least protection to the less knowledgeable individual users. Yet, despite the minimal protection for individual users, no identifiable harm has occurred from the practice of landscape architecture. In addition, current licensing provisions for landscape architects may also unnecessarily restrict the scope of practice of related professions.

The Legislature should consider deleting A.R.S. §32-101.B.14 through 32-101.B.16, which requires the licensing of landscape architects, and other portions of the statutes relating to landscape architects licensed by the Board of Technical Registration. If the Legislature decides to continue regulating landscape architects, it should consider amending A.R.S. §32-101.B.14 through 32-101.B.16 to provide a less restrictive

form of regulation, such as regulation of the title of landscape architect, which would not limit the ability of people in related professions to practice.

Deficiencies In The Board Of Technical Registration's Licensing Examination May Prevent The Board From Adequately Assessing Competency (see pages 33-43)

Licensing examinations developed by the Board of Technical Registration contain deficiencies that may limit the Board's ability to defend licensing decisions. The Board does not appear to use nationally recognized standards and procedures in developing its licensing examinations. As a result, tests may not adequately measure applicants' competence, and Board licensure decisions may be subject to legal challenges. In addition, inconsistencies in grading and errors in scoring further reduce the Board's ability to make sound licensing decisions. The Board should: 1) follow established standards and procedures for the development and validation of professional licensing examinations, 2) consider the joint development of regional exams with neighboring states, and 3) verify test scores before notifying applicants of exam results. The Legislature should consider appropriating funds from the Board's existing fund balance so the Board can obtain the services of professional testing experts.

The Complaint Review Process Has Improved, But A Few Changes Could Strengthen Enforcement (see pages 43-51)

The Board of Technical Registration has strengthened its enforcement function in recent years and is more effective in resolving complaints. However, a few changes could further improve enforcement. The statutory exemption that allows nonregistrants to design commercial and multifamily structures does not protect the public because it is based on a dollar amount and calculated differently by building permit officials from one jurisdiction to another. Also, the Board's enforcement activities could be further improved if professional liability carriers were required to report malpractice claims against registrants. The Legislature should

consider amending: 1) A.R.S. §32-144.A.3, to change the exemption allowing nonregistrants to design structures costing less than $75,000 to an exemption based on structure size and occupancy; and 2) A.R.S. §20-1742 and A.R.S. §32-101 et. seq., to require that insurance companies report malpractice claims and settlements against Board registrants to the Board of Technical Registration through the Department of Insurance, and to require the Board to investigate reports of malpractice claims and settlements against registrants.

TABLE OF CONTENTS

Page

INTRODUCTION AND BACKGROUND 1

SUNSET FACTORS 5

FINDING I: STATE REGULATION OF GEOLOGISTS IS UNNECESSARY 11

Little Need For State Licensing Exists 11

Alternative To State Licensure Provides Sufficient Protection. 14

Recommendation 16

FINDING II: STATE REGULATION OF ASSAYERS IS UNNECESSARY 17

Arizona Is The Only State That Licenses Assayers. 17

Little Harm Occurs To The Public From Assaying Practice 17

Users Have Methods Of Finding Qualified Assayers 20

Recommendation 22

FINDING III: STATE REGULATION OF LANDSCAPE ARCHITECTS IS UNNECESSARY 23

Landscape Architecture Poses Little Harm 23

Most Users Can Protect Themselves. 28

Current Licensing Provisions May Restrict Other Professions 29

Recommendations. 32

FINDING IV: DEFICIENCIES IN THE BOARD OF TECHNICAL REGISTRATION'S LICENSING EXAMINATION MAY PREVENT THE BOARD FROM ADEQUATELY ASSESSING COMPETENCE 33

Exam Content May Not Relate Directly To Skill Levels Needed To Ensure Competent Practice 33

TABLE OF CONTENTS (cont.)

Board Procedures For Administering the Exams Further Reduce Its Ability To Assess Competence. 38

Recommendations. 41

FINDING V: THE COMPLAINT PROCESS HAS IMPROVED, BUT A FEW CHANGES COULD STRENGTHEN ENFORCEMENT 43

Complaint Processing Is More Effective 43

The Current Statutory Exemption Does Not Protect The Public 46

Insurance Carrier Reporting Could Improve Board Enforcement 49

Recommendations 50

OTHER PERTINENT INFORMATION 53

AREAS FOR FURTHER AUDIT WORK 55

AGENCY RESPONSE 57

LIST OF TABLES AND FIGURES

		Page
TABLE 1 -	Licensure And Enforcement Activity	2
TABLE 2 -	Revenues And Expenditures Fiscal Years 1980 Through 1984	3
TABLE 3 -	Regulation Of Landscape Architecture In The United States	27
TABLE 4 -	Board Use Of Professional Testing Standards	35
TABLE 5 -	Board Enforcement Actions Fiscal Years 1982 Through 1985	44
FIGURE 1 -	Average Time To Resolve Complaints 1979 Through 1983	45

INTRODUCTION AND BACKGROUND

The Office of the Auditor General has conducted a performance audit of the State Board of Technical Registration in response to an April 27, 1983, resolution of the Joint Legislative Oversight Committee. This performance audit was conducted as part of the Sunset Review set forth in A.R.S. §§41-2351 through 41-2379.

Development Of The Board's Responsibilities And Membership

The Board of Technical Registration regulates architects, engineers, assayers, land surveyors, geologists and landscape architects. The State Board of Registration, the forerunner of the present State Board of Technical Registration, was established in 1921 to regulate the practice of architecture, assaying, engineering, and land surveying. The responsibility for regulating geology was added in 1956 and regulation of landscape architecture was added in 1968.

The current Board has two architects, three engineers, one landscape architect, one land surveyor, one geologist or assayer, and one public member. The original Board consisted of seven members: six individuals registered as architects, engineers or assayers; and the dean of the College of Mines and Engineering for the University of Arizona. The Board's membership was increased to nine in 1952; membership at that time consisted of three architects, five engineers and the ex officio member from the University of Arizona. Board membership was changed to its current status in 1980.

Current Responsibilities of the Board

The Board is responsible for administration and enforcement of Arizona laws concerning the practice of the aforementioned professions. Board duties include:

- Administering initial license examinations.
- Issuing licenses to individuals who meet the Board's education, experience, and testing requirements.
- Renewing licenses triennially.
- Resolving complaints and investigating violations of the Technical Registration Act.

Licensure and complaint closure information for the past 4 years are shown in Table 1.

TABLE 1

LICENSURE AND ENFORCEMENT ACTIVITY
FISCAL YEARS 1980-81 THROUGH 1983-84

	Actual 1980-81	Actual 1981-82	Actual 1982-83	Actual 1983-84
Licensure				
Professional registrants	10,041	10,680	11,722	13,062
Examinations administered	(1)	1,600	1,988	1,503
Professional registrations granted	681	638	869	1,340 (2)
In-training registrations granted	163	214	304	255
Enforcement				
Cases carried forward from prior years	93	131	159	105 (3)
Cases opened	102	106	106	144
Cases closed	64	78	127	127

Source: Board of Technical Registration budget request for fiscal year 1984-85

(1) The information is not available.

(2) Includes an estimated 600 land surveyor grandfather clause applicants.

(3) Due to recording changes and the reopening of some cases, cases carried forward into 1983-84 do not equal the balance from 1982-83.

Budget and Personnel

The Board and its operations are funded through fees charged for application, examination and license renewal. Ten percent of the fees are deposited in the General Fund; the remaining 90 percent are used for Board operations as appropriated by the Legislature. Expenditures for fiscal year 1980-81 through 1982-83 and estimated amounts for fiscal year 1983-84 and 1984-85 are shown in Table 2.

TABLE 2

REVENUES AND EXPENDITURES
FISCAL YEARS 1980-81 THROUGH 1984-85

	Actual 1980-81	Actual 1981-82	Actual 1982-83	Estimated 1983-84	Approved 1984-85
Full-time employees	5.5	6	6	7	8
Revenues -					
Balance beginning of fiscal year	N/A (1)	$169,000	$179,000 (2)	$214,300	$247,000
Fees	N/A (1)	282,200	316,000	400,800	413,000
Total funds available	$416,027	$451,200	$495,000	$615,100	$660,000
Expenditures -					
Personal services	$ 90,233	$100,300	$124,600	$139,600	$166,800
Employee-related expenditures	14,464	17,800	23,500	30,700	35,700
Professional services	64,648	97,500	77,100	123,400	112,600
Travel:					
In-State	6,448	6,000	6,500	10,100	14,400
Out-of-State	4,609	2,500	2,600	5,200	5,200
Other Operating	52,278	44,500	46,300	59,100	63,500
Equipment	14,347	0	100	0	400
Total expenditures	$247,027	$268,600	$280,700	$368,100	$398,600

Source: Appropriations Reports for fiscal years 1982-83 through 1984-85

(1) The information is not available on Appropriations Reports.

(2) There is a discrepancy in the Appropriations Reports of fiscal year 1981-82 and fiscal year 1982-83 in the category "Revenues - Balance at beginning of fiscal year."

Audit Scope And Purpose

Our audit addressed issues set forth in the 12 Sunset Factors in A.R.S. §41-2354. Additional detailed work was done to determine the following issues.

- Whether the professions of assaying, geology, and landscape architecture need to be regulated by the Board;
- Whether local license examinations test applicants' competence; and
- Whether the Board has been effective in handling and resolving complaints against its registrants.

Due to time constraints, we were unable to address all potential issues identified during our preliminary audit work. The section Areas For Further Audit Work describes these potential issues. In addition, we developed information on county building permits which is presented in the section Other Pertinent Information.

The Auditor General and staff express appreciation to the staff and members of Board of Technical Registration for their cooperation and assistance during the course of our audit.

SUNSET FACTORS

In accordance with A.R.S. §41-2354, the Legislature should consider the following 12 factors in determining whether the State Board of Technical Registration should be continued or terminated.

1. The objective and purpose in establishing the Board

The objective and purpose of the Board of Technical Registration is to protect the public by ensuring the competency of practitioners of six technical professions. This purpose is clearly stated in A.R.S. §32-101.

> "The purpose of this chapter is to provide for the safety, health and welfare of the public through the promulgation and enforcement of standards of qualification for those individuals licensed and seeking licenses pursuant to this chapter."

2. The effectiveness with which the Board has met its objective and purpose and the efficiency with which the Board has operated

The Board has been generally effective in meeting its objective and purpose. The Board has improved its complaint resolution process, resulting in an enhanced reputation among registrants and building safety departments throughout the State (see Finding V, page 43). However, the Board could improve its effectiveness by developing examinations for geologists, land surveyors and assayers that meet national standards for ensuring valid content (see Finding IV, page 33).

Some improvements are needed to increase the Board's efficiency in carrying out its operations. Security for important documents and checks received by the Board office is weak. Board staff does not deposit funds received in a timely manner. Finally, Board staff does not follow generally accepted accounting principles in maintaining

financial records. The Board's executive director should develop management reports to aid in monitoring these activities. The executive director has indicated that he plans to take corrective action in these areas.

3. The extent to which the Board has operated within the public interest

The Board's licensure and enforcement functions serve the public interest by ensuring that architects, engineers and land surveyors operating in Arizona meet minimum competency standards and that unregistered individuals do not practice these three professions except as provided by law. However, State licensing of assayers, geologists and landscape architects does not serve the general public interest (see Finding I, page 11; Finding II, page 17; Finding III, page 23).

4. The extent to which rules and regulations promulgated by the Board are consistent with the legislative mandate

The Board updated its rules and regulations in 1983, to make them more consistent with 1983 statutory amendments. The Attorney General's Office reviewed the rules and bylaws to ensure consistency.

5. The extent to which the Board has encouraged input from the public before promulgating its rules and regulations and the extent to which it has informed the public as to its actions and their expected impact on the public

The Board uses several methods to encourage public input and inform the public of its actions. The Board has posted notices in newspapers informing the public of impending rule and regulation changes. In addition, the Board stated it notifies building safety departments and professional associations when rule and regulation changes are proposed, and notifies professional associations and building safety departments when it takes enforcement action against registrants.

Finally, in 1984 the Board instituted a newsletter advising registrants, professional societies and building safety departments of current Board activities.

6. The extent to which the Board has been able to investigate and resolve complaints that are within its jurisdiction

The Board adequately investigates and resolves complaints against registrants and nonregistrants. Over the past 5 years complaint closure time has been reduced substantially. Although the Board has strengthened its enforcement function, the Board could improve its consistency of enforcement if: 1) the exemption for nonregistrants who design structures were based on objective design and use criteria rather than dollar amounts, and 2) the Board was notified of and investigated liability claims and judgments against registrants (see Finding V, page 43).

7. The extent to which the Attorney General or any other applicable agency of the State government has the authority to prosecute actions under enabling legislation

The enabling legislation for the Board provides the Attorney General and county attorneys adequate authority to prosecute actions. The Board's Attorney General representative feels that amendments to the Board's statutes since 1980 have increased the ability of the Attorney General and county attorneys to prosecute violations of the Technical Registration Act. Registrant violations, investigative procedures and grounds for disciplinary action have been clarified in the past 4 years.

8. The extent to which the Board has addressed deficiencies in the enabling statutes which prevent it from fulfilling its statutory mandate

In 1983, on the advice of its Attorney General representative, the Board proposed changes to A.R.S. §32-128.A to specify the disciplinary

actions the Board may impose upon registrants. In addition, the Board recommended changes to A.R.S. §32-128.C to clarify the Board's authority to employ expert witnesses, appoint advisory committees and settle cases informally.

9. The extent to which changes are necessary in the laws of the Board to adequately comply with the factors listed in the Sunset Laws

Based on our audit work we recommend that the Legislature make the following changes.

- Delete A.R.S. §32-101.B.4 through 32-101.B.6, which requires licensing of assayers, and other pertinent statutes relating to assayers licensed by the Board (see Finding I, page 11).

- Delete A.R.S. §32-101.B.11 through 32-101.B.13, which requires the licensing of geologists, and other pertinent portions of the statutes relating to geolgists licensed by the Board (see Finding III, page 23).

- Delete A.R.S. §32-101.B.14 through 32-101.B.16, which requires licensing of landscape architects, and other pertinent statutes relating to landscape architects licensed by the Board (see Finding III, page 23).

- Amend A.R.S. §32-144.A.3 to change the exemption allowing nonregistrants to design structures costing less than $75,000 to an exemption based on structure size and occupancy. The exemption should allow nonregistrants to design only structures that 1) do not exceed a specified square footage and 2) are not open to the general public (see Finding V, page 43).

- Amend A.R.S. §20-1742 to require: 1) insurance companies to report malpractice claims and settlements against Board registrants to the Department of Insurance, and 2) the Department

of Insurance to forward all such reports to the Board of Technical Registration (see Finding V, page 43).

- Amend A.R.S. §32-101 et. seq. to direct the Board to investigate reports of malpractice claims and settlements against registrants. This change would require the Board to determine if violations of Technical Registration statutes, rules and regulations have occurred (see Finding V, page 43).

10. The extent to which the termination of the Board would significantly harm the public health, safety or welfare

Terminating the Board could significantly harm the public by eliminating essential regulation of the architecture, engineering and land surveying professions. The absence of regulation would create a void by removing competency requirements and an enforcement process necessary to protect the public from personal injury or financial loss. However, terminating the licensure of assayers, geologists and landscape architects would not significantly harm the public health, safety or welfare (see Finding I, page 11; Finding II, page 17; Finding III, page 23).

11. The extent to which the level of regulation exercised by the Board is appropriate and whether less or more stringent levels of regulation would be appropriate

The level of regulation exercised by the Board with regard to architecture, engineering and land surveying appears to be generally appropriate, and major changes in this regulation are not necessary. However, the Board does not need to regulate assayers, geologists, and landscape architects (see Finding I, page 11; Finding II page 17; Finding III, page 23).

12. The extent to which the Board has used private contractors in the performance of its duties and how effective use of private contractors could be accomplished

The Board has used private contractors for investigating cases and developing, proctoring and grading exams. However, the Board recentlyhired its own investigator and no longer requires a private investigative firm's services. The Board will continue to use private contractors for examination-related functions and needs to increase its use of test development specialists to ensure that exams developed by the Board adequately measure competence. In fiscal year 1982-83 the Board expended approximately $60,000 for private contractors' services. The Board's expenditures for private contractors increased to approximately $76,000 in fiscal year 1983-84. The Board will expend approximately $71,000 for these services in fiscal year 1984-85.

FINDING I

STATE REGULATION OF GEOLOGISTS IS UNNECESSARY

State licensure of geologists could be eliminated without significantly threatening the public health, safety and welfare. To the extent that the practice of geology creates any potential harm, an alternative to licensure would provide adequate protection.

Little Need For State Licensing Exists

State licensing of geologists is not needed to protect the public. Licensure of a profession is justified only if unlicensed practice can cause significant injury to the public. Yet, evidence suggests that little harm has resulted from the practice of geology. Moreover, users of geological services are primarily institutional, commercial, and industrial firms with the capability to determine the qualifications of geologists they use.

Justification For Regulation - Regulation of a profession is necessary only when its absence is likely to result in injury to the public. The Council of State Governments has identified three conditions that must exist before a compelling argument for regulation can be made.

- Unregulated practice would threaten the public health, safety and welfare.
- Users of services do not possess adequate knowledge or resources to evaluate the qualifications of those offering services.
- Benefits of regulation to the public outweigh its costs.

According to Benjamin Shimberg, an authority on regulation, when conditions indicate a need for regulation licensure is not necessarily the most appropriate mechanism to use. The method chosen for regulation

should bear some relationship to the seriousness of harm that is likely to result from its absence. Licensure is the most restrictive form of regulation because it makes it illegal for unlicensed people to practice an occupation. For this reason, licensure should be limited to those professions in which the likelihood and likely degree of harm is greatest, and should be used strictly as a last resort. By comparison, certification is a form of regulation that recognizes individuals who have met predetermined qualifications. For example, individuals applying for certification may be required to have an appropriate degree and a specified amount of professional experience. Certification differs from licensure in that others may provide similar services as long as they do not describe themselves as "certified." According to Shimberg, certification is particularly appropriate in cases in which the public needs assistance in identifying competent practitioners but the risks are not severe enough to warrant licensure.

Little evidence of harm - Although the strictest regulatory alternative, licensure, is used to regulate geologists, we found little evidence of harm resulting from geological practice. Neither the review of complaints to the Board nor examination of lawsuits revealed harm from the geological practice itself.

From July 1, 1981 to September 20, 1984, the Board of Technical Registration received only 10 complaints related to geological practice. In no case did the complaints relate to the actual licensees' competence in geological practice. Nine cases involved geologists allegedly practicing without being registered, in violation of Board statutes. The Board closed all of these cases after routine investigation uncovered no evidence of violations. In the remaining case, a licensed geologist allegedly practiced outside his field in making recommendations bordering on those more appropriately made by a civil engineer. The Board cautioned the respondent to use care in issuing future recommendations, but did not impose any penalty. Again, it was not the practitioner's competence in geology that was being questioned.

Examination of lawsuits related to geology gave further evidence of the lack of potential harm from geological practice. Professional geologists identified some potential harm from their profession, but the actual harm resulted from related engineering subspecialties - geological, geophysical or civil engineering - not geology itself. Practicing geologists working commercially examine the earth's crust to determine the likely location of reserves of oil, water, ore, or other material of interest to a company. However, the design of any structure to access such reserves is not within the purview of geological practice, but is the primary responsibility of engineers trained to do such design work. A well collapse in Flagstaff, Arizona, resulting in a lawsuit, was cited as an example of harm from the practice of geology. However, the collapse was due to a design error rather than an error in geological practice. Because no identifiable instances of harm have resulted from geological practice as such, regulation of the profession provides no benefits in excess of the costs incurred.

Knowledgeable Users - Clients of geological consultants are generally capable of determining the qualifications of geologists. Most users have access to resources that allow them to ascertain such qualifications. Furthermore, statutory exemptions and exclusions recognize that employers of geologists can adequately assess geologists' qualifications.

Most users of geological services have the ability to assess the qualifications of geologists. Clients using geological services are primarily institutional, commercial, and industrial clients: the oil, gas, and mining industries; utility companies; developers; and local, state and Federal governments. Some clients, such as agencies of the Federal government, employ their own geologists as well as using geological consultants, and thus may use their own staff geologists in hiring geological consultants. Geological consultants obtain their business largely by word of mouth, indicating that potential users can and do make decisions based on recommendations from others in the business. Since almost all institutional clients also use geologists continually, they have opportunity to judge the quality of work as a result of their own experience.

Moreover, statutory exclusions and exemptions also recognize the ability of employers to assess qualifications. The statutory definition of "geologist" (A.R.S. §32-101.B.12) states:

> ". . . A person employed on a full-time basis as a geologist by an employer engaged in the business of developing mining or treating ores and other minerals shall not be deemed to be engaged in geological practice for the purposes of this chapter if he engages in geological practice exclusively for and as an employee of such employer and does not hold himself out and is not held out as available to perform any geological services for persons other than his employer."

In addition, A.R.S. §32-144.A.1 exempts Federal employees, among others, from statutory requirements for licensure.

Alternative To State Licensure
Provides Sufficient Protection

To the degree that the practice of geology results in any threat to the public health, safety and welfare, certification offered by the American Institue of Professional Geologists (AIPG) provides sufficient protection. Since little harm is likely to ensue from geological practice, voluntary certification offers a more appropriate level of protection than licensure. AIPG certification by itself provides a satisfactory indication of competence.

Appropriate level of protection - Results of the Auditor General review of complaints to the Board of Technical Registration indicate that risks from geological practice do not create a need for licensure. If regulation is warranted at all, a less restrictive form of regulation, such as certification, is more appropriate. The AIPG offers a voluntary certification process that appears to be more than adequate.

The stated purpose of the American Institute of Professional Geologists is:

> ". . . to establish professional qualifications for, and to evaluate continuously the conduct of geological scientists; to enhance and to preserve the profession; to establish ethical standards that insure the protection of the public and the profession itself from non-professional practice. . . ." [emphasis added]

The AIPG then describes the function of certification.

> "Certification provides a means by which the public can recognize those geologists who are judged by their peers to be worthy of public trust in the practice of their profession. The letters CPGS (Certified Professional Geological Scientist) following a name . . . proclaims to the public that that person has been certified by the Institute as possessing proper and necessary qualifications . . ." [emphasis added]

AIPG certification indicates professional competence - In the event that users would require assistance in determining the competence of a geologist, AIPG certification, without licensure, would adequately provide an indication of some competence level. Only 11 states regulate geolgists in any form. At least one of those states accepts AIPG certified geologists as being automatically qualified for certification by the state. To the extent that users of geological services in the other 39 states require assistance in assessing a geologist's competence, AIPG certification may meet their needs.

In Arizona, Board license requirements are similar to AIPG certification requirements for education and experience. AIPG requires a bachelor's degree and 5 years of professional experience; the Board of Technical Registration requires a combination of 8 years of education and professional experience. In addition, the Board requires applicants to pass a professional license examination, unless they are judged by the Board to be qualified on the basis of A.R.S. §32-123.A. In accordance with A.R.S. §32-123.A, the Board licensed 15 out of 16 AIPG members in fiscal year 1983-84 without examination. Therefore, it would seem that AIPG certification alone could be used to determine professional competence.

CONCLUSION

State licensure of geologists is unnecessary. The practice of geology does not pose a sufficient risk to the public to warrant licensure. To the degree that risks do exist from geological practice, voluntary certification through AIPG provides sufficient protection.

RECOMMENDATION

The Legislature should consider deleting A.R.S. §32-101.B.11 through 32-101.B.13, which requires the licensing of geologists, and other pertinent portions of the statutes referring to geologists.

FINDING II

STATE REGULATION OF ASSAYERS IS UNNECESSARY

The State does not need to regulate assayers. Arizona is the only state that licenses assayers. Assaying practice does not pose a threat to the public health, safety and welfare. Users of assaying services have the means to adequately protect themselves from incompetent and unethical practice.

Arizona Is The Only State That Licenses Assayers

Arizona is the only state that licenses assayers. Forty-two assayers are currently licensed in Arizona. No other state has laws regulating assayers in any form. One other state, Nevada, proposed such legislation in the 1983 legislative session but the bill was not enacted.*

Little Harm Occurs To The Public From Assaying Practice

State licensure of assayers could be eliminated without endangering the public. Available evidence suggests that little harm has resulted from the practice of assaying. In cases of mining fraud in which harm may occur, the general public has stronger and more appropriate avenues of recourse.

Little evidence of harm - Little identifiable harm related to assaying can be found by examining complaints to the Board of Technical Registration or lawsuits involving assayers.

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* The Nevada bill was proposed ostensibly to assist small miners and prospectors in identifying reliable assayers. However, in testimony regarding the bill opponents expressed doubts as to whether benefit would ensue from regulation. Even among supporters, controversy existed as to whether licensing would be the most effective method of regulation.

The lack of substantial complaints demonstrates the relatively minor harm associated with assaying. During the 3-year period between July 1, 1981 and September 20, 1984, the Board received and investigated only seven complaints related to assaying. Six of the complaints were against people allegedly practicing without a license, and in only one case was the complainant a user of assaying services. The Board found no basis for the complaints in three cases, and closed four other cases administratively without penalty.

Only one lawsuit against an assayer was identified, and it was related to neither the assayer's competence or ethical conduct. According to people familiar with the suit, the plaintiffs had bought a bar misrepresented to them as a solid gold bar. The assayer had cautioned the buyers against purchasing it, in spite of his own assay results that confirmed the sellers' assertions about the bar. The buyers discovered the fraud too late to locate the sellers, and sued the assayer, who was not involved in the scam, as the only party available from whom they even had a chance to obtain restitution. The assayer settled out of court, for an amount less than what his court costs would have been had he chosen to challenge the suit.

Mining fraud - Supporters of continued licensing identified mining fraud as the only major concern related to assaying practice that affects the general public. However, assayers themselves have not participated in these frauds. Even if assayers were involved, the public has effective recourse through the Securities Division of the Arizona Corporation Commission.

Some members of the general public are affected indirectly, but adversely, by assays when they decide to invest in mining properties based on assay reports that later prove to be fraudulent. Although an assay report is often a necessary part of such schemes, rarely, if ever, are assayers involved in perpetrating mining fraud. An official at the U.S. Securities and Exchange Commission (SEC), who has investigated cases of mining fraud across the United States for the past 10 years, could

recall no case in which SEC charged and convicted an assayer for involvement in such a crime. In fact, cases of mining fraud, as they relate to assaying, more frequently involve deceptive practices occurring before a sample is submitted to the assayer. As a result, erroneously high and misleading reports of precious metals content occur regardless of the competence or ethical conduct of the assayer.

Even if an assayer were involved in perpetrating a fraudulent mining scheme, other agencies have more effective penalties than the Board of Technical Registration. The Securities Division of the Arizona Corporation Commission investigates cases of securities fraud involving the investing public. The Securities Division prosecutes cases through the Attorney General's Office and can impose a wide range of administrative, civil, and criminal penalties as applicable to a case. Because securities fraud is a class 4 felony, there is no limit on civil or criminal penalties that can be imposed.

In contrast, the Board of Technical Registration is relatively powerless to take definitive action in fraud cases, except in cases involving Board registrants. The Board is limited to penalties allowed by statutory authority, including revocation of license, suspension of license not to exceed 3 years, imposition of an administrative penalty not to exceed $2,000 per violation, and imposition of probation requirements adopted to protect the public health, safety and welfare. Because Board options are limited, recourse through the Corporation Commission is a much more powerful tool for investors victimized by mining fraud.

The general public is also more aware of the role of the Corporation Commission in prosecuting fraud cases. No member of the general public brought an assaying-related case to the Board in the past 3 years; complaints were brought by employees of other State agencies, a member of the mining industry (prospector), and members of the Board staff itself. In comparison, the Corporation Commission conducts most of its inquiries in mining fraud cases as a result of complaints from the investing public, with a smaller proportion of its inquiries resulting from activities of its own staff or the staff of the Attorney General's Office.

Users Have Methods Of Finding Qualified Assayers

Most users of assaying services have a variety of ways to identify reliable assayers and assay laboratories. Users are primarily commercial and industrial clients who are fully able to determine the qualifications of the assayers they use. Individual prospectors unable to ascertain assayer qualifications may use certification by the Arizona Association of Certified Laboratories to aid in identifying reliable assay labs.

Knowledgeable users - Primary users of assaying services in Arizona have a wide variety of methods to assess the reliability of assayers. The general public rarely uses assaying services. Users of assay labs are largely commercial and industrial clients: mining companies, exploration companies, exploration geologists, and to a limited degree commercial dealers in precious metals. Many mining companies employ their own in-house assayers in addition to using independent assay labs, and are thus able to assess the qualifications of assayers they use. Other users have access to resources from which they can determine the reliability of assay labs. According to assayers and members of related professions (e.g., mining engineers and geologists), most assayers obtain their business through word of mouth and retain their business based on their work.

Even without access to information regarding assayer reliability, mining companies are able to ascertain the quality of assay work using other techniques. For commercial and industrial firms, good business practice demands the use of reliable assay labs, since a company's economic welfare depends in part on accurate assay results. Users commonly send duplicate samples to more than one independent laboratory and compare the different lab results. Even after becoming regular users of a lab, clients continue to send in check samples to assess the reliability of lab results. Because assayers are aware of these practices and are largely dependent on business from mining and exploration activities, assayers also have economic incentives to maintain ethical and competent

practice. Because assayers as well as users have incentives to assure reliable practice, the industry is sufficiently able to protect itself without State regulation.

Individual prospectors make up the remainder of clients served by assayers. Prospectors have access to information regarding the quality of assay labs through prospectors' associations. Moreover, people who prospect for a livelihood - with the ultimate goal of selling a property or a claim to a mining company - can obtain information during regular contacts and transactions with different mining companies.

Arizona Association Of Certified Laboratories - In the event that prospective users of assaying services do not have access to resources enabling them to determine the reliability of assay labs, certification by the Arizona Association of Certified Laboratories (AACL) can aid in assessing lab quality and reliability. Supporters of continued licensing argue that not all prospectors are necessarily knowledgeable about assayer reliability and that licensing is needed to protect this group. Currently, every independent assay laboratory is required to operate under the supervision of a registered assayer. However, a less restrictive mechanism, voluntary laboratory certification, is available and can adequately serve this same function.

AACL certification differs from licensing in that certification is voluntary, and aspects of the laboratory itself - facilities and equipment - are reviewed prior to certification. Formed in 1980, the AACL certifies laboratories of all types on the basis of on-site evaluations. AACL estimates that it currently certifies 68 percent of the commercial laboratories in the major metropolitan areas of Arizona (Phoenix, Tucson and Flagstaff). To maintain membership, laboratories must participate in a check sample program designed to monitor their performance on a continuing basis. No national check sample program exists for assaying laboratories; AACL offers the only organized program monitoring assay labs on an ongoing basis. AACL officers provide assistance in resolving problems and are authorized to terminate

membership if a laboratory is unwilling or unable to take remedial action. At least four of the estimated 15 independent assaying laboratories operating in Arizona are members of the AACL.

CONCLUSION

State regulation of assayers is unnecessary. The practice of assaying does not pose a sufficient risk to the general public to warrant licensure. Most users of assaying services have adequate methods to assess the competence of the assayers they use. To the degree that harm to the general public does occur, the public has stronger and more appropriate alternatives for action than licensing by the Board of Technical Registration.

RECOMMENDATION

The Legislature should consider deleting A.R.S. §32-101.B.4 through 32-101.B.6, which requires licensing of assayers, and other pertinent portions of the statutes relating to assayers licensed by the Board of Technical Registration.

FINDING III

STATE REGULATION OF LANDSCAPE ARCHITECTS IS UNNECESSARY

The public receives little protection from the licensure of landscape architects. Little harm to the general public results from the practice of landscape architecture. Most users are knowledgeable users who can assess the qualifications of landscape architects. Moreover, existing licensing provisions for landscape architects may restrict the scope of practice of other related professions.

Landscape Architecture Poses Little Harm

The practice of landscape architecture results in little harm to the general public. Proponents of continued regulation cite several threats but the potential harm is minimal. Moreover, existing evidence does not support other arguments for the licensure of landscape architects. The differing perspectives of the need for licensure are demonstrated by the fact that only 23 states license the actual practice of landscape architecture as a means of protecting the general public from potential harm.

Potential Harm Minimal - Landscape architects do not engage in activities that significantly threaten the public. The potential dangers cited by proponents of licensure are not sufficiently serious to warrant regulation, and other existing regulations adequately protect the public. Landscape architects consider their profession to be a design profession similar to architecture and engineering, but evidence suggests the inherent risks are negligible.

Risks from landscape architectural practice do not significantly endanger the public. Interviews with a cross section of landscape architects*

* People interviewed included members of the American Society of Landscape Architects, the landscape architectural representative of the Board of Technical Registration, and other landscape architects working in the public and private sectors.

revealed some possibility of potential harm. For example, incompetent practice can result in improper specification of plant material near rights-of-way, on median strips and in parking areas; which can result in trees and shrubs being located where they obstruct driver visibility and contribute to traffic accidents. Thorny plants placed near pedestrian walkways may cause pedestrian injury. Injury can also result from poorly designed walkways and outdoor structures. Improper design of irrigation systems can cause contamination of potable water supplies. Inadequate provision for drainage of runoff water can cause flooding and water damage to adjacent properties, as well as making surfaces sufficiently slippery to constitute a hazard to drivers and pedestrians. Potential harm from the practice of landscape architecture also includes environmental degradation and poor utilization of natural resources. For example, specification of plants that use excessive water or are unable to adapt to desert environments may result in higher maintenance and replacement costs and inefficient use of natural resources.

However, the incidents of potential harm cited are not extremely serious, in that many of these conditions can be easily identifed by the public and corrective action can be taken. In fact, one municipal official stated that his city has taken corrective action in the past as a result of citizen complaints regarding median landscaping that limited driver visibility.

Moreover, existing regulations protect the public from the most serious threats. Federal, State, and local highway and traffic engineering agencies require the review of design plans to ensure that landscaping along State highways, rights-of-way, and major arterial streets does not jeopardize safety and driver visibility. Local governments have a variety of regulatory requirements such as zoning codes, ordinances and subdivision regulations that govern building and design activities to protect residents. In Arizona, some cities also have special regulations for flood plains and water retention basins. The City of Chandler, for example, has special landscaping guidelines relating to flood retention basins, and the City of Phoenix requires special review of all development in designated flood plain areas.

In addition, potential risks from landscape architectural practice do not even approach those inherent in architecture and engineering. Some landscape architects assert that their profession should be licensed because it is similar to the other design professions of architecture and engineering. Landscape architects and architects both engage in site planning, for example. Landscape architects also may work with engineers in determining patterns of vehicular access to and from sites. Because of similarities in practice, some landscape architects maintain that their profession should be licensed as long as architects and engineers are licensed.

Yet, evidence reveals that compared with architects and engineers, landscape architects present far less risk, indicating that landscape architectural products pose much less harm to the general public. Collapsed buildings and structures are the most dramatic examples of danger to the public from architectural and engineering practice. The American Society of Civil Engineers estimates that at least 500 sizeable building failures per year occur in the United States. An article in Fortune magazine estimated that insurance companies paid approximately $235 million in 1979 for claims resulting from structural failures. According to a major insurer of architectural and engineering firms, claim settlements averaged $100,000 per claim during 1983, excluding claims settled for more than $250,000. In contrast, a major insurer of landscape architectural firms paid a total of $100,000 in claims settlements nationally in 1983 and 1984. As a result, only 25 percent of practicing landscape architects carry professional liability insurance. In contrast, insured architectural and engineering firms do approximately 95 percent of all construction.

The minor nature of the few complaints received by the Board also suggests minimum danger to the public from landscape architecture and points to the effectiveness of existing regulatory alternatives. The Board received only 11 complaints relating to landscape architecture between July 1, 1981 and September 20, 1984. None of the complaints originated with the public, and all alleged that people who were not landscape architects were practicing landscape architecture. The Board

dismissed nine cases, all involving nonregistrants, administratively without penalty. The other two complaints involved an architect and an engineer allegedly practicing outside their fields in drawing landscaping plans for roadway medians. Although the Board imposed a $200 civil penalty in each case, in neither case did the Board find the plans themselves to be substandard. Moreover, the complaint was submitted by an employee of a State agency with responsibility for ensuring the adequacy of the plans. Even if plans had been substandard, it is unlikely that they would have been carried out because agency review would have prohibited their implementation.

Other Arguments For Licensure Are Not Supported - Evidence does not support arguments of economic harm in the absence of continued licensure. Supporters of continued licensure argue that deregulation would be detrimental to the profession in Arizona and would thus affect Arizona's economy. However, little evidence indicates that deregulation would adversely affect the economic welfare of the State.

Landscape architects have stated that deregulation would place them at a disadvantage in competing for out-of-State jobs. Without regulation, landscape architects would not be able to obtain licenses by reciprocity. Thus, they would be unable to contract for work in states permitting only registered (licensed) landscape architects to practice.

However, the impact of deregulation would not be widespread. Many landscape architects limit their practice to Arizona and do not need licenses in other states. In addition, landscape architects who currently hold licenses in Arizona would still be able to obtain licenses in other states. Auditor General staff found that landscape architects in Colorado were able to obtain license by reciprocity through certification by the Council of Landscape Architectural Registration Boards (CLARB) after that state deregulated the practice in 1977. Thirty-three of the 38 states that license landscape architects accept CLARB certification for licensing by reciprocity. Landscape architects entering the profession in Arizona after deregulation, however, would have to obtain new licenses in any state that requires licensure if they wish to practice in that state.

Many States Do Not Regulate Practice - The perceived harm resulting from landscape architecture varies among the states. The variation in types of regulation used by the 50 states is shown in Table 3.

TABLE 3

REGULATION OF LANDSCAPE ARCHITECTURE
IN THE UNITED STATES

TYPE OF REGULATION	STATES USING THIS TYPE OF REGULATION		
Regulation of practice(1)	Alabama	Kansas	New York
	Arizona	Kentucky	Nevada
	California	Louisiana	Oklahoma
	Connecticut	Maryland	Pennsylvania
	Delaware	Minnesota	Rhode Island
	Florida	Mississippi	South Carolina
	Georgia	Montana	Texas
	Hawaii	Nebraska	
Regulation of title only	Arkansas	Massachusetts	Oregon
	Idaho	Michigan	Tennessee
	Indiana	New Jersey	Washington
	Iowa	North Carolina	West Virgina
	Maine	Ohio	
Voluntary certification	Virginia		
No regulation	Alaska	New Hampshire	Utah(3)
	Colorado(2)	New Mexico	Vermont
	Illinois	North Dakota	Wisconsin
	Missouri	South Dakota	Wyoming

Source: Council of Landscape Architectural Registration Boards, "State Comparison Chart," May, 1984

(1) Nearly all states regulating the practice of landscape architecture also have restrictions on the use of title.

(2) Colorado deregulated landscape architecture in 1977 in accordance with sunset review recommendations.

(3) Utah deregulated landscape architecture in 1981 in accordance with sunset review recommendations.

Although 38 states regulate landscape architects, only 23 states, including Arizona, regulate the actual practice of landscape architecture. One state has voluntary certification, and 14 have title laws, which allow anyone to practice landscape architecture as long as they do not call themselves landscape architects. Two states, Colorado and Utah, deregulated landscape architecture as a result of sunset reviews in 1977 and 1981, respectively. Since deregulation, Colorado handles complaints relating to landscape architects through the Office of the Attorney General. The consumer specialist of the Colorado Attorney General's Office stated that since the deregulation of landscape architecture no problems concerning the profession have indicated that there is a need to reestablish the Colorado Landscape Architects Board.

Most Users Can Protect Themselves

Another reason harm to the public is limited is that most users of landscape architectural services can adequately assess the competence of practitioners they use. Most clients are commercial and institutional clients with methods of determining qualifications of landscape architects. In fact, it is the individual users, who would presumably lack the ability of commercial users to judge competence, that Arizona's current licensing law does not protect.

Sophisticated Users - Most users of landscape architectural services are government agencies and private developers and builders, who are fully able to judge the qualifications of landscape architects. Since commercial and institutional users bear the primary liability for any unsafe design or construction, it is in their best interests to ensure that landscape architects they select actually have the necessary qualifications, experience and competence.

These users have developed ways to evaluate the competence of landscape architects. Governmental agencies contracting for landscape architectural work frequently use landscape architects on their staffs to develop requests for proposals and evaluate and select firms. Private

sector clients may select landscape architects based on the architects' reputation. Builders who have used a firm before often return to the same firm if they have been satisfied in the past. Developers choosing a firm for the first time (e.g., in areas where they have not previously built) usually seek recommendations from business contacts and engineering, architectural, or related professional firms that regularly conduct business with landscape architects. Developers may even obtain recommendations from law firms that specialize in representing design firms.

Small Commercial And Individual Users - Small commercial and individual users constitute the remainder of clients using landscape architectural services. They represent a smaller proportion of clients served by landscape architects, in part because it is not cost effective for large design firms to accept small jobs. In addition, the statutes do not require providers of landscaping services for private residences and small commercial facilities to be board registrants. Thus, the very individuals who regulation, in theory, is supposed to benefit - the less knowledgeable general public - are not protected by current licensing requirements. Yet, in spite of the absence of protection by the statutes, no identifiable harm has occurred.

Current Licensing Provisions May Restrict Other Professions

Current licensing provisions for landscape architects may restrict the scope of practice of related professions. The practice of landscape architecture includes activities that overlap several other professions. For this reason, licensing of landscape architects may prohibit people in related professions from engaging fully in their trades or occupations.

Overlap With Other Professions - Many activities of landscape architecture are also common to other professions. Landscape architects are not the only professionals who engage in practices related to planning, landscaping, irrigation and site design. Landscape contractors also work on drainage and sprinkler systems, and landscape designers

specify planting plans. Physical land planners and regional/urban planners engage in large scale land evaluation and analysis. Fifteen professions and occupations involve activities similar to those of landscape architecture. Three of these - landscape contracting, architecture and civil/electrical engineering are regulated in some form in Arizona.

Restricted Scope Of Practice - The definition of "landscape architectural practice" encompasses duties of professions other than landscape architecture. This broad definition of practice potentially restricts people in related professions and occupations from engaging in the legitimate practice of their professions.

Each portion of the definition of landscape architectural practice describes activities not only of landscape architects but of at least one other profession, such as planning and landscape design. As defined by A.R.S. §32-101.B.16., landscape architectural practice is:

> ". . . the performance of professional services such as consultations, investigation, reconnaissance, research, planning, design, or responsible supervision in connection with the development of land and incidental water areas where, and to the extent that, the dominant purpose of such services is the preservation, enhancement, or determination of proper land uses, natural land features, ground cover and planting, naturalistic and esthetic [sic] values, the settings and approaches to buildings, structures, facilities, or other improvements, natural drainage and the consideration and the determination of inherent problems of the land relating to erosion, wear and tear, light or other hazards. This practice shall include the location and arrangement of such tangible objects and features as are incidental and necessary to the purposes outlined in this paragraph. . . ."

Regulation of the practice may impose hardships on people in other related professions by restricting their scope of practice. Arizona regulates the practice of landscape architecture with licensure, which makes unlicensed practice illegal. The exemption of certain professions

and occupations from regulation presumably provides legal recognition of overlapping functions among related professions. These statutes (A.R.S. §32-144) currently include exemptions for nonregistrants who provide horticultural consultations or prepare planting plans.

Yet, these exemptions do not necessarily protect all related professions from undue hardship resulting from the restriction of the scope of landscape architectural practice. For example, planners who engage in planning activities for entities other than governmental subdivisions are not exempt. The Board received one complaint against a planner who had completed a site plan. According to planning professionals, site planning is within the proper domain of the practice of planning. Yet, the Board found the planner in violation of statutes for practicing landscape architecture, after seeking technical advice from a landscape architect serving as an advisor to the Board. Although the Board closed the case administratively without penalty, the decision that site planning performed by a planner was, indeed, in violation of the statutes shows that licensing landscape architects can restrict the practice of other (unregulated) professions.

If licensure is continued, one way to resolve this problem would be to more clearly define the practice so the definition covers only activities unique to landscape architecture. However, because landscape architectural activities overlap those of so many other professions, modification of the practice definition to make it specific to landscape architecture might severely limit the scope of landscape architectural practice.

Another alternative would be to use a less restrictive form of regulation, such as reserve of title. Reserve of title is a form of regulation that recognizes individuals who have met certain qualifications. It differs from licensure in that others may provide similar services as long as they do not call themselves "landscape architects." It would allow those in other professions to engage fully

in the legitimate practice of their professions and occupations, while continuing to differentiate landscape architecture from other related professions.

CONCLUSIONS

The State receives little additional protection from the licensure of landscape architects. Little harm actually results from the practice because existing codes, ordinances and other regulations protect the public against much of the harm that could occur. Primary users of landscape architectural services are institutional and commercial users who can assess qualifications of landscape architects in several ways. In addition, evidence indicates that current practice regulation may cause undue hardship on people in other related professions.

RECOMMENDATIONS

1. The State Legislature should consider deleting A.R.S. §32-101.B.14 through 32-101.B.16, which requires the licensure of landscape architects, and other pertinent portions of the statutes relating to landscape architects licensed by the Board of Technical Registration.

2. If the State Legislature decides to continue regulation of landscape architects, it should consider amending A.R.S. §32-101.B.14 through 32-101.B.16 to provide a less restrictive form of regulation, such as regulation of the title of landscape architect, which does not limit the ability of people in related professions to practice.

FINDING IV

DEFICIENCIES IN THE BOARD OF TECHNICAL REGISTRATION'S LICENSING EXAMINATIONS MAY PREVENT THE BOARD FROM ADEQUATELY ASSESSING COMPETENCE

Professional examinations developed by the Board of Technical Registration contain deficiences that may limit the Board's ability to make correct, defensible licensing decisions. Procedures for developing exams limit the Board's ability to successfully defend exam validity and reliability. In addition, procedures for administering the exams further reduce the Board's ability to assess competence.

The Board prepares examinations for professions for which no national or regional exams exist or special knowledge and qualifications are needed due to local conditions. Those professions requiring Board developed exams in Arizona include: assaying, geology, geological engineering, land surveying and structural engineering. These exams are prepared by individuals or committees who, because of their background, are considered by the Board to be eminent in their fields. During fiscal year 1983-84, 114 persons took exams prepared by the Board while 1,124 took national exams.

Exam Content May Not Relate Directly To Skill Levels Needed To Ensure Competent Practice

Board procedures for developing exams limit the Board's ability to successfully defend exam validity and reliability. Very specific standards, concepts, and procedures exist for developing examinations. The Board does not appear to use these standards.

Recognized Testing Standards Exist - Nationally recognized testing standards and procedures exist for developing license examinations and determining the knowledge necessary for competent practice of an occupation*.

* National standards for licensing examinations have been developed by a joint committee of the American Educational Research Association, the American Psychological Association and the National Council on Measurement in Education. These standards cover a wide range of areas including examination preparation, validation, administration and scoring.

Testing experts consider the following guidelines to be an important element in exam preparation and scoring because they provide assurances that exams accurately and consistently measure competence.

- Task Analysis - Task analysis identifies the critical skills that characterize a given occupation. It addresses concerns for public protection by ranking those tasks in terms of frequency, importance and criticality. With task analysis, test developers can determine exam content, the number of questions to be asked about a particular function, and the relative importance (weight) of questions or groups of questions.

- Validity - Validity is the extent to which a test measures the critical skills identified in the task analysis. A valid test should provide the Board with a passing score which ensures that an applicant possesses the skills, abilities and knowledge needed to successfully practice and efficiently perform critical occupational tasks. According to a local testing authority, an examination without properly validated content may be subject to legal challenge.

- Reliability - Test reliability is the extent to which the results of an examination are consistent. For example, the scores from two separate test administrations should be relatively consistent, assuming a relatively normal distribution of qualified applicants.

- Equating - Equating ensures that scores from various forms of an exam are equivlent. Ideally, all revisions or test formats should be equally difficult. If they are not, examinees taking the easier form would have an advantage over those taking the more difficult version. Equating, therefore, converts raw scores from each test form into a comparable, meaningful score.

These four standards are necessary to ensure examinee competence; their absence limits the ability of any professional licensing agency to defend examination results and ensure competence.

Exam Content Not Validated - The Board does not follow national testing standards to prepare its exams. No evidence is available to show that the Board or its test developers consistently meet accepted requirements for task analysis, validity, reliability or equating for any of its examinations (Table 4). As a result, these tests may not adequately measure applicants' ability to perform skills necessary for competent practice.

TABLE 4

BOARD USE OF PROFESSIONAL TESTING STANDARDS

	Task Analysis		Validity		Reliability		Equating	
	yes	no	yes	no	yes	no	yes	no
Assayers		x		x		x		x
Geologists		x		x		x		x
Geological Eng.		x		x		x		x
Land Surveyor		x		x		x		x
Structural Eng.		x		x		x		x

SOURCE: Compiled by the Auditor General staff from a series of interviews with test development personnel used by the Board, and confirmed by the executive director

Interviews with individuals who prepare examinations, Board staff and the Board's examination files showed no evidence that examinations are developed in a manner consistent with national standards. Test preparers could not document any analysis of occupational tasks or attempts to weight exam content to reflect critical skills and knowledge. Moreover, the Board has not provided a written scope of exam content, degree of difficulty, or other test development criteria to test preparers. Although the test developers are well qualified in their subject fields, and several have doctorate degrees, they have not received adequate instruction from the Board on developing valid professional licensing examinations. These findings were confirmed by Board staff, exam developers and the executive director.

Although some of the Board's tests, such as the land surveyor examination, have been improved in recent years, the Board has not ensured that examination difficulty is consistent from one testing period to another. A review of exam content suggests that the skill levels required to demonstrate competence may vary for each test administration. For example:

- One section of the 1983 assayer examination contained 15 questions. In 1984 the same section contained 25 questions. The weights of questions on both exams were changed without explanation and with no evidence that the Board equated the results of one exam with the other. On the land surveyor exam a multiple choice portion of the exam was changed from four possible answers in 1983 to five in 1984, reducing the chance of a correct answer from 25 to 20 percent.

- The format of the land surveyor exam changed from essentially a true/false and essay exam in 1980 to a multiple choice and essay test in 1983. This change is significant because on a true/false exam an examinee has a 50 percent chance of answering questions correctly. On a multiple choice exam with four possible answers, the examinee's chance of selecting the correct answers is reduced to 25 percent.

Another continuing problem is the use of irrelevant questions and questions that test superficial rather than fundamental knowledge. Some questions that appear to be significant may not adequately measure the actual knowledge needed for competent practice. In some cases, individuals not educated in the professional field could select a correct answer without knowing the principle being tested. Such questions appear on most of the exams to varying degrees. The following are examples of questions that do not test the conceptual aspects needed to determine proficiency.

- List at least four books and authors or references that you use for assaying (assayer exam).

The fact that an examinee can or can not remember an author or title does not reveal whether technical knowledge is present or absent.

- According to A.R.S. §33-121, Arizona Coordinate System, which of the following counties would fall in the West zone? a) La Paz b) Maricopa c) Pinal d) Yavapai e) none of the above (land surveyor exam).

  The purpose of the question is to determine an examinee's knowledge of the Arizona Plane Coordinate System. However, a basic knowledge of Arizona counties could prompt a correct answer without the respondent possessing fundamental understanding of the principal being tested.

- Blunders may be pro-rated. True or False. (land surveyor exam)

  An individual who currently develops the land surveyor exam, who did not author this question taken from a previous test, was not sure of this question's meaning or technical merits.

Lack of content validity and use of irrelevant questions means that examinees' performance may not adequately demonstrate knowledge and skills necessary for competent practice. Therefore, people may be licensed who are not sufficiently competent; conversely, competent individuals may be denied licenses. These deficiences raise questions about the Board's ability to make defensible licensing decisions.

The Board needs to follow national testing standards in preparing its examinations. Otherwise, there is a potential for a legal challenge on the grounds that without the use of testing standards the Board cannot adequately distinguish between people demonstrating minimum competence to practice a licensed profession and those lacking such knowledge. The technical nature of these standards may necessitate the assistance of professional testing experts. Although testing experts or companies may

be expensive,* the Board has several hundred thousand dollars of unallocated revenues, of which a portion could be appropriated for this purpose. The Board may also be able to work with neighboring states to prepare a regional examination for some professions and thus share the cost of validation with other participating boards.

Board Procedures For Administering The Exams Further Reduce Its Ability To Assess Competence

In addition to deficiencies in examination validity and reliability, grading variations, curving of exam results, and scoring difficulties and errors further reduce the Board's ability to make sound licensing decisions. Furthermore, varying interpretation and practice of Board rules may create an unfair advantage for some examinees.

Arizona statutes and Board rules do not indicate how tests are to be graded or scored. Grader interpretation is required on subjective exam questions, in contrast to objective questions for which the answer is either right or wrong. Subjective questions include essay and short answer responses, while objective questions include true/false and multiple choice questions.

Grading Procedures Vary - The Board does not ensure that examinations are graded consistently. Although more than one person grades the land surveyor and geologist exams, the Board has not standardized procedures to ensure grading consistency for exams. Two individuals grade the entire exam for half of the land surveyor license applicants. However, exams are not cross graded to ensure consistency. Four people grade each section of the Geologist exam and the scores are averaged. However, in 1982 the sections were averaged differently. Part One of the 1982 exam was reviewed by four graders with the low score being dropped before

* Testing service fees may vary widely in price. Education Testing Service estimates its costs at approximately $6,000 per exam, or $30,000 for the five exams. A local testing authority, however, indicated that charges would consist of a retainer fee and an hourly rate.

averaging. On Part Two of the exam, all four scores were used for averaging. The varation significantly affected the results; all examinees would have failed Part One if all four scores had been averaged.

Grading procedures also differ among exams. While exams for some professions use multiple graders, others, such as the assayer and structural engineering exams, are graded by a single individual. Multiple graders add consistency to subjective grading by reducing grader bias or misunderstanding. The Board's reliance on single graders for these exams increases the likelihood that a candidate's responses may not be fully considered.

One Exam Graded On Curve - The land surveyor examination is scored on a curve basis. The effect of this action is that an individual's score is adjusted based upon a comparison of each examinee's performance to that of others taking the exam. With this method, the performance level required for licensure can change from one test administration to the next. For example, if a fixed passing score of 70 percent were used to score the land surveyor exam only 16 percent (22 examinees) of 136 individuals taking the test between October 1982 and April 1984 would have passed. Forty-seven percent (64 examinees) actually passed based on a curved passing score. Although neither statutes nor rules prohibit this practice, an adjusted curved score does not represent a specific level of competency as would appear necessary to comply with the Board's charge to provide "for the safety, health and welfare of the public through the promulgation and enforcement of standards of qualification for those individuals licensed and seeking licenses. . . ."

In contrast, the other four Board exams are scored with a definite passing point. This practice provides a specific performance standard examinees must demonstrate to be licensed. A licensing exam is to measure professional competency, therefore the passing point must represent the lowest score that would justify licensure.

Because of this, The National Council of Engineering Examiners, the national testing organization for land surveyors, has changed from a curved score to a fixed pass score and established minimum passing scores to determine competency on the national portion of the land surveyor exam. Moreover, Arizona law specifically prohibits curved scores on at least one professional examination. For example, A.R.S. §32-1724.C specifically prohibits the Arizona State Board of Optometry from grading its exams on a curve.

Scorers Make Errors - Scoring difficulties also occur in evaluating the mathematical accuracy of scores. Graders generally report only final scores rather than the mathematical computations used to arrive at scores. Additionally, Board staff were uncertain whether the Board was required to verify scoring accuracy. The Board therefore cannot be assured of the correctness of scores due to lack of detail. In the few cases in which computations were available, two errors in averaging were found. In the first instance the examinee failed the exam regardless of the error. In the second case the individual was originally given a passing grade, however, a chance review before examinee notification revealed that the score was below the passing score.

Preexam Review - The practice of allowing individuals the opportunity to review their previous exams may also reduce the Board's ability to adequately assess competence. Board rules allow failing candidates to review their exams by submitting a written request to the Board within 30 days after receiving notification of a failing grade. Applicants may review their previous test booklets any time after submitting a request, up to a few weeks or days before retaking the exam. Because local exams are given every 6 months and most contain only minor or moderate changes in exam content, applicants may become familiar with the exam questions and test administration practices. Therefore, examinees taking advantage of the review process may be able to pass the licensing examination because they have become familiar with the questions instead of by demonstrating the fundamental knowledge needed for competent practice.

Thus the Board cannot ensure that all applicants have mastered the critical knowledge for competent practice. By improving exam development techniques, the Board could vary test questions while ensuring exam content and validity.

CONCLUSION

The Board of Technical Registration's five professional local licensing examinations do not comply with generally accepted testing standards. Content of each of the five exams may not be valid or reliable. Furthermore, the Board has not provided guidelines or standards forgrading or scoring of local exams. Therefore, various nonstandard methods of grading and scoring have been used, causing review inequities between professions, and in some instances, inconsistencies within the same profession. Because of this, the degree of technical competency of examinees cannot be adequately or consistently determined.

RECOMMENDATIONS

The Board should:

1. Ensure that standards and procedures for determining exam content are followed and clearly documented. Where necessary, the Board should seek the assistance of professional testing experts. At a minimum documentation should include:

    - An analysis of the critical tasks and knowledge required for competent practice;

    - The relative weight assigned to each task and area of knowledge, and procedures used to determine passing scores; and

    - Procedures used to change exam content between administrations and to equate scores on different exam formats.

2. Consider participation in the development of regional exams with neighboring states with local conditions similiar to Arizona.

3. Develop procedures and instructions for multiple graders to decrease the potential for bias and misunderstanding.

4. Standardize the format for reporting scores to ensure sufficient detail for verification of the mathematical accuracy of scores. The Board or staff should check the mathematical accuracy of graders' reports before notifying applicants of exam results.

5. Stop grading the land surveying exam on a curve.

The Legislature should consider:

Appropriating funds from the Board's surplus funds for the purpose of employing professional testing experts to assist the Board in developing its examinations.

FINDING V

THE COMPLAINT PROCESS HAS IMPROVED, BUT, A FEW CHANGES COULD STRENGTHEN ENFORCEMENT

Although the Board of Technical Registration presently handles complaints effectively, a few improvements could further strengthen enforcement. The statutory exemption for commercial and multifamily structures does not protect the public and needs clarification. Finally, requiring professional liability insurance carriers to report insurance claims would assist the Board's investigative staff.

Complaint Processing Is More Effective

The Board has strengthened its enforcement function, making complaint resolution more effective. The Board is taking stronger disciplinary actions, and it has improved its disciplinary action documentation. In addition, use of advisory committees has helped decrease complaint resolution time while allowing for a thorough peer review.

The Board is currently taking stronger disciplinary action on more of its cases. The Board had a history of inaction. The 1979 performance audit cited the Board for not fulfilling its responsibility to protect the public health, safety and welfare. The audit found the Board had failed to pursue allegations of illegal or incompetent work. The Board's weak enforcement action caused many building safety departments to discontinue reporting substandard work to the Board. However, the Board's recent enforcement efforts, as shown in Table 5, have improved its reputation. As a result, building safety officials now report substandard work and nonregistrant activity to the Board.

TABLE 5

BOARD ENFORCEMENT ACTIONS
FISCAL YEARS 1982 THROUGH 1985

	Fiscal 1982	Fiscal 1983	Fiscal 1984	Fiscal 1985[1]
Peer review	3			1
Letter of reprimand		1		1
Letter of concern		1		3
Probation	2			2
Suspension				1
Practice restriction			1	2
Administrative fines:				
Number	N/A	N/A	6	6
Total collected	$250	$750	$2,850	$4,200
Restitution[2]				$10,000
Cases closed	78	127	127	65

Source: Compiled by the Board of Technical Registration

N/A Information was not available.

(1) Cases as of November 19, 1984.

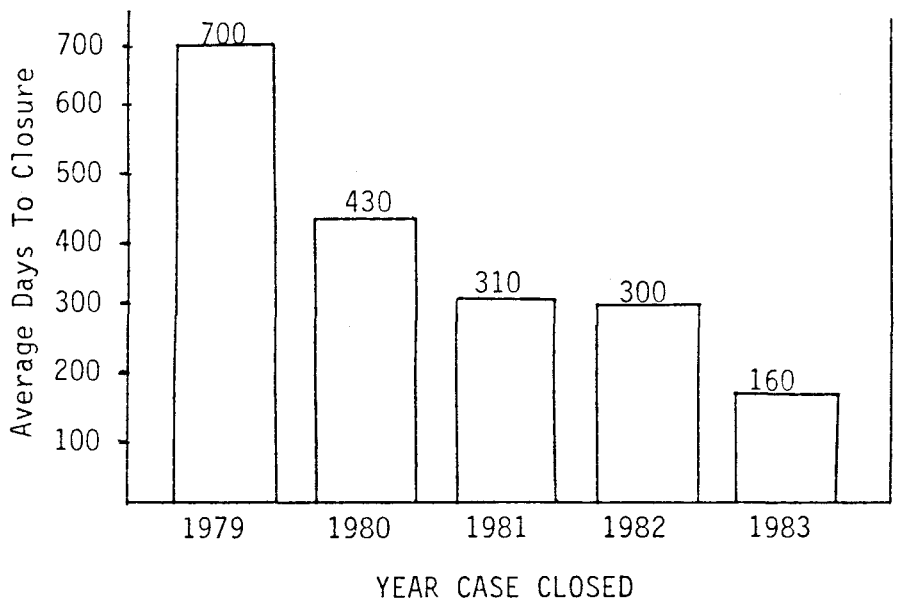
(2) Restitution was added to the Board's statutes in 1983.

The Board has also improved its documentation of disciplinary actions. While the 1979 and 1981 performance audits of the Board found that disciplinary actions were not fully documented, most cases requiring Board action are now well documented, as evidenced by the complaint analysis. Complaint files now contain the nature of complaints, investigative information, advisory committee recommendations and subsequent Board actions. The few case closures that were not well documented were all administratively closed and did not require Board action.

Complaint resolution timeliness has improved since the 1979 performance audit of the Board. An analysis of randomly selected complaint files revealed that cases opened in 1979 took approximately 700 days to be resolved, as shown in Figure 1. The Board was able to resolve cases opened in 1983 in an average of 160 days.* Board members feel that the advisory committees have helped decrease complaint resolution time. The Board established enforcement advisory committees in 1983 to assist it in further expediting complaint review and disciplinary action. Advisory committees review cases under investigation, interview the respondents and complainants, and analyze investigative reports and other pertinent information.

FIGURE 1

AVERAGE TIME TO RESOLVE COMPLAINTS
1979 THROUGH 1983



Source: Compiled by Auditor General staff from complaint files

* The Board's executive director feels complaint resolution time will be decreased further when the complaint files are computerized. Case investigation and advisory committee review is timely, however, the Board's quarterly meeting schedule, in part, contributes to a delay.

The advisory committees have also helped improve the Board's complaint review. Board members and building safety officials feel that the advisory committees provide a mechanism that allows for a more thorough review than the Board was previously able to conduct. Before advisory committees were established the Board was hampered in its efforts for two reasons. One, agendas for the Board's quarterly meetings do not allow much time for each individual case. Two, if a complaint goes to a formal hearing, the Board needs to be objective in its judgments. Objectivity could be questioned if the Board had previously reviewed the case thoroughly in an attempt to close it informally.

The Board is also placing a greater emphasis on enforcement activities. In fiscal year 1984-85 the Board added an additional position to the investigative area. In addition, in fiscal year 1983-84 the Board purchased computer equipment to aid in documenting all complaint files properly and decrease the administrative time needed to generate enforcement documents. Standardized documents have also helped decrease the time the Board's Attorney General representative spends reviewing legal documents, thus further decreasing complaint resolution time. According to the Board's Attorney General representative, his document review time has decreased by 50 percent.

The Current Statutory Exemption Does Not Protect The Public

The statutory exemption allowing nonregistrants (individuals not registered with the Board of Technical Registration) to design buildings or structures that cost less than $75,000 does not protect the public. An exemption based on a dollar amount is not an objective, constant standard. As a result, the Board cannot consistently enforce requirements that registrants design certain structures. Therefore, nonregistrants may be designing unsafe buildings.

State law does not require that architects or engineers design commercial buildings or multifamily structures costing less than $75,000 (A.R.S. §32-144.A.3). The exemption has always been a monetary one, and has

increased over the years. In 1952 the Board's statutes were amended to exempt nonregistrants who designed structures costing less than $3,000. The Legislature increased the ceiling to $10,000 in 1956. In 1970 the exemption was increased to $50,000. The exemption remained at this level until 1982, when the Legislature increased it to its current level.

Present Exemption Is Not Objective - The present dollar exemption is not an objective measure of the need for a registrant's assistance. The exemption for commercial and multifamily structures does not prescribe how to calculate the dollar value. A.R.S. §32-144.A.3 states only that nonregistrants may design buildings or structures costing less than $75,000.

Building safety departments enforce the Board's statutes by requiring that plans for commercial buildings or multifamily structures that cost more than $75,000 be prepared and stamped by a registrant. These departments review plans before issuing building permits and decide which structures come under the Board's regulation. Because the statutes do not specify how cost should be calculated, building safety officials have been forced to adopt their own valuation methods to determine exemptions.

Because building permit officials adopt their own valuation methods, no standard formula is used throughout Arizona.* One building permit official estimates that structure cost calculations and subsequent Board regulation vary 25 percent statewide as a result of the current exemption. Approximately 80 percent of the building stafety departments use the International Conference of Building Officials valuation tables to determine exemptions. However, the tables' effective dates span from 1978 to 1984. For example, Pima County uses 1978 valuation tables and the City

* Additional problems arise in counties that do not issue building permits. Although counties are required to issue building permits, many are not doing so. (See Other Pertinent Information, page 53 for additional information on county building permit departments).

of Tucson uses 1983 valuation tables. A nonregistant could design a 2,830 square foot store in Pima County because the structure would be valued at $74,500. This same structure would be valued at $87,680 in Tucson, and the law would require a registrant to prepare the plans. In addition, inflationary changes could allow a nonregistrant to design a structure one year and prohibit that individual from designing that same structure a year later. Similarly, the costs of goods and services are different in various areas, allowing nonregistrants to design structures in one area and requiring registrants to design the structures in another, higher cost area.

Maricopa County's valuation method further illustrates the subjectivity of the present valuation method. Individuals applying for permits in Maricopa County are allowed to establish a structure's value themselves. If they are aware of the Board's statutes, they may state a structure's value at below $75,000 and proceed without a registrant's assistance. According to a Maricopa County building official, unless a structure is grossly undervalued a building permit will be issued.*

Because of the statute's ambiguity, a 600-seat church being built in Lake Havasu City was considered by building safety officials to be statutorily exempt because all materials and labor were donated. Although the structure's actual cost was below the $75,000 cutoff, this church's value is approximately $165,000.

Inconsistent Enforcement And Unsafe Buildings May Result - The current exemption may result in inconsistent public protection and unsafe buildings. An objective standard should be used to determine whether a registrant's assistance is needed on various buildings or structures.

* Areas that have adopted the Uniform Building Code may require registrants to complete structural calculations for any statutorily exempt structures. This option is also subject to the building officials' judgment.

Several Board members have questioned the dollar exemption's pertinence, and two Board members stated that an exemption based on structure size and occupancy type would be more objective than the present dollar-based exemption.*

A size and occupancy exemption would offer several advantages over the current monetary exemption. First, it would not be subject to varying interpretation by building safety officials. Furthermore, questions about structures built with donated materials and labor would not occur. Having registrants design buildings used by the general public would reduce the risk to the general public. In addition, square footage and occupancy information are obtained easily through the plan review and building permit process. This type of exemption would also make it easier to investigate and decide cases, according to the Board's executive director. Rather than facing enforcement inconsistencies due to a changing variable, the Board could have a concrete, objective indicator on which to base its findings.

Insurance Carrier Reporting Could Improve Board Enforcement

The Board's enforcement activities could be improved by statutory changes requiring professional insurance carriers to report malpractice claims against registrants. The Board currently lacks information because no such requirement exists. Implementing a statutory insurance carrier reporting system similar to statutes of at least four other licensing boards could provide valuable information to the Board.

The Board is not receiving all useful information regarding registrant activities. The Board's staff currently tries to review newspapers to obtain malpractice insurance claim settlement information. However, this

* Connecticut uses a 5,000 square footage exemption, however, Technical Registration Board members feel this method could allow small, complicated commercial buildings to be designed by nonregistrants. Use of occupancy would address this problem.

does not ensure that the Board is consistently receiving all available information, and is not the most efficient use of investigative staff time.

The Board would benefit from a statute similar to statutes requiring insurance claim reporting for other professions such as physicians, physical therapists, podiatrists and pharmacists. In 1982 and 1984 the insurance code was amended requiring that the Department of Insurance obtain reports of malpractice claims and settlements from insurers and forward the information to the licensing boards. This allows the Department of Insurance clear authority to penalize companies that do not report. Furthermore, the law requires that the appropriate boards review malpractice reports and determine if licensees violated any statutes or rules. The Board of Technical Registration's executive director and Attorney General representative support this recommendation because it will improve the Board's ability to identify registrants who violate the Technical Registration Act. Although a similar recommendation requiring insurance carrier reporting was made in the 1979 performance audit, this has not been implemented statutorily.

CONCLUSION

Although the Board has improved the effectiveness of its enforcement efforts, two changes could further improve its enforcement function. The statutory exemption allowing nonregistrants to design structures costing less than $75,000 does not protect the public and should be changed to an objective standard. Insurance carrier reporting could also improve the Board's enforcement abilities.

RECOMMENDATIONS

1. The Legislature should consider amending A.R.S. §32-144.A.3 to change the exemption allowing nonregistrants to design structures costing less than $75,000 to an exemption based on structure size and occupancy. The exemption should allow nonregistrants to design only structures that do not exceed a specified square footage and are not open to the general public.

2. The Legislature should consider amending A.R.S. §20-1742 to: 1) require insurance companies to report malpractice insurance claims and settlements against Board registrants to the Department of Insurance, and 2) require the Department of Insurance to forward all such reports to the Board of Technical Registration.

3. The Legislature should consider amending A.R.S. §32-101 et seq. to direct the Board to investigate reports of malpractice claims and settlements against registrants. This change would require the Board to determine if violations of Technical Registration statutes, rules and regulations have occurred.

OTHER PERTINENT INFORMATION

During the audit, we developed pertinent information on county building permits.

County Building Permits

Statutes require all counties to issue building permits. However, building permits are currently being issued in only six of Arizona's fifteen counties. A.R.S. §11-321.A. states that "[e]xcept in those cities and towns which have an ordinance relating to the issuance of building permits, the board of supervisors shall require a building permit for any construction of a building or an addition thereto exceeding a cost of one thousand dollars within its jurisdiction. . . ." The counties issuing building permits are Maricopa, Pima, Yuma, Coconino, Mohave and Navajo.

The building permit process protects the public by ensuring that structures comply with all relevant State and local laws and codes. According to several building safety officials, serious problems can develop when plans are not checked to ensure compliance with codes. If plans are not checked, inadequate or incorrect structural calculations may not be identified.* Such errors could lead to a building's collapse, seriously endangering public safety. Similarly, handicapped codes may not be complied with. Therefore, structures in counties without building safety departments may not accomodate handicapped individuals.

One county recently implemented a building safety program due to concerns about unsafe structures. Mohave County did not issue building permits until 1983 because of pressures against increased regulation and its associated costs. Increased nonregistrant activity caused concern and

* The Registrar of Contractors does not have authority over commercial contractors, therefore, counties without codes do not have any mechanism requiring that commercial contractors comply with the Uniform Building Code. Residential contractors in counties without codes are regulated by the Registrar of Contractors and its rules.

led the Board of Supervisors to establish the building permit program last year. According to the director of building safety, at least two restaurants and one apartment complex were designed illegally by nonregistrants.

Apache County is also beginning to implement a building safety function, although building codes have not yet been adopted. This program will include reviewing plans, ensuring compliance with all codes and monitoring on-site construction activity.

Building Permits Improve Enforcement - Building permit departments strengthen the Board's enforcement function. Building safety departments provide the Board with a check against its own registrants. By requiring a building permit, a county ensures that registered architects and engineers are involved, when necessary, in the plan preparation process. Building permit plan review allows the counties to: 1) identify registrants who may be working outside the field in which they are qualified, and 2) registrants whose work is substandard. This information can be provided to the Board for possible disciplinary action.

Nonregistrant activity could be decreased by requiring building permits. Building safety departments should enforce the requirement that registrants prepare plans for commercial and multifamily structures costing more than $75,000. This check makes it difficult for nonregistrants to design structures and buildings costing more than $75,000.

The Board's enforcement efforts against registrants and nonregistrants are reduced because several counties do not issue building permits. The effect of not issuing building permits is twofold. First, the Board has no way to identify registrants whose work is substandard. These individuals may continue producing inferior plans unless a complaint is filed against them. Second, nonregistrants are able to continue designing structures because there is no way to enforce statutory requirements. According to the Board's executive director, most nonregistrant activity takes place in counties that do not have building safety departments.

AREAS FOR FURTHER AUDIT WORK

During our audit, we identified several potential issues that we were unable to complete due to time constraints. We have listed these issues as areas for further audit work.

- Is the information required on the licensing application necessary and relevant for assessing the applicants' qualifications?

  The current licensing application requires information that does not appear to be pertinent for assessing an applicant's qualifications. Required information includes the applicant's photograph, and questions about state residence and United States citizenship. Requiring applicants to submit this information could result in accusations of discrimination based on race, sex, Arizona residency or United States citizenship. Further audit work is necessary to determine whether this information is necessary and whether requiring this information has adversely affected licensing decisions.

- Should continuing competency checks be required for license renewal?

  Currently, licensure renewal only requires the payment of a triennial renewal fee. Continuing education or reexamination are not required for license renewal. Registrants establish their competency only during the initial application process. Several Board members and registrants feel that continuing education or reexamination are needed to ensure professional competence. Further audit work is necessary to determine whether the lack of this requirement endangers public health, safety and welfare.

- Should the exception allowing registrants to accept professional assignments outside of their profession be more clearly defined or limited?

  Board regulations allow registrants to accept professional assignments outside their registered profession if the registrant is: 1) qualified by education, technical knowledge or experience, and 2) the assignment is both necessary and incidental to the professional work on that assignment. This exception has caused confusion for building permit departments because it allows registrants to prepare all types of plans. According to the Board's investigator, complaints against registrants often arise because of this exception. Advisory committee and Board members have expressed concern about the exception. In resolving complaints, committee members must determine whether registrants are qualified to design various plans outside their registered area and whether the work is necessary and incidental. However, the regulations do not define the terms "qualified by education, technical knowledge or experience" or "necessary and incidental." Such an exception is necessary partially because of the overlapping scope of practice in many of the regulated professions. For example, an architect could not move the location of a light switch without an electrical engineer's assistance without this exception. However, further audit work is necessary to determine the number of cases that arise from this exception, the problems this exception poses to public health and safety, and whether the exception can be more clearly defined or meaningfully limited.

State of Arizona
BOARD OF TECHNICAL REGISTRATION

FOR ARCHITECTS, ASSAYERS, ENGINEERS, GEOLOGISTS, LANDSCAPE ARCHITECTS AND LAND SURVEYORS

1645 W. JEFFERSON, SUITE 140 • PHOENIX, ARIZONA 85007 • (602) 255-4053

FEB 1985
RECEIVED
AUDITOR
GENERAL

DOUGLAS R. NORTON
AUDITOR GENERAL
111 W. MONROE
SUITE 500
PHOENIX,AZ. 85003

FEBRUARY 7, 1985

DEAR MR. NORTON:

WE HAVE RECEIVED THE REVISED DRAFT OF THE PERFORMANCE AUDIT OF THE BOARD OF TECHNICAL REGISTRATION. OUR COMMENTS ARE ATTACHED.

THE BOARD WOULD LIKE TO TAKE THIS OPPORTUNITY TO THANK THE MEMBERS OF THE AUDIT TEAM FOR THEIR COURTESY AND PROFESSIONAL ATTITUDE DURING THE AUDIT.

THE BOARD HAS FULLY COMMITTED ITS RESOURCES TO THE FULFILLMENT OF ITS MISSION OF PROTECTING THE HEALTH, SAFETY AND WELFARE OF THE PUBLIC AND APPRECIATES THE OPPORTUNITY OFFERED BY THE AUDIT FINDINGS TO FURTHER IMPROVE ITS OPERATIONS.

SINCERELY,

Ronald W. Dalrymple

RONALD W. DALRYMPLE
EXECUTIVE DIRECTOR

COMMENTS
AUDITOR GENERAL REPORT 85-3

FINDINGS #1 THROUGH #3

THE BOARD'S RESPONSE IS THAT THE BOARD FEELS THE RESPONSIBILITY FOR DETERMINING WHETHER OR NOT ANY PARTICULAR PROFESSION SHOULD BE REGISTERED RESTS WITH THE LEGISLATURE AND THEREFORE THE BOARD HAS NO COMMENT ON THESE FINDINGS WITH THE EXCEPTION OF STATING THAT THIS ISSUE WAS RAISED IN THE LAST SUNSET REVIEW AND NO ACTION WAS TAKEN AT THAT TIME TO ELIMINATE THOSE PROFESSIONS FROM BOARD JURISDICTION.

FINDING # 4

VALIDATION OF A TEST INVOLVES THE ANALYSIS OF TASKS AND KNOWLEDGE REQUIRED FOR COMPETENT PRACTICE AND ASSIGNING RELATIVE WEIGHTS TO THE TASKS AND AREAS OF KNOWLEDGE AND THEN DETERMINING IF THE TEST ACCURATELY AND CONSISTENTLY MEASURES COMPETENCE. PROFESSIONAL TEST DESIGNERS RELY ON PROFESSIONAL PRACTITIONERS FOR ASSISTANCE IN IDENTIFYING THOSE TASKS AND THEIR RELATIVE IMPORTANCE. THE BOARD HAS UTILIZED PROFESSIONAL PRACTITIONERS AND PROFESSIONAL EDUCATORS TO DESIGN AND GRADE THE FIVE LOCAL EXAMINATIONS.

THE BOARD FEELS THAT PRACTITIONERS IN THE PROFESSIONS WHO HAVE DEMONSTRATED THEIR CAPABILITIES IN PRACTICE AND EDUCATORS WHO ARE DIRECTLY INVOLVED IN THE EDUCATIONAL PREPARATION OF POTENTIAL PRACTITIONERS HAVE DEVELOPED SKILLS IN DETERMINING WHAT ENTRY LEVEL KNOWLEDGE IS REQUIRED OF THOSE JUST ENTERING THE PROFESSION INASMUCH AS REVIEW AND EVALUATION IS A PART OF THEIR RESPECTIVE DAILY PROFESSIONAL DUTIES.

REGISTERED PROFESSIONALS HAVE BEEN FULLY UTILIZED IN DEVELOPING THE CURRENT LOCAL EXAMINATIONS AND THESE EXAMINATIONS HAVE BEEN GRADED BY REGISTERED PROFESSIONALS. IT IS THE BOARD'S POSITION THAT MAJOR PROBLEMS WITH THE LOCAL EXAMINATIONS' ABILITY TO DIFFERENTIATE BETWEEN THE QUALIFIED AND THE UNQUALIFIED WOULD HAVE BEEN DISCOVERED BEFORE THIS TIME.

THE STATEMENT THAT EXAMINATION WRITERS DID NOT RECEIVE ADEQUATE INSTRUCTION FROM THE BOARD ON DEVELOPING VALID PROFESSIONAL LICENSING EXAMINATIONS IS APPARENTLY BASED ON AN ASSUMPTION THAT A LACK OF FORMAL DIRECTIVES MAKES THE INSTRUCTION INADEQUATE. EXAMINATION WRITERS WERE PROFESSIONALS WHO HAD ALREADY BEEN THROUGH THE EXAMINATION PROCESS AND ALL WERE AWARE OF THE BOARD'S NEED FOR AN EXAMINATION TO IDENTIFY QUALIFIED APPLICANTS.

THE CONCLUSION OF THE AUDITORS THAT THE DEGREE OF TECHNICAL COMPETENCE OF EXAMINEES CANNOT BE ADEQUATELY OR CONSISTENTLY DETERMINED CANNOT BE SUPPORTED BY THE CURSORY REVIEW OF THE EXAMINATIONS CONDUCTED DURING THIS AUDIT. NO VALID DETERMINATIONS CAN BE MADE UNTIL AFTER VALIDATION STUDIES ARE COMPLETED.

THE BOARD DOES NOT ACCEPT ANY ASSUMPTION THAT THE FIVE LOCAL EXAMINATIONS ARE NOT VALID SIMPLY BECAUSE THE TESTS HAVE NOT BEEN THROUGH A VALIDITY EXAMINATION, HOWEVER, THE BOARD DOES AGREE THAT THE EXAMINATIONS SHOULD BE EXAMINED FOR VALIDITY IN ORDER TO DETERMINE WHETHER SOME CHANGES SHOULD BE MADE. THEREFORE, THE BOARD CONCURS WITH THE RECOMMENDATIONS CONTAINED IN THIS FINDING.

FUNDS HAVE BEEN INCLUDED IN THE 85-86 BUDGET REQUEST FOR VALIDATION STUDIES AND OTHER WESTERN STATES HAVE BEEN CONTACTED TO SEE IF THE DEVELOPMENT OF REGIONAL EXAMINATIONS IS A FEASIBLE ALTERNATIVE.

FINDING #5

THE BOARD CONCURS WITH THE AUDITOR'S CONCLUSION THAT THE BOARD'S ENFORCEMENT PROGRAM HAS BEEN IMPROVED. IN THE LAST PERFORMANCE AUDIT THE ENFORCEMENT PROGRAM WAS FOUND TO BE EXTREMELY DEFICIENT. THE BOARD HAS MADE A SIGNIFICANT EFFORT TO RECTIFY ALL DEFICIENCIES NOTED IN THAT AUDIT.

THE BOARD SUPPORTS THE RECOMMENDATIONS RELATING TO THE FINDINGS AND WOULD BE WILLING TO WORK WITH THE LEGISLATURE, THE PROFESSIONS AND OTHER AFFECTED INDIVIDUALS TO TRY TO DEVELOP SUITABLE LEGISLATION.

OTHER PERTINENT INFORMATION

THE BOARD CONCURS WITH THE COMMENTS CONTAINED IN THIS SECTION AND SUPPORTS THE USE OF BUILDING PERMITS IN ALL COUNTIES.

AREAS FOR FURTHER AUDIT WORK

THE APPLICATION FORM HAS BEEN DISCUSSED WITH THE BOARD'S LEGAL ADVISOR REGARDING POSSIBLE DISCRIMINATORY ITEMS. THE EXECUTIVE DIRECTOR WAS ADVISED THAT THERE DID NOT APPEAR TO BE ANY DISCRIMINATORY QUESTIONS, HOWEVER, THE BOARD WILL BE ASKED TO APPROVE CHANGES TO THE APPLICATION TO ASSIST STAFF IN EVALUATION AND IDENTIFICATION OF APPLICANTS. ALL CHANGES WILL BE SUBMITTED TO THE ATTORNEY GENERAL REPRESENTATIVE FOR REVIEW PRIOR TO ADOPTION.

THE BOARD WILL BE CONDUCTING RESEARCH INTO THE USE OF CONTINUING EDUCATION OR OTHER METHODS OF DETERMINING CONTINUED COMPETENCE BY OTHER STATE BOARDS REGULATING THE SAME PROFESSIONS AND WILL UTILIZE THAT RESEARCH TO MAKE A FUTURE DETERMINATION OF THE NEED FOR DEMONSTRATION OF CONTINUED COMPETENCE.

THE STAFF IS CURRENTLY REVIEWING THE CROSSOVER EXEMPTION AND POSSIBLE RECOMMENDATIONS TO THE BOARD FOR CHANGES IN THE LAW.

Ronald W. Dalrymple

RONALD W. DALRYMPLE
EXECUTIVE DIRECTOR

FEBRUARY 7,1985