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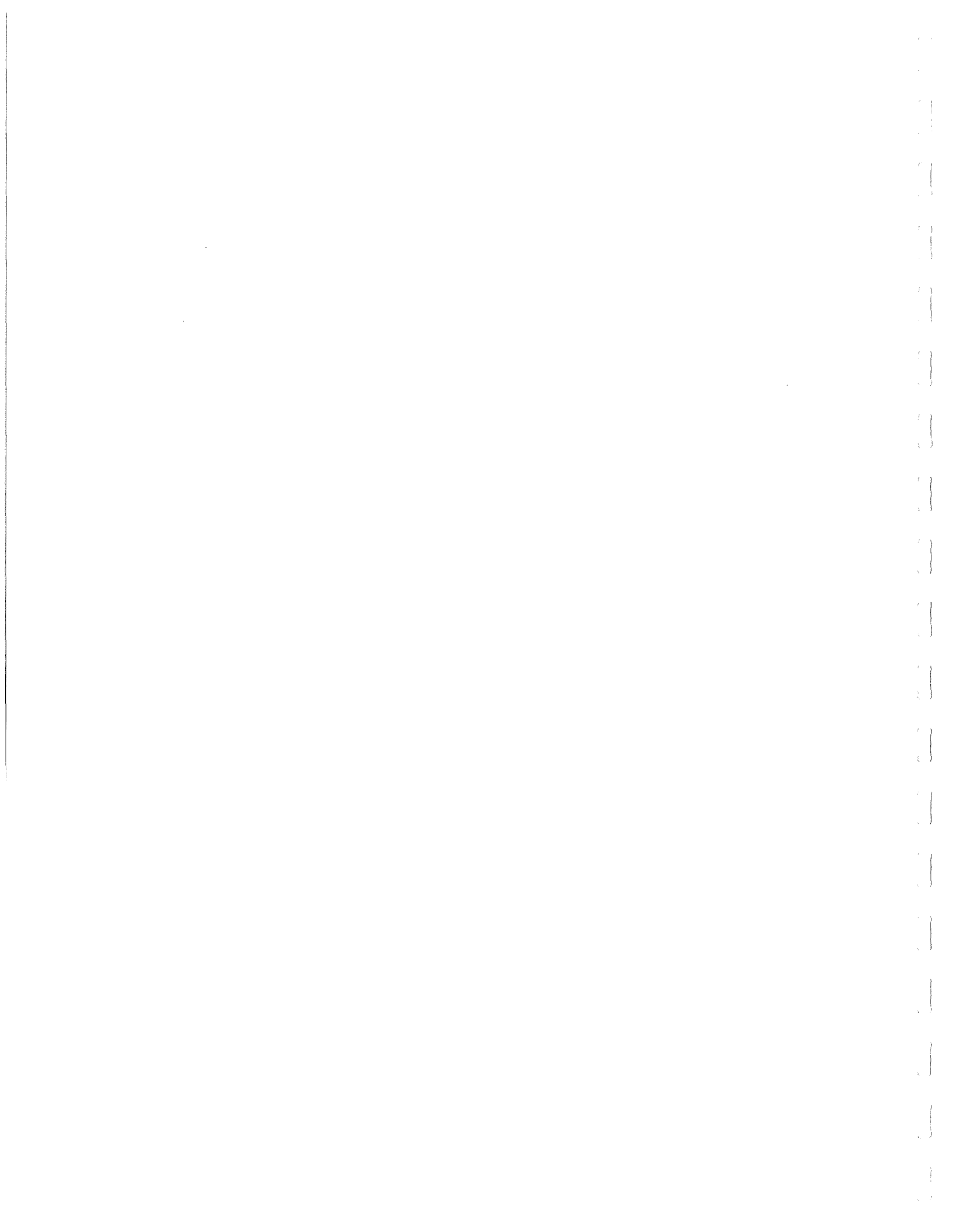


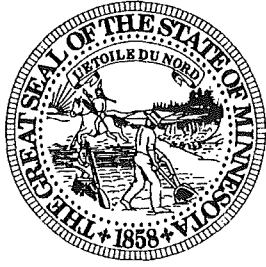
**CONSTRUCTION CODES  
ADVISORY COUNCIL**

*Government and the Construction Industry Working Together*

**CONSTRUCTION  
CODES  
ADVISORY COUNCIL  
1999  
Year-end Report**

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CONSTRUCTION CODES  
ADVISORY COUNCIL

Government and the Construction Industry Working Together

February 2, 2000

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Commissioner David F. Fisher  
Department of Administration  
50 Sherburne Avenue  
St. Paul, MN 55155

Dear Commissioner Fisher:

Pursuant to Minnesota Statute 16B.76, the enclosed "Calendar Year 1999 Progress Report" is submitted by the Construction Codes Advisory Council.

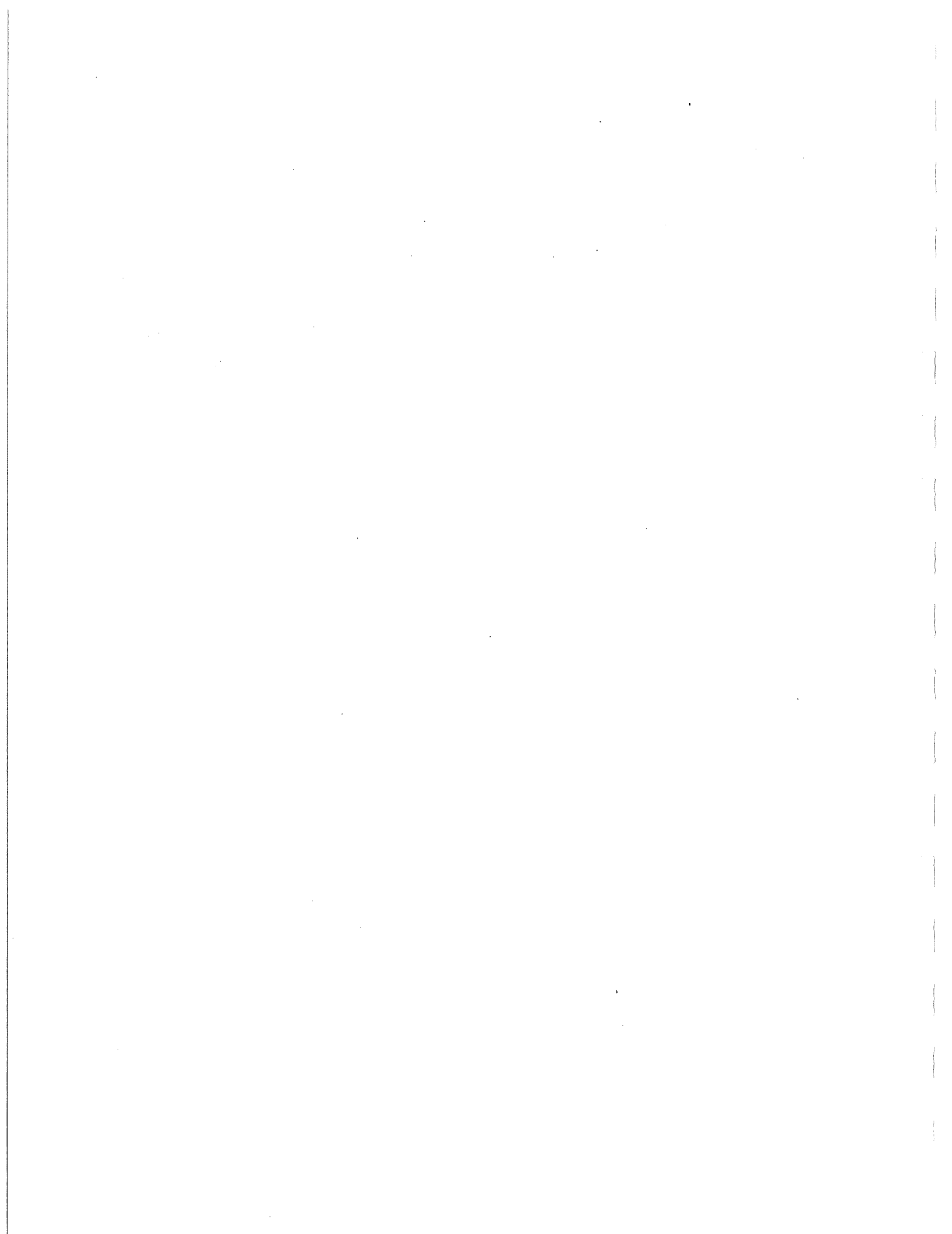
Sincerely,

Dean Newins  
Chair

Thomas R. Joachim  
Vice Chair

trj/mlm  
enclosure

c: Legislative Reference Library



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# CONTENTS

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BACKGROUND 1

1999 CONSTRUCTION CODE  
ADVISORY COUNCIL ACTIVITIES 2

UPCOMING ISSUES 3

APPENDICES 4

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This document will be made available in alternative formats such as Braille or large type by calling Peggi White at (651) 296-4626 or TDD (800) 627-3529. For more information or copies of various reports noted in this document, contact the Minnesota Construction Codes Advisory Council

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# BACKGROUND

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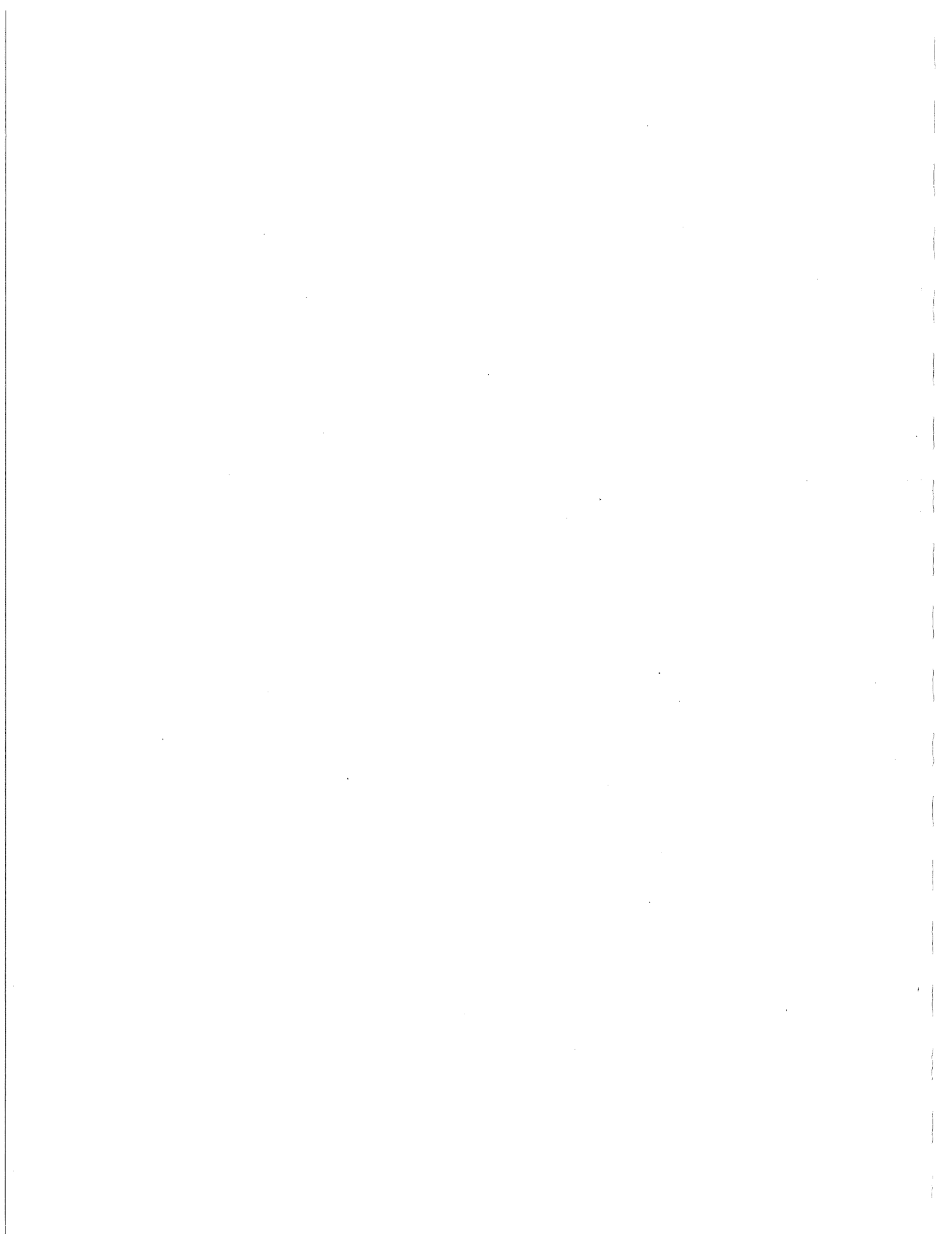
The Construction Codes Advisory Council was created by statute to review and advise state agencies on issues relating to building construction in Minnesota. M.S. 16B.76 assigns the council to review laws, rules, standards, and licensing requirements relating to building construction. It also suggests that the council may:

- recommend ways to eliminate inconsistencies, to streamline construction regulation and construction processes, and to improve procedures within and among jurisdictions;
- review and comment on current and proposed laws and rules to promote coordination and consistency;
- advise agencies on possible changes in rules to make them easier to understand and apply; and
- promote the coordination, within each jurisdiction, of the administration and enforcement of construction codes.

The council is composed of:

- representatives from the four state agencies that administer construction codes – Administration’s Building Codes and Standards Division, Health’s Environmental Health Division, Public Safety’s Fire Marshal Division, and Commerce’s (formerly Public Service) Energy Regulation and Resource Management Division;
- a licensed architect;
- a heating and ventilating contractor;
- a commercial building contractor;
- a plumbing contractor;
- a certified building official;
- a fire service representative;
- a licensed residential building contractor;
- a local government official;
- a member of the construction and building trades unions;
- a building owners and managers representative; and
- a licensed engineer.

The council is required to report on its activities at the end of each calendar year.





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# 1999 CONSTRUCTION CODE ADVISORY COUNCIL ACTIVITIES

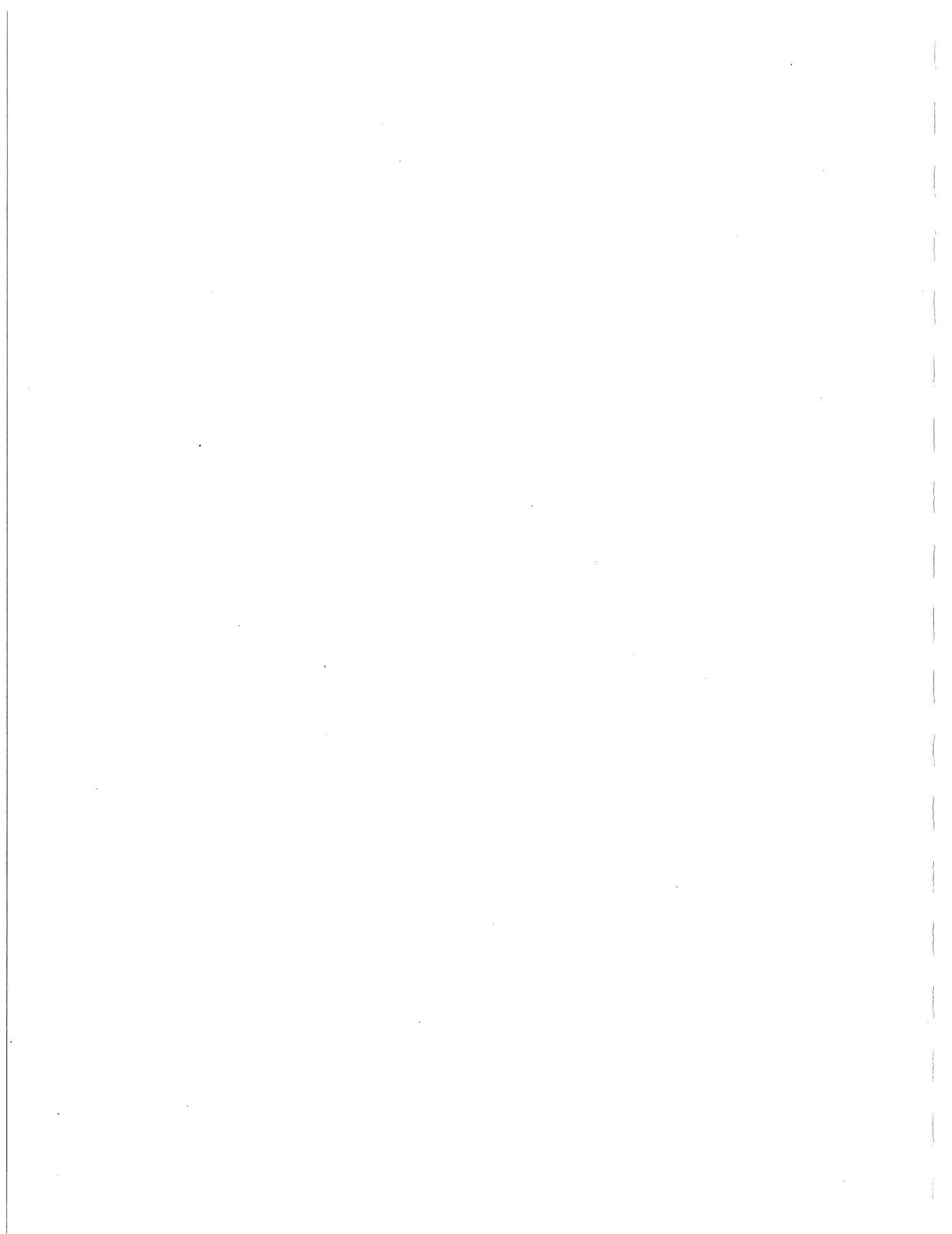
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The primary focus for the Construction Codes Advisory Council in 1999 was responding, at the request of the Minnesota Legislature, to Chapter 135, Section 8, Laws of Minnesota 1999. The response was to a program evaluation report on the state building code and how it is administered, issued by the Office of the Legislative Auditor in January 1999. After establishing membership on the council and responding to various issues during the legislative session, the council focused on responding to eight issues raised in the Legislative Auditor report. The executive summary of the council's response on those eight issues is attached in the Appendix.

During the year, the council discussed a number of additional issues or topics. Much of the discussion on these topics occurred in subcommittees created by the council to facilitate its work. The subcommittees, or technical advisory groups (TAGs), consisted of individuals or organizations with interest in or insight into specific topics.

Four technical advisory groups were formed, assigned topics for discussion, and requested to submit reports to the council. These groups included the Codes Coordination and Procedures Technical Advisory Group, the Statewide Code Adoption Technical Advisory Group, the Fee Technical Advisory Group, and the Healthier Homes Technical Advisory Group. An executive summary of each group's report to the council is attached in the Appendix. An additional technical advisory group, the Healthier Homes Implementation Technical Advisory Group, was formed in 1999 in an effort to suggest ways to implement the recommendations in the Healthier Homes Technical Advisory Group's report. The new group's report will be issued in early 2000.

On Dec. 16, 1999, the Construction Codes Advisory Council participated in the Minnesota Building Officials' Construction Codes Adoption Forum. The forum was held to examine the complex issues surrounding the next series of construction code adoptions in Minnesota. Attached in the Appendix is a summary of the forum.

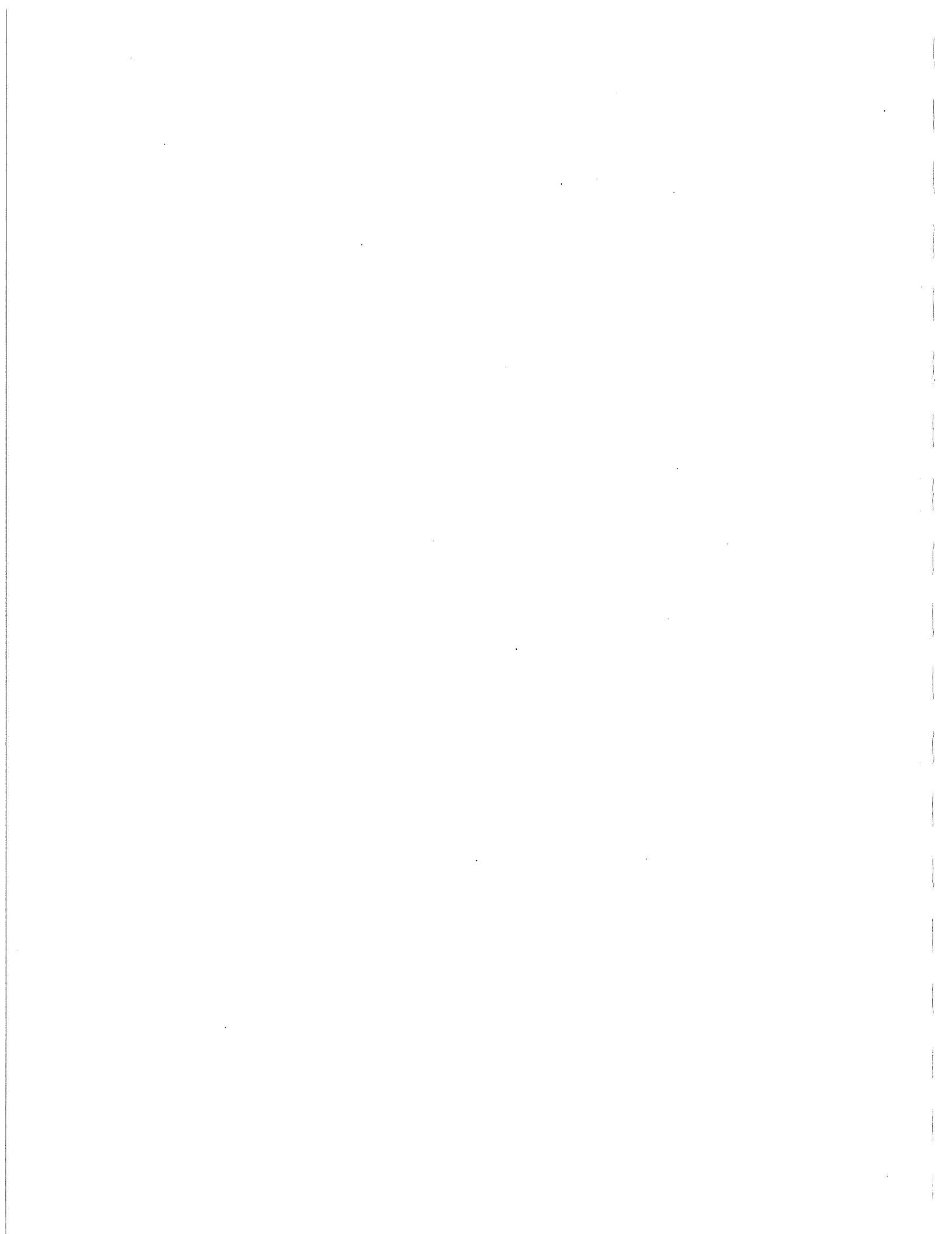


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## UPCOMING ISSUES

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The Construction Codes Advisory Council will continue its work on many of the same issues it has for the past year. The key issues of statewide code adoption, appropriate use of building construction fees, indoor air quality, and the relationship, coordination, and operation of the various codes in Minnesota will remain the primary focus for the council.

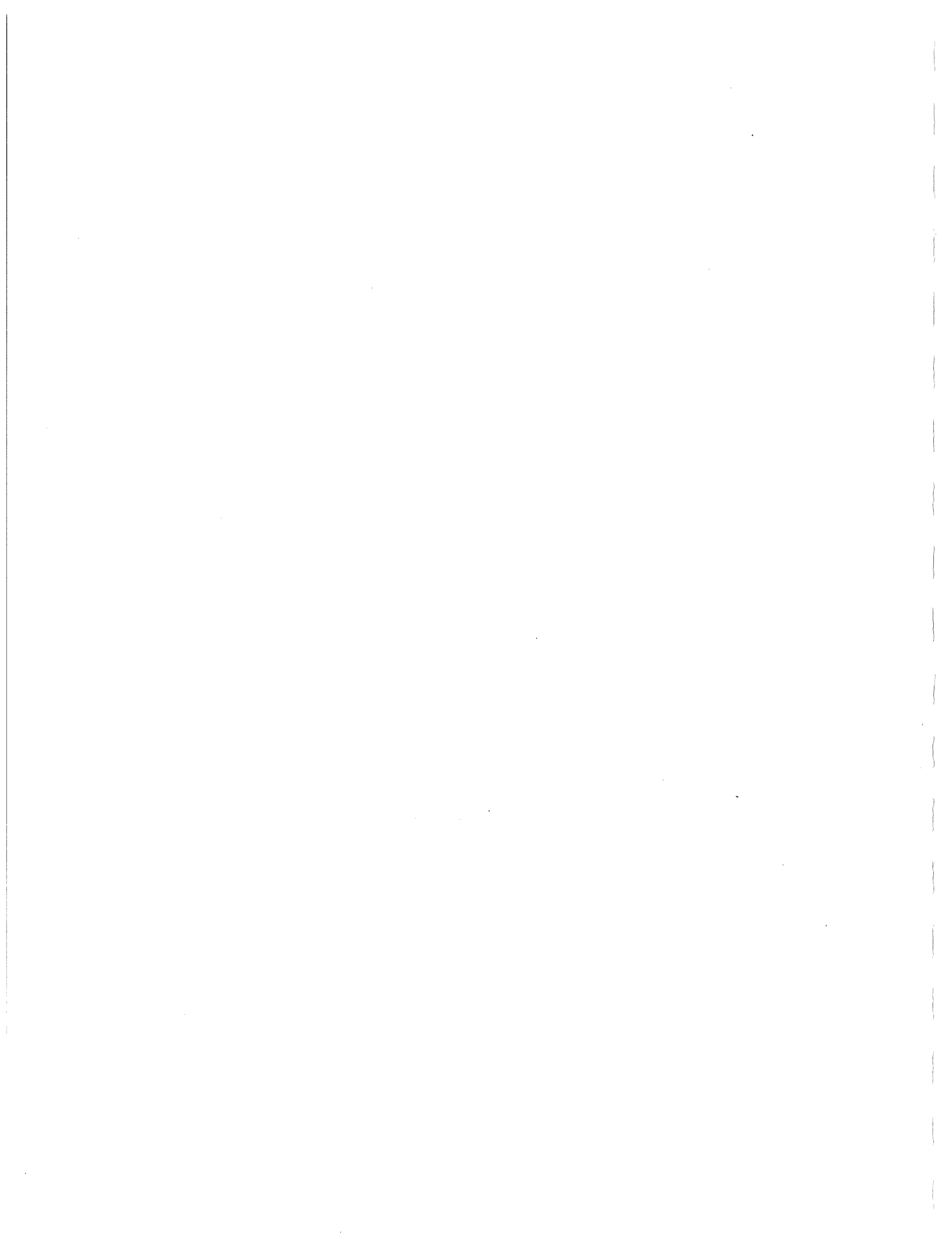


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# APPENDICES

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1. Response to the Legislative Auditor's January 1999 Program Evaluation Report on the State Building Code 5
2. Healthier Homes Environment 8
3. The Use of Building Construction Fees by Minnesota's Governments 13
4. Application of the Minnesota State Building Code Statewide 16
5. Review of the Building Code Board of Appeals System. 19
6. Code Coordination Recommendations 23
7. Minnesota Building Officials' Construction Codes Adoption Forum 25



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# 1. Response to the Legislative Auditor's January 1999 Program Evaluation Report on the State Building Code

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## Minnesota Construction Codes Advisory Council Report to the Minnesota Legislature January 2000 Executive Summary

The Construction Codes Advisory Council was requested in Chapter 135, Section 8, Laws of Minnesota 1999, to respond to a program evaluation report on the state building code and how it is administered, issued by the Office of the Legislative Auditor in January 1999. The statute asked the advisory council to respond "with recommendations on which proposals in the report, if any, should be implemented."

The advisory council reviewed the auditor's report and identified eight key issues to discuss:

- ISSUE 1. Should the Department of Administration rather than the Department of Public Service have the authority to adopt the energy provisions of the state building code?
- ISSUE 2. Should the appeals process be improved?
- ISSUE 3. Should the Department of Administration have the authority to require local building officials to accept some code equivalencies?
- ISSUE 4. Should both building and fire officials be required to give written approval of certain code equivalencies?
- ISSUE 5. Should the overlapping portions of proposed state building and fire codes be jointly approved by building and fire officials?
- ISSUE 6. Should the state have more discretion in authority over municipal administrative building officials (all types of inspectors)?
- ISSUE 7. Should the legislature create an authoritative code council to address problems related to administering the building code?
- ISSUE 8. What is the appropriate structure for the administration and operation of codes within Minnesota state government?

For each issue, the Construction Codes Advisory Council recommends:

- ISSUE 1. That, while the council acknowledges that moving the authority to adopt the energy code portion of the Department of Administration helps to streamline the code regulation process by facilitating communication between the departments, it recommends more be done to strengthen the relationship and process. The discussion of Issue 8 outlines the council's recommendations for a more cohesive structure.

- ISSUE 2. That the current appeal process be revised through rule making to create a regional appeals board system.
- That language creating the new board define a narrow focus of appeals and ensure that the process operates quickly and easily.
- ISSUE 3. That equivalencies be considered on a case-by-case basis. The council's recommendations address the broader issue question: *What is the best way to achieve uniformity of code interpretations and equivalencies?* The council recommends that, because communities or projects may be different and specific, equivalencies should be considered on a case-by-case basis at the local level. The equivalency decision can be approved through the appeals system mentioned in Issue 2. The council further recommends that the transportability of equivalencies be encouraged where possible.
- That, for interpretations, the Department of Administration have the authority to issue binding interpretations through the resolution function of the regional appeals process outlined in the Construction Codes Advisory Council's *Response to the Legislative Auditor's January 1999 Program Evaluation Report on the State Building Code*.
- ISSUE 4. That the provisions in the commissioners' cooperative agreement on processes between the departments of Administration and Public Safety be accepted. The council requests annual updates on the progress and status of the cooperative agreement.
- ISSUE 5. That the provisions in the commissioners' cooperative agreement on processes between the departments of Administration and Public Safety for the adoption and administration of the codes be accepted.
- That this agreement be used as a model for local conflict resolution at the local level.
- That the council receive annual updates on the process and status of the cooperative agreement.
- ISSUE 6. That a peer review board be created to review, evaluate, and make recommendations on administrative action to the commissioner of Administration for building officials who may not be carrying out their responsibilities.
- ISSUE 7. That the council remain advisory while it determines whether future issues it handles define the council's role more clearly.
- ISSUE 8. That a mechanism responsible for coordinating the operation of all construction codes in Minnesota be created.
- That the council be charged, over the next year, with crafting this mechanism and presenting it to the appropriate administrators and/or lawmakers early in 2001.
- That the focus be on coordination, cooperation, and resolution of conflict between codes and code personnel.



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## CONSTRUCTION CODES ADVISORY COUNCIL

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Name	Representing
Dean Newins, chair	Licensed architect
Thomas Joachim, vice chair	Building Codes and Standards Division, Department of Administration
Janet Streff, secretary	Department of Commerce
Thomas Brace, executive committee member	State Fire Marshal Division, Department of Public Safety
Steven Tufenk, executive committee member	Construction and Building Trades Unions
Bill Barber	Certified building official
Patricia Bloomgren	Department of Health
Ted Ferrara	Heating and ventilating contractor
Katherine Gove	Fire service
Craig Holmen	Commercial building contractor
Duane Javens	Plumbing contractor
Leonard Pratt	Licensed residential building contractor
Terry Schneider	Local government
Kent Warden	Building Owners and Managers
John Youngstrom	Licensed engineer



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## 2. Healthier Homes Environment

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Healthier Homes Technical Advisory Group Report  
to the Governor's Construction Codes Advisory Council  
December 1998  
Executive Summary

The Technical Advisory Group was given a charge to research current codes, rules and standards in an effort to determine how we can best provide a sound indoor environment in new residential construction in Minnesota. After several meetings it became clear to TAG members that this issue was very complex. In the search to define a "healthy home," the group determined that it was only reasonable to suggest what might constitute a "healthier home" and to focus the report on indoor air quality concerns. The group adopted this goal as an objective and continued researching documents and publications that could help in this pursuit.

As meetings proceeded, members brought forth information gathered from many sources. Organizations such as the Canadian Mortgage and Housing Corporation, the US Environmental Protection Agency, and the American Lung Association, as well as other profit and non-profit organizations, provided material which formed the basis of this report. The complex task began to take form. It became clear that this report should address several areas. They are: the health impacts of pollutants found in materials used to construct our homes as well as finishes and furnishings brought into the home; the importance of good design and construction practices; and occupant responsibility for a healthier home. The common thread through all of these areas of concern is education. If we are to go forward with improving the indoor environment, each and every individual involved in the planning, construction, and occupation of a healthier new home must have more and better information available to them.

### BACKGROUND MATERIAL

Americans spend about 90% of our time indoors. Sixty-five percent of that time is spent inside our homes. In the last fifteen to twenty years, we have seen a dramatic increase in the reported cases of asthma and respiratory illness. There is clear and convincing evidence that household air impacts the health of the inhabitants of a house. Studies showing statistically significant results of health and indoor air are listed in Section V. Background Material of this report. Others are listed in Section X. References.

The evolution of housing construction has led to tighter construction and less air exchange in houses. There are good reasons for tighter construction. Conservation of energy became very important in the 1970's and is likely to continue to be important. Homeowners have demanded houses that are less drafty, more comfortable, and more energy efficient. In addition, the materials that have been developed as our natural resources are challenged have different moisture and air quality characteristics than the old products. These new methods are not likely to change, nor should they. We must simply recognize the changes and provide for safe products and equipment as well as construction practices that will protect occupants.

Pollutants in our indoor air. The effects of pollutants in our indoor air can be acute or chronic, and will vary depending on the age and overall health conditions of the occupants. The level of concentration and length of exposure also affects the response of the occupant.

Pollutants can enter the house from the exterior or can be generated inside the home. Exterior sources include air from the outdoors, attached garages, and gases from the soil. Pollutants can be components of building materials such as plywood, floor underlayment, and cabinets. Furnishings brought into the house can also be polluted. Simple activities that are a part of everyday life can add pollutants. Moisture and byproducts from cooking, hobbies that include the use of adhesives and glues, the use of cleaning products, and the combustion process can all be responsible for polluting the indoor air.

Several pollutants are known to be especially troublesome in indoor air. Health risks identified with each are described in Section V. Background Material, of this report. The pollutants included are:

- Biologicals (mold, mildew, dust mites, etc.)
- Volatile organic compounds
- Combustion contaminants
- Pesticides
- Formaldehyde
- Ozone

While each of these has its own risks, this report addresses each by suggesting how they can be eliminated or controlled in indoor air. The most effective way to eliminate pollutants is not to bring them in. Other methods of control include dilution by means of ventilation or by choosing materials with low pollutant levels. Choosing sealed combustion heating and water heating equipment would greatly lower the risk of exposure to combustion pollutants.

## OCCUPANT ROLE in PROVIDING a HEALTHIER HOME

The indoor air quality in a home is greatly affected by its occupants. Occupants can play an important part in making decisions in the design and construction phase of home construction. They also affect the indoor air with products they bring into the house as well as activities they perform inside the home. But the biggest impact from occupants in the long term is how the building is operated and maintained. Homeowners must accept the responsibility to properly and adequately care for, repair, and maintain their homes.

The features that make a house healthier are not necessarily required by code, nor are they standard practice at this time. Education is key to helping home buyers and homeowners understand how they can influence the indoor air of a house. If they are provided with the information, they can better make the decisions necessary to protect themselves and their families from risk.

## DESIGN and CONSTRUCTION ISSUES RELATED to a HEALTHIER HOME

The design and construction of a house is an amazingly complex process involving hundreds of decisions and the interaction of builders, consumers, subcontractors, material suppliers, and building officials, as well as installers and technicians.

Planning for a healthier home should begin with the design stage of the project. To assist in the planning process, TAG members suggest that a checklist of items identifying a healthier home be developed. Such a list could be a point of discussion for healthier home features as well as for cost comparisons.

Research and discussion at TAG meetings have led to the following conclusions. Specific design features that should be discouraged are:

- The use of underground/in-slab duct work.

- The installation of flexible duct for any HVAC or exhaust fan application.

On the other hand, there are several design features that should be encouraged in the construction of a healthier home. They include:

- Encourage balanced heat recovery ventilation systems.

- Use of sealed combustion equipment and appliances.

- Better isolation between the house and the garage.

- Improve moisture control for basements and foundation walls.

- Require ducting to be sealed and of hard or solid material (not flexible).

- Better overall design of ventilation systems and filtration.

- Building Materials and Installation Practices.

Builders as well as home buyers need education about building materials that can impact indoor air. As new products enter the market, some type of evaluation system must be available to assist in choosing healthier products in the homes they construct.

**Construction Quality Control.** Residential plans often lack the detail necessary to evaluate healthier construction. A check list of critical items that is agreed upon and understood by all parties involved in the construction process could improve the process and help assure healthier homes.

Coordination among all key players in the construction process (builder, subcontractor, suppliers, site supervisors, building code inspectors, and home buyers, is critical. Education along with a checklist of compatible products and equipment would help assure that the construction of a healthier home is not compromised.

## EDUCATION and LICENSING

While residential contractors are currently licensed under Minnesota law, subcontractors and mechanical contractors are not. TAG members recommend that mechanical contractors as well as technicians and installers of mechanical equipment be either certified or licensed, and be required to attend continuing education on an annual basis.

There is also a special need for building code inspectors to be certified and trained. The heavy losses suffered by homeowners in recent natural disasters (flooding) have led to changes in insurance practices in this country. Building inspection departments across the country are being rated. In communities with good building departments, higher quality inspection services could result in reductions of insurance premiums for some property owners. This program may be a motivation to assure that building departments are fully funded with qualified staffing, and to encourage the adoption of the building code statewide.

## HEALTHIER HOMES INDEX MANUAL

TAG members recommend that a quick reference manual on issues relating to a healthier home be developed. This manual would be used for builders, buyers, and policy makers. Cross references of all pertinent building codes should be included in this manual. The manual could also be used as an educational tool in training about healthier home construction.

## EDUCATION - The FINAL WORD

The need for education of the builders, consumers, subcontractors, building code officials, suppliers, and installers cannot be overemphasized. This education should not only cover design and construction issues, but must also address maintenance and operation issues.

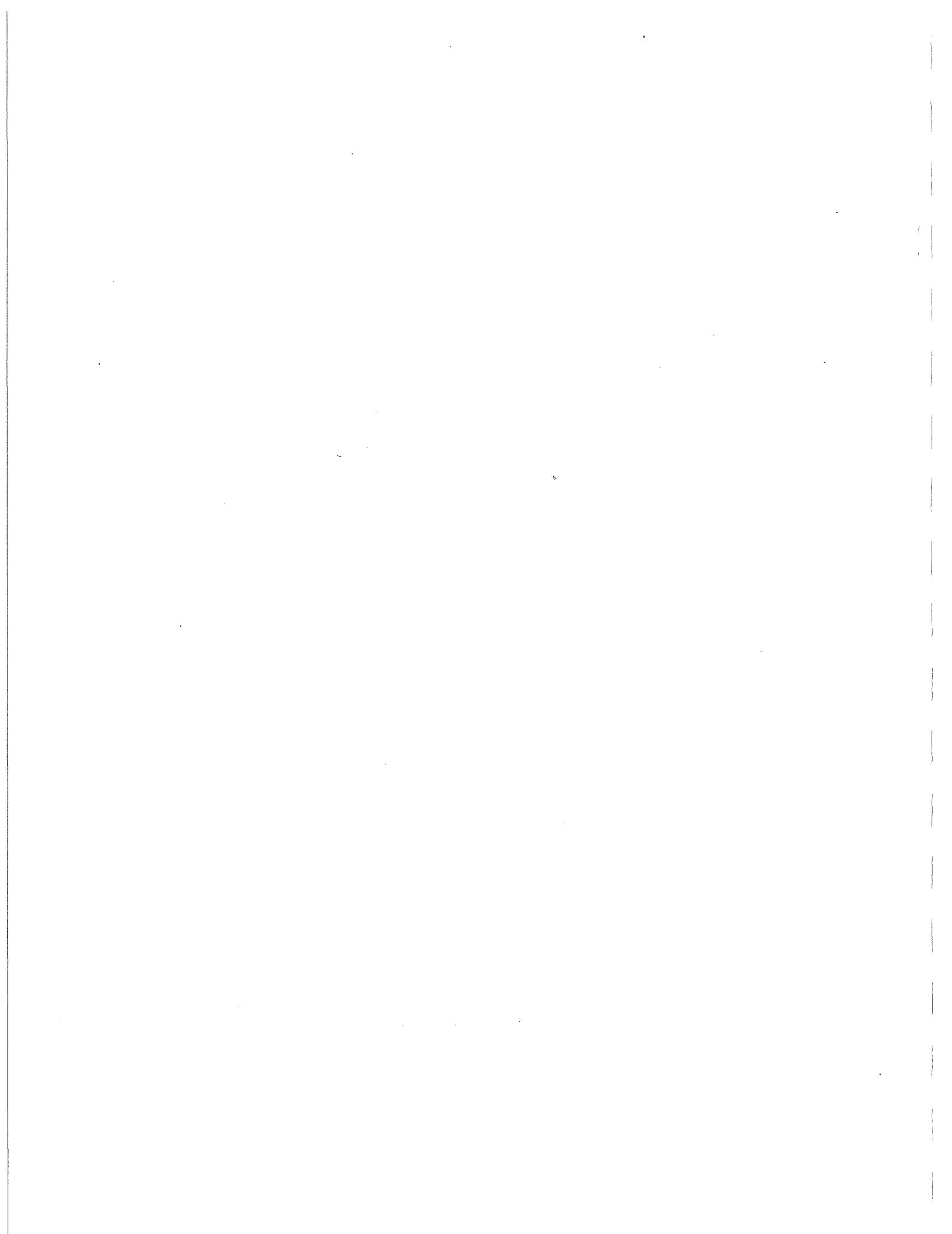
Government should play a major role in directing the research and in monitoring the projects that are necessary to determine public policies. It must also take the lead in providing educational opportunities. Production of healthier homes affects efficient use of natural resources, protection of the environment, productivity, and most importantly, the health and well-being of each member of our society.

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## HEALTHIER HOMES TECHNICAL ADVISORY GROUP

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Marilou Cheple, Chair	University of Minnesota Cold Climate Housing Program
Duane DeLonais	Department of Administration Building Codes and Standards Division
Bill Forder	Forder Engineering and Sheet Metal, Air Conditioning, Roofing Contractors of America
John Griebler	City of St. Cloud
Mike Haefner	American Energy Systems
Patrick Huelman	University of Minnesota Cold Climate Housing Program
Chuck Klimmek	KMA Design & Construction
Mark LaLiberte	Shelter Source, Inc.
Merwyn Larson	City of Minneapolis
Bruce Nelson	Minnesota Department of Public Service
Dave Olson	City of St. Paul
Kathie Pugaczewski	Builders Association of Minnesota
Matt Wilber	Minnegasco
Mike D. Wilson	Wilson Ventilation Services





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### 3. The Use of Building Construction Fees by Minnesota's Governments

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Fee Technical Advisory Group (TAG) Report  
to the Construction Codes Advisory Council  
August 1999  
Executive Summary

The Fee Technical Advisory Group (TAG) was asked to examine the use of building construction fees for the local units of government and make recommendations regarding:

The present state of construction fees and use in local units of government.

What fees are required by construction codes?

The amounts of fees.

Allowance for dollar carryover from year to year due to swings in the economy

Guidelines for use of fees for inspection plan review.

Time line for implementation.

#### PRESENT STATE of CONSTRUCTION FEES and THEIR USE in LOCAL UNITS of GOVERNMENT

The TAG conducted a survey of eighty-eight (88) cities, counties and townships. The results of the thirty-four (34) respondents indicated that approximately 75% of the fees are being used to administer building codes. Although many factors can impact the data, on average 25% of the revenue is being allocated for uses other than administration of the code. The TAG also examined the existing construction fees in Minnesota law.

#### The AMOUNT of the FEES

The TAG felt that it would be difficult to unilaterally prescribe the amount of fees because of the varying needs of the different communities. Regardless, the amount of the fees should reflect the internal and external costs of the services relating to the administration of the construction codes.

#### RECOMMENDATIONS

A. Establish guidelines for the use of the fees for inspections and plan review: Our research demonstrated the importance of setting fees so that they reflect the cost of providing the service. The community may determine the level of service, but the fees charged must not be more than what is necessary to cover the cost associated with the administration of the construction codes. Appropriateness of the services included in code administration should be left up to the

community to allow local flexibility, provided that the fees are truly used for code administration and not as a source for general fund revenue.

B. Time line for implementation. The TAG is proposing legislation that would require that fees only be used for code administration. The legislation allows for a three-year implementation to give a reasonable amount of time to local government to change their budgeting procedures.

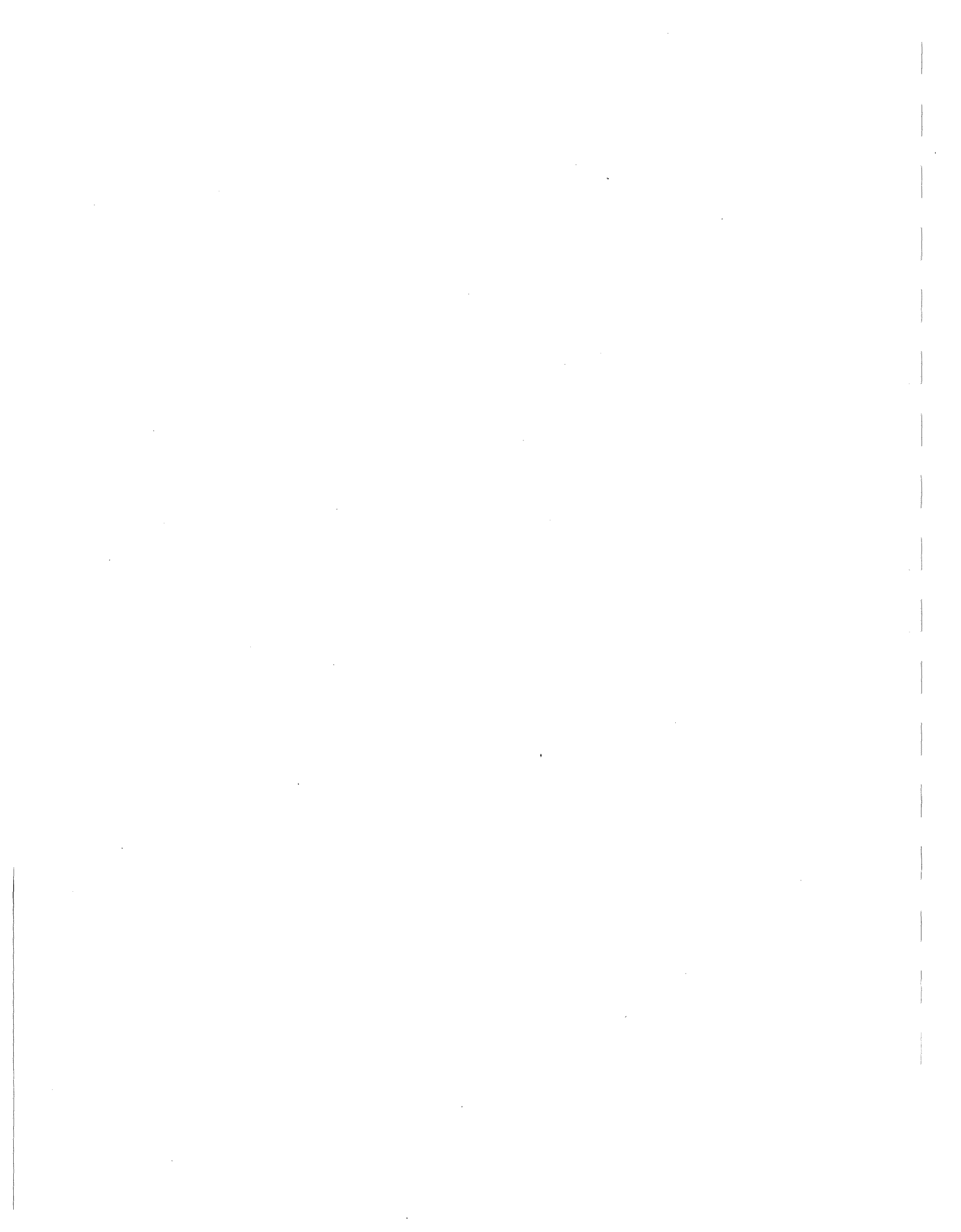
C. Allowances for carryover. The TAG felt that a dedicated fund to support the administration of the codes was required. In addition, in order to allow for variations in the construction economy and timing of receipts and expenditures, government should allow for carryover of funds from one year to the next.

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## MEMBERS of the FEE TAG

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James Muyres	Chair of TAG; Rice County, Building Official
Stacey Fujii-Lee	Secretary of TAG; Management Guidance (Contractor Association Representative), Staff Attorney
Steve Landry	Construction Codes Advisory Council Liaison to TAG; City of Edina, Fire Marshal
Jim Beckwith	Kraus Anderson Construction Company, Project Manager
Fred Driver	Building Codes and Standards Division of Department of Administration, Senior Building Code Representative
Ron Glubka	City of Woodbury, Chief Building Official
Katherine Grove	City of Blaine, Fire Marshal
Joe Ryan	City of Plymouth, Chief Building Official
Gary Thaden	Minnesota Mechanical Contractors Association, Government Affairs Director
Joe Weis	Weis Builders, Inc., Chairman
John Williamson	Minnesota Electricity Board, Assistant Executive Director



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## 4. Application of the Minnesota State Building Code Statewide

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Statewide Code Adoption Technical Advisory Group (TAG) Report  
to the Construction Codes Advisory Council  
September 1999  
Executive Summary

### THE ISSUE

The Minnesota State Building Code has been adopted and administered in the seven county metropolitan area and in larger cities in Minnesota for the past 27 years. As the public has become more safety conscious, there has been a new interest in building codes throughout the State of Minnesota.

The issue is that the building related codes are not adopted or not administered uniformly throughout the state. In most of greater Minnesota, there is no code administration outside of the larger cities. This report will explore the need for statewide building code adoption. The purpose of building codes will be reviewed and the history of code adoption in Minnesota will be summarized. Supporting information and opinions on statewide building code adoption is included in this policy paper. The opposing opinion on the effect of building code adoption is also included in this paper. Finally, the implications of the benefits of statewide building code adoption are included. The purpose of this report is to determine the benefits of statewide adoption of the Minnesota State Building Code.

### The PURPOSE of BUILDING CODES

The code has had a long history with a purpose of providing minimum standards for buildings. The 1927 edition of the Uniform Building Code stated that its purpose was to provide certain minimum standards, provisions and requirements for safe and stable design, methods of construction and uses of materials in building and occupancy of all buildings. This is consistent with the Minnesota State Building Code and the 1994 Uniform Building Code. A common theme of these codes from 1927 to the present is to provide minimum standards to safeguard life and limb, health, property, and public welfare by regulating and controlling the design of buildings.

### The HISTORY of CODE ENFORCEMENT

The history of code enforcement started with state laws enacted in 1971. The first State Building Code became effective in 1972 and superseded all municipal building codes. The laws and rules have been amended and currently, the code is enforced in 375 of Minnesota's 854 cities, 225 of the state's 1,801 townships, and 17 of the state's 87 counties.

## SUPPORT for a STATEWIDE CODE

The Construction Codes Advisory Council sees a need for statewide administration because it has become increasingly evident that many of the construction problems Minnesotans experience result from a lack of inspection and code administration. The Construction Codes Advisory Council cited the following examples:

1. During the 1996-97 blizzards, a record number of building roofs failed due to snow load. These failures were located, predominantly, in areas where the code is not enforced.
2. Rural areas experience more severe fire losses than do urban areas. Reconstruction after fire damage does not benefit from a building inspector's review and inspection.

In the annual report, 1997 Fire in Minnesota, information was provided on structure losses and civilian death rates in Minnesota. The report stated that in the past 14 years, 903 Minnesota citizens died in fires. During that time, fire deaths in greater Minnesota have outpaced those in the seven county metro area by a rate of two to one. In addition to that, the non-metro area has experienced approximately 52 percent of the fire damage. Minnesota alone saw over 7000 buildings damaged by the weight of ice, snow and sleet and to date, insurance companies have paid out almost 15 million in losses.

## SUMMARY

Nationwide, the need for one modern up-to-date code is recognized. The three model code groups (BOCA, ICBO and SBCCI) are in the final draft stage of the International Building Code 2000. Currently the insurance industry is developing a rating system for local building inspection departments, much like they rate fire departments. The insurance industry equates good code administration to lower losses, and this means lower rates for property owners. The building code provides minimum requirements to safeguard the public safety, health and general welfare through standards for the built environment.

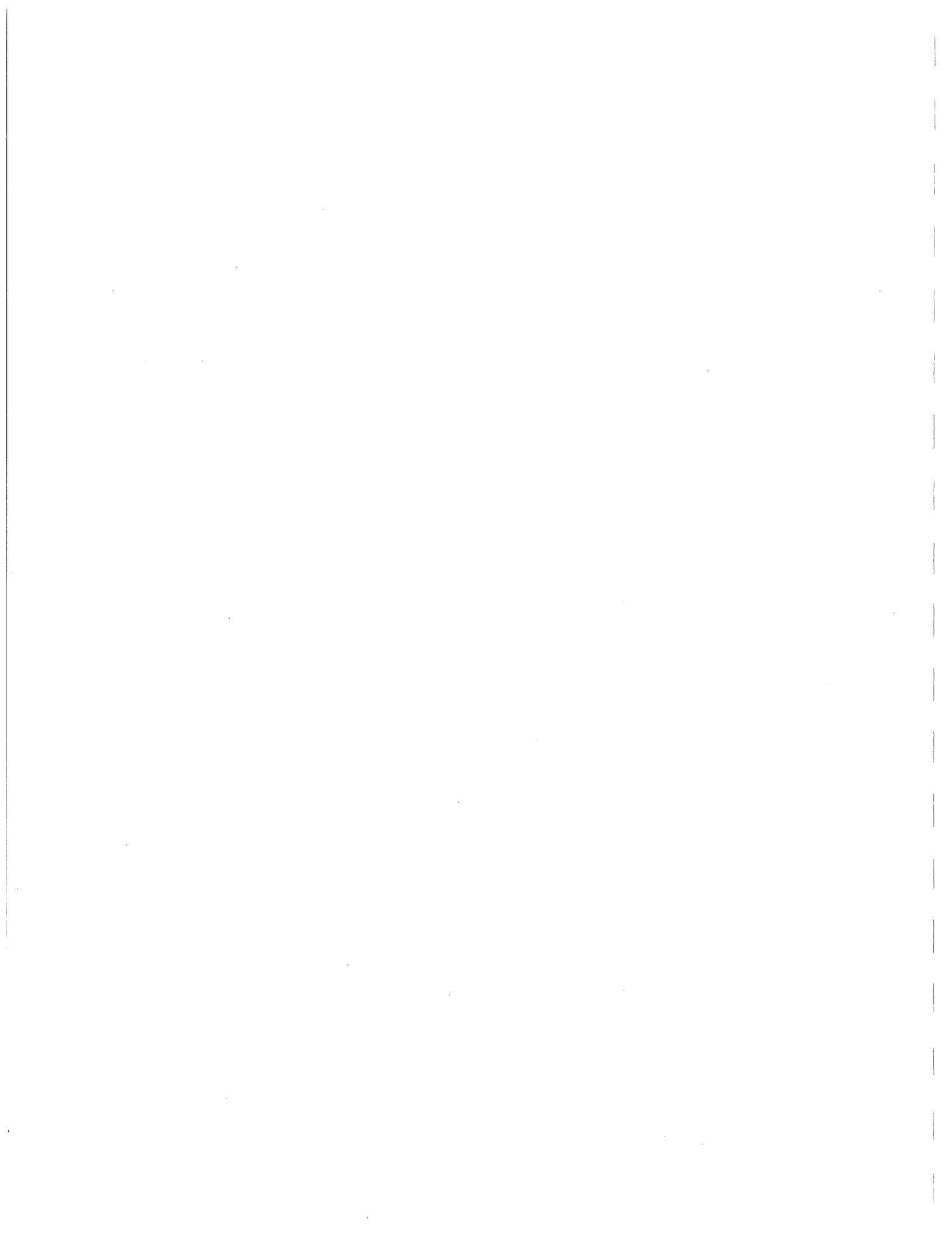
Most Minnesotans believe they are protected by codes when they hire a contractor to build. Consumers today expect quality buildings, up to code, no matter where they build in the state. That expectation is not always met. Statewide code administration would create more consistency in construction quality and safety and would enhance consumer protection. The state as a whole would benefit from statewide building code adoption and administration.

## RECOMMENDATIONS

The Statewide Code Adoption TAG recommends the following:

1. The Minnesota State Building Code (MSBC) be adopted as the construction standard for all new or remodeled construction projects throughout the state. The MSBC would be applicable to all commercial/industrial and residential facilities throughout the state. Farm residences and any attached garages would be included.

- 1a. The administration of the Minnesota State Building Code be voluntary for those municipalities which are not currently administering the MSBC for 3 years after Legislative approval.
- 1b. After 3 years, all municipalities (counties, townships, and cities) should be ready to administer the MSBC.
2. The Minnesota State Building Code snow loads, wind loads and use of structural concrete apply to all new agricultural buildings.
3. The definition of agricultural building be reviewed and updated for clarification.
4. The residential contractor licensing law be updated if MSBC is mandated statewide to require licensed contractors to build to MSBC.





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## 5. Review of the Building Code Board of Appeals System

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Statewide Code Adoption Technical Advisory Group (TAG) Report  
to the Construction Codes Advisory Council  
September 1999  
Executive Summary

### CRITERIA for an EFFECTIVE APPEALS PROCESS

The TAG concluded that the current system of appeals was predominantly not operating as intended. This report identifies key and secondary criteria which would be essential to the implementation of an appeals system that would serve the intended purpose. Four key criteria were identified as follows.

1. **Due Process.** The underlying reason for having an appeals board is to guard the right to due process before the law that every individual is constitutionally guaranteed. TAG members were concerned that many communities do not now guarantee due process to the people involved in construction activities in those communities by virtue of having no appeals process.
2. **Timeliness.** Timeliness is an essential criteria for any appeals because delays cause problems in construction scheduling, particularly in a cold weather state. If an appeals system fails to provide expedited resolutions, it probably would violate the principle of due process.
3. **Accessibility.** The TAG believes it is unreasonable to require a person to travel significant distances to appeal a building code order when the contested issue could be decided in a venue geographically nearer the municipality that generated the appeal. The TAG felt that by requiring significant travel to appeal that both criteria of timeliness and due process were violated.
4. **Enabling Authority.** The TAG concluded that not only must a board of appeals be capable of issuing final decisions, but that its authority to act on building code issues must be clearly defined. The board must be given clear direction as to which appeals are placed before it. Discussion of this issue included the use of related codes, hierarchies of codes, and clear definitions of the limits of authority of the various types of code enforcement agencies as enabling mechanism for providing the scope of authority for the board.

In addition to the four key criteria identified above, secondary criteria were also identified that would have significant impact on the successful operation of a building code appeals process. Those secondary criteria are:

**Membership.** Members of the board of appeals should have technical expertise and provide representation in the issues placed before it. Accommodating the various types of potential issues, mechanical, building, fire safety, etc., indicates a system of appeals that has a pool of building sub-discipline experts available to serve in conjunction with certified building officials on the board. The TAG also thought the Department of Health should be responsible for developing and maintaining the appeals process for plumbing code issues.

Limiting Authority. The TAG was in consensus that the operation of a successful board of appeals should not endanger or supercede the discretionary authority of the local building official. Rather, a board of appeals should be limited to correcting only clear abuses of discretionary authority and resolving technical applications of the code.

Administration. Mechanisms that would enhance the success of an appeals board are published hearing results, administrative support for research, clear rules for selecting board membership, clearly defined procedures for operation, and regularly scheduled board meetings.

## IMPLEMENTATION of a NEW APPEALS PROCEDURE

State Building Codes and Standards Division staff evaluated the enabling language of the current appeals process with an eye toward the steps necessary for changing the process; i.e. rules versus legislation. Reporting to the TAG, the State Building Official indicated that it was the Division's belief that the appeals process could be reformed through the rules process. It was felt by the TAG that it would be advantageous to amend the rules which allows for the most public involvement.

## AGENCY CONFLICT RESOLUTION (STATE to STATE or STATE to LOCAL)

The TAG endorsed the idea of using the appeals system to also serve as a method of resolution for conflicts between code officials who differ on interpretation and enforcement of the building code. It was agreed that the collection of technical judgement necessary to staff an appeals board also lent itself for use as an arbitative or resolutions type of panel. The TAG supported the concept of identifying which issues should be placed before the appeals board for resolution by using either references between codes, i.e. the fire code referring to the building code for exiting provisions; or, by establishing a hierarchy of codes and code appeals. Using the latter approach, the building code would be assumed to be the dominant code and the building code appeals process would be used for issues and situations that were addressed in more than one code. It was generally felt that either approach would help solve the difficulties associated with multiple jurisdictions having the same enforcement duties. It was felt that this approach provided an ultimate code authority and addressed conflicts in code enforcement in the most nonpartisan fashion.

## EXAMINATION of a PROPOSED APPEALS and RESOLUTIONS SYSTEM

As part of its charge by the Construction Codes Advisory Council to examine the building code appeal process the TAG reviewed a specific proposal by Greg Johnson, a building inspector from St. Paul, for reform of the appeals process.

The proposal has been widely distributed through the building officials' professional organizations and posting on the Fire Marshals' Association of Minnesota's Internet web site with very little critical response. The proposal is incorporated as Appendix Exhibit H.

The TAG concluded that the proposal satisfied all key and secondary criteria as identified above and was suitable for use by the Department of Administration as a system model if the current system of appeal is replaced.

## RECOMMENDATIONS

The TAG supports revising the current Board of Appeals process by updating rules to address the concept of a Board of Appeals system which addresses due process, timeliness and accessibility, as patterned by the Board of Appeals Chart on Page 6 of this report.

The TAG also supports a resolutions or arbitative Board which addresses agency issues, either State to State or State to local, as patterned by the Resolutions Board Chart on Page 7 of this report.

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## Membership Roster of the Technical Advisory Group for Statewide Adoption of the Minnesota State Building Code

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Don Anderson	Building Codes and Standards Division	St. Paul
Curt Brekke	Thermex Corporation	Minneapolis
John Clark	BKBM Engineers	Minneapolis
Rick Davidson	Building Official City of Moorhead	Moorhead
John Buchner	Department of Labor and Industry	St. Paul
Tom Joachim	State Building Official - TAG Liaison	St. Paul
Cal Kinney	Plaas, Inc.	Red Wing
Marcus Marsh	MN Assoc. of Farm Mutual Ins. Companies	St. Cloud
Veryl Morrell	County Planner / Building Official	Mankato
Ron Nesvold	Nesvold Construction	Grand Rapids
Bill O'Malley	HGA Architects / Planning / Engineering	Minneapolis
Scott Sollars	Crane Engineering	Plymouth
John Strongitarm	Duluth Fire Department	Duluth
Paul Waldron	Waldron and Associates	Waconia
Lowell Wenzel	Wenzel Engineering	Bloomington
Douglas Whitney	Building Official	Cambridge

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## 6. Code Coordination Recommendations

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Codes Coordination and Procedures Technical Advisory Group Report  
to the Construction Codes Advisory Council  
September 1999  
Report Summary

The Codes Coordination TAG was formed to examine the coordination of code adoption, code enforcement, and interrelationship of the various codes regulating construction activity within the State of Minnesota. The TAG posed the question: Which system of code regulation is working for Minnesota and why? The TAG members discussed the various codes and agreed that the State Electrical Code is the most effectively and efficiently managed code in use in Minnesota. The TAG then identified the elements most responsible for the success of this code.

From these findings, the TAG made nine recommendations. They include:

1. Minnesota should require adoption of all codes on a three-year renewal basis.
  - 1a. Minnesota should adopt and enforce all codes statewide.
2. Minnesota should require all Construction and Fire Code Officials and Inspectors to be certified.
  - 2a. Continuing education should be required for certification maintenance.
  - 2b. Funding should be adequately provided for continuing education and inspection operations.
3. Joint procedural agreements should be required between all state entities of code enforcement, with three-year renewals.
4. Peer review boards should be established to hear complaints and discipline construction code and fire officials.
5. An appeals and arbitration board should be created to resolve code interpretation and jurisdiction issues.
6. An on-site procedure should be established to resolve jurisdictional disputes in a timely manner to facilitate initial occupancy.
7. Standing State Code Advisory committees should be established for each code to facilitate code adoption at the state level and to provide Minnesota's input into code development at the national level.
8. Construction installers for elevators, fire alarm systems, all plumbing, mechanical HVAC and refrigeration systems should be required to be state licensed with education, experience and testing required to attain such licensing and continuing education required to maintain such licensing. All current and future installer licensing should require continuing education.
9. All construction code requirements, in detail or by reference, should be required by Minnesota to be incorporated within the State Building Code.

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## CODES COORDINATION and PROCEDURES TECHNICAL ADVISORY GROUP

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Jan Gasterland, TAG Chair	Public member
Greg Johnson	City of St. Paul building inspector
Marty Strub	City of St. Paul mechanical inspector
Steve Hernick	State Building Codes and Standards Division
John Schultz	State Board of Electricity
Rich Pehrson	State Fire Marshal Division
Steven Tufenk	Minnesota Pipe Trades Association
Gary Topp	Minnesota Department of Health
Bernie Carey	International Union of Elevator Constructors No.9
Kevin Wilkens	Department of Labor and Industry
Steve Landry	Edina Fire Department
Allen Zepper	City of Stillwater
William Barber	City of Crystal
Jerry Rowe	United Properties
Michael O'Hara	Mountain Star Group
Eric Linner	Wold Architects and Engineers

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## 7. Minnesota Building Officials' Construction Codes Adoption Forum

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Synopsis of the Minnesota Building Officials Construction Codes Adoption Forum to the Construction Codes Advisory Council  
December 1999

On December 16<sup>th</sup> the Minnesota Building Officials (MnBO), with the financial assistance of the State Building Codes Division of the Department of Administration and the endorsements of the Department of Public Safety-State Fire Marshal Division and a number of local stakeholder organizations, presented a forum to examine the complex issues surrounding the next series of construction code adoptions in Minnesota.

Although the intended audience of the forum was primarily legislators and senior administration staff, the participation of the Construction Codes Advisory Council (CCAC) as the agency that formally questioned the presenters enabled the CCAC to research specific issues related to its charge of providing advice regarding building construction regulation to state agencies and the legislature.

Presenters at the forum included the federal government in the form of the Federal Emergency Management Agency (FEMA) and five national model code promulgating organizations; the International Association of Plumbing and Mechanical Officials (IAPMO), the International Conference of Building Officials (ICBO), the International Fire Code Institute (IFCI), the National Fire Protection Association (NFPA), and the Western Fire Chiefs Association (WFCA).

Also presenting at the forum were the national representatives of eight major construction industry stakeholders in the regulatory process; the American Institute of Architects (AIA), the Building Owners and Managers Association International (BOMA), the Insurance Building Code Coalition (IBCC), the Mechanical Contractors Association of America (MCAA), the National Association of Home Builders (NAHB), the National Multi Housing Council (NMHC), the Plastic Pipe and Fittings Association (PPFA), and the Sheet Metal and Air Conditioning Contractors National Association (SMACNA).

Prior to the event, the model code organizations were asked to provide the CCAC with written responses to the following three questions:

*Explain the code development process your organization uses – who can vote, who can speak, and why is it a superior process?*

*Assuming that the next building code adopted in Minnesota will be the International Building Code, how does your organization guarantee the compatibility of its documents with this building code?*

*What support and at what cost can your code organization give the code users of Minnesota? Describe Minnesota's access to interpretations, training, publications, and to the code development process.*

Four of the five model code organizations replied and had their responses incorporated into the handout document distributed at the forum. IAPMO however chose to address these questions through verbal presentation only. IAPMO's presentation, as is the entire event, is available on video tape from the Building Codes and Standards Division.

The issue of differing processes generated a number of questions at the forum and significant discussion.

NFPA explained the complex American National Standards Institute (ANSI) approved consensus method it uses to develop its codes and standards. The essence of the NFPA method is that the content of its codes is protected from dominance by specific economic interests by the competition between differing economic interests and by careful balancing of the composition of its hearing committees. Additional control resides with the NFPA board which has the authority to veto any earlier actions taken in the code development process. NFPA estimated that, based upon membership figures, that as many as 30% of the people voting on proposed code changes at its annual meeting may have been public safety officials. IFCI challenged this estimate, contending that public safety official participation in the NFPA process is actually much lower. IAPMO acknowledged its concern with the perception of industry and labor dominance in its current code development process and expressed its goal to move to a true ANSI style process. The 2000 versions of IAPMO's published codes were developed in a consensus process that did not feature the checks and balances of the ANSI approved NFPA method. IAPMO said its 2003 codes will comply with ANSI requirements for consensus process development. An estimated 40% of the voters at IAPMO's last annual meeting were public safety officials.

WFCFA spoke to its process which permits voting on code development items only by public safety officials. WFCFA believes its process superior since public safety is the primary goal of the parties voting. While anyone can testify, voting is reserved to those with no economic interest in the provisions of the code.

ICBO and IFCI, on behalf of the International Code Council (ICC) process, similarly spoke to the benefits of having financially disinterested public safety officials render the final vote on the contents of the code. The ICC process however, in contrast to the WFCFA process, not only permits anyone to testify, but also allows industry participation on the code development hearing committees, thereby guaranteeing an initial vote on code provisions. An analogy was drawn between the ICC process and the legislative process whereby anyone may speak before a committee but only legislators vote on the issues at hand both in committee and as the larger assembly. NFPA challenged the analogy by pointing to the diversity of an elected body versus an assembly of appointed public safety officials.

Regarding the question of the compatibility of codes, ICBO and IFCI explained that because the ICC offers a comprehensive set of code documents the codes are coordinated at the national level with no further amendment necessary at the state level. NFPA indicated that its codes and



standards have been used extensively in the past with regional model building codes. NFPA also indicated that is exploring the option of developing its own comprehensive set of codes. IAPMO stood upon the technical merit of its documents, stating that they were "turn key" codes with everything necessary to design, install, and inspect contained within the code document. IAPMO also claimed to be unaware of any problems caused by the conflicting provisions associated with mixed adoptions which ICBO countered with an example specific to California's 1997 adoptions. ICBO said that, again in California, the amendment package necessary to coordinated planned year 2000 mixed adoptions was larger than the original code documents.

All code promulgators pointed to their past experience in delivering products and services to the nation and/or Minnesota to answer the questions regarding the support their organizations could offer to the code users of Minnesota.

For industry, AIA, BOMA, NAHB, NMHC, and SMACNA reaffirmed their commitment to the Get It Together Coalition, an organization demanding the code promulgators produce a single set of national model codes. These speakers were critical of NFPA for abandoning the efforts to partner with the ICC to achieve that goal and even more critical of NFPA's announced intention to consider developing its own complete set of model documents. They were also critical of IAPMO for not taking the steps necessary to become part of the ICC process. These organizations expressed a preference to work under the coordinated codes promulgated by the ICC as well as satisfaction with industry's role in the development of the International Codes.

The IBCC also spoke of the insurance industry's support of coordinated codes by addressing the need for uniformity between code documents.

Contrary to these positions, PFFA expressed a preference for an ANSI consensus process for code development, believing that industry is best able represent itself within that process. PFFA also expressed dissatisfaction with IAPMO's past attempts at consensus code development but optimism that IAPMO would resolve its issues as it moves to the true consensus process.

MCAA also spoke to a preference for the consensus development process and specifically the Uniform Plumbing Code (UPC) as developed by IAPMO. MCAA believes that the participation of the plumbers' union, manufacturers, and contractors in the development of the UPC results in the best technical document. The MCAA representative also spoke to the difficulties associated with working as a contractor in a region with differing plumbing codes adopted by municipal jurisdictions.

Several days after the forum participants were asked to respond to an exit interview. The purposes of the interview were two fold. First, participants were asked questions to determine whether or not they believed that they had been treated fairly, whether the event presentation was free of organizational bias on the part of MnBO, and whether they felt they had ample opportunity to speak to the issues. All respondents indicated satisfaction with these aspects of the event.

Additionally, respondents were afforded the opportunity identify issues that hadn't been adequately addressed, clarify any statements made at the forum, and say anything that they

wanted to say but hadn't. The following comments are the most significant responses received to the exit interview.

**FEMA-Terry Fell.** "The forum was very interesting. There is only one thing that I wish I had made clearer. As of now, the only code that meets the minimum protections standards FEMA has identified for wind, flood and earthquake is the International."

**IAPMO- Gaby Davis for Russ Chaney.** "I am answering your exit interview on Russ's behalf. Russ reviewed the questions you outlined in your e-mail for the exit interview and wanted me to advise you that he was satisfied with the event."

**ICBO-Roy Fewell.** "More attention might have been focused on how debilitating it is for the construction industry to be faced with a multiplicity of conflicting codes. This was mentioned, but the true dimensions of this issue were not necessarily clearly spelled out in terms that non-technical policymakers could fully comprehend." Also, "If the State of Minnesota adopts a conflicting mix-and-match set of codes, it will probably end up with a set of state amendments as thick as the model codes themselves. This will take thousands of hours to develop and will waste untold reams of paper, all to no net increase to the public safety in Minnesota's built environment."

**BOMA-Marco Giamberardino.** "BOMA prefers that any final decision on code adoption rest in the hands of the appropriate regulatory bodies. A legislative solution would likely compromise the integrity of any model code submitted at every step of the legislative process."

**MCAA-Robert Rimel.** "I thought the forum was well orchestrated and informative. I really don't have any negative comments to make about the representation, the format, or the moderators. I was just pleased to have the opportunity to represent the plumbing/mechanical contractor's point-of-view. I suppose the only mild surprise was that organized labor wasn't represented at the table."

**PPFA-Richard Church.** "The commitment I heard between ICC and IAPMO/NFPA to sit down and talk could have been pursued harder."

**SMACNA-Dennis Bradshaw.** "The only confusion that appeared to be evident was a lack of understanding, primarily by legislators, about the code setting process. Several questions seemed to believe that ICC's procedures involved only building officials and that building officials alone were involved in the development process. Legislators and others (maybe with reason for a bias) tended to assume that ICC codes were and are void of industry involvement."