

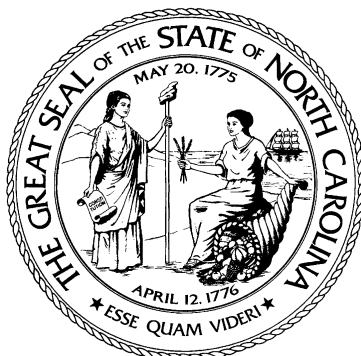
LEGISLATIVE COMMITTEE ON NEW LICENSING BOARDS

Assessment Report

For

**IRRIGATION CONTRACTORS
LICENSURE/FEEES**

House Bill 2353
Senate Bill 1795



LEGISLATIVE COMMITTEE ON NEW LICENSING BOARDS

June 11, 2008

The Legislative Committee on New Licensing Boards is pleased to release this assessment report on the licensure of irrigation contractors. This report constitutes both the preliminary and final assessment report.

Senator A. B. Swindell, IV

**LEGISLATIVE COMMITTEE ON NEW LICENSING BOARDS
(2007-2008)**

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PREFACE

The Legislative Committee on New Licensing Boards is a 9-member joint committee of the House and Senate created and governed by statute (Article 18A of Chapter 120 of the General Statutes). The primary purpose of the Committee is to evaluate the need for a new licensing board or the proposed licensing of previously unregulated practitioners by an existing board. The Committee has been in existence since 1985.

The Committee solicits written and oral testimony on each licensing proposal in carrying out its duty to determine whether the proposal meets the following criteria:

- 1) Whether the unregulated practice of the profession can substantially endanger the public health, safety, or welfare, and whether the potential for such harm is recognizable and not remote or dependent upon tenuous argument.
- 2) Whether the profession possesses qualities that distinguish it from ordinary labor.
- 3) Whether practice of the profession requires specialized skill or training.
- 4) Whether a substantial majority of the public has the knowledge or experience to evaluate the practitioner's competence.
- 5) Whether the public can effectively be protected by other means.
- 6) Whether licensure would have a substantial adverse economic impact upon consumers of the practitioner's good or services.

The Committee issues an assessment report on its findings and recommendations. The recommendation in the report is not binding upon other committees considering the proposal.

**HOUSE BILL 2353
SENATE BILL 1795
IRRIGATION CONTRACTORS LICENSURE/FEES**

BACKGROUND¹

Current Standards.

The practice of irrigation contractors in North Carolina currently requires no license. The Carolina Irrigation Association has a code of ethics and minimum standards for irrigation contractors. Nationally, irrigation contractors may voluntarily become certified by the Irrigation Association Certification Board by meeting the standards for certification. Certification indicates that the successful Irrigation Contractor applicant has:²

- A minimum of three years of irrigation-related experience/education.
- Successfully passed a written examination covering general irrigation subjects and specialty areas.
- Agreed to follow a specific Code of Ethics established by the Certification Board.

Established minimum standards and the professional certification process provide the public an opportunity to choose an irrigation contractor with training and experience that indicate a certain level of competence. However, service providers can still hold themselves out as irrigation professionals without being certified or meeting minimum standards of competence.

There are industry concerns that the public is not fully aware of professional standards and is subject to believing that any provider using the title "irrigation contractor" is in fact qualified to engage in the practice of irrigation contracting. Industry believes that the typical consumer has little understanding of proper irrigation design, installation techniques,

¹ **Source:** *Response to Questionnaire for the Legislative Committee for New Licensing Boards*. A copy of the questionnaire is attached to this report.

² **Source:** Irrigation Association website, *Certification; Bulletin of Information: Certified Irrigation Contractor (CIC) Program*, at www.irrigation.org/certification.

and required maintenance, and therefore, places these decisions into the hands of the contractor. Consumers are not in a position to protect themselves from practitioners who are operating without a professional system of accountability. With existing lack of professional oversight, the opportunity exists for irrigation installers to cut corners, use inferior products, stretch practical design limits, and take advantage of uninformed customers, a compromise on principle for the sake of bidding cost reduction. The end result of a failure to install a quality system due to professional incompetence is the wasting of water, and significant costs and delays in having to call in a qualified and competent contractor to rework and repair poorly functioning or failed irrigation systems.

The current ongoing drought in North Carolina has raised awareness of water shortages and the need for conservation. The industry feels that North Carolina needs to establish uniform minimal contractor standards and best management practices for landscape irrigation systems that protect our state's water resources and ultimately, its consumers.

House Bill 2353 (=SB 1795) enacts a new General Statute Chapter 89G, establishing a nine-member North Carolina Irrigation Contractors' Licensing Board, effective October 1, 2008. It sets out the powers and duties of the board and authorizes the board to take disciplinary action, assess civil penalties, and seek injunctive relief for specified violations. The bill would require anyone using the designation "irrigation contractor" to be licensed, and requires all irrigation construction or contracting performed by an individual, partnership, association, corporation, firm, or other group to be under the direct supervision of an individual licensed by the Board. Specific exemptions are set out in the bill. An irrigation contractor is defined as any person who, for compensation or other consideration, constructs, installs, expands, services, or repairs irrigations systems.

A House Bill 2353 (=SB 1795) makes exceptions to the examination requirement for any person who has obtained Certified Irrigation Contractor (CIC) or Certified Irrigation Designer (CID) status or any person who is a registered landscape contractor under Chapter 89D of the General Statutes, provided that specific conditions are met. Others would have to meet all the qualifications and requirements set out in the bill. The bill sets out the expenses and fees that may be imposed by the Board and allows the Board to require 10 continuing education units per year as a condition of license renewal.

LICENSING REQUIREMENTS

§ 89G-2. License required.

Any person who engages in the practice of irrigation construction or contracting, uses the designation 'irrigation contractor,' or advertises using any title or description that implies licensure as an irrigation contractor is required to be licensed. All irrigation construction or contracting performed by an individual, partnership, association, corporation, firm, or other group shall be under the direct supervision of a licensed individual. An "irrigation contractor" is defined as "Any person who, for compensation or other consideration, constructs, installs, expands, services, or repairs irrigation systems."

§ 89G-3. Exemptions.

The provisions in this Chapter shall not apply to:

- 1) Any federal or State agency or any political subdivision performing irrigation construction or contracting work on public property.
- 2) Any property owner who performs irrigation construction or contracting work on his or her own property.
- 3) A landscape architect registered under Chapter 89A of the General Statutes.
- 4) A professional engineer licensed under Chapter 89C of the General Statutes.
- 5) Any irrigation construction or contracting work where the price of all contracts for labor, material, and other items for a given jobsite for 12

consecutive months is less than one thousand five hundred dollars (\$1,500.00).

- 6) Any person performing irrigation construction or contracting work for temporary irrigation to establish vegetative cover for erosion control.
- 7) Any person performing irrigation construction or contracting work to control dust on commercial construction sites or mining operations.
- 8) Any person performing irrigation construction or contracting work for use in agricultural production, farming, or ranching, including land application of animal waste water.
- 9) Any person performing irrigation construction or contracting work for use in commercial sod production.
- 10) Any person performing irrigation construction or contracting work for use in the commercial production of horticultural crops, including nursery and greenhouse operators.

§ 89G-4. The North Carolina Irrigation Contractors' Licensing Board.

(a) Composition and Terms. – The North Carolina Irrigation Contractors' Licensing Board is created. The Board shall consist of nine members who shall serve staggered terms. The initial Board shall be selected on or before October 1, 2008, as follows:

(1) The Commissioner of Agriculture, upon the recommendation of the Carolinas Irrigation Association, shall appoint two irrigation contractors, one to serve a one-year term and one to serve a three-year term.

(2) The General Assembly, upon the recommendation of the Speaker of the House of Representatives and pursuant to recommendations from the North Carolina Green Industry Council, shall appoint two members, one who is a registered landscape contractor in good standing with the North Carolina Landscape Contractors Registration Board to serve a one-year term and one who is an irrigation contractor to serve a three-year term.

(3) The General Assembly upon the recommendation of the President Pro Tempore of the Senate, shall appoint two irrigation contractors, one to serve a one-year term and one to serve a two-year term.

(4) The President of the University of North Carolina system shall appoint one member from within the ranks of the land grant university community who is knowledgeable in irrigation methods and practices to serve a three-year term. The position is open to both current employees of The University of North Carolina system and persons who have earned emeritus status with The University of North Carolina system.

(5) The Board of Directors of the North Carolina Chapter of the American Society of Landscape Architects shall appoint one member who is a registered landscape architect to serve a two-year term.

(6) The Governor shall appoint one public member to serve a two-year term.

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§ 89G-5. Powers and duties.

The Board shall have the following powers and duties:

- (1) To administer and enforce the provisions of this Chapter.
- (2) To adopt, amend, or repeal rules to carry out the provisions of this Chapter.
- (3) To examine and determine the qualifications and fitness of applicants for licensure and licensure renewal.
- (4) To issue, renew, deny, restrict, suspend, or revoke licenses.
- (5) To reprimand or otherwise discipline licensees under this Chapter.
- (6) To receive and investigate complaints from members of the public.
- (7) To conduct investigations to determine whether violations of this Chapter exist or constitute grounds for disciplinary action against licensees under this Chapter.
- (8) To conduct administrative hearings in accordance with Chapter 150B of the General Statutes.
- (9) To seek injunctive relief through any court of competent jurisdiction for violations of this Chapter.
- (10) To collect fees required by G.S. 89G-10 and other monies permitted by law to be paid to the Board.
- (11) To require licensees to file and maintain an adequate surety bond.
- (12) To establish and approve continuing educational requirements for persons licensed under this Chapter.
- (13) To employ a secretary-treasurer and any other clerical personnel the Board deems necessary to carry out the provisions of this Chapter and to fix compensation for employees.
- (14) To maintain a record of all proceedings conducted by the Board and make available to licensees and other concerned parties an annual report of all Board actions.

- (15) To adopt and publish a code of professional conduct and practice for all persons licensed under this Chapter. The code shall establish minimum standards for water conservation in the practice of irrigation construction and contracting.
- (16) To publish a list of irrigation best management practices to be followed by licensed irrigation contractors.
- (17) To adopt a seal containing the name of the Board for use on licenses and official reports issued by the Board.

§ 89G-6. Application; qualifications; examination; issuance.

(a) Upon application to the Board and the payment of the required fees, an applicant may be licensed under this Chapter as an irrigation contractor if the applicant submits evidence that demonstrates his or her qualifications as prescribed in rules adopted by the Board and meets all of the following qualifications:

- (1) Is at least 18 years of age.
- (2) Is of good moral character as determined by the Board.
- (3) Has at least three years of experience in irrigation construction or contracting or the educational equivalent. Two years of educational training in irrigation construction or contracting shall be the equivalent of one year of experience.
- (4) Files with the Board and maintains a corporate surety bond executed by a company authorized to do business in this State or an irrevocable letter of credit issued by an insured institution. The surety bond or the letter of credit shall be in the amount of ten thousand dollars ((\$10,000)). The surety bond or letter of credit shall be approved by the Board as to form and shall be conditioned upon the obligor faithfully conforming to and abiding by the provisions of this Chapter. Any person claiming to be injured by an act of a licensed irrigation contractor that constitutes a violation of this Chapter may institute an action to recover against the licensee and the surety.

(b) If the application is satisfactory to the Board, the applicant shall be required to pass an examination administered by the Board. The Board shall establish the scope and subject matter of the examination, and an examination shall be held at least twice a year at a time and place to be determined by the Board. The examination, at a minimum, shall test the applicant's understanding of the following:

- (1) Efficiency of water use and conservation in the practice of irrigation construction and contracting.
- (2) Proper methods of irrigation construction.
- (3) Proper methods for irrigation installation.
- (4) Basic business skills.

(c) When the Board determines that an applicant has met all the requirements for licensure, the Board shall issue a license to the applicant.

§ 89G-8. Reciprocity.

The Board may issue a license, without examination, to any person who is an irrigation contractor licensed, certified, or registered in another state or country if the requirements for licensure, certification, or registration in the other state or country are substantially equivalent to the requirements for licensure in this State.

§ 89G-9. License renewal and continuing education.

(a) Every license issued under this Chapter shall be renewed on or before December 31st of each year. Any person who desires to continue to practice shall apply for license renewal and shall submit the required fees. Licenses that are not renewed shall be automatically revoked. A license may be renewed at any time within one year after its expiration, if: (i) the applicant pays the required renewal fee and late renewal fee; (ii) the Board finds that the applicant has not used the license in a manner inconsistent with the provisions of this Chapter or engaged in the practice of irrigation construction or contracting after notice of revocation; and (iii) the applicant is otherwise eligible for licensure under the provisions of this Chapter. When necessary, the Board may require a licensee to demonstrate continued competence as a condition of license renewal.

(b) As a condition of license renewal, a licensee shall meet continuing education requirements set by the Board. Each licensee shall complete 10 continuing education units per year. Failure to obtain continuing education units shall result in the forfeiture of a license. Upon forfeiture, a person shall be required to submit a new application and retake the examination as provided in this Chapter.

§ 89G-10. Expenses and fees.

(a) The Board may impose the following fees not to exceed the amounts listed below:

- | | |
|---------------------|----------|
| (1) Application fee | \$100.00 |
|---------------------|----------|

(2)	Examination fee	200.00
(3)	License renewal	100.00
(4)	Late renewal fee	50.00
(5)	License by reciprocity	250.00
(6)	Corporate license	100.00
(7)	Duplicate license	25.00

(b) When the Board uses a testing service for the preparation, administration, or grading of examinations, the Board may charge the applicant the actual cost of the examination services.

§89G-11. Disciplinary action.

The Board may deny, restrict, suspend, or revoke a license or refuse to issue or renew a license if a licensee or applicant:

- (1) Employs the use of fraud, deceit, or misrepresentation in obtaining or attempting to obtain a license or the renewal of a license.
- (2) Practices or attempts to practice irrigation construction or contracting by fraudulent misrepresentation.
- (3) Commits an act of gross malpractice or incompetence as determined by the Board.
- (4) Has been convicted of or pled guilty or no contest to a crime that indicates that the person is unfit or incompetent to practice as an irrigation contractor or that indicates that the person has deceived or defrauded the public.
- (5) Has been declared incompetent by a court of competent jurisdiction.
- (6) Has willfully violated any provision in this Chapter or any rules adopted by the Board.
- (7) Uses or attempts to use the seal in a fraudulent or unauthorized manner.
- (8) Fails to file the required surety bond or letter of credit or to keep the bond or letter of credit in force.

§ 89G-12. Civil penalties.

(a) In addition to taking any of the actions permitted under G.S. 89G-11, the Board may assess a civil penalty not in excess of two thousand dollars (\$2,000) for each violation of

any section of this Chapter or the violation of any rules adopted by the Board. The clear proceeds of any civil penalty assessed under this section shall be remitted to the Civil Penalty and Forfeiture Fund in accordance with G.S. 115C-457.2.

(b) Before imposing and assessing a civil penalty and fixing the amount of the penalty, the Board shall, as a part of its deliberations, take into consideration the following factors:

- (1) The nature, gravity, and persistence of the particular violation.
- (2) The appropriateness of the imposition of a civil penalty when considered alone or in combination with other punishment.
- (3) Whether the violation was willful and malicious.
- (4) Any other factors that would tend to mitigate or aggravate the violation found to exist.

(c) Schedule of Civil Penalties – The Board shall establish a schedule of civil penalties for violations of this Chapter and rules adopted by the Board.

§ 89G-13. Injunction to prevent violation; notification of complaints.

(a) If the Board finds that a person who does not have a license issued under this Chapter is engaging in the practice of irrigation construction or contracting, the Board may appear in its own name in superior court in actions for injunctive relief to prevent any person from violating the provisions of this Chapter or rules adopted by the Board.

(b) A licensed irrigation contractor shall notify the Board of any complaints filed against the contractor within 30 days from the date the complaint was filed by registered mail to the Board.

Sections two and three of HB 2353 (=SB 1795) allow any person who has obtained Certified Irrigation Contractor (CIC) or Certified Irrigation Designer (CID) status through the Carolinas Irrigation Association and any person who is a registered landscape contractors under Chapter 89D of the General Statutes on the date this act becomes effective to be

issued an irrigation contractor's license under Chapter 89G of the General Statutes, as enacted by Section 1 of this act, without the requirement of examination after successfully applying for and meeting all other requirements and qualifications for licensure, provided the person submits a valid application for licensure to the Board within 180 days of the date this act becomes effective.

The provision in the bill related to selection of members of the newly created North Carolina Irrigation Contractors' Board becomes effective October 1, 2008. The remainder of this act becomes effective January 1, 2009.

FINDINGS AND RECOMMENDATIONS

IRRIGATION CONTRACTORS LICENSURE/FEEES

Findings. The Legislative Committee on New Licensing Boards finds that the sponsors have met the six criteria by which the Committee judges licensure proposals. Specifically, the Committee finds that:

- 1) The unregulated practice of irrigation contractors can substantially harm or endanger the public health, safety, or welfare because the proper irrigation design, installation of new irrigation systems, their repair and extensions, and the inspection of existing systems at the time of purchase are not currently regulated in a way that would provide the public with assurance of competent installation practices. Irrigation systems connected to public water systems pose the risk of cross contamination if proper backflow prevention devices are not installed. Anytime significant amounts of limited public resources are wasted, there is potential risk to the public welfare.
- 2) The profession possesses qualities that distinguish it from ordinary labor since it requires proficiencies in specialized technologies and equipment such as the physics of water flow, hydraulics, and pressure loss through piping systems. The practitioner should know what type of equipment is best suited for a particular job, the mechanics of trenching and pipe fitting, what type of sprinklers, pipe emitters, fittings, wire, connectors, valves, and controllers fit a specific application, what permits and inspections are required, how utilities need to be located, how to schedule and maintain crews, labor, and resources, how to estimate and price a job, how to specify and order materials, how to schedule watering for maximum efficiency, and how to properly maintain, repair, and troubleshoot all of the equipment and systems installed.
- 3) The profession of irrigation contractors requires specialized skill or training.
- 4) A substantial majority of the public does not have the knowledge or experience to evaluate the competence of a professional irrigation contractor.
- 5) The public cannot be effectively protected by other means.
- 6) Licensure would not have a substantial adverse economic impact upon the recipient of the services of a professional irrigation contractor.

Recommendation. The Legislative Committee on New Licensing Boards recommends the licensing of irrigation contractors. This assessment report constitutes both the preliminary and final assessment report for the licensure of irrigation contractors. This report is based on the proposed licensing of irrigation contractors as set out in House Bill 2353 and Senate Bill 1795, the response to the Committee's questionnaire (Attachment), and testimony before the Committee on June 11, 2008.

ATTACHMENT

*Response to Questionnaire for the
Legislative Committee on New Licensing
Boards*

QUESTIONS FOR THE LEGISLATIVE COMMITTEE ON NEW LICENSING BOARDS

1. In what ways has the marketplace failed to regulate adequately the profession or occupation?

The irrigation industry has taken the brunt of recent water restrictions and total watering bans, because governmental units automatically assume that irrigation systems waste water. The fact is that there are a lot of poorly designed, installed, and inadequately maintained irrigation systems that do waste lots of water, however, the technology and know how exists to install efficient irrigation systems that use water wisely and promote healthy landscapes and turf. The installer of a good irrigation system understands the principles of water flow and hydraulics, understands soil/plant/water relationships, and chooses sprinklers and drip system components with appropriate application rates to minimize runoff. He/she knows the pressure requirements of each type of water delivery device, understands the principles and calculations required to achieve uniform application rates, and wisely chooses and installs proper types of pipe, fittings, valves, control wiring, and controllers to fit the unique needs of each irrigated site. Currently, there are no statewide regulations or mandatory best management practices that have to be followed when installing irrigation systems. Likewise, there are no statewide requirements or minimal qualifications for anyone claiming to be an irrigation contractor. Installing a reliable and efficient irrigation system requires more than the ability to open a trench and throw in some pipe and sprinklers. With the current awareness of potential water shortages and ongoing drought, North Carolina needs to establish statewide, uniform minimal standards and best management practices for landscape irrigation systems that protect our state's water resources.

2. Have there been any complaints about the unregulated profession or occupation? Please give specific examples including (unless confidentiality must be maintained) complainants' names and addresses.

Each year there are numerous complaints from consumers (both public and private), who realize after the fact that they have purchased irrigation systems that simply do not perform and are faced with the dilemma of having the system reworked, abandoned, or replaced. Consumers with inefficient irrigation systems are unknowingly spending more on water and contributing to a waste of public water supplies. The typical consumer has little understanding of proper irrigation design, installation techniques, and required maintenance; therefore, these decisions are put into the hands of the contractor. Many irrigation contractors do quality work, use quality materials, and install efficient and problem free systems that use water efficiently and effectively. The problem is that currently there is little oversight and, as such, the opportunity exists for irrigation installers to cut corners, use inferior products, stretch practical design limits, and

basically take advantage of uninformed customers. Cutting of corners is done to reduce costs for the contractor who is willing to compromise on principle. Unfortunately, many irrigation installers lack the knowledge, training, and competency needed to install a good system and end up wasting water just because they do not know better. A public example of an irrigation fiasco is Springwood Church Road Park in Alamance County. A landscape contractor who was not qualified to install large irrigation systems turned in the low bid on this extensive project and was awarded the contract. Such a mess was made by this contractor that the owner (City of Burlington) had to terminate his contract and bring in a qualified contractor. The resulting cost of reworking and repairing this irrigation system amounted to tens of thousands of dollars in costs and delays. Another public example of an unqualified contractor and a resulting botched job can be found in the Town of Cary's Thomas Brooks Park Phase I. On these ball fields, the contractor used undersized pipe that was not capable of even popping up some of the sprinklers. In places the pipe was laid on top of the ground and covered only with sod. The control wiring that links the valves to the controller was undersized, installed improperly, and had to be totally replaced. Again, a competent contractor was called in to repair this mess resulting in significant costs and delays. The consumer protection branch of the Attorney General's Office has received complaints concerning bad irrigation installations. Dr. Ronald Sneed, retired professor from NCSU, irrigation specialist, and Professional Engineer stated that he has been called in to evaluate poorly performing irrigation systems.

3. In what ways has the public health, safety, or welfare sustained harm or is in imminent danger of harm because of the lack of state regulation? Please give specific examples.

While failures of most landscape irrigation systems pose no great risk of personal injury, it can easily be argued that vast amounts of water are wasted each year by poorly installed irrigation systems. This places all residents of the State in jeopardy during times of water shortages. The US Environmental Protection Agency has determined that as much as half of the water applied to the landscape is lost to evaporation, deep percolation, wind or runoff. There have been automobile accidents and falls by persons attributed to slick conditions caused by irrigation water on streets, sidewalks, and steps. Irrigation systems have electrical components including pumps, wiring, and timers that if improperly installed, can pose electrical hazards.

4. Is there potential for substantial harm or danger by the profession or occupation to the public health, safety, or welfare? How can this potential for substantial harm or danger be recognized?

Irrigation systems connected to public water systems pose the risk of cross contamination if proper backflow prevention devices are not installed. Unqualified contractors are more likely to install systems without proper cross connection compliance. Anytime significant amounts of a limited public resource are wasted, the public's welfare is ultimately at risk. Plants and landscaping increase real estate values, prevent soil erosion, filter sediments and pollution, convert carbon dioxide to oxygen, and produce a sense of wellbeing. Parks and ball fields allow means for relaxation, exercise, and competitive sporting events. The chance of participant injury increases on ball fields when they are

not adequately watered and maintained due to water restrictions. When water bans and restrictions are enacted and landscape plants and turf cannot be maintained, the public suffers in many tangible and intangible ways. Water bans and the waste of water could be reduced if proper and efficient irrigation methods were mandated.

5. Has this potential harm or danger to the public been recognized by other states or the federal government through the licensing of certification process? Please list the other states and any applicable federal law.

Irrigation licensing programs currently exist in New Jersey, Louisiana, and Texas. Licensing programs are under consideration in New York, Massachusetts, Illinois, and Connecticut. The EPA has a Water Sense program that recognizes individuals that have received certification through The Irrigation Association. The Town of Cary requires certification for commercial irrigation systems. The City of Raleigh is considering adopting some type of irrigation certification. Licensing of an industry is normally handled on a state level.

6. What will be the economic advantage of licensing to the public?

The public will benefit from irrigation systems that use less water, less energy, and the costs associated with correcting substandard work. If efficiency becomes the norm, then the public should benefit from less threat of water bans and restrictions and they should be better able to maintain their landscape investment and protect their property values.

7. What will be the economic disadvantage of licensing to the public?

Any business that has to pay licensing fees will pass along that cost to its customers. These associated costs will be spread over the business's customer base and will be minimal. Customers should quickly recover any increased installation costs through water and energy savings, and the general population will benefit from less wasted water as irrigation systems are required to become more efficient.

8. What will be the economic advantages of licensing to the practitioners?

An irrigation licensing requirement would level the playing field where all contractors will have to meet minimal standards and compete on a more equitable basis.

9. What will be the economic disadvantages of licensing to the practitioners?

Irrigation contractors would have to pay licensing fees and complete continuing education. This will require some commitment of time and resources.

10. Please give other potential benefits to the public of licensing that outweigh the potential harmful effects of licensure such as a decrease in the availability of practitioners and higher cost to the public.

The public would be assured that their contractor is insured and has posted a bond or letter of surety for protection. The assurance of increased efficiency and water conservation in the landscape would benefit the public as would the system of accountability for irrigation contractors. A system that mandates good water stewardship would potentially allow the consumer more access to water in the future. Recently all consumers who use irrigation were forced to curtail their use of water.

11. Please detail the specific specialized skills or training that distinguishes the occupation from ordinary labor.

To design and install a good irrigation system, the installer needs to understand the basic physics of water flow, hydraulics, and pressure loss through piping systems. He/she needs to understand soil/plant/water relationships and soil infiltration rates. He/she should understand the water requirements of various types of plants and grasses and their season growth habits. He/she should know what type of equipment is best suited for a particular job, the mechanics of trenching and pipe fitting, what type of sprinklers, pipe, emitters, fittings, wire, connectors, valves, and controllers fit a specific application, what permits are required, what inspections are required, how utilities need to be located, how to schedule and maintain crews, labor, and resources, how to estimate and price a job, how to specify and order materials, how to schedule watering for maximum efficiency, and how to properly maintain, repair, and troubleshoot all of the equipment and systems that he/she installs.

12. What are other qualities of the profession or occupation that distinguish it from ordinary labor?

The professional installer should possess the qualities that make a successful businessperson, including ethical conduct, the ability to hire and retain employees, the ability to keep records and make good business decisions, the ability to plan and schedule work, the ability to seek and procure jobs, and the ability to provide warranty service and customer follow up. The professional installer must also keep current on relative rules, regulations, and policies that affect his/her business and insure compliance with current laws.

13. Will licensing requirements cover all practicing members of the occupation or profession? If any practitioners will be exempt, what is the rationale for the exemption?

Exemptions are clearly identified and defined in 89G-3. The exemptions apply to sectors of the industry that are either currently regulated, licensed, or who install irrigation on their own property or business enterprise. Agricultural irrigation is totally exempted from this legislation. Very small installers who do jobs less than \$1500 are also exempted. The goal of this proposed licensing is to cover the majority of landscape irrigation installers who are responsible for irrigation systems that distribute most of the municipal water used in landscape irrigation systems.

14. What is the approximate number of persons who will be regulated and the number of persons who are likely to utilize the services of the occupation or profession?

It is estimated that there are approximately 2000 individuals and/or companies in NC that install irrigation systems. Some of these will fall under the minimal threshold of \$1500, so the actual number of contractors subject to licensure will be less. It is estimated by industry sources that as many as 1 in 6 residents of the state will at one time utilize the service of this profession.

15. What kind of knowledge or experience does the public need to evaluate the services offered by the practitioner?

The public should have some idea of how an irrigation systems works, what it is capable of, and how it should be maintained. There are a number of sources of information available including the NC Cooperative Extension Service, The Irrigation Association, most irrigation equipment manufacturers and distributors, friends who have used the services of an irrigation contractor, web sources, and others. Ideally, the public could refer to a list of licensed contractors who have met the minimal requirements, demonstrated their ability to install quality irrigation systems, and have a successful track record in the industry.

16. Does the occupational group have an established code of ethics, a voluntary certification program, or other measures to ensure a minimum quality of service?

The Carolina Irrigation Association has a code of ethics and minimum standards for irrigation contractors. The Irrigation Association has multiple certifications that can in turn earn EPA's Water Sense certification. These programs are all voluntary.