New Business

A. U.S. DOE energy code requirements for states – Scott McLellan, Suzanne Todnem
B. Rulemaking for new commercial energy code – Scott McLellan
C. Process for new residential energy code (2021 IECC) – Scott McLellan
D. Legislation review and comment process – Scott McLellan
E. TAG report on review of floodproofing code – Greg Metz
F. TAG report on review of frost depth for Clay county (SF 1114; HF 1402) – Dan Kelsey
G. Formation of two new TAGs – Scott McLellan
   a. Window washing anchorage (SF 62; HF 165)
   b. Building Code
      i. Residential building permit fees (SF 801; HF 1085 as amended)
      ii. Adult changing tables (SF 2536; HF 2135)
      iii. Raising exemption on municipal report; codes adopted by law; ROI on residential energy code (SF 910); permit requirements (Rep. Elkins’ Housing Affordability proposal 2SS-CG001-3)

H. Approval of TAGs & members
   a. Window Washing Anchors
   b. Building Code
U.S. DOE energy code requirements for states – Scott McLellan
Determination of Commercial & Residential Energy Codes

• The U.S. DOE is required to issue a determination as to whether the latest edition of the Commercial Energy Code (ASHRAE Standard 90.1) or the latest version of the Residential Energy Code (International Energy Conservation Code) will improve energy efficiency compared to their previous editions.

• DOE has one year to publish a determination in the Federal Register after each new edition of the standard/code is published.
State Certification – Commercial Energy Code

• Upon publication of an affirmative determination (that the new code is more energy efficient), States have 2 years to certify that they have reviewed the provisions of their commercial energy code and have updated their codes if necessary to meet or exceed the updated edition. [Mandatory]

• State certifications for ASHRAE Standard 90.1-2019 must be submitted by July 28, 2023. DOE estimates 4.7% site energy savings.
U.S. DOE energy code requirements for states
State Certification – Residential Energy Code

• Upon publication of an affirmative determination (that the new code is more energy efficient), States have 2 years to certify that they have reviewed the provisions of their residential energy code and made a determination whether it is appropriate for them to revise their code to meet or exceed the updated edition. [Not mandatory]

• State certifications for the 2021 IECC must be submitted by July 28, 2023. DOE estimates 9.38% site energy savings.
U.S. DOE energy code requirements for states

Status of State Residential Energy Code Adoption
Rulemaking for new commercial energy code – Scott McLellan
1323 Technical Advisory Group (Commercial Energy)

(7) Meetings
January 5
January 19
February 2
February 16
March 2
March 16
March 30

Recommendations:
- Redefining Model Code to ASHRAE 90.1
- Expanding Scoping to All Historic Bldgs
- Accepting changes from ASHRAE 90.1-2016 to 2019
- Amendments proposed

Barry Greive  Building Owners & Operators
Gerhard Guth  Architectural Design
Julianne Laue  Commercial Construction
Britt McAdamis  Municipal Code Enforcement
Greg Metz  DLI/CCLD Building Plan Review
Ben Rabe  Energy Conservation Advocacy
Chris Rosival  DLI/CCLD Mechanical & Refrigeration
John Smith  Building Systems Design & Engineering
ASHRAE 90.1-2019


• The report linked above, details the TAG members’ recommendation to adopt ASHRAE 90.1-2019 and proposed modifications to the standard.

• The Department has not received any public comment or feedback on the TAG members' recommendations.

• The Department recommends beginning Rulemaking to adopt ASHRAE 90.1-2019. Motion required.
Process for residential energy code review – Scott McLellan
Process for residential energy code review
(42 U.S.C. 6833) (M.S. 326B.118)

1) Public Hearing (Federal req's): A State Determination whether to adopt the new Residential
Energy Code must be made in writing after public notice & hearing; based upon findings &
evidence provided at the hearing; made available to the public.

2) Determination by the Commissioner: The Commissioner of Labor & Industry reviews findings
of the hearing and decides whether to explore and review the appropriateness of the new
model energy code in consultation with the CCAC.

3) CCAC appoints Technical Advisory Group: Research & analysis must be conducted in
cooperation with practitioners in residential construction and building science.

4) Affirmative Recommendation by CCAC: The Commissioner may not adopt new model energy
codes without an affirmative recommendation by the CCAC.

5) Rulemaking begins.
Legislation review and comment process

The council is charged by Minnesota Statute 326B.07 to review laws, codes, rules, standards and licensing requirements relating to building construction and may:

1. recommend ways to eliminate inconsistencies, to streamline construction regulation and construction procedures, and to improve procedures within and among jurisdictions;
2. review and comment on current and proposed laws and rules to promote coordination and consistency;
3. advise agencies about possible changes in rules to make them easier to understand and apply;
4. promote the coordination, within each jurisdiction, of the administration and enforcement of codes; and
5. advise the commissioner about adoption of the State Building Code and Residential Model Energy Code.

REVIEW NEW CODES
The council reviews all new construction codes to ensure health and safety protections are provided at the least possible cost consistent with recognized standards.

CCAC EXPERTISE
Council members possess technical expertise in the following areas of the construction industry:
- boilers
- licensed architects and engineers
- heating and ventilation
- manufactured housing
- licensed residential building
- commercial building
- public utility suppliers
- local units of government
- energy conservation
- building accessibility
- state building official
- State Fire Marshal Division
- fire chiefs or fire marshals
- certified building officials
- commercial building owners and managers
- Minnesota Building and Construction Trades Council
- Boards of Plumbing, Electricity and High Pressure Piping Systems

REVIEW PROPOSED LEGISLATION
Consistent with its statutory duties, the council reviews and comments on legislation relating to building construction.

MORE INFORMATION
Legislation review and comment process

REVIEWS NEW CODES
• The council reviews all new construction codes to ensure health and safety protections are provided at the least possible cost consistent with recognized standards.

REVIEWS PROPOSED LEGISLATION
• Consistent with its statutory duties, the council reviews and comments on legislation relating to building construction.
Legislation review and comment process

a) The CCAC will review legislation related to building construction when (1) legislation is proposed in both House and Senate, (2) at the request of a legislator, or (3) at the request of the Commissioner or Chair of a legislative committee with jurisdiction over building construction.

b) Meetings will occur as needed but a minimum of four times a year with one scheduled in the second week of January and one in the second week of February. Meeting dates will be sent to bill authors in advance.

c) The chair will recommend whether a bill or legislative inquiry can be evaluated by council members alone or whether a technical advisory group should be established. Due to the technical nature of most bills, a Technical Advisory Group, (TAG) will usually be necessary.

d) Appointment of TAG members and their evaluation process will be in accordance with CCAC bylaws.
e) The Review and Comment process will be summarized in a format that identifies the subject, bill numbers if applicable, proposed bill language, whether a TAG was formed, TAG members, TAG comments and any recommendations, Criteria addressed (see (f) below), and CCAC comments, and any recommendations. Findings and recommendations will be provided to the commissioner, bill authors, and chairs of the relevant committees.
f) Criteria for the Review and Comment shall include eliminating inconsistencies, streamlining construction regulation, promoting coordination and consistency, making rules easier to understand and apply. Other criteria may be included as requested by a legislator, the commissioner, or chair.

g) CCAC will not review content under the statutory authority of a board such as for high pressure piping, electrical or plumbing. Legislators seeking review of such proposals may contact the boards directly.
Proposed Flood Resistant Design Code Highlights

Greg Metz | DLI/CCLD Plan Review Manager
**TAG Meetings**
June 22
July 6
July 20
August 3
August 17

Andrea Crabtree  Moorhead Floodplain & CRS Manager
Vince DiGiorno  Architectural Design, KOMA A&E
Christian Faste  Building Official - Burnsville
Dan Korf  Construction Engineer, Houston Eng.
Greg Metz  DLI/CCLD Building Plan Review (Leader)
Chris Rosival  DLI/CCLD Mechanical & Refrigeration
Ceil Strauss  MN DNR Floodplain Manager & National Flood Insurance Coordinator

**TAG Recommendations:**
- Redefine Model Code from the 1972 US Army “Chief of Engineers- Floodproofing Regulations” to ASCE Standard 24-14 Flood Resistant Design and Construction
- Create a “Floodplain Administrator”
- Modify Existing Non-conforming Use
- Redefine Substantial Damage and Substantial Improvement
- Modify language to not require fill.
- Allow “Contingency Plans” to prevent flooding of municipal systems.
Change Model Code to ASCE 24-14

- Update Model Code for Flood Resistant Design to the latest national standard for construction.
- Referenced from the 2018 International Building Code, (model code for Minnesota Rule 1305)
Floodplain Administrator

- Equates the duties and powers of the Floodplain Administrator to those of the Building Official with respect to administrative enforcement of MR 1335.
- Building Officials are defacto Floodplain Administrators
- Allows direct use of MR 1300 for administrative provisions.
Non-conforming Uses

- No increases to Non-conformity
- Additions must comply
- Substantial additions will necessitate upgrades to the existing non-conforming to comply.
- Discontinued use for 12 months negates the non-conformity allowance.
- Nuisances shall not be entitled to continue non-conforming use.
**Substantial Damage:** Any damage the cost of which to repair equals or exceeds 50% of the market value of the structure at the time just before the damage occurred.

- One-for-one equipment replacement, if the total work would NOT be defined as substantial damage unless including the cost to relocate the equipment to a complaint location.
Substantial Improvement: Any work the cost of which when considered in conjunction with other work that has occurred within the past 5 years equals or exceeds 50% of the current market value of the structure.

- Historic buildings are exempt.
- New work is not exempt.
Dry Floodproofing & Waterproofing

- Dry floodproofing of the lowest floor in residential buildings per ASCE 24 is permissible when a building is constructed per FEMA Tech Bulletin 10-01 or is in a jurisdiction with a FEMA basement exception.
- Dry Floodproofing allows up to 4 inches of water accumulation in 24 hours.
- Waterproofing criteria added to allow construction for accumulation of less than 3 pounds of water per 1000 square feet in 24 hours (6 cups of water).
• Fill is no longer required but will be one of several other flood resistant design strategies.
• Municipalities may institute contingency plans involving human intervention as a means to provide supplemental protection to municipal systems.

2. Modify parameters for Existing Non-conforming Use to be more consistent with common practice.

3. Redefine Substantial Damage and Substantial Improvement to prevent the current practice of improvement daisy-chaining to avoid compliance criteria and reducing the highly restrictive limits established in the model code.

Questions/Comments

Greg Metz
Greg.Metz@state.mn.us
651-284-5884
TAG report on review of frost depth for Clay county – Scott McLellan
Purpose of Frost Depth Study TAG

Evaluate the current minimum allowable footing depth due to freezing contained in the State Building Code for Clay county. The Technical Advisory Group shall evaluate at minimum:

a. Whether the current required minimum depth below grade of five feet is necessary to protect foundations and supporting structures from the damaging effects of freezing soil located both beneath and adjacent to foundations;
b. Whether a lesser frost depth requirement would reduce the structural integrity or otherwise negatively affect the foundation or supporting structure and if not, what lesser depth could be recommended;
c. Whether a lesser frost depth requirement could extend beyond Clay county and if so to what extent;
d. Whether the minimum required frost depth requirement for residential housing should or can be regulated differently from other building types;
2021 Frost Depth Study TAG

Dan Kelsey, P.E. | DLI/CCLD Plan Review
Clay County Frost Depth Technical Advisory Group

(2) Meetings
August 4
September 1

Ezra Balliger  Braun Intertech, Geotechnical Engineer
Don Dabbert  Dabbert Custom Homes
Mark Hallan  Widseth Architecture & Engineering
Dan Kelsey  DLI/CCLD Structural Engineer (Leader)
Greg Metz  DLI/CCLD Plan Review Manager
Jack Nyberg  Moorhead Building Official
Mitch Okeson  Sandman Structural Engineers
Kurt Welker  Welker Custom Homes

TAG Recommendations:
- Revise footing depth requirements when an updated edition of ASCE/SEI 32 is published.
- Recognize that there is a current compliance path for 50” footing depth per ASCE 32.
- Clarify that foundations designed per ASCE 32 are permitted by revising MR 1303.1600 during the 2024 code cycle to provide a direct reference to ASCE 32.
Why ASCE 32 Frost Protected Shallow Foundations?

- Allowed by prescription per Minnesota Rules, part 1309.0403, subpart 1, and part 1305.1809.
Why ASCE 32 Frost Protected Shallow Foundations?

- Merging of Maps in Figure A1 allow for interpolation of an Air Freezing Index Line at 3750°F-days.
Per ASCE 32, Appendix A, Frost protected shallow foundations do not mandate horizontal insulation.

Energy Code Requires Minimum R-10, so always exceed minimums.
Min R-10 and R-15 foundation

- Min R-10 foundation insulation for slab-on-grade
- Min R-15 foundation insulation for split-level.

- The goal: modular 48” concrete form for foundation walls.

- Must be at least 50 inches below finished grade

- Can be up to 24 inches

- Depth Required by MR 1303.1600, 60” below finished grade.

- Min. R-15 if constructing a split-level

- Under slab insulation R-0 to R-28 ($R_L$)

- Minimum R-10

- 8” min.
Counties able to leverage the Alternate Compliance Path

Affected Counties:
- Aitkin
- Becker
- Beltrami
- Carlton
- Cass
- Clearwater
- Cook
- Crow Wing
- Douglas
- Grant
- Hubbard
- Itasca
- Kanabec
- Koochiching
- Lake
- Mahnomen
- Mille Lacs
- Morrison
- Otter Tail
- Pine
- St. Louis
- Todd
- Traverse
- Wadena
- Wilkin
Conclusions

Deep investigation of Frost Protected Shallow Foundations uncovered a previously unknown prescriptive compliance path.

**Required:**
- Merging of two Air Freezing Index [AFI] Maps
- Interpolation of the maps to determine AFI 3750 line
- Exploration of appendices to discover opportunities without horizontal insulation

**Recommendations:**
- Monitor ASCE 32 Standard for changes in the nationally accepted Air Freezing Index
- Recognize that there is a current compliance path that does NOT require engineering
- At the next code cycle, add Subpart 3 to MR 1303.1600 to clarify that Frost Protected Shallow Foundations is a viable compliance path per the rule as well as model code (transparency)
1. Consider revising footing depth requirements when an updated edition of ASCE/SEI 32 is published showing changes to the Air Freezing Index contour lines used to establish frost penetration for Frost Protected Shallow Foundations.

2. Recognize that there is a current compliance path for 50" footing depth in Clay County per ASCE 32 without the need for an Engineered design.

3. Clarify that foundations designed per ASCE 32 are permissible by revising Minnesota Rule 1303.1600 during the 2024 code cycle to add subpart 3 in order to provide a direct reference to ASCE 32.
Questions/Comments

Dan Kelsey
Dan.Kelsey@state.mn.us
651-284-5852
1. Consider revising footing depth requirements when an updated edition of ASCE/SEI 32 is published showing changes to the Air Freezing Index contour lines used to establish frost penetration for Frost Protected Shallow Foundations.

2. Recognize that there is a current compliance path for 50" footing depth in Clay County per ASCE 32 without the need for an Engineered design.

3. Clarify that foundations designed per ASCE 32 are permissible by revising Minnesota Rule 1303.1600 during the 2024 code cycle to add subpart 3 in order to provide a direct reference to ASCE 32.
Formation of two new TAGs – Scott McLellan
Proposed window washing anchorage TAG

(Existing M.S. 326B.106): Window cleaning safety. The code must require the installation of dedicated anchorages for the purpose of suspended window cleaning on (1) new buildings four stories or greater; and (2) buildings four stories or greater, only on those areas undergoing reconstruction, alteration, or repair that includes the exposure of primary structural components of the roof.

The commissioner may waive all or a portion of the requirements of this paragraph related to reconstruction, alteration, or repair, if the installation of dedicated anchorages would not result in significant safety improvements due to limits on the size of the project, or other factors as determined by the commissioner.

(Proposed language): Dedicated anchorages are not required for new buildings that are six stories or less if the roof has a slope steeper than four units vertical by 12 units horizontal.
- SF 2536; HF 2135 – Adult Changing Tables required in code;

- SF 801; HF 1085 – Building permit fees calculated on cost-per-square foot for new residential construction

- SF 910 – Codes must be adopted by law if prior to 2026; 5-year ROI on Residential Energy Code adoption;

- 2SS-CG001-3 – Rep. Elkins' Housing Affordability proposal - Raises exemption on municipal fee report to $7,000 & requires additional detail on reporting form; 30-year ROI on residential energy code adoption; 60-day limit to act on building permit applications; Building permit fees calculated on cost-per-square foot by Jan 1, 2022; Codes must be adopted by law if prior to 2026
Approval of TAGs & members – Scott McLellan
Proposed TAG members for window washing anchorage

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TAG member qualifications for window washing anchorage

**Greg Metz, TAG Leader**
Greg has six years with the Minnesota Department of Labor and Industry Construction Codes and Licensing Division, and he currently manages plan review. He has 31 years of experience as a commercial architect and 10 years in code enforcement. Greg has previously led five Technical Advisory Groups.

**Kyle Berndt**
Lobbyist for Minnesota Multi-Housing Association. Formerly worked for MN Senate and MN House for MHA. Deep knowledge in the development and writing of statutes and rules. Four years in the State Senate as committee administrator for housing committee.

**Eric Crone**
Eric has been a professional window cleaner for 12 years. He has worked at both union and non-union companies as a window cleaner. He is currently the union steward while working for Columbia Building Services and serves as the window cleaning delegate on the executive board for SEIU Local 26.

**Larry Farris**
Larry has more than 30 years in municipal code enforcement and a background in commercial construction. For the past eight years he has served as the lead construction codes expert for BKV Group, an architectural/engineering firm specializing in mid- and high-rise construction and based out of Minneapolis, Chicago, Washington DC, and Dallas.

**Daniel Kelsey, P.E.**
Dan has been a licensed engineer for 30 years. He has an Architectural Engineering degree with specialties in building structural systems and building mechanical systems. He has been with DLI/CCLD for 21 years as a structural specialist. Prior to DLI/CCLD he worked 13 years as a structural engineer with the last position being the Structural Department Head with a national firm.

**Wendy Rannenberg**
Wendy currently serves as the Building Official/Manager of Construction Services and Inspections for the City of Duluth. She has an architectural background and over 30 years of experience in the construction industry serving 20 years in municipal construction codes enforcement.

**Nancy Zentgraf**
Director of Training & Outreach for Minnesota OSHA. Nancy has worked with MNOSHA for over 25 years and has worked as a safety professional for over 30 years.
## Proposed TAG members for building code series 1

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TAG member qualifications for building code series 1

Scott McKown – TAG Leader
Assistant Director, CCLD, DLI, for 8 years; graduate of Bethel University & North Hennepin Community College, MN certified building official and has multiple ICC certifications – over 25 years in building code industry.

Irene Kao
Serves as the Intergovernmental Relations Counsel at the League of Minnesota Cities – land use and zoning, building codes, data practices, Open Meeting Law, procurement, and civil liability.

Charlie Vander Aarde
Government Relations Specialist at Metro Cities (organization that represents cities in the seven-county metro area at the Legislature, Executive Branch and Metropolitan Council). Areas of focus: housing, economic development and metropolitan government. Previously served as legislative staff in both the Minnesota House and Senate.

Nick Erickson
Helped form the Housing Affordability Institute, a 501c3 housing research group, serving as the lead author on its research initiatives; contributing writer to Housing Industry News; frequent testifier at the MN Legislature on housing policy issues; Business Communications Degree (St. Thomas) and previous Policy Fellow at the U of M’s Humphrey School of Public Affairs.

Brian Hoffman
City of St. Louis Park for over 22 years, current Director of the Building & Energy Dept. Brian is the legislative rep for the Association of MN Building Officials.

Kurt Welker
Graduated from Iowa State with a Bachelor of Science in Construction Engineering and is a MN Limited Building Official. He founded Welker Custom Homes in 2001 and builds homes in Owatonna and the surrounding area. Kurt is the past president of the Builders Association of Minnesota and currently the Minnesota State Representative to the National Association Of Homebuilders and on their board of directors.

Karen Gridley
Accessibility Specialist with the Building Plan Review unit, CCLD, DLI. U of M degree, and 25 years of experience implementing accessibility codes/regulations (federal & state).

Barry Greive
Building Regulatory & Strategy Lead for Target Corporation; 20+ years enforcing MN Building Code; Certified MN Building Official; multiple ICC Certifications; participates in NFPA and ICC code development.

Dana Murdoch
University of Minnesota Design project manager for capital projects. Dana is both an architect and MN accessibility specialist. She has been active with the accessibility code for many years working for a large architecture firm prior to coming to the U of M.
Motion to approve TAGs & members
Proposed TAG & members for window washing anchorage

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A copy of this presentation and today’s hand-outs can be found on the CCAC’s webpage