STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

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MINUTES

STATE BUILDING CODE COUNCIL

Date: September 29, 2009
Location: Holiday Inn Select, Renton

Council Members Present: Peter DeVries, Chair; Jon Napier, Vice Chair; Ray Allshouse; John Chelminiak; Kristyn Clayton; John Cochran; Mari Hamasaki; Donald Jordan; Tom Kinsman; Robert Koch; Jerry Mueller; Tien Peng

Council Members Absent: Angie Homola, Dale Wentworth

Visitors Present: Chuck Day, Mike Butler, Terry Thomas, Mike Wheeler, Ron Schumacher, Randy Miller, Kate Tate, Mark Gray, Jim Muir, Jon Dunaway, Dr. Neil Hampson, Mark Liles, Don Pamplin, Roger Ferris, Dave Cantrell, Kraig Stevenson, Tom Young, Tonia Sorrell-Neel, Ray Bizal, Todd Short, Jim Kambeitz, Bob Sparks, Ron Biesold, Kelly Fahey, Tom Phillips, Michael Fitzgerald, Joe Puckett, Todd Woosley, Ben Ferguson, Michael Barth, Don Tomaso, Bruce Smart, Patrick Hayes, Brian Minnich, John Hogan, Javad Maadanian, Greg Rogers, Chris Ricketts, Dan Quatier, Scott Beard, Rena Keith, Bill Littlejohn, Lee Kranz, John Williams, Kevin Kartak, Zak Parpia, Scott Bergford, Jim Williams, Jeff LaFlam, Kim Allen, Mark Crowthers, Gary Faucett, Larry Rabel, Scott Kramer, Dick Bower, Paul Burckhard, Jim Crawford, Richelle Risnow, Kim Schroeder, Martha Gillis, Tom Raymond, Carl Anderson, Mark Hoyt, Stan Amas, Roy Greenman, Dave Lynam, LeRoy McNulty, Gary Wray, Joe Herr, Diane Glenn, John Norris, Michael Schoonover, Joe Andre, Anjela Pimentel, Jim Tidwell, Pat Dillon, Gary Nordeen, Joe Bowen, Tony Usibelli, Chuck Murray, Kim Drury, Mark Frankel, Greg Staats, Tom Nichols, David Cohan, Jack Harris, Mary Claire Frazier, C. J. Brockway, Megan Strawn, Lauren MacLeod, Michael Lane, Bev Kuritz, Steven Wilcox, Dave Baylon, K. C. Golden, Mary Smith, Mike Ferry, Carolyn Blayney, Christina Parker, Gary Franz

Staff Present: Tim Nogler, Krista Braaksma, Joanne McCaughan

CALL TO ORDER

Peter DeVries, Council Chair, called the meeting to order at 10 a.m. Peter welcomed everyone to this public hearing, held to receive testimony on the 2009 proposed code changes from the public residing on the Westside of Washington State. Introductions were made.

REVIEW AND APPROVE AGENDA

Tom Kinsman asked for a brief discussion, if possible, under Other Business, about communication within the Council and with others, based on recent e-mails. Peter agreed with having such a discussion if time allows. Thus the agenda was approved as amended.

REVIEW AND APPROVE MINUTES

The minutes of the August 3, 2009 conference call meeting and the July 9, 2009 meeting were reviewed. Both sets of meeting minutes were approved as written.

PUBLIC COMMENT ON ITEMS NOT COVERED BY THE AGENDA

None received.

PUBLIC HEARING

Peter set some ground rules before public testimony began. He set a three-minute time limit per speaker. Groups of four or five were asked to delegate a member to speak on behalf of the group, rather than individual members each speaking. Speakers were asked not to repeat previous comments. To facilitate the number of people wishing to speak to the International Residential Code, Peter asked that three speakers approach the podium at a time and take turns speaking.

Peter noted that the intent of this hearing is to receive public testimony. Council decisions won't be made today. However, questions may be asked by Council members, to clarify or explain testimony.

International Building Code

Mike Wheeler, Smoke Safety Council

I speak in opposition to proposed amendments 09-183 and 09-239. These amendments were heard at the June meeting and were moved forward by the Council for public comment. We've also prepared a written comment that we'll give to staff and they'll be passing that out as well as

part of your package after this meeting. The Smoke Safety Council is urging the State Building Code Council to disapprove proposed Washington State amendments 09-183 and 09-239.

Protection of patients in hospitals has always been a concern in the State of Washington. Patients in hospitals are dependent on the fire and life safety systems required by the Washington building code. These building code requirements, coupled with the trained hospital staff, ensure the safety of nonambulatory patients during a fire emergency and give firefighters a level of safety from smoke while battling a fire.

The passage of 09-183 and 09-239 will overturn the recent ICC code action in the 2009 IBC and would drop Washington below the national standard of life safety in hospitals. It would reduce the level of life safety in hospitals for patients. It would reduce the level of life safety for firefighters as they're battling the fire. It would eliminate the requirements for vertical smoke protection, not only in hospitals, which is what the IBC will require, but also in R-2 occupancies, which by definition are all apartment houses, boarding houses, convents, dormitories, fraternities, sororities, monasteries, hotels, motels, vacation timeshare properties.

Passage of these two amendments would go far beyond the intent of the national IBC requirements to provide smoke protection. It would also provide prisoners in the State of Washington who are required to live in areas where they are required by the state code to be compartmentalized to have a higher level of protection than patients in Washington's hospitals. And it would also allow unprotected vertical penetrations in hospitals. Since other vertical penetrations into the required smoke compartment are required to be protected from fire and smoke, such as ducts, why not [also protect] elevator hoistway openings?

Please disapprove these two amendments. Passage of either amendment would seriously decrease the level of life safety for patients, residents and firefighters by allowing unprotected vertical openings for movement of smoke in Washington hospitals.

Dan Quatier

I just wanted to add to that—I'm also speaking on behalf of defeating those two amendments—As a business owner in Washington State, I employ 12 people, providing health insurance for them, and I expect hospitals to be a very safe place for them to receive care. I don't see how passage of these amendments will achieve that goal, because without smoke protection at the elevator hoistway it should be obvious to everybody that it will not make hospitals a safer place for my employees or anybody that's in the hospital. Thank you.

Mike Butler, Interior Technology

There are case studies out there that show there were incidences and what I want to say is compartmentalization did the job with regards to allowing safe movement of people from one compartment to another. But without the additional protection we may have mitigated the smoke passage, the migration of that smoke, whereas we wouldn't of had to if you hadn't had it migrating.…So I would strongly urge you to not adopt these two amendments.

Kristyn Clayton made a point of order, asking speakers to please refer the code sections. 09-183 deals with Section 407.4.6 and 712.9. 09-239 deals with Section 708.14.1.

Tom Young, Northwest Concrete Masonry Association

I'm here today to speak in support of five amendments to the building code dealing with masonry construction. All these amendments have been recommended by your Building Code TAG. Two of them were further discussed by the Structural Engineers Association, Earthquake Committee.

I'm just briefly talking about Log #243 and #244, which deal with anchor bolt installation. This amendment is an update to a current state amendment that we have. Again, we're in support of all of these. #245 deals with masonry grout lid types. It allows construction to be facilitated so that we can grout these walls to a full course height, which makes a lot of sense from a construction and a design standpoint. #246 clarifies the code provision allowing the one-third increase and allows stress design of masonry. And this one was discussed further at the Structural Engineers Earthquake Energy Committee and was given endorsement or support by the structural engineers as well.

And the last one is #242. It's also an update to a current state amendment. In the process of submitting this proposal, there was some language there that when discussed, the structural engineers committee agreed to remove the language as not supported. So I have modified that amendment. And I have copies of the modification that I can distribute as well. Upon removing the language that was requested, it left us with two options. One is to keep the IBC as it is. The other was to amend it to match the masonry standard, the reference standard, which is the method we're supporting, Option #2. And again, I have an update of that.

So we appreciate the opportunity to talk to you today on these structural issues. Again, we're in support of all five of these amendments.

John Cochran asked Tom Young what IBC sections those amendments deal with. #243 is Section 2108.2; #244 is 2107.3; #245, 2104.1; #246, 2107.1 and .2; and lastly #242 is Section 1405.6.2.

Scott Beard, Building Department, City of Tacoma, representing Structural Engineers Association of Washington (SEAW)

This is regarding a code amendment that went through TAG for telecommunication towers. I didn't think it was particularly controversial at that time. But Tom e-mailed me with a couple questions yesterday, so I thought I'd better show up in case there were further questions. This has the support of the engineering community; both the SEAW (Structural Engineers Association of Washington) wind committee and seismic committee And on a national level, a parallel effort is being done by the National Association of Structural Engineers nation-wide, trying to get this in the 2012 code.

Basically what it all boils down to is, when we go from the 2006 to the 2009 IBC, the tower standard TIA222 changes from Version F to Version G. And they made a pair of errors in doing

that. One was the wind speed. They tried to simplify it, and they missed a condition. We've notified them about that. We gave them a couple of suggestions for wording. Their recommended wording is the wording that we put in the code provision. They can't get to it now. But once they get around to meeting, they'll address the problem.

We haven't heard back from seismic, but I have talked to the committee chair for ASCE 7, which is the structural code portion. Chapter 15 is the part the towers are within. And the tower guys have provided some exemptions for seismic design and towers. And, we can show by calculation those exemptions are not appropriate. In the case of ASCE 7, Chapter 15, they've stated that they have no intent of letting you guys exempt towers, it's just the way it came into the code it's done an end run. We haven't heard back from the seismic guys on TIA yet.

Tim Nogler noted those are items #51, Section 1609.1.1, determination of wind loads on Towers; and #64, Section 3108.1, telecommunication and broadcast towers.

Rena Keith, Sherwood Assisted Living in Sequim, Washington

I want to thank you for letting us speak on behalf of our residents. Our request today is that you consider our request to amend the building code and allow doors to resident rooms to be open in assisted living facilities without automatic door closures, if staffing and building specifications need go through fire by nursing homes.

Sherwood Assisted Living originally was built in 1974 as a 60-bedroom nursing home. And in the late 70s and early 80s, boarding home beds were added. But the rooms that were added were still built to nursing home specifications. In the early 90s, the nursing home part was remodeled and the whole building was licensed as a boarding home, even though the building was still built to specifications of a nursing home, which means that it's had all the smoke detectors, all the fire…sprinklers in all the rooms and hallways and doorways were widened. Not only was the building built to those specifications, but the staffing of our assisted living is much higher than any other assisted living, and also is equal to or higher than nursing homes.

We have, during the day, one staff to 3.5 residents. During the evening, there's one staff to 5.5 residents. We have nurses there 24 hours a day. We never use rubber stoppers to hold the doors open. But we have had them weighted with small stuffed animals to hold the door open. And we use those because they slid easily when used. It was easy to close the doors in the event of a fire alarm or drill. Also our rooms are all equipped with spring-loaded closures. With those spring-loaded closures and the stuffed animals, doors can close entirely on their own. But they close gently.

The current regulations require that doors spring closed at all times for our residents if they are not equipped with the automatic door closures. But with the automatic door closures and with the wide doors, the doors are very heavy, cumbersome, and dangerous, if not impossible for residents to open if they have the door closed and they try to open it themselves when they use a walker or are in a wheelchair. If the door is open and the smoke alarm goes off, or the fire drill, then those automatic door closures release those heavy doors and they come shut quickly. So the residents in walkers or wheelchairs, or even a frail, little person could be injured.

Residents move into assisted livings because they are frail, because they need assistance, and because they don't want to be alone. When the doors are shut, they feel isolated and alone. One of the residents even told me, "Please don't shut the door. It makes me feel like I'm in a prison." We also have a special needs unit where the residents have Alzheimer's and dementia, and they're high-risk. So they have motion detectors on so that if they start to move, the alarms will go off. But if those doors are shut, the alarms cannot be heard.

Nursing homes are allowed to have their doors open without the automatic door closures because of their staffing and because they have smoke detectors and sprinklers. We ask that the assisted living be able to have an exemption that they also need that same criteria.

Tom Kinsman questioned whether the proposed code change is needed. He suggested that Sherwood Assisted Living obtain a permit to change its occupancy from R-2 to I-2. If Sherwood Assisted Living presently meets all the requirements of an I-2 occupancy, it should be a simple matter of getting a permit. Then door closures won't be required.

Bill Littlejohn said this question came up at a previous hearing. He said he checked with local city code people, and they wouldn't buy into that. Tim said it's a licensing issue. Sherwood Assisted Living is licensed as an R-2.

Tom said he's concerned because Sherwood Assisted Living doesn't know all the implications of switching from an R-2 to an I-2, and what the requirements are to meet I-2 standards. Rena said her understanding from everyone, including the local fire chief, is that Sherwood Assisted Living complies. However, because it's licensed as a boarding home, the doors have to be closed or have automatic closures. Bill added that he understands the staffing level is the biggest issue involved.

Tom said if Sherwood Assisted Living meets the staffing levels of an I-2 occupancy, the local official should allow exemption from the automatic door closure provision. That's preferable to a code amendment that implies Sherwood Assisted Living meets all the code standards for an I-2 occupancy. Tom questions the latter.

Bill Littlejohn said locals don't care. The people out of Olympia made it an issue.

Lee Kranz, City of Bellevue

I'm speaking in opposition to proposals 09-183 and 09-239, which relate to smoke migration in hospitals and multifamily residential. Both of these amendments would eliminate elevator hoistway smoke protection and allow the potential for vertical smoke migration through unprotected elevator doors.

#183 is in Section 708.14.1 in the 2009 IBC. This is a new requirement to provide an elevator lobby in I-2 hospitals. And Proposal #239 is Section 407.4.3 and 712.9. It deals with the requirement to provide smoke protection for horizontal floor assemblies.

These two proposals would eliminate elevator lobbies in hospitals and multifamily buildings. If they're approved, it would put the State of Washington behind the times with the rest of the country. Smoke compartmentalization is a basic life/safety enhancement to contain fire and smoke to the room of origin.

Elevator shafts are recognized as the largest penetrations in most multistory buildings and a ready conduit for migration of smoke and toxic gas in the event of fire.

While the elevator shaft and elevator doors are fire-rated, the closed elevator doors are no barrier to smoke and toxic gas migration due to allowed gaps between the door and the frame. Elevator shafts penetrating smoke compartments provide a ready conduit for smoke and toxic gas to migrate from floor to floor, requiring that the elevator doors be protected against smoke migration, as required by the code.

With hospital elevators, vertical elevator shafts penetrate the top and bottom of smoke compartments on every floor of the hospital, representing openings in the smoke barriers that have been penetrated and must be protected against both fire and smoke to maintain the integrity of the smoke barrier. These elevator openings are protected against fire by fire rating in the elevator shaft and elevator door, and must be protected against smoke migration as required for openings from both smoke partitions and smoke barriers.

I'll just close by saying that there is nothing unique to the State of Washington that warrants eliminating the requirement to provide the smoke protection afforded with these lobbies. Therefore I'm recommending disapproval.

John Chelminiak asked for clarification. He asked, since Section 708.14.1 doesn't adopt the code, if Lee is requesting that the code be adopted. Lee said the proposal is to insert an exception to 708.14.1 that eliminates the requirement for the elevator lobby in hospitals and multifamily occupancies. He added that this is a new code requirement that was approved through a national code development consensus process. It philosophically provides compartmentalization by the use of passive smoke barriers.

John Chelminiak clarified that Lee asks that Section 407.4.3 be adopted.

John Williams, Washington Department of Health, Construction & Youth Services

I'm also a member of the IBC TAG Committee. In my role, I review hospitals and nursing homes, boarding homes, health care facilities across the state for fire safety and life safety.

I am specifically addressing the two items that Mr. Kranz just addressed, Log 09-183, which is Section 708.14. and Log 09-239, 407.4.3 and 712.9. Those two proposals are from the Department of Health. It's our position that the IBC and the model codes previously already addressed the issue of smoke migration and control in I-2 occupancies, as every single I-2 occupancy is required to have smoke compartmentalization on every floor. And that's to provide

for horizontal evacuation in the hospital. In hospitals, we can't move people outside the building. We always move them to the adjacent smoke compartments so that they can receive care.

So in terms of how that affects vertical smoke migration, those smoke compartments are stacked throughout the building. So if there's a fire in one smoke compartment, that would translate perhaps by an elevator shaft, to a floor above, if that elevator shaft is in one smoke compartment. So the people on that floor above have the option to be horizontally evacuated to the adjacent smoke compartment on that floor.

So when we look back at the history of how this works, it's been incredibly successful. If you look at the fire data from NFPA, the numbers that I have is on average between the years of 2003 and 2006, there has been one civilian death per year in a hospital or hospice facility, one civilian death per year in a mental health or substance abuse facility. And in the majority of those cases, the fires are contained within the room itself. Two percent of the fires extended beyond the room of origin.

So we believe that the existing provisions of the IBC accommodate this. And I think the fire statistics prove that. Adding elevator lobbies, which could potentially reduce visibility, complicate transfer of patients back and forth between smoke compartments, we don't think it's practically necessary.

I understand that this is an emotional issue. These institutional occupancies house some of our most fragile patients. But that's why we've always protected them in the building code.

We don't have a problem with making you appropriate requirements on health care facilities. We've been before this Council and the national council asking for better safeguards even this year, and previously. But I believe that the previous codes have this covered. And since we've asked for more safeguards, I think we have to go back when we see something new and ask, "Does this make a difference?" And I don't believe that this makes a difference.

Jon Napier asked if Mr. Williams testified at national code hearings on this issue. John answered no. He said he wasn't available at the time of the Minneapolis hearings. He is, however, proposing a national code change to remove it from the next code edition.

Dr. Neil Hampson

I'm here to comment on Item 25, Section 907.2.8 relating to carbon monoxide alarms in residential settings. I'm the Medical Director of the Center for Hyperbaric Medicine at Virginia Mason Hospital in Seattle. We're the regional referral center for treatment of cases of severe carbon monoxide poisoning with hyperbaric oxygen in the hyperbaric chamber. I am one of the top three to four experts on carbon monoxide poisoning in the United States. I've published more than 50 articles on the subject and spoken around the world on the topic.

I would like to congratulate the State of Washington for addressing the issue. Most unintentional CO poisoning is surmountable, and the place to start this is with CMORs. I strongly advocate legislation as it passed through the House and Senate. It made recommendation for changes in the bill that were necessary. Unfortunately the proposed rules on CO alarms are changed from the law signed by the Governor. And those changes are very significant.

The proposed rules have excluded all electrical residences without attached garages, presumably because they do not have a permanent source of CO. I'm holding here the recent article from the American Journal of Public Health that describes the carbon monoxide poisoning epidemic that we experienced after the windstorm in December 2006. An estimated 300-500 individuals were poisoned with carbon monoxide, 70 of them severely enough to be treated in the Hyperbaric Chamber of Virginia Mason. Of those 70 individuals, none were poisoned by fuel-burning appliances in their residences or by cars running in attached garages. They were all poisoned by sources of CO brought into their home, charcoal briquettes or gasoline-powered electrical generators. This could easily have occurred in the type of residences that would be excluded under the proposed rules.

I also operate a nationwide, on-line reporting system for severe cases of co poisoning. It's funded by the Federal Centers for Disease Control Prevention. If you look back at the last year at unintentional poisonings that occurred in residential settings, 55 percent were due to fuel-burning appliances, 45 percent occurred because CO sources were brought into the home, like charcoal generators or pressure washers.

Since the proposed rules have the potential to miss approximately one-half of residential co poisonings, I strongly encourage you to modify them to conform with the law passed by the Legislature. Remove the exclusion for all electrical residences and those that have garages. And make the requirements for co alarms conform with those for smoke alarms. They should be present in all residences.

Tom asked for statistics about the number of deaths per year, as well as the state, for carbon monoxide poisoning. Dr. Hampson answered there are about 2,500-3,000 deaths per year. About 2,000 of those are intentional poisonings. So, we're looking at preventing about 1,000 unintentional or accidental poisonings.

Tom asked if Dr. Hampson's database is available on the web. Dr. Hampson said it is not. He offered to provide data for the State of Washington for the past year from it.

Dr. Hampson noted that prevention includes brain injury from carbon monoxide poisoning as well as death.

Tim noted the proposal for carbon monoxide alarms appears in the building, residential and fire codes. He said the IFC is the governing code for other than one and two-family dwellings.

Jim Williams, Executive Director, Washington Poison Center

I'm testifying on the same issue, but from a different perspective. The Washington Poison Center handles about 436 calls a year from co exposure or information. The thing that I want to drive home today is those calls happen all year long. When we did the research, we have them in July, we have them in August, we have them in June. It's not just in those winter months that most people think about it. And it is again predominantly as people bring things into their dwelling.

So I fully support the changes that Dr. Hampson suggested.

International Residential Code

Kevin Kartak, owner of AAA Kartak Glass and Closet

We employ 50 people all over Puget Sound. I'm speaking in favor this morning of #09- 211. This proposal gets rid of the mandatory sprinklers in residences.

I'll preface my comments by saying that we might look at this and say, "Oh, this isn't going to affect me. I've already got my home. This is for new homes, so it doesn't affect me. It's not going to affect people I know and love." I would suggest that the majority of us live in homes that are less than 40 or less than 50 years old. And over the next 40 or 50 years, for the majority of us, reason would follow that we're going to live in homes that are built after today, sometime or those next 40 or 50 years, or our children will, our grandchildren will.

At our company, we encourage our team members to buy a home, to own a home. It's the American dream. We provide home grants for that. I know that my sister and my children are saving. I have employees that are saving with the desire of achieving that dream of owning their own home. And I myself, over the next five or 10 years, I'm planning to buy or even build myself that dream home that I want to have.

So the question before us on this issue is should we the citizens ourselves be mandated to pay $30,000 to have a fire sprinkler system in our home. And that's a good question. It's worth looking at. I've given this a lot of thought. I know we all have a limited amount of money. My pockets are a little lighter than they used to be. And I've only got so much. So how should we spend our money? $30,000 is a lot. So I compared some investments, at least one other investment. I compared that investment with the investment that we make to save lives in the area of cancer research. So I'll give you a handout on this.

Annual deaths from cancer are 560,000 a year. This is the number to leading cause of death in America. And per capita, spending on cancer research is $22.76 per year. That rounds out to about $1,500 per person per lifetime. I would submit that most of us agree that's a good investment. We're fighting something big there.

Comparing that investment to what we're looking at here in residential fire deaths, there are less than 3,000 residential fire deaths in a year. What we're proposing is about $30,000, and that's not counting the cost of when those things go off and you don't want them to and there's water all over the house, that's just the cost of having that installed. About, if there's 2.3 people in a household, something like that, about $13,000 would be each person's investment that we'd be making for that. And I note that this is not in the top 10 causes of death. As I researched this last night, I couldn't find a bigger list. But I doubt it's in the top 20. It might be in the top 50, but this is a very small cause of death here.

I did find that your chances of death by cancer are one in four. Your chances of death by smoke, fire and flames, according to the National Safety Council, are one in 1,192. So, just comparing those investments, I have a question about that.

Just to close, this is a very emotional issue. And I appreciate the passion of the people that are going to testify after me and say, "We've got to save lives." And I agree. Saving lives is important. I would, however, suggest a much better investment would be how about mandating $1,000 defibrillator in each of these new homes. We'd be fighting the number one cause of death in America. So I would say it's an extreme case of diminishing returns. And it's not appropriate for us to mandate that we all have to do that.

Jon Napier asked how the per capita $30,000 price of sprinklers was arrived at. Kevin answered, "The per capita spending is from the Public Library of Science." He said the $30,000 is not per capita. He divided that by 2.3 average occupants per home. He said the per capita estimated lifetime investment price of sprinklers is $13,000.

Zak Parpia

I've been building houses in Washington State now for 33 years. I did serve on the State Building Code Council in the 80s. I was appointed by Dan Evans, as well as Governor Spellman. For 15 of those years, I built residences in Spokane. And for the last 20 or so, I've been building in North Snohomish County.

The issue that's before us here has been there forever, as far as I can remember. It was at that time proved to be useless and economically unwarranted then. It is now almost impossible to substantiate its value. The huge changes that have been made in building materials, technology, building codes, awareness, education, it's mind-boggling that today fire departments are still pumping out this information that so definitively was presented to me and this council and others as now something that is in need of review.

I'll give you my reasons for that. Since 1975 that I've been building, at that time we had one smoke detector in the house. Then it became wise to, because of electricity being shut off, have maybe a battery backup. Then we had one in each bedroom. Because that's where fire started. Then we had one in each room, each space in the house, all with a backup. Then we decided to we need to link them all. If one goes off, everything goes off. Those enormous changes, the advantages then that have been incurred from that kind of a change in code make this completely impossible to support.

Fire fatalities, if you compare them by age of house, it should be dramatically obvious to you the plummeting of deaths when you have house built, on page 7, are almost at zero, you can't go below that. I urge you to ask the fire department to give you statistics of fires in single-family homes in Washington State by age of home. And you'll see how worthless this requirement is.

These are homebuyers that you're talking about. We've done enormous research on what causes these fires, and the location and their sources. Mechanical rooms, garages, storage spaces and bedrooms. People smoking cigarettes. A lot has changed from when our fire walls, fire doors, automatic closing doors, you have night wear, fire retardant carpets, fire retardant upholstery.

It's the smoke inhalation that kills residents, not the fire. Smoke starts really before any conflagration. And for a smoke detector to get that information out to the entire house early is really what's important.

Regarding economic conditions, just heaping costs on homebuyers is no longer the answer. It's not the answer for bureaucracy. It's not the answer for police departments. It's not the answer for homebuilders. It's not the answer for the general public either. It used to be, you had the cost and the buyer would pay, and you would get prices high enough and mortgage companies would loan you money. It doesn't happen anymore. Unsustainable cost increase can not get you appraisals, it can not get people to qualify, and these increases in cost I think they're substantial, and a percentage of construction. All of these added fees and costs are absolutely unsustainable.

Joe Herr, Burnstead Construction

I'm here to address this issue of fire sprinklers, and maybe from a couple of different aspects.

Most fire departments will admit that 80 percent of their calls are ambulatory or health-related. They are not fire-related. Of that 20 percent that remains, you have commercial structures, brush fires, car fires. So we break it down to now we have less than 10 percent of all fire calls are residential calls. Of those 10 percent, near none of them are new construction. New construction has addressed all the fire issues that currently fire departments are concerned about, and that is occupant safety. The fire department does not respond to put the structure out. They respond to make sure there's no one in that structure. If there's no one in that structure, the fire either burns or they contain it to the structure to not allow it to spread. With the current codes addressing occupant safety through electrical codes, fire blocking, smoke detectors, that goal of occupant safety has been met.

We have addressed and provided sprinkler costs. Those cost estimates are between $15,000 and $20,000 added to the cost of the new home. That, given current market conditions, helps to further erode any opportunity for new home ownership, especially in the affordable housing market.

Chuck Day, Adair Homes

We focus on affordable housing. You might say we kind of pick up where Habitat for Humanity leaves off. That is, where people make too much money for Habitat for Humanity, we try to provide an option from there upward. Even though that's a great challenge for many until they get up to a certain income level, and in fact, that's what I want to speak to a lot in my comments, is housing affordability and what the impact and various percentages of increase in the price of a home does to the ability of the person to finance that home.

The first handout that I'll leave with you has this chart. It illustrates the point that starting out with a five percent increase in the price of a home, by the way this study was done with the help of our lender partners who have provided loans for actual people in actual houses, the analysis is that starting with a five percent increase that 69 percent of the individuals who we have been able to retain funding for will not be able to buy. It takes only a five percent increase in the price of the home to do that. We're talking, of course, we build on the owner's property. We do not build speculative housing. We do not build in subdivisions, mainly the rurals. So we're talking the price of the home, when I say that.

So a five percent increase in the price of the home will eliminate 69 percent of those. Now, it goes up from there. As it ranges up to a maximum of 30 percent, we calculated 94 percent of

individuals who come to us to build a home would be unable to. As it is, we're only able to finance and build for about 10 out of 100 individuals that come to us, as it is. And of those 10, 94 percent of them would not be able to build at a 30 percent increase. And you have the handout to review. I hope you will.

The second piece is a handout that shows the cost impacts of fire sprinklers in residences. And, again, it's detailed and done from different angles, actual case studies of cost. Estimated costs are also charted. And we hope you'll look at that.

The last is an example of a basic Adair home of 1192 square feet, in which the price of the home is increased from five to 17 percent, depending upon whether you do a whole estimate on a public water system or a higher estimate of cost based on a well system and the use of holding tanks and pumps and other things associated with that. So that one increase alone would knock out between 69 and about 80 percent of people from being able to finance their Adair home. So I'd like you to take a look at that.

Of course, I'm speaking in opposition to Section R313 of the IRC, which mandates fire sprinklers in all single-family residences. I would prefer the Council eliminate that entirely. However, of the two options that are on the table, we would be in favor more of the one which retains the present requirement where each jurisdiction must seek Council approval to enact a local ordinance.

The last piece is redesign costs. I thought you might be interested in talking about the 2009 IRC in general and the Washington State Energy Code (WSEC). Our estimate of the cost per home that would be incurred by redesign, rework, recalculation respec, training and redocumentation for building our homes, it comes out to almost $2,000 per home to reengineer those plans. For about 130 plans or versions thereof, it's about a $140,000 investment overall. It works out, at the rate of homes we're building today in Washington, lord help us if something happens to our 69 percent, then the cost effect would be $2,000 per home to do that. That and other code – already in the model code, less the fire sprinklers – I've calculated to a price increase of about five percent already contained in the model code.

Tim clarified that the proposed rule moves Section R313, fire sprinkler requirement, to Appendix Chapter S. It deems it appropriate for local adoption. The third thing it does, there is an amendment in R313 that states where fire sprinklers are voluntarily installed, Appendix R, the prescriptive method, may be used.

Chuck Day said, to clarify, Adair Homes is asking that Section R313 be completely stricken, which is not on the table but which is what we're requesting.

Ray Bizal, National Fire Protection Association

I'm here to urge you to keep Section R313 in the IRC we adopted. I'm here to urge you to keep the fire sprinkler requirement for new one- and two-family dwellings and townhomes in the IRC. With the publication of the 2009 IRC, now all of the national model codes that cover residential occupancies require sprinklers for new one- and two-family dwellings and townhomes, all of them.

This national standard of care has been established for good reason. And that's because home fire sprinklers have been proven to save lives and property. And let me tell you, the fire problem in the United States is in the home. You heard earlier, it's not in the hospitals. It's in the home. Every year, around 80 percent of civilian fire fatalities are in the home. That's close to 3,000 fire deaths a year. More people die in home fires each year than all natural disasters in the United States annually. But, if you haven't reported fire in your home, the risk of dying decreases by about 80 percent when fire sprinklers are present, 80 percent. House fires also take the lives of firefighters. About 92 percent of firefighter fatalities on the fire ground occur fighting home fires.

People can also be injured in home fires. In 2008, nearly 13,600 civilian fire injuries were due to home fires. This can have a tremendous impact upon family, but also society, people who work in the community.

Property damage also can be reduced. In 2008, property loss reached 8.5 billion in direct damage. A fire sprinkler system in a home can significantly reduce this property loss, by about 71 percent per fire. And, yes, smoke alarms have done a good job. They have reduced fire fatalities over the last three or four decades since they began to be required. But, with 3,000 fire fatalities still occurring every year, you must know that 37 percent of fire deaths occur in homes where smoke alarms operated during the fire, **37 percent**. Home fire sprinklers are necessary if you want to reduce the number of fatalities, 3,000 nationally every year.

This national standard of care has been established at the national level. We hope that you will not reduce the national standard of care in Washington.

And I have to tell you, in California the Building Standards Commission is moving forward with this requirement. And during their TAG, the BIA got up and said, "You know, we're not opposing fire sprinklers in California because we're concerned about the potential construction defect litigation and negligence lawsuits." I can't say whether this is negligence or not. But, believe me, the California building industry association has indicated their concern.

And I hope that you'll consider that too when you make your decision.

Jeff LaFlam, Fire Marshal, North Shore Fire Department

I'm here representing the fire service. And I'm speaking against the proposed amendment to remove the sprinkler requirements from the IRC Section 313.

The United States is the greatest country in the world. Americans take pride in having achieved a balance between personal independence and the support of laws that help ensure safety and security. The U.S. is arguably the richest and most technologically advanced nation in history. In spite of this, we lag behind much of the world when it comes to fire safety.

Even though the U.S. has experienced significant reductions in fire deaths in the last three decades, according to the Geneva Association, an international association for the study of insurance economics, the fire death rate in the U.S. is 21st among the 25 industrialized nations that they studied. According to their study published in October of 2008, nearly every European nation and Canada have fire death rates lower than that reported by the United States.

While the U.S. is struggling to duplicate the fire results of other nations, many dedicated individuals across Washington State are also working to provide fire-safe homes for its residents.

A study published by the National Fire Protection Association in December 2008 revealed that the fire death rate in Washington is 15th as compared to other states. While this may be acceptable to some, our ranking of 15th amongst 50 states in a country that ranked 21st of 25 industrialized nations is unacceptable to those of us who have dedicated our careers and our very lives to fire safety.

In 2008, there were 7,141 fires reported in one- and two-family dwellings in Washington State. Those fires caused nearly $111 million in direct property losses. Of those, just 485 fires caused over $86 million in damage. That means that throughout 2008 in Washington State, every 18 hours there was a fire that caused an average of $177,000 in damage. While direct property losses can be quantified, indirect losses and the devastation to the families that these fires caused are impossible to calculate. In addition to property damage, approximately 73 percent of fire deaths in Washington occurred in residential occupancies. Single-family dwellings alone accounted for 60 percent of the reported fire deaths.

Smoke alarms are a valuable tool, yet more than 30 percent of fire deaths in Washington occurred in occupancies where the smoke alarm operated properly. Every citizen deserves to live in a home equipped with a cost-effective system that protects not only their possessions, but their very lives, from fire.

I'd like to share a quick story with you about an incident that I was involved with while working at another fire department. Back in 2002, a small group of houses was built. Because fire access was difficult, they were required to put in fire sprinklers. Approximately six months later, I was called out to investigate a fire at one of these homes. Each of these homes sold for over a $1 million apiece. The people had accidentally left the stove on, had been trying to paint, with tarps around, paint thinner, things like that. A single sprinkler head had controlled that fire and saved that entire home. The people didn't get home until later that evening. And when I finally spoke to them, they were so excited that the fire had been confined to such a small area.

Every resident of Washington State should have the right to expect that the new home they purchase is a safe and secure place to raise a family and build a lifetime of memories.

Don Jordan asked Jeff to segregate his fire statistics, to structures built in the last 10-15 years versus structures that are 20 years or older. Jeff answered that the date he received from the State Fire Marshal's Office didn't indicate age of home for data about fire losses or number of fires.

Kimberly Allen, Redmond City Council Member, and former Chair and current member of the Redmond City Council's Public Safety Committee

In 2006, our fire chief brought to my attention the department's desire to require sprinklers in all new single-family and townhouse residential construction. Redmond's sprinklers then began its journey to this Council twice to demonstrate why Redmond was unique enough to earn an exemption from the building code, which did not currently require sprinklers in all new residential units.

We needed to do this because the provision in the code allowing the city to require sprinklers in all new residential construction was in an appendix, not in the body of the main code. When we

were last before you, we heard from some of your members that you felt requiring sprinklers was something that should be addressed on the national code level, not on a state-by-state or city-by-city basis, and in the interest of uniformity, and that Redmond's request should be denied. Fortunately that view did not prevail, and Redmond did get permission to pass our ordinance. It remains one of the only one of its kind in the state.

Last fall, I was asked to share Redmond's experience with the sprinkler ordinance before the International Code Council convention in Minneapolis. There I heard hours and hours of testimony, asserting that mandatory sprinklers should be a decision made at the local level and that the requirement for mandatory sprinklers should not move from the appendix to the main code. That view did not prevail at the convention, and the membership voted decisively to move the sprinkler requirement to the main code, which is now before you for adoption. And we urge you to do so.

The time has come to integrate this life safety feature into Washington's building code. You have the national consensus you were looking for. And the news about fire sprinklers just keeps getting better. They're more cost-effective. They reduce property damage from fire, as well as incidents of injury and death. As we grow ever denser here in Washington, we're feeling the mandate of the growth management act. The need for mandatory fire sprinklers in residential construction is even more acute.

Now, having the only real sprinkler ordinance in Washington State gives us a little place to look at this. And so I want to comment on a couple of things that I've heard here. One, we have been documenting the costs of the homes that have been built in Redmond under our sprinkler ordinance. And our costs are averaging $5-6,000 per home. If you've come to Redmond any time lately, you know that we are not building inexpensive homes in Redmond. They are big, single-family homes. And we are happy to provide that documentation to the Council here.

We're also implementing the new water meter requirement. Originally we had all sprinkler users upgrade to a larger meter to accommodate the potential for the fire flow. We've, as a Council and as a department, since re-engineered that to reduce that cost and to allow sprinklers to use an ordinary meter. So the $5-6,000 number that I just quoted is due to falling further with the new regulations that we're passing.

As to the advocacy of fire alarms versus smoke alarms versus fire sprinklers, when we were going to institute this in Redmond, we did a controlled fire burn of a home outfitted by Underwriters Laboratories with identical, modern building materials in each side. One side was sprinklered, one side not. Now I will tell you, I was one of the people in bunkered gear that was in that home when they set the fire. And I watched as that moved from ignition to flashover too quickly for my 10-year-old son to have been rushed from a sound sleep, oriented himself, remembered what our fire safety plan was, and got himself out safely. Additionally, the time between ignition and flashover was significantly less than the response time of the Redmond Fire Department to date. So there would have been a long wait past flashover for the fire department to arrive.

So I ask you to consider all of these new deliberations and to implement Section R313 as written.

John Chelminiak asked what the $5-6,000 cost includes. For example, he said most construction in Bellevue is not new. Thus streets have to be dug up and then re-paved. Kimberly said she

believes that represents the complete cost, including metering and accessing the main. She deferred to Todd Short, Redmond's Fire Marshal, who will testify later.

Gary Faucett, Lake Stevens Fire Department

I'm in opposition to any amendments that would alter the IRC.

The other Sunday, local fire department received a call at our jurisdiction for a house fire, with a child possibly entrapped. The first engine, with a crew of three, arrived on the scene within six minutes and reported that the single family, two-story home with large volumes of fire showing from the rear bedroom. The officer ordered his crew to pack up and prepare for entry. A mother frantically approaches the officer and reports that her five-year-old daughter is missing and believed to be inside. The officer must now make entry without backup units. Due to the extreme high risk to the firefighters, this type of internal attack is only allowed in Washington State under life threatening situations. The crew now mounts an aggressive interior attack in the attempt to make the way to the upper bedroom, where the child is at.

Just as they prepare to go in, a second engine arrives. Both officers agree that the first engine crew will execute the search and rescue, and the second will fight the fire. Dispatching informs units, however, at the scene that's been 10 minutes and they know flashover will occur soon. Officers understand that flashover will occur at any moment, and normally they would not even attempt to make an entry with this information. But they know that they have to risk a lot to save a life.

The battalion chief arrives on the scene, quickly assesses the situation and calls for a second alarm. Both of his units on the scene are now inside, battling the fire and performing search and rescue. The chief assumes command and requests a dispatcher to call for the utility companies to shut off the services. He also assigns a safety officer, an aid to monitor the personal accountability, and a ventilation crew to cut a hole in the roof to assist the personnel inside. He also assigns an officer to assist the water supply, and gives the order for rehab and staging to be implemented. He requests dispatch to tone out the fire marshals and then asks law enforcement to control the overwhelming crowds of neighbors that are gathered.

I tell you this story as a fire chief, because this occurs all too often. While some would say that it's only a percentage number and it's a small percentage number, tell that to the citizens that we respond to.

This is not just about building codes, Council members. This is not just about the money, debates and hearings. It's about the safety that our firefighters and homeowners face every day. As a fire chief, I and my firefighters live in the real world out there. When it comes to fire, that real world is determined largely by the decisions this board makes.

Fires are hectic and dangerous. Split second decisions are made, which may be life-threatening and changing for firefighters and homeowners. Quite honestly until a few years ago, I didn't even know this Council existed. However, since then I've learned that these do exist and your decisions are critical to fire service.

We can count the cost of residential sprinklers in new construction at today's dollars. As a fire chief, I'm counting the costs that homeowners have to pay in fire taxes each year to maintain and operate an entire fire department, at today's and tomorrow's prices.

I'm hearing the homes are built even safer. What the homeowners aren't telling you, or what the building industry isn't telling you, is that it isn't the home we're concerned about. It's the contents of the home. It's the people that are in the home. And that will not change. That's what we fight. Fire is not a respecter of people, and it does not care what it burns.

As a matter of record, I've installed and retrofitted my 2,000 square foot home with sprinklers, and it cost me $5,500.

Mark Crowthers

I'm speaking in opposition to the removal of R313 on behalf of the Washington State Council of Firefighters.

I, too, have a story. It's two o'clock in the morning in the fire station. Sleep doesn't come easy on duty, and it's never as good as at home. Everyone knows that just like vehicles, when the bell hits, there's no warmup time; it's time to go. The click of a relay looses an instant, almost Pavlovian response. Eye snap open as the lights come on and the bell hits, and the voice of a dispatcher comes over the intercom with the primary dispatch information. It's a full response.

That means that this is a confirmed fire. Our heavy bunking pants are prearranged over the boots at the side of our bunks. In one motion, feet slide into the boots, the pants are yanked up and suspenders are hooked over the shoulders. It's a race to get to the rig before the bay doors are fully opened. From a deep sleep, we're now in full motion within a few seconds.

The ideal contingent for working fire includes several different types of assets. Just like a sports team during the big game, there are a variety of interrelated tasks that must be performed in concert to bring the situation to a successful conclusion. In general terms, these tasks break down into two broad areas of responsibility: curb work and engine work.

It's the engine's responsibility to get water on the fire. The truck is responsible for search and rescue, as well as ventilation. I'll get back to this in a minute.

This early morning fire is in a single-family home. The area was developed in the 90s to the latest codes. In the working class neighborhoods, some of the original owners remain, many in their retirement. The new folks are primarily young families, trying to get started.

As we roll code red to the scene, a familiar laundry list of thoughts and considerations fly through my head, even though I've been awake for less than two minutes. How long was this fire burning before notification? This housing development is primarily light-weight construction. At this early hour in a residential occupancy, there are probably people inside. Had the smoke alarms operated? We will be the first in truck. This means making a lot of critical choices at lightning speed, after only being awake for a few minutes. Establish command if it hasn't already been done. What recent sources do I have on the way? Will rescue crews be necessary? Will we be in time for an offensive attack? What about exposures? I know that these houses are positioned with minimum side lot requirements. A fully involved structure can jeopardize the entire block. These thoughts are interrupted by the radio breaking, with secondary dispatch information. The 911 call came from a house across the street. Smoke and flames are visible from the first floor of the two-story structure. Occupant status is unknown. We're a half mile away.

As we pull into a position adjacent to the fire building, I can see the front and two sides of the structure. There's a house to the left with about 10 feet between them. The fire is venting. The flames are coming out of the first-story window between the houses. The side area on the right provides about 40 feet of clearance to the next house on the row. A swing set stands in the side yard. There are two cars in the driveway and a tricycle on the porch. No sign of the occupants.

The first in engine is still at least a minute away. There's a decision to be made. I know that a family lives in this house. There isn't time to gather more information. The situation's rapidly deteriorating. Without intervention, the temperature inside the home will continue to rise until the rooms flash over. There will be zero chance for survival. If the family's in there and if it's still a tenable environment, it's up to us to get them out. As a ladder truck, we don't carry any hose or water. I split the crew for search and rescue. We just put three firefighters and myself in harm's way.

This scenario is not on a script. Rather, it's a realistic glimpse into the drama that plays out far too regularly across this country year in and year out. We've developed structures for every conceivable purpose and use. We've codified the demands for active fire protection, sprinklers in every significant type of building with the exception of one, the single-family home, which is supposed to be our shelter.

This type of occupancy takes more lives, civilian and firefighter, every year than any other. Why is more money spent on watering the lawn, or upgrading kitchens and bathrooms, than significantly reducing the risk to civilians and firefighters?

Council members, I ask that you think about this: how long would it take you after waking up in the middle of the night to make a life-saving, critical decision. Time is the enemy. These sprinklers give firefighters and the people they are sworn to protect that time.

On behalf of the Washington State Council of Firefighters, please keep the requirement for home fire sprinklers in this code.

Terry Thomas, Walla Walla Fire Department and Washington Fire Chiefs Association

We're opposed to removing the sprinkler requirement in the IRC. And Washington Fire Chiefs are in support of a statewide requirement.

The mantra, do more with less, is a tremendous challenge for a profession already stretched for vital resources. For decades, volunteer and rural firefighters have come to the aid of friends and neighbors when fire has threatened lives, homes and memories. However, recent years have challenged this admirable and dedicated corps, with dwindling resources while costs, training requirements, and the population of previously uninhabited lands steadily increased. There may, and seem, no easy resolve. The number of volunteers is steadily decreasing in many eastern Washington fire districts; and, as those numbers decrease, training and safety requirements, very much supported by the chiefs, are increasing. There are chiefs in eastern Washington who, due to limited resources, will not and cannot engage in interior attack. A commendable decision when the threat to firefighters rightfully dictates safety before sacrifice. The threat, however, has changed. It has become greater than it should. A single room and contents fire once managed through a calculated, offensive interior attack now becomes a defensive operation. Hold the fire, not to the room of origin, but to the structure of origin. The once aggressive volunteer firefighter is fast becoming a manager of controlled burns.

But we still want our community to feel safe, cared for, and protected. We still want to help protect our neighbors. And we feel we have found a way: residential sprinkler systems.

Residential sprinkler systems will become our partners in fire protection. As the numbers of rural firefighters continue to decrease, residential sprinkler systems will continue to stand, ready to protect. As training and safety requirements for the protection of our members continue to increase, residential sprinkler systems will be ready to respond with minimal attention. As our environment, our water and our air, continues to be of concern and worthy of good stewardship, residential sprinkler systems will limit the demands of those precious resources. As the cost of development, access roads, water systems for fire flows, and storm sewer requirements continue to increase, residential sprinkler systems remain affordable and effective. As firefighters become more and more restricted in their ability to help their communities in the traditional fire attack model, they are afforded an option to ensure the safety of their friends and neighbors: residential sprinkler systems.

Again, Washington Fire Chiefs are opposed to removing fire sprinkler requirements in the IRC and are in support of a statewide requirement.

Ron Biesold, South King County Fire & Rescue

I'm here to speak in opposition to removing R313.

Smoke alarms alone don't always allow residents to safely exit their homes in the event of a fire. Once the smoke alarm sounds, it's only two to three minutes that they can get out safely. Firefighters have been on many calls where homeowners have actually removed the batteries from their smoke alarm or completely removed the device, making it totally inoperative. Historically, 30 percent of smoke alarms do not operate in homes that had fires. Twenty percent of all fire deaths occurred in homes that had working smoke alarms.

Home fire sprinklers are designed to allow residents time to exit their home safely by controlling the fire, in most cases to completely extinguish the fire. Unlike smoke alarms, fire sprinkler systems are always on. When a fire starts in a home, it will continue to increase in size depending on the fire load in the home.

The smoke alarm should go off within one to two minutes. Meanwhile the room temperature reaches around 600 degrees. From the time the fire starts and the time 911 is called, it can take four to five minutes. It may take another seven to eight minutes before the fire department arrives, and another two minutes for them to get their hose lines set up to start fighting the fire. By now the fire has burned for at least 10 to 15 minutes. Somewhere between eight and 10 minutes, the temperature will reach over 1200 degrees and flash over will have occurred, causing the fire to burn out of control.

This all could have been avoided if fire sprinkler systems had been installed in the home. The sprinkler system will activate around the same time as the smoke alarm. In most cases, only one head would discharge. One sprinkler head is all that is needed to control the fire and, in most cases, extinguish the fire.

Most homes today use light-weight construction, which typically fails within five minutes of direct flame contact. This may not affect the homeowner's ability to escape the event of a fire, but it does affect the safety of the firefighters who are fighting the fire. When the fire is allowed

to really burn, it grows in size and heat, from the fire starts to deteriorate the drywall. When the drywall fails, the heat and fire will compromise the integrity of the light-weight construction and cause the roof or floor to collapse.

Builders claim that with today's codes, the fire resistant building materials, homes are more fire-safe. But they still will burn, primarily due to the fire load in the home. Home furnishings are made up of plastic and other combustible products, increasing the fire load. And the fire load is the reason for fast-burning fires.

Fire sprinklers, in addition to smoke alarms, are the answer to saving lives and reducing fire and smoke damage.

Scott Kramer, State Farm Insurance

I'm representing State Farm Insurance today as a member of their management team. We're located in DuPont, Washington.

State Farm appreciates the opportunity to participate in this discussion here in the State of Washington about residential fire sprinkler provisions contained in the 2009 International Residential Code. As background for our high level of interest in this discussion, as of 2008 State Farm insures approximately 17.5 percent of the Washington homeowners market.

State Farm would like to go on record as supporting the adoption of the most recently published edition of the 20009 IRC, approving Section R313 with no modifications to sprinkler provisions or transfer of the provisions to an appendix. The sole exception to our stance would arise if any modifications would strengthen the current code's sprinkler provisions.

All three of the current sprinkler provisions were removing them as a requirement under the code. We think the part of the code which has been shown to reduce the chances of dying in a fire and the average property loss by one-half to two-thirds when compared to situations where sprinklers are not present. It may also introduce unintended consequences in the equation if requirements in other parts of the code are lowered or will be lowered because sprinkler systems were anticipated to be a part of the home's fire protection package.

As you've already heard today, the total lives and cost from residential fires is enormous. Therefore the benefits of installing a sprinkler system in a home far outweigh any possible downside. So, on behalf of our policyholders, we must all take reasonable steps to reduce the nearly 3,000 annual deaths and the over $8 billion in direct property loss caused by fires in one- and two-family dwellings.

It's beyond dispute, in our opinion, that, when properly installed, sprinkler systems save lives, protect property, and reduce risks to firefighters. To this point, State Farm has long held that is our social responsibility, to provide a premium discount for those homes with residential fire sprinkler systems meeting nationally recognized standards. Further, State Farm supports its belief in the value of home sprinkler systems by its involvement in the Home Fire Sprinkler Coalition and its sponsorship of the National Fallen Firefighters Foundation.

John Chelminiak asked what premium discount State Farm gives for homes with fire sprinkler systems. Scott answered that it's approximately 10 percent.

Tom Kinsman asked why the discount is so low when Scott said sprinklers reduce the average property loss by one-half to two-thirds. He said State Farm seems to be "giving up a little and getting a whole lot." Historically, the question has always been why there isn't a better offset on your fire insurance for sprinklering your home. Scott said that's a very good question that State Farm will address as its experience increases covering homes that have fire sprinkler protection. Rate setting is based upon prior experience, which currently is minimal. In addition, premiums must take into account a variety of different exposures or perils, such as liability losses, water losses, crime losses.

Tien Peng asked if the same premium discount is given for both new and existing homes. Scott said they receive the same premium discount. The age of the home doesn't affect the discount amount.

Larry Rabel

I'm a 23 veteran of the fire service and a captain with Kent Fire.

I'm here today opposed to the amendments to the IRC as written, and support it as submitted by the ICC. And I also want to express that Washington's fire service is right now over-burdened and under-resourced. Our State Fire Marshal states that every 53 seconds we get a response. First response is answered by fire departments across this state. Every 22 minutes, a fire occurs. Every 90 minutes, a structure fire occurs.

Whole insecurity through the U.S. Fire Administration has surveyed the status of our state and reveals that over half of our fire stations are over 40 years old and apparatus inside those, the fire engines, over half of those are more than 15 years old. We have inadequate training across Washington State. We don't have enough resource to provide radios to our first responders. And the study reveals there's 20 percent too few firefighters employed throughout the state.

What all this means to us, and to you as public safety folks, is that Washington is in failure. The U.S. Census Bureau also states that by 2030 we will see a 46 percent increase in populations. Combining that impact with today's fire service will require answering every incident that somebody makes, with the budget restrictions that we currently have, with one percent limits on our funding, where we never can catch up with inflation. We continue to go backwards.

The National Fire Protection Association Standard 550 recognizes that emergency response and fire prevention go hand in hand. There's no such thing as perfect response or perfect prevention.

We're here today to tell you that Washington State's fire service is weak and we need help with the fire prevention leg of this portion. The fire service really looks at it as a three-legged stool. We have emergency response. We have fire prevention, and public education upon which the platform of our mission sits. If any of those legs is too weak, the stool will fall and public safety is jeopardized. We're here to tell you that it is jeopardized. We need strength in our fire prevention.

In closing, I just want to say that all of us, you and I are all part of this public safety system in looking out for the public interest in Washington State. Now our nation recognizes the dire

situation that Washington State's fire service is in through the USFDA study. Our state legislature recognizes our situation by the law that was enacted three years ago to monitor performance of fire departments throughout this state. Our Growth Management Act, the state's SEPA, and our subdivision code all call out that public safety should be met prior to development. The fire service in Washington State is unable to do that at this time.

I just want to read a passage quickly:

> It is the continuing policy of the State of Washington, in cooperation with federal and local governments and other concerned public and private organizations, to use all practical means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare.

Fire sprinklers are a technical assistance to us, that's desperately needed by Washington's fire service. I encourage you to read the written testimony that I will forward to you by mail in support of the opposition to these amendments and support the IRC as written.

Jon asked the source of that quote. Larry answered RCW 43.1C.

Dick Bower, Building, Fire Safety, Emergency Management Director, City of Gig Harbor

You guys have heard a lot about sprinkler systems so far, and you're going to hear a lot more in the coming days. So the purpose of my testimony is really to address the possible unintended consequences of removing the IRC provisions. Those consequences arising will be in significant public safety features without further addressing code changes that have occurred during the development of the codes. Thoughtful delivery process of code development hopefully strikes a balance in the introduction of new requirements by reducing or eliminating others that have addressed through new language. While this isn't always the case, it would appear to be so here.

These two examples where a conflict arises are found in Sections R302.2 and R302.2.4, which deal with townhouse construction. Review of those sections will show you that the required rating of common walls in townhouses has been reduced, at one point where you have two one-hour walls next to each other to one two-hour wall. And now under the new code with the sprinkler systems, it's been reduced to a one-hour wall with no penetrations. Similar are some other requirements for structural independence in townhouse construction, structural independence which assures that your house doesn't fall down when your neighbor's house catches on fire. Those requirements for structural independence have also been changed, so that now, with a one-hour wall, you don't require structural independence.

In both of those incidences, the reduction is directly credited and incorporated into sprinkler requirements in residential construction. I acknowledge that the proposed amendment R302 does reword the exception provided a two-hour wall for townhouses that are not sprinkled.

A coordination issue appears to arise again when you look at R302.2.4, where the amendment stipulates a two-hour protection without a reduction to one-hour if it's sprinkled. It's a little confusing. I question whether this is a nod to increase fire protection or an oversight. We're not providing some sort of relief from the separation requirement because of the sprinkler system.

That's just a couple of examples of how when you make one change in the code and, however well-meaning its intentions, you may end up diluting or causing other problems that go along with the code that's gone through a considerable amount of coordination ahead of time.

Removing sprinklers from the equation, with the townhouse example, you have two single-family homes that are separated by a single one-hour assembly, which is less protection than you provide in two single-family homes on separate lots. In addition, the structural independence to protect your unit from collapsing during a fire has been extended to a one-hour wall. What is done by eliminating the sprinkler protection without revisiting dwelling unit separation makes townhouse owners and occupants far more vulnerable to their neighbors' misfortunes than in earlier codes.

In closing, I'll say I support incorporating the sprinkler requirements in the IRC. I am opposed to the proposal to delete those or to move them to an appendix chapter, at this point. I encourage you to look toward these life savings, systems and provide the ultimate in life/safety for your citizens.

Randy Miller

Thank you, Council, for a chance to speak in support of residential fire sprinklers. My name is Randy. I'm with the Fire Marshal's Office at Camas.

I'm privileged to be able to speak about the Camas experience of fire safety residential fire sprinklers. Camas has a 10-year history of the installation of fire sprinklers. We are excited about our community having nearly 1,000 of the safest homes in the U.S., with sprinkler systems currently installed and hundreds more in the approved development stage.

I'm glad to tell you that my house and other coworkers in the Camas Fire Department are among those that have residential fire sprinklers. We understand there is nothing else available that can protect and save the lives of our family members, while additionally controlling or extinguishing the fire at the incipient stage and dramatically decreasing or eliminating the destructive effects of super heated smoke and direct fire impingement.

In Camas, we have witnessed the positive results of having fire sprinklers installed, when two of our sprinklered homes experienced fires. Both residential fires started on the kitchen stove and began to burn in the microwave above. As the exterior of the cabinet above the microwave began to burn, the closest fire sprinkler head, in each case, activated and provided rapid cooling and complete extinguishment of the fire in the early stages. Tens of thousands of dollars from fire and smoke damage of personal items and house structure was avoided due to single, low-volume sprinkler head activation.

In 2002, in very different times, an entry-level development in Camas called the Meadows was 100 percent sprinklered. This subdivision also happens to be the location of the homebuyers I've just described. During this construction period for this development, fire sprinkler installation costs were around $1.00 per square foot.

Fast forward nearly eight years later, in today's tough economic times, an entry-level subdivision called Lacamas Meadows is frequently selling units before they are completed. The sprinkler contractor in this development bid systems at a $1.15 per square foot to stay competitive in the Camas market. Having also recently polled several of the sprinkler contractors that regularly do

work in Camas, I was provided with verbal bid ranges of $1.15 to $1.40 per square foot, with attribution given again to the Camas competitive market staying below the national average.

Drewfs Farm, another of our many fully sprinklered subdivisions submitted 12 building permits early this year. These $2-300,000 homes all quickly sold. This same developer is in the process of submitting 10 additional building permits, with eight of these having sold before the dirt has been disturbed. Earlier the site superintendent stated to me that homebuyers when told they will be living in the safest houses in America because of the addition of fire sprinklers, respond to him with extremely positive feedback.

And in the 2009 economic downturn, over 95 percent of the new Camas homes, so far this year, will have fire sprinklers installed.

This Camas experience has benefitted developers, builders and homeowners. The high percentage of Camas homes being sprinklered has kept the installation costs competitive and affordable. Sprinklers provide decreased insurance rates, a savings to our citizens. Sprinkler installation allows developers to mitigate site issues, such as increase for severe street slopes, single subdivision vehicle ingress and egress, long dead-end roads and cul-de-sacs, poor water supply, desire for gated communities, wildland/urban interface, poor fire department access. Sprinklers also provide developers and builders financial incentives: higher lot yields, narrower streets, less required fire hydrants, decreased infrastructure costs, the utilization of nondesirable property, advertising sprinklers as part of their green building process, decreased impact and permit fees, no water upsize charge for sprinklers.

With around 1000 residential sprinklers installed in Camas since I entered the Fire Marshal's Office eight years ago, I have observed, during good economic times and poor economic times, in starter homes and in multimillion dollar estates, the continued, uninhibited building and purchasing of fully sprinklered homes.

Jim Muir, Chief Building Official, Clark County

I wanted to testify in favor of retaining R313 and residential fire sprinklers.

From a building official perspective, we have spent countless, thousands of hours bringing national codes and standards to fruition. Much of the impetus was from stakeholders who do not want to continue to work code issues out of the state and local level.

Yet here we find ourselves discussing an issue as important as fire safety at the state level after much testimony, discussion, and finally adoption in the model code. We have heard many arguments against fire sprinklers in new homes over the years. Now that they're incorporated into the model code, it is not the time for Washington to take a step back in code development or fire safety. Washington has proudly been a pacesetter in codes and been intricately involved in model code development for decades.

I believe that limiting amendments to the degree possible provides us consistency and reliability in using the codes. I was a building official in the State of Oregon prior to the ICC code family. And we have yellow pages throughout that document. It's very difficult to maintain consistency when stakeholders are removing and adding provisions ad nauseam throughout the code. Thankfully they have taken Washington's lead in limiting code amendments to their model codes.

Amendments that take away major code provisions affect reliability, consistency, flexibility and confidence. It also makes it much more difficult to analyze alternates and performance-based submittals. Has there been a comprehensive code analysis of the affect of removing this section? Modifications, concessions and coordination are a function of model code development.

I would encourage the Building Code Council to continue a course in code leadership in favor of the occupants being provided life/safety through the proven technology of residential fire sprinkler systems.

Todd Short, City of Redmond

We successfully passed a local ordinance, by local amendment, requiring fire sprinklers in all new homes. I also serve on the IRC TAG. And I'm speaking today in opposition to the two amendments that would eliminate the requirement for fire sprinklers in R313.

During Redmond's public hearings, the building community stated that passing a fire sprinkler mandate would result in a reduction of housing starts and negatively impact our ability to provide affordable housing. Developers and builders are still developing and building in Redmond. If over 344 fire sprinkler installation permits have been applied for since you voted unanimously to approve our local amendment, the testimony that the builders used to dissuade our efforts in passing an ordinance did not come to fruition.

The fire service across the nation has stepped forward to let you know that a residential fire sprinkler code requirement in the IRC is critical to providing an acceptable level of safety in our homes. We are united in our support. Labor unions, fire chiefs, fire marshals, public educators, full-time and volunteer departments are all in agreement. In every state of our country, firefighters charged with the duty and obligation to protect and serve their citizens are saying that the time is now for fire sprinklers to be installed in every new home. This level of solidarity on an issue is unprecedented, because we know what the facts are. We see them on a daily basis. We are united, and we are determined.

The place where we lose more of our firefighting brothers and sisters is in fires that occur in homes.

You told us, as did many builders, that the issue of fire sprinklers should be dealt with at the national code level. That occurred last September at ICC's final action hearings, when an overwhelming majority of voters approved the requirements for fire sprinklers in the base code.

It is interesting to me that the fire sprinkler advocate groups all deal with the devastation of fire. The fire service, the insurance industry, burn care professionals, burn victim advocacy groups, college campus safety groups, fire protection engineers, environmentalists, advocates for elderly and disabled citizens are all well aware of fire's indiscriminate capability to devour and destroy.

Groups not in support of fire sprinkler requirements are not generally present at the scene of a fire. They don't have to deal with the devastation of fire's victims. The huge costs associated with the home fire are not factored into their arguments. Rather it is the small cost of the system installation that dominates their discussion.

I consider it a privilege to serve the citizens of my community. I have taken an oath and accepted the duty and obligation to serve and protect. This duty brings me here today. The fire service is obligated to tell you the facts.

If you say no to fire sprinklers, then you're setting the course that will result in the continued fire death and injury rate that the fire service cannot and will not accept.

Many jurisdictions are anticipating the requirements of fire sprinklers to become effective in January 2010 and have thus not pursued local amendments to this board. This board and many builders agreed that this issue really should be dealt with at the national level. If we don't pass the sprinkler requirements and uphold R313, there will be more and more inconsistencies in the state, because we will come. We will be wanting to put sprinklers in local jurisdictions.

Don Jordan asked Todd what the average cost is of sprinkler installations in Redmond. Todd said the average cost is $5-6,000 for new construction. It includes water service connections.

John Chelminiak asked if it was for new construction or in-fill construction filling in an existing neighborhood. Todd answered that interesting things have occurred with in-fill, because of the variety of systems. He said there have been a couple of in-fill lots that were able to utilize existing water supplies because of the efficiencies that are gained with multipurpose piping systems.

Paul Burckhard, Lozier Homes

I'm here today to speak in support of removing R313 from the mandatory fire sprinkler requirements and placing it in an appendix, where it can be opted to be approved by local jurisdictions, with State Building Code Council review and approval.

Last year the Building Code Council convened a special fire sprinkler TAG to review and identify the barriers to the installation of residential fire sprinklers. Aside from the high costs of installation, our experience in the City of Redmond shows that cost ranged from $8,300 to $11,000 per home that we are building there since this was enacted. And that wasn't our actual cost of installation. When we factor in carry cost, the cost of selling the home, the actual cost to the homeowner ranges more from $11,000 to $15,600. These are costs most home buyers can ill afford in this or any other market.

In addition to cost, the TAG identified a number of other major hurdles to the installation of fire sprinklers, including requirements in some water districts for additional or larger water meters or restrictions on the type of system allowed. In rural areas with private wells or private water systems, costly added storage or higher capacity pumps would be needed. Homeowner maintenance of the system and backflow and check valves was another unknown.

All jurisdictions are not alike. Forcing all to comply with this mandate is costly and unnecessary. Fire sprinklers should be a voluntary choice, left to the consumer homebuyer or the needs of the local jurisdiction.

Mark Gray, Quadrant Homes

I urge the Council to retain the option for voluntary, not mandatory, residential fire sprinklers in Washington State.

For forty years, Quadrant Homes has sought to provide safe housing, especially for the first-time homebuyer. Of course, affordability is always uppermost in our minds whenever we are called upon to advocate a public policy issue that affects our homebuyers. The per house cost associated with mandating sprinklers does concern us.

In addition to that, I wish to speak about two other critical issues, encouraging cost-effective, proven fire safety and advocating for homebuyer choice. If sprinklers are required in new residential homes, the gripping stories that we have heard will still be told. As new homes only make a fraction of a percent of the total stock of sheltered units in our country and in this state, children and adults, as well as our dedicated firefighters, could still suffer injury and death from burns from toxic fumes in the home.

If sprinklers are required in new residential homes, the increased cost will slow the rate at which new homes are built and the rate that they replace existing units.

Preventing death or injury from a fire is an issue in the homebuilding industry that is taken seriously. As a result, fire protection is now built into the very fabric of the communities we create. The fire protection measures taken now is not just a long list, but it also includes highly effective actions that have dramatically reduced deaths and injuries from fire in new home construction. These currently use preventative actions are proven. Fire deaths in residences have steadily fallen in the last 30 years.

The sentiments expressed by many in the fire protection community are heart-felt. And we share in their intention to help save lives.

But imposing mandatory sprinklers in new residential homes will not completely deliver on that goal. Washington code has effectively and dramatically improved fire protection in new residential construction. After implementing ever stricter codes, a tipping point has been reached. It should remain a personal choice for homebuyers to decide if the extra margin of safety is worth the cost to install fire sprinklers in single-family homes.

In these challenging times for the homebuilding industry, it is tempting to argue against sprinklers because of its poor timing, given the current economic environment. But mandatory fire sprinklers are a poor allocation of financial resources, and it's never a good time to adopt poor public policy like this. That's why people believe it's so very essential to make sure that the scarce available resources be used in the best, most effective ways that are proven to save lives.

Washingtonians are not the first to consider imposing mandatory fire sprinklers. Other states and countries have too. Carefully consider its benefits and cost. Clearly, many lives can be saved by continuing to voluntarily invest our capital in obtaining and maintaining fire smoke detectors, individual escape bars or placing extinguishers in all homes.

We believe homebuyers should be able to continue to make their own choices about the potential of installing residential fire sprinkler systems. Some will, and many have chosen to do so. For others, the additional cost of fire sprinklers may put homeownership out of reach. We think it's better to allow homebuyers to weigh the value of investing in a fire sprinkler system against other equally important quality of life or risk management actions.

Before I conclude, I would urge you to further investigate the features and benefits offered to builders and developers in entitling or utilizing their land, as was mentioned by the Camas fire

official. I'm not aware of any such ease or security that is offered in the process of a permission to build if sprinklers are installed.

In conclusion, we support continuation of the cost-effective and proven fire protection measures that are currently in the code. We also support allowing homeowners to continue to choose if they wish to make additional enhanced investments for fire sprinklers. We urge the Council to retain voluntary residential sprinklers.

Richelle Risdon, Public Information Officer and Educator for Monroe Fire

I'm speaking in opposition to the proposals to R313, removing sprinklers from homes.

Almost all households in the U.S. have at least one smoke alarm, yet in 2003 to 2006 smoke alarms were present in only 69 percent of all reported home fires. Smoke alarms operated correctly in only 47 percent of reported home fires. Forty percent of all home fire deaths resulted from fires in homes with no smoke alarms, while 23 percent resulted from homes in which smoke alarms were present but did not operate. As stated earlier, 37 percent of home fire deaths happen in homes with a working smoke alarm.

I think we can do better with fire sprinklers, and I feel we are obligated to do so.

Back in December of 1990, I was 13 years old. And the Seattle area experienced a huge snow storm. My dad had just bought my mom her dream home, a doll house on the Sammamish plateau. I caught the bus that day, as far as it would go, it wouldn't go all the way to my house that day so we had to walk the rest of the way. So my friend Rachel and I walked to my house, with the snow pushing at our shins. My brother was trapped at his elementary school, and the buses could not move in the weather. The kids were going to spend the night in the gym. My sister was trapped at her daycare. Parents in the Seattle area were told not to even bother driving or leaving work. Traffic was frozen. The average commute from Seattle to Sammamish was taking about three hours, so most people decided to stay the night at their offices. My parents decided to do the same thing. So later that evening, my friend Rachel and I decided we were going to spend the night at my house. Nobody was home. The power was out. We had no electricity, no light, no heat. I lit a fire in the family room, in the fireplace. We got out every blanket we could find, every flashlight and every candle. That night we had a disagreement as to where we should sleep. She wanted to sleep upstairs in my bedroom, and I wanted to sleep downstairs on the floor next to the fireplace. It was absolutely freezing that night, so I convinced her to sleep downstairs with me. I think it was about 3:30 in the morning when my mom woke me up screaming in my ear "Fire, fire; get out!" I woke up to a house filled with black smoke. I could hardly see a thing. It felt like I was choking. My dad was fighting the flames with a fire extinguisher and water in the next room. The flames had crawled up the wall to the ceiling and were headed toward our Christmas tree. My dad sent me up to my bedroom to open the windows to ventilate the house. As I held my breath to open the window, I realized if we had slept in that room, we'd probably be dead. That night my parents came home simply by chance. My dad told his coworkers in Seattle that he just had a bad feeling. And he decided to make the drive home. I had left candles burning on the mantle in the next room that night, and the wax had dripped onto the mantle and lit everything on fire. When my parents drove up to a house with flames coming out of the living room window, they couldn't find me. When they did, they found that the smoke was venting down just above my nose.

With home fire sprinklers obviously, even back then, I wouldn't have had to rely on just my dad's intuition. Home fire sprinklers would have saved me if he would have decided to stay at his work in Seattle.

Nowadays, I have the displeasure of standing in front of TV cameras and telling the public, neighbors, that another person has died in a fire. I don't ever want to get in front of another TV camera, knowing that we could have done more. I don't want to tell people that another newborn baby, like the one we had a few months ago in Monroe, lay helplessly as flames burned her body. I don't want another mother to have to go through the kind of agony that that baby's mother did when she was told her baby, Nancy, had died. I think we can do better than that.

Don Pamplin, National Fire Sprinkler Association

I am the current Pacific Northwest Regional Manager for the National Fire Sprinkler Association, headquartered in New York. I'm a former fire chief.

I'm speaking to the Council today in opposition to R313 and the removal of the fire sprinkler requirements in the International Residential Code. My comments today are a short overview of the more comprehensive facts and material that I have prepared for distribution to all Council members so that they may have the opportunity to review the information in greater detail before they make their final decision later this year.

There have been many studies done over the years that have identified the average per square foot costs of installing an NFPA 13D fire sprinkler system in new construction in one- and two-family dwellings as defined in the International Residential Code. Two of the best have happened within the last two years and are considered more accurate and more relevant in today's economy. The nonprofit National Institute of Science and Technology, better known as NIST, did a cost-benefit analysis of residential fire sprinkler systems. And that analysis documents the expected present value of net benefits resulting from the installation of a multipurpose network fire sprinkler system. The report examines data from 2002 to 2005, comparing costs of three prototypical single-family housing types: a 3,338 square foot, two-story Colonial home, costing $2,075 to install a multipurpose system; a 2,257square foot, three-story townhouse costs $1,895 for that same system; an 1,171 square foot, single-story ranch house, $828.66 to install that multipurpose system.

As a comparison, a nonprofit, fire protection research foundation released a report in September 2008 entitled, "Home Fire Sprinkler Cost Assessment." In that report, 30 house plans in 10 different communities across North America have reflected a realistic cross-section of housing types that were analyzed. The cost of a fire sprinkler system to the builder ranged, to the builder, from $0.38 per square foot to $3.66 per square foot. The average identified cost was $1.61 per square foot. The research was performed by the Fire Protection Research Foundation Nonprofit, by Newport Partners, LLC, under the direction of Kathleen Almand. The project was also guided by a technical review panel to ensure that the analysis was correct and the concluded data was valid.

What is also interesting is the fact that one of the members of the technical review panel was Mr. Paul Emrath, Executive Vice President of the National Association of Homebuilders. I had the opportunity to hear Mr. Emrath speak at the National Fire Protection Association annual conference and exposition in Chicago this year and, during a panel discussion about this report,

Mr. Emrath's support of the findings and the validity of this report. That seems to be a substantial, compelling, evidential endorsement that the average cost to install a residential fire sprinkler system across America is $1.61 per square foot.

To all Council members present today, please take the time to read the reports I have included in my handout package. Thank you very much.

Jim Crawford, Vancouver Fire Department

Out of interest to the time and respect for the Council, I'll keep my comments brief and try to speak to some different points. As Don already pointed out, the average cost of a sprinkler system, according to the NFPA Research Foundation study was $1.61 per thousand. Downloading some material, the National Homebuilders Economics Department cite the average square foot of a home sold in the United States was about 2,200 square feet. If you multiply that by $1.61, you get the cost of a sprinkler system of about $3,500. Take that cost and extrapolate that out for 30 years, it's about $9.95 per month of increased cost for a sprinkler system in that average home. Now the NFPA says that those costs include the design, the permits and the installation.

So it's difficult for those of us in the fire service to extrapolate out how that would amount to a significant hurdle for someone who's trying to get into a home, the cost of three Starbucks Americanos, if I did my math right. That really doesn't boil down to much of a financial impediment. In fact, we believe that there's more significant impediment in land costs and service system charges, and just market factors.

Downloading similar material from the Homebuilders Economics Department, it looked like the average home price has fallen from $238,000 to $229,000 from 2005 to 2008. The market forces alone have changed the cost for the average home by more than double the cost of the average residential sprinkler system.

I will say that the way that we look at it is fire, or my heart attacks or my cancer and some other problems, admittedly the medical problems, as much as the fire service runs on, is different from those in that fire is a phenomenon that is not going to go out until it runs out of air, or it runs out of fuel, or somebody externally puts it out. What we're talking about is an efficient way to provide fire protection in the United States. And, according to the NFPA study, the cost of the fire burden losses and the cost of fire protection in the U.S. runs from between $231-278 billion annually. That means that about 2.5 percent of the gross domestic product for the United States is tied up in fire losses and fire protection costs.

What we're advocating is a long-term solution, a long-term efficient way of providing fire protection. I will forward my comments and the supporting material to the Council so you can review it.

Kim Schroeder, Snohomish Fire #1

I'm a fire and life safety educator, representing Washington Public Fire Educators, which is a section of the Washington Fire Chiefs.

I'm opposed to removing the fire sprinkler requirement from the IRC. And I support having the requirement be statewide.

As an educator, I often talk to people about how to be safe in their homes. Home is where people should feel most safe. Yet in 2008, 83 percent of civilian fire deaths and 79 percent of civilian fire injuries occurred in home fires, according to the National Fire Protection Association.

The major cause of these home fires, and also the major cause of civilian injuries, is unattended cooking. The majority of those injuries occurred when people tried to fight the fire themselves. The truth is your home is the most dangerous place to be with respect to fire.

There have been improvements in fire death rates from several different approaches. Better equipment, better training, public education and awareness campaigns, lifestyle changes and fire-safe cigarettes have made an impact. But the most significant weapon in fighting fire deaths has been the smoke alarm.

In the 1960s, the average U.S. citizen had never heard of a smoke alarm. Now they're commonplace. The smoke alarm technology has developed over time to include a wide range of residential smoke alarms available to homeowners. As technologically advanced as the smoke alarm has become, there is one very important thing that a smoke alarm will never do, extinguish a fire.

Fire sprinklers are designed to take immediate action to extinguish a fire when the heat from that fire reaches a sprinkler head. Most fires are extinguishes by the activation of a single sprinkler head, reducing heat, flames and smoke, which allows occupants time to escape. Each individual sprinkler is designed and calibrated to activate when it senses a significant heat change. It does not operate in response to smoke, burnt toast, cooking vapors, steam or the sound of a smoke alarm.

Smoke alarms do what their name implies; they provide early detection and warning of the fire. If you have a fire in your home, your risk of dying decreases by about 80 percent when sprinklers are present. Everyone agrees that smoke alarm usage must be maintained. But to achieve further meaningful progress in fire protection and safety, we also need an additional intervention. That intervention is the installation of residential sprinklers.

In the automobile industry, airbags were first introduced in the 1970s, when seatbelt usage across the country was very low. The airbags were first thought to serve as replacements to seatbelts. But further study showed that the most significant reduction in deaths and injuries in our nation's automobiles occurred when seatbelts and airbags were used together. In most automobiles today, they are referred to as supplemental restraint systems, because they supplement the use of seatbelts. Driver side and front passenger airbags are standard equipment on all new cars sold in the U.S. today.

The requirement for sprinklers in one- and two-family dwellings, together with the existing requirement for smoke alarms, will absolutely result in a reduction of our nation's death and injury rates by providing the early warning systems needed for occupant evacuation, as well as early action to extinguish the fire. Fire sprinklers save lives.

Tom Raymond, South King Fire & Rescue

I'm speaking as a 33-year professional firefighter and member of the fire prevention team now. I do have material for you. I have a new aspect that I want you to consider.

I did some research. What I figured out is that residential fire sprinklers do more than save lives and reduce property damage and injury. Residential fires occur daily in the State of Washington, 7.7 thousand residential fires just last year. They pollute our atmosphere with tons of hydrogen cyanide, sulphur dioxide, carbon dioxide, carbon monoxide, hydrogen chloride and nitrogen oxide. We fill our landfills with millions of tons of unrecyclable trash annually. They pollute our streams, our rivers, and our lakes with contaminated runoff water. In the United States, they account for 16,000 injuries and kill over almost 3,000 people a year.

Residential fires waste billions of gallons of potable water annually. In the built environment, the best way to eliminate environmental damage from these unwanted fires is to extinguish them when they're small, which is exactly what residential fire sprinkler technology does.

Our carbon footprint is generally defined as the scene of all emissions of carbon dioxide which are released by human activity within a given time period. Residential fire sprinkler systems reduce our carbon footprint in the following ways: they reduce the carbon dioxide production for residential fires by more than 80 percent by early suppression; they reduce the carbon footprint of operating fire suppression vehicles; they reduce the carbon footprint associated with the building and burned home; they reduce the carbon footprint associated with caring for injuries and deaths associated with residential fires.

Landfills are another concern resulting from an uncontrolled house fire. Whether a house is completely destroyed in a fire or only damaged, tons of building materials, furnishings and other ruined possessions are hauled to the dump. According to a green building guideline report created by the Alameda County Waste Management Authority in Santa Ana, California, it's estimated that 21 percent of the materials disposed in county landfills are construction and demolition debris. Rebuilding a home will not only require new building materials, but also generate tons of construction waste. The report state that total construction waste generated from one 2,000 square foot home is nearly 13 tons.

The mission of the United States Green Building Council is to transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy and prosperous environment that improves the quality of life.

Residential fire sprinklers directly affect several areas measured in green construction, including locations. I'm not going to go through the entire list. But increased housing density, sustainable sites, energy and atmosphere have already been mentioned.

We know sprinklers provide environmental benefits, benefits that we only prove through scientific study. When sprinklers activate they control the heat, flames and smoke in a home fire, effectively mitigates the products of combustion. The expectation is that a reduction in combustion also results in less pollution. It's time to firmly determine if those qualities as well have the potential for the reduced water they impact.

Next month, a nonprofit home fire sprinkler coalition is partnering with FM Global. They're doing an unprecedented research project to identify, analyze and evaluate the environmental impact caused by home fires. That will have some empirical data I'm sure everybody will hear about. There's never been a better time to do a study like that; the interest is at an all-time high.

The types, quantity and duration of air and water pollutants released from home fire will be identified. Environmental impact from burning household furnishings and finished materials, as well as the carbon footprint associated with rebuilding a burnt home.

Residential fire sprinklers are an engineered system to ensure building sustainability independent of the contents, construction or actions of its occupants. Residential fire sprinkler systems don't just protect our loved ones, they protect our environment. It's time to acknowledge the inherent environmentally friendly nature of residential fire sprinkers. The most environmentally-friendly and responsible thing we can do is to put the fire out when it's small. And that's exactly what residential fire sprinkler systems do.

Roger Ferris, Executive Secretary, Washington Fire Commissioners Association

I represent approximately 380 fire protection districts and the elected fire commissioners throughout the State of Washington.

The Washington Fire Commissioners Association strongly supports the International Residential Code for residential fire sprinklers. And we oppose any amendments that the state code council is looking at that would dilute or would make a weaker code than what is currently the national standard. The Fire Commissioners Association thinks it's a good public policy and has made residential sprinklers one of its top four priorities, as a top safety issue in the State of Washington. And this isn't just an urban issue. This is a rural issue as well, with our fire districts. And we've heard very clearly from them.

I guess the only other good thing is this is my first time here. And I appreciate the opportunity to speak to you today on behalf of the Washington Fire Commissioners Association.

Carl Anderson

I'm a licensed fire protection engineer and the fire code official for the City of Tacoma Fire Department.

I'd like to speak to the issue of metering for residential fire sprinkler systems. The national standard for the installation of a residential sprinkler system is NFPA 13D. It does not actually require a water meter, although, of course, most, if not all, water purveyors will require some type of metering on a residential sprinkler system.

The sprinkler system does not need to be served by a separate system from the street into the home with a separate meter. It can be served by the same meter already being used for domestic water supply to the home. And it can be supplied through the same piping from the street to the home.

Two arrangements are typically used in jurisdictions that are successfully implementing sprinkler requirements now. There's a flow-through system, where the multipurpose piping system that Mr. Pamplin discussed earlier, or a system where the fire sprinkler supply tees off the domestic line within the dwelling, typically within the garage. Since a sprinkler system of this type generally requires a very low volume of water, 26-30 gallons per minute typically, the size of the meter required is in line with what's already there for domestic use, a 5/8-inch, ¾-inch, maybe a

one-inch meter, depending upon the type of home, the type of system. That's all that you'll need.

There is a possibility, of course, that some purveyors will require a second meter. That's not necessary. It's not a requirement of the installation standard. That's one of the barriers that was already addressed by the technical advisory group that this board formed to discuss barriers to residential fire sprinkler systems.

The Washington Water Utility Council has developed a guide for water utility managers, discussing fire sprinkler system implementation. Within that guide, which I'll submit as written testimony, there are four arrangements diagramed: the flow-through system and the system teeing off within the building, which are preferred systems in jurisdictions currently installing fire sprinkler systems. Also there are two arrangements showing either separately or separate, piping the system from the street. Those are not a requirement in NFPA 13D, the national standard for this type of system.

In the event that public water supply is not available, or that the cost of providing that second meter, should it be required, is burdensome, NFPA 13D allows for on-site water supply. It's a 10-minute duration, which amounts to about a 300-gallon supply tank. That works out to about a three-foot diameter by six-foot tall tank, not all that large and something that easily fits within a typical garage. That can be used with a pump. Or you can use a pressure tank to supply water.

The only other issue with water meters that's been brought to my attention is concern by some purveyors about their liability. And that's currently being addressed in this state by House Bill No. 2224, which basically indemnifies water purveyors should they need to maintain their system, shut off water supply for failure to pay, or have some other emergency within their system and that system is serving residential fire sprinkler systems.

Stan Amas, Western States Fire Protection

I'm a fire sprinkler contractor. I want to speak to the issue of the cost of fire sprinklers. You've seen some varying numbers, all over the place. It is a function of where you're located, what's around, whether it's a starter home and a flow-through system to a big house in Medina. Each jurisdiction has different codes. And so, in our particular area, we can do a flow-through system for a single-family starter home for about $1.00 to $1.25 per square foot. The average costs, what Don said, this is in the Redmond/Bellevue area, are about $1.65. These costs are to the builder. The builder can then mark these costs up. Then we can go as high as $2.25 a square foot for a remodel of a home where you have to tear sheetrock down, crawl through an attic, that type of thing.

Carl just spoke to the stand-alone system, with a tank and a pump. The cost for that is about $3,000. It varies from $2,500 to $3,000. And that is depending upon whether there are sloped ceilings in the house, because sprinkler manufacturers require different discharges for sloped ceilings than they do for flat ceilings.

So I hope you have a better idea what the costs are now, from our perspective.

Tom Kinsman asked if the $3,000 cost for the tank and pump includes the square foot cost for the sprinkler system itself. Stan answered no. The $3,000 is solely for the tank and pump.

Mark Hoyt, Washington Fire Sprinkler Coalition

I've been in the fire protection industry for 30 years now. I've been a resident of the State of Washington for the last 40 years and lived in Covington for the past 18.

I work as a piping consultant and territory manager for the Lubrizol Corporation. I'm here to oppose the removal of the residential fire sprinkler requirement from the body of the IRC. I'm here on behalf of the Washington Fire Sprinkler Coalition to testify about the different types of piping that are available for fire sprinkler systems in single-family homes. You've all received the handout and we'll go through some of these pictures.

There are several piping options available when it comes to selecting a fire sprinkler system for your home. Typically steel pipe is not used in residential fire sprinkler systems, like it is in commercial applications. Copper is an option, but because of price fluctuations and higher labor costs, it is not used as much today. The piping products most often used in single-family homes are CPVC, which is chlorinated polyvinyl chloride, and PEX, which is cross-linked polyethylene.

There are also different types of fire protection systems to choose from when protecting your home. First, there is the stand-alone system, as you can see in Photo #1. The fire sprinkler system is separate from the plumbing system. This type of system typically consists of CPVC pipe and fittings. But copper is also approved for this application. The water supply for a stand-alone system can be a community or municipal system, or by a reservoir tank with a pump or pressurized inert gas. CPVC stand-alone systems have been installed in homes in the State of Washington since 1984.

Second is the multi-purpose system. In this system, the water supplying the cold water plumbing fixtures is also the supply for the fire sprinklers. Copper, CPVC, and three manufacturers of PEX are approved for use in multi-purpose fire sprinkler systems. PEX piping is commonly found as a supply material for potable water inside homes. Photo #2 shows a multi-purpose system using CPVC. The orange pipe supplies the fire sprinklers. The cream-colored pipe is the cold water piping. Photo #3 shows a multi-purpose system using CPVC and PEX. The blue piping is the PEX, supplying the cold water plumbing. And again the orange pipe supplies the fire sprinklers. Photo #4 shows a multi-purpose system using an approved PEX product. The clear piping, actually it might be white, supplies both the plumbing fixtures and the fire sprinklers. Photo #5 is a great example of how all the different piping materials adapt to each other so easily. In this photo, the cream-colored pipe with gold strips, supplying cold water, easily adapts to the copper plumbing fixtures and the orange CPVC pipe that supplies the fire sprinklers.

As you can see, there are several options available for choosing a fire sprinkler system for your home. There are even more options available for choosing a manufacturer for your fire sprinkler system. There are six manufacturers of CPVC pipe and/or fittings in North America. There are also three manufacturers of PEX that are approved for multi-purpose fire protection systems.

Hopefully I've just illustrated that many piping options are available when choosing a fire sprinkler system for your home. I ask that you please keep the life/safety fire sprinkler provision in the body of the code.

John Cochran asked if Mark has any statistics comparing the reliability and durability of the various fire sprinkler systems. Mark answered no. John asked if any of the systems give the homeowner a insurance premium savings. Mark said insurance savings aren't type specific. Savings apply simply to whether or not a system is present in the home.

Michael Fitzgerald, Fire Marshal, City of Monroe

Good afternoon. Thank you, Mr. Chairman and members of the Council. My name is Michael Fitzgerald. I'm the Fire Marshal in the City of Monroe. I'm also the Fire Chief of Snohomish County Fire District 28. I'm here today to oppose the proposal to remove fire sprinklers from the code. I'm also opposed to placing Section R313 in the appendix. As you consider the value of fire sprinklers, I think it's important that we speak to you not with rhetoric but with facts. So today, just very briefly, I want to dispel some common myths about fire sprinklers. Hopefully I've already crossed off the ones you've already heard about today.

There is a myth that all fire sprinklers in a system activate at the same time. Hollywood would have you think that that's what happens. The truth is that individual fire sprinklers are designed to operate when they reach a preset temperature. The heat from a fire causes water to discharge only out of the fire sprinklers in proximity to the fire. That is evident, as we see statistically that 90 percent of the fires are extinguished from one fire extinguisher. It is a myth that the smoke alarm activates a fire sprinkler. The fact is that fire sprinklers are not activated by smoke, but rather by heat from a fire. These are not smoke sprinklers, they're fire sprinklers. There is a myth that water damage from fire sprinklers is worse that the damage from the fire. The fact is that fire sprinklers will control fire with less water, more quickly than your fire department will. In fact, extinguishing home fires when fire sprinklers are not present utilizes nearly ten times the amount of water from fire hoses and fire fighters. There is a myth that fire sprinklers are ugly. The fact is that pipes are hidden behind walls and ceilings, just like domestic plumbing. In fact, sprinklers are recessed and hidden. In fact, fire sprinklers are present in this room and you don't see any of the fire sprinkler piping. There is a myth that a code requiring fire sprinklers isn't necessary because people will install them voluntarily. The fact is there is a 200 year history in the fire service demonstrating that life safety equipment and systems are rarely installed when left to good intentions. We can look at seat belt requirements, air bag requirements, and helmet requirements as illustrations that safety systems often should be imposed because their value is not foreseen by the consumer. Further, it's a fact that I voluntarily installed fire sprinklers in my home. I did that because I have a career's worth of experience in seeing the devastation of a fire, seeing what happens to people and seeing what happens to families. A home that those people otherwise felt very comfortable and safe in. In a home built to a standard that they depended upon their local government to certify as safe.

I respect that the opponents to residential fire sprinklers recognize that this is an emotional issue. It's an emotion of loss. Please recognize that for the fire service this issue is emotional because of loss of life, family and property. And I urge you to keep residential fire sprinklers in the body of the IRC, not in the appendix as this will cause this debate today to occur in every city and county throughout our state. Thank you.

LeRoy McNulty, Fire Marshal, City of Lynnwood

Good afternoon, Chairman and members of the Council. My name is LeRoy McNulty and I'm the Fire Marshal in the City of Lynnwood. I, of course, am here for the same purpose as most of the people that have been here. I oppose the removal of R313 from the Residential Code. The purpose my visit today was not necessarily to speak of my own personal opinion here, but you had received two letters in the month of June from two separate Representatives from the Washington State Legislature. The first Representative was Jan Angel and the second Representative was Geoff Simpson. In Representative Angel's letter, she was opposed to any sprinklers in the Residential Code. And Representative Simpson was a proponent of that. The thing that I want to talk about is that there are some points, bullet points, in Representative Angel's letter to you that are egregiously inaccurate. So I'm just going to speak about those: I won't waste your time with much of this.

Much has been discussed about the cost of sprinklers. You've heard from many other people here in this meeting as to what the cost is for sprinklers. I will not belabor that. What I can tell you is I've been in the fire service a long time. My very first smoke detector was the size of a dinner plate, took two D-size batteries, and it was loud. It also cost $125 to put it in my house when I first became a fire fighter. I want you to know that marketing of that has decreased the cost of a smoke detector dramatically. I would guess that with more installations of sprinkler systems, you will find the cost will drop also dramatically.

Also, in Representative Angel's letter, it says that fire sprinklers have a propensity to leak. That is inaccurate. It also says that when they do leak they also produce mold. Well, it may come as a surprise to you that most of our homes today come with indoor plumbing. They don't have a tendency to leak. And the certification for sprinkler installers is far higher than the plumbers. I don't expect them to leak.

Bullet three in Representative Angel's letter talks about the increase of more fire marshals in the state because of this. The fire marshals will not increase. As a matter of fact, she said that the State Fire Marshal's staff will have to increase in order to maintain the number of certifications and licenses. That is also incorrect because the State Fire Marshal maintains just the repository of the licenses and certifications.

And finally, the letter talks about the burden on the individual homeowner who wants to build their own house, the burden of more codes. You've also heard, I believe my partner in crime here, Fire Marshal Fitzgerald, talked about installing sprinklers in his house. I also installed sprinklers in my house. I did it myself because I built my own house. It cost $850. It did not leak. With that, I want to leave you with the fact that we would not like this removed from the Residential Code. I thank you for your time.

David Lynam, Kitsap County Fire Marshal

Good afternoon, ladies and gentlemen. My name is David Lynam and I'm the Fire Marshal in Kitsap County. I'll be very brief, because it's been a long morning for me and you've been at it longer than I have. I have some new information that I want to share with you on a topic we haven't spoken of yet today. Today I'm speaking to you on behalf of the Washington State Association of Fire Marshals, in opposition to removing or amending any of the requirements for automatic fire sprinklers in single family dwellings in the International Residential Code. I'm

here today to talk with you and address the subject of maintenance of residential fire sprinkler systems.

As you are all aware, the maintenance of structures and systems in them is paramount in ensuring that these components in our buildings perform as they were intended in the event of a fire. The fact of success and reliability of residential fire sprinkler systems is due in large part to their ease of maintenance. The maintenance of sprinkler systems in single family dwellings is intended to be accomplished by the owner or occupant of the home. NFPA 13D, which is the standard for installation of these types of systems, lists several simple items that homeowners can check themselves. The standard recommends that those items be checked on a monthly basis. The standard recognized that it is the installer who is responsible for providing the owner or the occupant instructions for inspection, testing and periodic maintenance of the system. The Home Fire Sprinkler Coalition and the National Fire Sprinkler Association both publish free guides for homeowners regarding the care and maintenance of their automatic fire sprinkler systems.

Providing this information to homeowners should not stop there. I know of at least one fire department that put in place a program that mailed an informational and instructional brochure to all the homes, on an annual basis, within their jurisdiction that had automatic fire sprinkler systems. They also made their fire prevention personnel available for site visits to assist homeowners, to help them learn about their systems, how to inspect them and how to maintain them properly. It is programs like these that the Washington State Association of Fire Marshals is dedicated to promote; the process to assist fire departments in developing and implementing.

There are, however, two particular maintenance problems that homeowners may require outside assistance with. One is inspection and testing of backflow preventers and the other is if you have a specific antifreeze solution installed. Not all sprinkler systems will have backflow preventers and very, very few sprinklers in homes will have antifreeze systems. If your system does have a backflow preventer, some water purveyors require that it be tested annually. A homeowner cannot do that on their own. These requirements are not unique to fire sprinkler systems, but it the same thing that is required for the automatic sprinklers that protect your lawn. In some cases, they're also designed to incorporate an antifreeze system in there. That typically occurs in extremely cold environments when you drop down into single digit temperatures, and even below zero. In these instances, homeowners will have to require assistance for the specific training and maintenance of those antifreeze systems. But the winterizing of those systems can be compared to the same thing that they would do to winterize lawn sprinkler systems or other ancillary potable water systems that you have in your home. As someone that has lived in a fire sprinklered home, I can speak from my personal experience that testing and maintaining my fire sprinkler system is both simple and affordable. Thank you.

Tom Kinsman asked, with an antifreeze system, what is maintenance involved? David Lynam replied that the system would need to be maintained to the manufacturer's specifications. They all have a shelf life and periodically the system needs to be drained and recharged. The systems vary from annually to three to five years.

Kraig Stevenson stated he did not wish to testify at this time. All of his points have been made by other individuals testifying.

Gary Wray, Habitat for Humanity

I'm the construction coordinator for Island County's Habitat for Humanity. I think I bring a different perspective of this, of people that are affected by this and can't afford it. What I've been hearing, it basically boils down to resources. If resources were unlimited, sprinklers make sense; a lot of things make sense…zero energy homes, or cars. How many of us arrived here today with fire suppression systems in our automobiles? Or helmets, racing style seatbelt systems? We draw the line somewhere. I think what needs to be done with this is that local jurisdictions decide. I've been hearing a lot of different cost analyses, how much it's going to cost per house, etc. Most of those I've heard is if the water is there, if there is a water system available that is going to supply that fire suppression system or the sprinkler system. Being in Island County, most of our homes are on private wells or small community systems. And added costs haven't been addressed… Well, let's go with cost. I've been hearing about $4,000 a house, kind of ballpark, if the water system is there. In Island County, we're building house number 21 now. If we had been putting a sprinkler system in all our homes from the beginning, at $4,000 per home, that would be about $84,000 for this house. We're building our houses for about $90,000 a house. That means we would have one less home for a family to be in at this point and time.

Let me tell you about the partner we're working with right now. She's a mother of two; she has a kindergartner and a 12-year-old. She is living in a 1958 travel trailer on a friend's property. I'm not going to tell you she has a septic system. I don't know if she has water. This is who we are serving. I would not be one to go and tell her, because of fire sprinklers she can't move into her home. That is really about all I have to say. It is expensive and should be left up to local jurisdictions and individual home owners.

Carolyn Blayney

Chairman and Council members, thank you for allowing us to speak today. My name is Carolyn Blayney. I'm the Nurse Manager of the University of Washington Burn Center at Harborview. We are the largest burn center and serve Washington, Alaska, Montana and Idaho, and are the only burn center left in our area. I heard a lot of the focus on the deaths and comparing the amount of burn injuries to the cancer rates. And I have to say that's really not comparable. I'm going to talk about those who survive. We prefer to call our burn injured patients burn survivors not burn victims. Because I think that's really who needs to tell their story. A statistic from the American Burn Association, there were 400,000 house fires last year, with about 3,000 deaths. We've already heard that. But the bottom line is all of these…almost all of these were preventable deaths and preventable injuries. That's really what I'm going to focus on. At Harborview, we have admitted about 12,000 over the ensuing 30 years that we've been there. I'm going to focus on just Washington State for my statistic, even though we serve a large area. We admit about 700 patients a year to the ICU, the intensive care unit, and to the acute care floor. Our average age for children is, for fire and flames, 5 to 18 years; and the adult is 20 to 30 years of age. Male is, by far, the most popular gender that gets burned. In our statistics, 45% of all of our burn injuries were in some kind of a house fire or structure fire. That's smoking in bed, that's cooking—we see a lot of grease fires, it's the juvenile fire setters that are going in the bedroom with a pack of matches or the lighters that are starting fires, and then electrical fires.

These are real [events], in our community, that happen. And every day I go to work, I have to deal with another patient, another family who has to live the rest of their life. This is not a broken leg that can be fixed and sent home to get on with your life. If the average life expectancy is 80 years, a current 8-year-old that I have in my unit right now has 72 years left to deal with this burn injury…the scars, the reconstruction and the medical care that he's going to need to repair, for something that might have been preventable. I would also like to mention just that smoke alarms have really helped us. For the patients and the families that we talk to, for those that even have batteries in their smoke alarms, that had a smoke alarm even hooked up, the majority of our patients got out of the house and were not injured but went back in to save their children, another family member, an elderly family member, or their pets. That's the unfortunate part of what we see, is those reentry injuries, that go back in and lead to devastating burns. The other thing that a sprinkler could do besides help with that situation is the depth of the burn is related to the temperature and how long you're in contact. If a sprinkler were put into place, the fire wouldn't be so hot and it would go out faster. So if people reentered the house, the death of their bird might not be so severe that they need long term surgery. The cost of an ICU day at Harborview is approximately $3,500 a day. That's just a nurse and a bed. That's not lab work, that's not X-rays, that's not physical therapy, that's not physicians. So it is a very costly injury. I want to just tell you about a current 8-year-old that I have on my unit right now with 30 percent burns, who was burned in a house fire in the two months in Washington State. He was playing with matches, unfortunately, in his bedroom and set the clothes on fire. He has been on my ICU for approximately 40 days, and is getting ready to go down to the acute care floor. It's not just being there and doing daily dressing changes; there is a lot of medication and pain medication involved. We have to cover his skin with artificial skin. Your skin is the largest organ in your body, and you can't transplant it, like a heart or kidneys. You have to actually grow it and then replace it and cover it with your own skin. So it is very time intensive, you're at risk for infection, you're at risk for scarring. Our job is not to just help you survive, but to help you survive, go out in the community and be a good, functioning member of the workforce. This 8-year-old boy has 72 years of life left to give. I think if you make it a choice out there, who's going to go back to him and say, oh I'm sorry we didn't put sprinklers in our house. Because his life is going to be changed forever. I think it is important that we keep what we have and make our home life as safe for our family, for our elderly, for our kids, as possible. Thank you for giving me the time here.

Mike Ferry, Grays Harbor County

Good morning. My name is Mike Ferry and I'm representing Grays Harbor County here this morning, or this afternoon. I'd like to explain that I'm not here today to discuss residential fire sprinklers. So I hope you all take just a moment and relax with that. Instead, I'm here to comment on the proposed rulemaking to the 2009 International Residential Code Section R202, which is the definition of dwelling unit. I want to thank the Council for the opportunity to speak on this. Grays Harbor would request reconsideration by the Building Code Council of the proposed adoption of the amendment to the International Residential Code definition of dwelling unit, to include the owner occupied dwelling with 5 or fewer guest rooms. We believe that the propose text as amend should not be adopted for the following reasons.

Number one, the use of single family dwellings for transient sleeping accommodations is outside the scope and the intent of the IRC. And reading the minutes from the April 12, 2009, meeting of

the IRC Technical Advisory Group…Historically, there was a lodging house designation in the code. The 1997 edition of the Uniform Building Code, Section 310.1, did provide for lodging houses under the Group R-3 Occupancy. UBC Section 213 defined a lodging house as any building or portion thereof containing not more than five guest rooms where rent is paid. However, it should also be noted that Section 904.2.9 of the 1997 UBC also allowed Group R-1, hotel and apartment houses, Occupancies of less than three stories with less than 20 guest rooms or less than 16 dwelling units to also be constructed without providing an automatic fire sprinkler system. Additionally, it is well to note that the International Building Code and not the International Residential Code is the successor to the UBC. The IRC is more accurately described as a successor to the Council of American Building Officials, or what we refer to as CABO, One- and Two-Family Dwelling Code. This nationally-recognized code did not include lodging houses in its defined scope.

Number 2, the IRC does not provide for the minimum accepted standards of life safety required where the occupants are not familiar with their surroundings. The 2006 edition of the IBC commentary, in the discussion of residential occupancies, for IBC Section 310 notes that residential occupancies represent some of the highest fire safety risk of any of the occupancies listed in chapter 3. It also notes that residential occupancies are more susceptible to the frequency of careless acts of the occupants, and therefore the consequences of exposure to the effects of fire are the most serious. The commentary notes that occupants are asleep approximately one-third of every 24-hour period, and if awakened by the presence of a fire, an occupant, especially a transient one who's unfamiliar with their surroundings, may not immediately react in a rational manner and thus may cause a delay in the safe evacuation.

Point number 3 is that the ability of the local authority to regulate a commercial use within their jurisdiction is constrained. Per the Revised Code of Washington, RCW Section 19.27.074, where a lodging house is defined as a dwelling unit and subject to the requirements and allowances of the IRC, the ability of the local jurisdiction to regulate commercial uses within his jurisdiction would be subject to the approval of the Washington State Building Code Council.

My last point here is that allowing transient sleeping accommodations in the IRC, where established life safety elements are not provided, would undermine the progress achieved in recent editions of the building code. The current trend in code development is to provide an increasing level of life safety for residential occupancies, especially when the occupants are transient in nature. The requirements for automatic sprinkler systems in Group R occupancies regulated by the IBC are an example of this trend. Reverting to an earlier standard for the regulation of transient housing for compensation is counter to this trend.

In conclusion, we'd just like to state that including lodging houses within the scope of the IRC is not in the best interest of the citizens of Washington State. It would not promote a continuing health, safety or welfare of the general public, and it would restrict the ability of the authorized local enforcement jurisdiction to control local development in a manner consistent with local needs and wishes. Grays Harbor County would also like to state that we would be supportive of amendments to the IBC that would provide a path for compliance for smaller, transient housing occupancies in circumstances where a reduced level of life safety may be acceptable. Grays Harbor County would commit to participating in discussions with other interested parties to review and develop code language revisions.

Tom Phillips, WABO

I'm representing the Washington Association of Building Officials and the City of Kirkland. I was also on the IRC TAG. I'm here to state the support of item 3 in the summary of changes for the IRC. This proposal amends Section R102.5 of the International Residential Code by giving local jurisdictions the option to adopt Appendix X and require fire sprinklers in new homes and townhouses. There are many valid points on each side of the fire sprinkler issue that can be argued for hours without a resolution. I don't think there is a single right answer for all the communities in Washington. Many communities in Washington have different needs and desire different levels of fire safety. The amendment to R102.5 is the best solution to the fire sprinkler issue because it offers a compromise. With this amendment, fire sprinklers would not be required across the board and communities that don't feel that they would benefit them would not have to require them. But communities that have the need or desire for fire sprinklers can include them as part of their building code. The fire sprinkler issue should be decided by the local councils that were elected to represent the citizens of their community and who best understand the needs of their community. This amendment was approved by the IRC TAG, which is made up of member of the building industry as well as representatives from local government. This proposal is also endorsed by the members of the Washington Association of Building Officials. I urge you to keep the proposed language to R102.5 the way it is currently proposed.

Tom Kinsman asked if the Washington Association of Cities ever expressed an opinion on this issue. Tom Phillips replied that he did not know.

Christina Parker, Washington Association of Realtors

Thank you for hearing my comments today. I'm here on behalf of the Washington Association of Realtors. I also have 14 years of service in the fire industry. It is a challenging situation we're faced with, and there is a lot of passion in the room for individuals' well being. It's a tough issue we face. But I'm here to talk to you about the importance of making this a jurisdictional issue rather than making it mandated for everyone. I'm not convinced it's a perfect fit for everyone everywhere. The gentleman from Island County, from Habitat for Humanity, spoke to one of the points that I had intended to make, so I won't belabor those. I, too, come from Island County. There are some real challenges with the rural environments, with trying to make this economically feasible and make it workable for all individuals. Issues of communities being on well systems, low water pressure. There are some issues around losing power for two to three days at a time and how that impacts us in a rural environment. One of the things that I heard, and haven't heard vetted out completely, are the annual maintenance requirements, the cost of having it done versus individual homeowners doing it themselves. I would draw a correlation with the challenge we have in getting homeowners just to purchase a 9-volt battery. They know the importance of having a working smoke alarm and yet how many times does that fail? I don't know what the answer is around the insurance implications. If individual home owners purchase a home and have not completed their annual inspections, what then happens to them if they end of having some loss from fire and the sprinkler system didn't work optimally? I don't know the answers to those, but it brings up some questions that we may not have been faced with before. I would suggest that individuals who choose to have sprinkler systems put in their homes right now do so because they're motivated, they know the value and they know the benefit and they want them there, and they're motivated to do the maintenance. I'm not sure what the answer is

for homeowners who purchase a home where the sprinkler system was mandatorily installed. I just raise that as a serious concern and I'd like to see us continue to address, with education and outreach, the community in terms of fire safety and in terms of making this workable for all jurisdictions. I think every individual jurisdiction needs the ability to address it on a case by case basis. Thank you.

Todd Woolsey, Seattle/King County Association of Realtors

Thank you, Mr. Chair, members of the Council. I'm Todd Woolsey. I'm representing the Seattle/King County Association of Realtors. I'd like to speak in support of the removal of Section R313, and have the Council vote no on a statewide mandatory sprinkler requirement. We also believe that, as has previously been said, it should be a jurisdictional choice rather than a state-wide mandate. Again, we appreciate all the hard work and concern for fire safety. I hope, with all the sea of blue in here there is still somebody back in the stations.

We also would like to comment on…you're asking for some new information…I'd like to share with you the results of a poll that was done of registered voters in our neighbors to the north, Snohomish County. Sixty-nine percent of those surveyed oppose the proposed addition of sprinklers to new homes, with 26 percent in favor. Two-thirds of those surveyed agreed with the statement that indoor sprinkler systems should be optional as individuals and families know best what they can afford and what their home needs to be safe from fires.

I'd like to bring that concern about housing affordability into your consideration. We know that in this state nearly 10 percent of our economy is dependent on real estate. With multiplier factors, nearly a quarter of the state's economy is dependent on that. We have a housing affordability crisis, as well as a home construction crisis going on right now that is decimating our local and state budgets. As we look at these costs, we've heard a wide range of costs as to what it would take to add into this. That latte a day does add up and compile in and makes it unaffordable, particularly toward the lower end. A mandatory sprinkler system would create an additional challenge to all local jurisdictions that are working towards their housing affordability targets under the Growth Management Act. We are working very hard to maintain the $8,000 first time home buyer tax credit at the federal level. It is set to expire at the end of November. That has been what has started to bring the housing market back and started to give our economy, at a national level, some stability. But if we have costs that are up to $20,000 imposed on a new home, that would more than offset the value of that and will set us back significantly. The fiscal impacts on governments also are important. When you see the increase in home prices, few homes are being built, that cuts into the real estate excise taxes that cities—and the state—enjoy. It cuts into the construction sales tax that helps fund our services. And it also results in the loss of what could be increased property taxes. All of those go to help fund, amongst other things, the fire service that we do enjoy. So, with respect to the balancing act that the Council needs to make on this decision, we respectfully ask that you do not make it a statewide mandate to sprinkler homes.

Gary Franz, Graham Fire and Rescue

I'm Deputy Fire Chief for Graham Fire and Rescue. I have 30+ years in the fire service. I didn't intent to be one of the last ones speaking, so a lot of what I had intended to speak to has already

been spoken of. But I want you to know that I represent not only our fire department, which is a rural fire protection district--we cover approximately 110 square miles--but I also, because of things that have been occurring in the last few years with respect to growth, I have become also a representative for the Pierce County Fire Chiefs Association and serve as their chairperson for fire conditions and related issues to growth.

I'm here to speak in opposition of removing any part of the proposal, part of R313, that would not cause fire sprinklers to be installed in homes as a requirement. I'll tell you a little story about why that is. I want you to understand that I am not really a code individual; I'm a person in this business who has spent 20 years targeting and become, developing some expertise in combating fire after it occurs. There are a number of tactical procedures and applications that, over the years, have become more and more complex. Part of that is the fact that homes today are built very efficiently. I give credit to the builders and code people. They are very, very efficient—when there is no fire in them. The instant there is a fire in them, things change a little bit. Generally speaking, a fire—I have a report that I will give to you that was prepared in 2004 by NIST. This was a test, they actually ran two tests, putting test homes six feet apart from one another and started a fire inside those homes—that was unprotected by sprinklers—in order to determine the effect of that fire outside of the burning structure. It was less than four minutes in both test cases in which the fire that was ignited blew through the window. I think the timing was right at 3 minutes, 52 seconds. Eighty seconds after that fire went through the window the next building to it was on fire. It was in free burning flame. Recently, it ran earlier this year—you may have seen it on the news, we had five homes on fire at one time. These homes were ten feet apart.

The reason that I'm here today doing what I'm doing now, which is not fire fighting, is because our growth in Graham—and in Pierce County in general—has just exploded. In 2003, I noticed my very first development in our jurisdiction. It was my job to know what's going on in my jurisdiction. I'd seen the first development in 2003. Today, I don't know how many developments we have; there are probably 40 to 50 of these developments, hundreds upon hundreds of homes that are six feet apart from one another. Not a single bit of protection has been installed; neither fire rated materials, not fire resistive materials, not fire sprinklers. Sprinklers put fires out. Bottom line: Wet stuff on the red stuff, that's my expertise. Sprinklers are designed to be there 24/7, on call, waiting to operate when heat in a home activates them. And that's the only way that's going to happen, in general terms. So I highly recommend that these sprinkler requirements be sustained as they are published today. Thank you.

Shawnee Brown, Hughes Tech NW

My name is Shawnee Brown and I work for Hughes Tech NW. I could argue this on every side of the fence. Not only am I a manager, and have been for the last ten years, for various fire protection companies, although I would like to say for the record right now I am working for a commercial alarm company, so I don't stand to make any money off of residential sprinklers. I am a huge proponent of the Kitsap County Homebuilders Association, and anybody in the room who's worked with me in my fire career knows that I am a huge proponent of fire life safety and protecting not only civilians but the people who are going to serve and protect us. I come to you today not as an adult who has a stake in this, but I come to you as the 9-year-old child that I was 31 years ago when my own home burned down and went to flash point with me and my 3-year-

old brother inside. I can tell you my mother, to this day, the only reason why she forgives me for choosing that night to dress my baby brother up as a girl in curlers and makeup and pink nightgown is because had I not done that, had him in the room with me, he would not be alive. Nobody can understand what it's like to be inside of a burning building, and nobody can understand what it's like to wake up inside of a burning building unless they've been there. And nobody can understand what a child goes through when they're homeless. Yes, we all made it out alive. The only casualty was my bird. But, we were homeless for a year. And I can tell you, yes we have friends and family, but you wear out your welcome pretty fast. I can testify to the fact that having to go to school in the fourth grade with my classmates' hand-me-down clothes on my back, children are cruel and they make fun of you. I can tell you about laying in a bedroom, sharing it with other children, with our friends that we were staying with, and hearing their parents talk on the other side of the door about when our family was going to move out because we were becoming a burden. Had we had fire sprinklers in our home, the grease fire from the French fries that my dad cooked when he came home late from work that night and was too tired to notice that he didn't turn the grease off, would have just made a mess in the kitchen. We wouldn't have lost our home. We wouldn't have lost our lives—as we knew it, obviously, we're all still alive. But to this day, and I think it's probably why I ended up in the fire protection industry, if I smell that smoke residue on a fire, from a home fire structure fire, it still turns my stomach. I want you all to know that I will be signing papers on my first home that I purchased in Washington this week. I don't have extra money in my budget for granite counter tops or crown molding. I have money in my budget for a fire sprinkler system. So I ask that you keep the code the way it is proposed and also, from a professional point of view, I ask that you not put it in the hands of local jurisdictions. As a professional in the fire protection industry, it's hard enough for us to deal with all the different decisions made in the local jurisdictions. Everybody has their own point of view on what should happen, and I think this should be a state matter so that we can enforce it and help our customers enforce it the way the state wants it. Thank you.

Garrett Huffman, Master Builders Association of King and Snohomish Counties

Chairman, Council members, Senator. My name is Garrett Huffman and I am with the Master Builders Association of King and Snohomish Counties. I have good news. I'm not here to talk about fire sprinklers. But I am here to talk about something related, which is the fire separation issue, and I apologize, I do not know what number that is in your amendments…Section 302.1?...having to do with the set back issue. If you will remember, roughly a year ago there were discussions before you about current product out in the market that will be noncompliant. And we discussed with your vice chair at some length about putting an emergency ordinance in place that will allow those structures to remain without having them be illegally sold to the consumer. At that time we did come up with some language that was adopted an emergency rule. I would very much request that you install that amendment as permanent. It is very important to those of us who build in an urban area as we do have homes that are built close together, simply because we don't have the available land outside the urban growth boundary to expand into. Understanding that there are issues with that, but it is very important to us and I want to say for ourselves, our industry, everybody involved, that we strongly support that and urge you, in November, to adopt that permanently. Thank you very much.

Jon Napier asked for clarification. Do you want us to stay with 2003 code/2006 code versus going to the model code? Garrett responded, yes. Correct me if I'm wrong, what we agreed to was basically allowing the eaves to burn off because they're not fire rated, although everything else into that five foot area has to be fire rated. And I assume that is the way the amendment is being read. Tim Nogler and Tom Kinsman repeated the request for clarification. The amendment currently proposed is not the same as the previously-adopted emergency rule. The current proposal moves to a five-foot separation. Garrett stated what we discussed is basically what you have proposed, which allows the eave…We do support this latest proposal. Our members spent a long time working on this and discussing it in the IRC, and we do support this.

International Mechanical Code Testimony

Lee Kranz

Good afternoon. My name is Lee Kranz. Speaking in opposition to proposal 09-250; that is IMC Section 501.2.1. Recently I became aware of a problem with the soon to be adopted 2009 IMC state amendment. I am the proponent of code change proposal 09-176, which modifies Section 202 of the IMC to include parking garage exhaust in the definition of Environmental Air. This was done to clarify that enclosed parking garage ventilation exhaust terminals would be required to meet the environmental air exhaust outlet minimum distances found in item number three of Section 501.2.1 as opposed to the product conveyance requirements. And the TAG endorsed my proposal. They suggested that it be a state amendment. Then I found out that code change 09-250 deals with exhaust outlets for parking garage and transformer vault exhaust and was also endorsed by the Mechanical TAG. This proposals contradicts mine because it deletes parking garages from the environmental air exhaust outlet distances and adds a new requirement, item number five, which specifies essentially the same exhaust outlet distances found in item number two for product conveying outlets. My question to you is what is the point of adding parking garages to the definition of environmental air only to turn around and amend another code section to still require what would have been required if it were classified as a product conveying exhaust? It's sort of a circular requirement. For years mechanical engineers and contractors have taken issue with the lack of consistency amongst the various jurisdictions on this issue. Some building code officials consider the exhaust air from enclosed parking garages to be environmental air, and some consider it product conveying. There are significant differences in separation requirements between the two. I believe that the Council has a responsibility to provide clear direction to building officials and the design communities on this issue. I understand that the City of Seattle has language in their code that requires not less than 10 feet from enclosed parking garage exhaust outlets to property lines and operable opening into buildings. The City of Bellevue, who I represent, supports these distance requirements but does not support the 10 foot above adjoining grade requirement. Other cities, such as Denver, have adopted local ordinances that clarify for designers and building officials that garage ventilation ducts should be considered environmental air and allow the vent terminals to meet the requirements for environmental air. I think there's a cost impact to this that is fairly significant, especially to larger cities like Bellevue and Seattle. Our main issue is that by requiring these vent terminals to extend 10 feet above grade that does eat up valuable real estate. There is little, if any, value added. The air that is coming out of these vent terminals is the same air that we

breathe when we walk into the parking garage, the enclosed parking garages. And that is required to be ventilated with outside air as required by the mechanical code, other sections of the mechanical code. Thank you.

Tom Kinsman asked for clarification on which section Lee was opposing. Lee replied IMC Section 501.2.1, which excludes parking garages and transformer vaults from the environmental air outlet requirements. His proposal is the definition of Environmental Air in Section 202, which adds parking garages to that definition. Lee stated that, if the Council would entertain an option to that, he would be willing to withdraw his proposal if the Council would agree to delete the language requiring the 10 foot elevation of the parking garage vent terminal in Section 501.2.1. He stated he provided testimony in written form on August 27.

Tim Nogler clarified that all of the testimony, both written and verbal, would be complied and sent out to the Council members prior to the worksession.

International Fire Code Testimony

Jim Tidwell stated he was available to answer any questions the Council may have on the fire extinguisher exception.

Kraig Stevenson, ICC

I just wanted to make some comments about the fire code Chapter 46. Just to bring out some points, clarifications that the content of that chapter, the new chapter within the 2009 IFC, is relocated content that was elsewhere in the 2006 edition. I know that some people are concerned and think that it is new content, even the retroactive provisions for existing buildings. I just wanted to clarify that code change number F294-07/08 cycle goes through the reasoning statements and is basically…within the reasoning is to relocate it so that it's more easy to identify by the fire inspectors of those items that are considered a hazard or an item needing to be mitigated on an existing building. That technical content is unchanged with the exception of the means of egress. The means of egress portion requirements within Chapter 46 are not the full Chapter 10 requirements; they are the minimum level mitigated for buildings such as multistory open shafts in stairways so they are mitigated back not to a 2-hour shaft but to a 1-hour shaft and a few things like that. So I just wanted to provide that clarification.

Uniform Plumbing Code Testimony

Dave Cantrell, Seattle/King County Public Health

Thank you, Mr. Chair, members of the Council. Dave Cantrell, representing Seattle/King County Public Health, speaking on the amendments to the 2009 Uniform Plumbing Code. I would draw your attention to page 3 of the documents, Section 402.3.1.3.1., nonwater urinals. What I'm

asking the Council is to consider deleting the final sentence of that section, which reads "Where nonwater urinals are installed, they shall have a water distribution line rough-in to the urinal location to allow for the installation of an approved backflow prevention device in the event of a retrofit." I want you to understand clearly that the backflow prevention device that's being scoped out here would be the Flushometer valve itself. This really discourages water conservation, and really flies in the face of conservation efforts. Waterless urinals, whether you like them or not, are an approved, listed product that does work towards conservation of water. I'm not aware of any other model code that has this requirement. The International Plumbing Code certainly doesn't, and I've never even seen this being proposed to the International Plumbing Code. Of course many people say well, the issue is that it smells bad and so forth. Well, that really is if you don't maintain it. But there are many of these installations that are properly maintained and that are fine—City Hall in Bellevue is one case, a remarkable example that is always a very nice restroom. But I've been in a lot of restrooms that did not have waterless urinals that I would rather not visit again. Maintenance really is the key. As far as the…I would see this as a cost increase, really, because adding one or two urinal Flushometer valves can result in the increase of your water line, perhaps even from the meter all the way to the urinal fixture itself. That could be 100 feet, 200 feet, 300 feet. That could even be for small systems that may only have one or two Flushometer urinals. And then how would you size it? You couldn't really use the flow restriction methods that are in Appendix A, because you really don't know what your flow rates are going to be because you haven't got that particular device yet. However, if you would be forced to use the prescriptive methods in Chapter 6, prescriptive just about always results in oversizing. So I would see this as a cost increase. I would urge the Council really to delete the last sentence of Section 402.3.1.3.1. I really would find it a little bit unreasonable and somewhat uncomfortable to explain to someone that they need to supply a large water line to a fixture that does not require water all in the name of water conservation.

Jon Napier asked what would happen in a retrofit situation. If they get rid of a nonwater urinal and go back to a conventional urinal, how would they do that? Would they need to plumb new water lines to that restroom and upsize the water line? Is it more a case of being there just in case they want to convert to the standard-type water urinal? Dave replied that this is a change to the 2009 code, so it has never existed before. Clearly, if you are going to install a fixture that never had water before, you're going to have to add water lines to it. I'm not arguing the fact that that would be a cost. However, if you provide water to it, you really are not encouraging people to maintain what certainly is an approved method. I think not having water to it would encourage more maintenance rather than just changing it out because you do not like it. However, I have no problem with explaining to people the need for maintenance and if they didn't maintain it or had no intention of maintaining it, then they might want to supply water. But should it be a requirement for something that does not require water? I really don't see that.

After a short break, Jon Napier took over as chair of the meeting after Peter DeVries' departure.

Washington State Energy Code Testimony

David Baylon

My name is Dave Baylon. I participated in the Energy TAG process throughout the deliberations. I'm going to discuss two things. Other people will discuss many other things; there are quite a few and relatively complicated numbers of proposals here. The two things I'm going to discuss is first, the overall energy impact of these code change proposals generated from energy savings estimating procedures using prototypes and simulations of buildings, and using energy simulations. The basic strategy here can be discussed in some detail. Suffice it to say that this is what's used in the power plan and the power council and most utility planning as a method for projecting, predicting and projecting the savings associated with utility measures of one sort or another, which is largely measures associated with, that could be associated with, utility programs as well. There are approximately 775 million kilowatt hours of savings associated with this plan, over a five year period of construction. That's roughly 175 million kilowatt hours a year. Over 88 megawatts, average. This is a fairly big amount of energy, a very significant impact on the energy generating requirements of our utilities. In addition, there is a 42 million therm benefit associated with this over the five year period that I'm talking about. All of that put together amounts to a $20 million per year savings in energy bills to the people of the state of Washington. A year. Each year. The next year there would be $20 million on top of the first $20 million, and so on like that until we change the code again. This is a very significant change in the energy code, and it's a very significant change in the energy use components of state buildings.

About 40% of these savings I just described are in nonresidential code, which is what I'm going to talk about for the rest of my time. Fourteen percent of the total energy use of the buildings is being saved by this.

I'd just like to say a couple of things about the code proposals as we produced them. This is a very contentious process. There is a very diverse committee; there are a lot of different views of this. But, for the most part, we were able to arrive at consensus in some cases, and at least a level of compromise that represented was required in order to build a working majority in any of these cases. Often times this required considerable concessions on everyone's part. But nevertheless, what we've crafted, at least as far as the nonres code, and the rest of the code for that matter, is a system of code changes that will work well for the state.

Patrick Hayes

Thank you. I participated in the Energy Code TAG probably 98% of the time, I might have missed a few hours. It was a monumental exercise, and we got through them all. What I have done, we had previously submitted a matrix that aligned all the proposals, whether they aligned with the IECC or not, regarding motion 7. We've revised it just a little bit and identified 17 that don't align with the IECC. So I'm asking you to please review the new one and take a look at those 17 very hard. Because, as we go to adopt the IECC in the future code cycle, those 17 will stand out again and be very difficult to incorporate in. They can always be re-proposed as a separate thing during another code cycle. That, I think, would be a better spot for those 17, because we have this global thing, the energy code, that's going in place right, that's a

monumental change to our state code. It's a pretty big pill to swallow. Removing those, per motion 7, would probably make it a smoother process.

Regarding the percent increase of the proposals, there is going to be a lot of talk about this, I just went at it mathematically, because that's how I do it. I'm not going to talk about the kilowatt hours or try to convert it into a five year thing and billion dollar savings. Table 5-1, regarding residential buildings, R-1 and R-2, which is multifamily, and R-3 and R-4, so just down the list on R-1 and R-2, windows were increased by 25%, skylights 9.6%, vaulted roof/vaulted ceiling +25%, walls +1.7%, floors +0%, slab on grade +50%. On single family dwellings, windows +16%, skylights +9.6%, vaulted roof +25%, walls 1.7%, floors 0, slab on grade again +50. Those are pretty big numbers. And those are real numbers; that's how much the insulation increased. Keep that in mind as you look at what you're voting on, and so on and so forth. Thank you very much.

John Cochran asked if the new matrix referred to will be provided in written testimony. Patrick indicated that it would.

Paul Burckhard

I'm speaking to the residential portion of the energy code. The question I'm going to pose to the Council at this point is, are we really taking the right approach to new home energy saving in Washington State. A recent interview with the director of EPA's Energy Star program, Sam Rashkin, by Ted Cushman covers the home building industry, makes me wonder if the approach the state is taking in its revision of our energy code is really the correct approach at this time. The Energy Star program is aimed at 30 percent better than code home performance. Thousands of builders have participated in the program, and built more than a million homes that have earned the Energy Star label. Sam was asked about his proposed new specifications for 2011 and the Waxman-Markey 30% and 50% targets. Sam's answer was, in his view, people who are talking about percentage improvements are looking at the problem all wrong. "'I just think people are positing the wrong question and the wrong goal,' said Rashkin. 'They're worrying about the wrong thing. Some theoretical number that comes out of a model that evaluates how a house performs, is only interesting to me. But what is really exciting to me is completing systems.' Energy Star no longer dwells on percentages, he went on to say. "We identify the problem differently — not by saying that there is a lack of HERS index scores or percent above code metrics getting higher. Our problem definition is, we look at how homes are constructed, and we say, 'Thermal envelopes are not being installed so that they work effectively; HVAC systems are not being installed so that they deliver near full rated performance; homes that are high performance homes with good envelopes and HVAC systems don't have the water-managed construction details comprehensively needed to avoid critical failures; homes don't have the ventilation systems installed so they deliver rated performance and ASHRAE levels of ventilation…And we realize that you don't solve the problem by just ratcheting up either the HERS index score or the percent above code." Instead, Energy Star's proposed new specifications, which you can read about on the program's web site, establishes six inspection checklists for framing, HVAC installation, thermal bypass elimination, air quality details, and water-managed exterior detailing. It's not an increase in insulation requirements, appliance efficiency, or anything like that—it's a quality assurance program. It's about accountability…we

want a complete building science approach that delivers complete systems…that work…[and] will be tested and verified."

A majority of homebuilders want to build an energy efficient product at a price that home buyers can afford. And, according to Sam Rashkin, we should be able to accomplish this without a slew of new requirements or a percentage target, but by just making the effort of doing the right job in the first place and holding our trade partners accountable to do the same. The results will be a home that performs more efficiently for our home buyers with many of the products and materials that we are using today. In many ways, the energy code proposals before you today ignore the fact that we could reach many of our energy saving goals in this cycle by improving on the installation and verification of the systems we are currently providing, rather than adding on new, huge amounts of money on upgraded products and non-effective technologies.

Joe Herr, Burnstead Construction

My name is Joe Herr. I work for Burnstead Construction. I'm here to address the Washington State Energy Code, specifically Chapter 9 of that energy code. This new code places a further financial burden on new home buyers and it fails to address the true nature of energy savings, that of existing home stock. The stated goal of the TAG of reducing energy in new construction by 30 percent was a lofty ideal. The current proposed changes targeted that 30 percent number, but are now realistically admitting that it's only 15 to 20 percent of achievability. Our industry numbers show that, dependent on to what level of Energy Star construction versus standard current practice construction a builder is doing, that cost can range between $15,000 to $30,000 additionally per house. If this new proposal, the stated new proposal is only achieving 15 to 20 percent of that original 30 percent, then attaining the other 10 to 15 percent is going to be exponentially more prohibitive to achieve. This new code fails to address the whole house system approach to energy savings that can achieve the goals of energy savings desired. Come July 1 of next year, if this new code is adopted as presented, we will see an almost total stop in new construction as builders realize that no current plan design they currently build will qualify or beat Chapter 9 of the new energy code. As a builder that chose to build to the current Energy Star standards, it took my department of three, three full time drafters, over a year to modify our current set of plans. Current Energy Star standards are close to the Chapter 9 standards being proposed today. But even so, we need to make more improvements. Other builders will be blind-sided by these changes if they realize the extent of the changes required to meet the new requirements. Our state would be better served to address the existing housing stock through weatherization, insulation and etc. than to place another burden on new construction. If these two issues, sprinklers and Chapter 9, go forward and we pile on $30,000 to $50,000 on new construction, we will view the current housing construction, real estate problems of today as a mere appetizer to the meal of doom we're going to serve up to the public. Thank you.

Diane Glenn

Good afternoon. My name is Diane Glenn. My company is Construction Consultants of Washington. I'm a consultant to the industry throughout the state of Washington. My clients include all types of builders, from entry level to high end. I would like to say the industry is in support of moving energy efficiency forward, and they do support many of the amendments that

are presented. However, I'm going to speak to a few of them that we are opposed to. The first one is 09-140, additional energy efficiency requirements, also known as Chapter 9. Chapter 9 should and can be treated as a stand-alone document, not as an integral part of this code in this regard. It should be eliminated as a whole. Some of the reasons: This chapter is presented as a menu of items, when in fact it is very limiting in nature. There are only about five basic categories you can choose from. One category has a punitive element, another one is limited by area and extreme cost. Chapter 9 also excludes some methods of construction. Some parts are very vague and will have a challenge for enforcement. For example, footnote 1, if you want to refer to that, an air leakage test. Some items are very contrary to good construction practices. Option 3 of the building envelope is a good example of that. Last of all it is very costly. Our estimates are anywhere ranging from like $9,000 with the best to over $20,000, just to get these credits. These numbers also will be submitted to you in a package of written testimony, so you will have all those number before you.

Another amendment I would speak is to 09-135, direct induction fan. [Section 503.4.1] So making this, for this direct induction fan or variable speed fan, making this requirement, does exclude some manufacturers, as it is not available on every type of heating unit.

09-134, air leakage testing, we'll speak to that as far as…there's very limited resources at this point for testing and we're talking about the state of Washington, we have to keep that in mind. It would also add considerable cost. This is also going to be on your additional testimony in written form. Energy Star, just to compare that a little bit on the air leakage test, a couple of years ago Energy Star decided that the state of Washington was complying with air sealing sufficient enough that they have eliminated that requirement. So now we're trying to bring it into the code.

09-081 is duct testing…I just want to say, on duct testing, we are pretty much in support of duct testing, because we have realized that this does increase energy efficiency. However, we want to encourage that you consider some kind of a sampling on that. Like I said, you'll be provided with the testimony. Thank you very much.

Chuck Day, Adair Homes

I thank you again for letting me speak before the Council at this hearing..

Again, I've done an analysis of the cost associated with all of the energy changes that affect single-family residences as proposed for the WSEC, including Chapter 9 and other provisions. Now, as with fire sprinklers, please keep in mind that costs for energy changes--energy measures in a home--are more than the net cost. They are the full cost to the consumer that will be met, including the requirement that sales tax be charged on the contract amount. So the end cost to the consumer of one house, with present day provisions, and a house with the proposed provisions, has to include profit, overhead, construction, detailing, training, cost of interest rate, construction, many other things. It's not just that in itself. And that's what I've tried to do in this analysis, which are outlined in the handouts that you'll get, including nice little copies of these posters.

The end result, though, is… And remember my previous item, which talked about, for our customers, that a five percent increase will eliminate 68 percent of the people's ability to finance their home. Okay? My calculation of these energy measures are in three sample homes that we built, one a very basic home, others a little bit larger, a little more complex. It's an average of 20

percent of additional costs over today's measures. That would virtually then eliminate, that just alone, would eliminate 89 percent of the people who we loan homes for, this last year about in the State of Washington from being able to do the same again. So that in itself would eliminate about 90 percent of our business.

And, as I said, as you look the numbers, they seem a little daunting, but they have to include everything associated with that. Sometimes, for example, the change, let's say the envelope, the super efficient envelope you pick in Chapter 9, if you're going to use that as one of your point measures, you don't just put foam around the outside of the wall, you know, R-21 in the cavity, which is one of the wall requirements. It changes how you trim up the inside windows. You go from 1x8 stock for a window sill to a 1x10 stock, which is more of a premium stock, you know, it's a higher per square foot rate.

So these things can be compounded by all the auxiliary little things, which I try to do as much possible in this calculation, for example. Going to an R-38 floor, you change your floor system. It's no longer cost-effective to use drop joists down inside the floor system. You do a rim joist for that, but that means you add to the wall line,, which means more siding, which…. So these things compound each other. That's all the point I'm trying to make.

So hopefully you will really take a look at these cost measures, as I've calculated and handed out here. I hope we have copies for everyone. Really consider that carefully, as to whether these measures really meet the test of what's cost-effective for what's accomplished.

Michael Schoonover, Washington Realtors

Thank you for allowing me to speak today. Today I'm speaking on behalf of the Washington Realtors.

I specialize in land sales, both commercial and residential. So I'm on the front end of development projects. I'm also one of the original instructors for the National Association of Realtors in their Green Builder Program. I'm presenting a program at the national convention in November on green building.

But from my perspective and my business, we saw our market literally stop in January 2007, in land sales and future developments. We still have not recovered from that. We're not seeing a lot of land development happening in our state.

Just this morning, those of you that got up early enough to watch CNBC, the Case/Shiller report came on the nation's housing report. It showed a 15.3 percent decrease in the value of homes in the Seattle metropolitan area in the last year. It also showed that 18 of 20 major metropolitan areas in this country showed either stabilization or an increase in prices from June to July. Only two areas showed a decrease, Las Vegas and Seattle.

As an association, we represent realtors and homeowners, buyers from around the state, urban, suburban and rural. Realtors support the energy code for new construction and we support cost-effective and sustainable improvements for the useful life of the buildings.

Washington is already one of the cleanest states in the nation. We have some of the most stringent and effective environmental protection laws. Already, major steps are being taken to reduce the impact of transportation on our communities, the electric car initiative, alternative fuels, improving our state's land use planning with sufficient infrastructure to reduce people's

commutes. Over the last two decades, energy efficiency has been increased in both residential and commercial construction. Today's buildings use less energy than their older counterparts.

The state's Growth Management Act was adopted by the Legislature to manage and plan for jobs and population growth expected in this state. The act has several goals, some of which have bearing on the action of this Council. Goal #4 is housing – encourage the availability of affordable housing to all economic segments in the State of Washington. The economic development goal is to encourage economic development throughout the state that is consistent with adopted comprehensive plans and promote economic opportunity for all citizens of this state, especially for the unemployed and disadvantaged. Environmental goals are to protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.

Much of our housing stock in all of our communities across the state is already built. And most of it existed well before the Growth Management Act and the state's first energy code were enacted. Therefore the Council needs to consider what the effect of somebody's new rule will be on remodeling and updating our existing housing. Our energy codes, if they are too stringent, will cause us not to build buildings. And people won't upgrade their older buildings. They'll simply stay in them and pay the higher cost of energy.

One last thing I'd like to say is most of the financing for construction comes from outside the State of Washington at this point in time. So I'm sitting in Manhattan and I have two projects, one from Washington, that has a confusing, very stringent set of rules, and one from another state, that I can start to break ground within weeks or months. Which one would I fund?

Joe Andre, NEMA

I'm here representing about 450 manufacturers and members of the National Electrical Manufacturers Association.

I participated in the Energy Code TAG for approximately five months. I went to nine meetings, plus participating in a special committee on commissioning. I invested a considerable amount of my time and my association's time.

I am appalled I have to be here today. Earlier David Baylon mentioned that consensus was achieved on everything at the TAG. And he was right. We achieved consensus on Item 139, Proposal 139 to Section 505.1.1. We did that on April 17, when the agenda was to dispose of all the lighting proposals. There was two hours of discussion on that. So I can't even begin to start talking about that during three minutes. At the end of it, there was overwhelming consensus that the proposal, as submitted, was not good code. And that sat for two and one-half months without a whimper, until the afternoon of June 26, when, for inexplicable reasons, any sense of rule is thrown out the window, it was allowed to be reopened simply because somebody said, "I didn't like the vote." I say that because there was absolutely no new information provided, nothing was changed; they simply wanted to overturn the vote. At that meeting, there were five TAG members. There are 18 on the TAG. The vote was 3 to 2. And yet that was put forward by the Council as consensus.

I feel like I've wasted five months of my organization's time. We've been disrespected; we asked for reconsideration, it was ignored. Two months after the fact we got a letter from the Council that I won't dignify by saying it was a response, because it didn't address a single thing

in three pages that we contested. I'm tired. I'm tired of being angry. And I'm upset that I wasted so much of my time. I spent about the last year and a half convincing my organization, and the entire electrical industry, that we need to be involved in energy code development. After what I've experienced here today, I won't change that on a general basis, but I would not in good conscience ever recommend that anybody participate in this process again. I have a lot more to say, but I won't. We deserve better, and I'm very disappointed in the process.

Tom asked if Joe submitted written testimony about his displeasure with the process. Joe answered that it was in the letter he submitted electronically to the Council on July 1. It was never intended to be written testimony, he had asked for a reconsideration. He said "going to this body is simply an exercise in frustration."

Kraig Stevenson, International Code Council

I, too, attended the majority of the Washington State Energy Code TAG meetings. I got to know some people quite well on Fridays.

There's a number of provisions that can be supported by me, because they were specifically designed to tie improvements to the WSEC to the model document, and that's consistency in language definition. So I appreciate those. There's far too many to go over and itemize.

But the thing that I can say is the matrix that Patrick Hayes, Diane Glenn and myself put together is a very useful tool, in order to look at which ones have a parking spot and some consistency between the Washington State code and what has been expressed in the minutes of the August 3 and July meetings of the Council that we will be going to the IECC. So I appreciate the decision on that and recognize that we will start this process again in the near future. we've been working through these issues that are quite difficult and challenging. In fact, I've overheard some people say that Friday was quite a grueling series of meetings. It was a lot of work on the part of everybody.

I'm happy to be a part of it, because I recognize that I've brought some value to the committee, to be able to provide some information, not only to them, but also to you, as the Council, in rendering your decisions about how you move forward. I know it's not an easy decision.

Gary Nordeen, Washington State University Energy Program

I also attended 20-some TAG meetings on Fridays. And the Mechanical Code TAG also, because I sit on both of those.

I support the proposed changes to the WSEC. The changes recommended for approval by the Energy Code TAG are a culmination of a lengthy process. Reaching agreement between the various interests represented by TAG members was at times difficult. But negotiation between TAG members resulted in 97 proposals recommended for approval.

There has been much publicity regarding the added cost of construction related to the current proposals. My only comment, since I'm not much of a mathematician, is that when the statement was made that code changes will add tens of thousands of dollars to the cost of a new home, I believe that someone has misplaced the decimal point.

I urge the Council to carefully review the analysis provided by the Washington State Department of Commerce and know the sources that measure costs for credibility. Their costs are about $1.00 to $1.24 per square foot for construction. The bigger the house, the cheaper the costs are.

Proposed code changes provide flexibility for designers and builders. Compliance can be easily demonstrated using a prescriptive path, which has been predominately used by builders in Washington State for almost 30 years.

WSU Energy Program is currently providing training for upcoming duct testing requirements adopted by the Council during the last code cycle, at no cost, thanks to funding by the Northwest Energy Efficiency Alliance and the U.S. Department of Energy. A component of that training is familiarizing the attendees with the function of blower doors, which measures the air leakage of the house. The blower door component of this training will continue in anticipation of adoption of the proposed air leakage requirements.

Also, WSU Energy Program will continue to provide energy code training throughout the state, which has been ongoing since 1986. Compliance documents have and will continue to be developed to assist jurisdictions in documenting compliance.

In conclusion, the code change proposal before you will take a step in meeting recent energy efficiency legislation, reduce the need to build new generation facilities to meet increased energy needs, combat climate change, and make houses more affordable to **operate** for the citizens of Washington State. A house is not affordable if you can't afford your monthly energy bill.

Tom Young, Northwest Concrete Masonry Association

It's been a while since I talked to you this morning. I commend you on your diligence and your effort here today.

We are here to talk about some unique masonry industry issues in relation to the nonresidential energy code, and specifically the prescriptive path, Tables 13-1 and 13-2. This is all found in Log #09-031.

So, representing the masonry industry, we are builders and suppliers of heavy-weight or mass wall systems, as they're defined in the energy code as "mass walls", heavy-weight walls. Our industry is comprised of many small businesses, manufacturers, suppliers, subcontractors, as well as union labor, both bricklayers and hod carriers are part of our industry.

So we want to address just the portions of those tables in that amendment that are proposed to deal with mass walls, and again specifically to nonresidential buildings which are our primary market. We do oppose, take opposition to the mass wall provisions that are in this proposed amendment. They're potentially very detrimental to the masonry industry and, we believe, have not been adequately justified.

I did attend a couple of TAG meetings as well, when these issues were discussed, and also had a chance to talk to the Economic Committee. But, for the most part, these issues were not vetted completely. So we believe that neither has the need to adopt the proposed amendment been demonstrated nor the economic impact evaluated, which is very important.

The proposed amendment increases masonry wall installation requirements 240 percent in Climate Zone 1 and 55 percent in Climate Zone 2. Additionally, it prohibits the use of a

common system that we supply today, which is integral-insulated wall systems, where we fill the cores, the empty cores of the block with foam insulation or rigid insulation. It gives the owner a durable surface on both sides of the wall. It's a very sustainable wall. This code amendment would prohibit that.

I will give you a diagram of that wall system I'm talking about with my written testimony, so you'll have that.

When you look at commercial building energy use, it's much different than residential. The exterior walls aren't typically the most important item in terms of seeking out energy savings. They do have an effect, but they don't have a major impact on the total energy use.

In fact, adding excessive amounts of insulation to the interior of a mass wall, such as this amendment would require, could actually increase your cooling demand by doing that. So it's somewhat counterproductive.

The proposed amendment, again, as it relates to mass wall is very restrictive. It's not cost-effective. We've done some studies, and it looks to us that any potential energy savings are not equal at all to the increased cost that you'd be looking at to accomplish that. There's really no reasonable payback period that we can see, which would disadvantage our industry.

There are some current provisions separate from these for mass wall in the energy code. We support those. We support maintaining those and denying those provisions of this proposed amendment that deal with mass walls.

Tien Peng stated he did not understand how adding insulation on the interior of a mass wall would increase the cooling load. Tom Young replied that you're separating the mass from the interior space, so you no longer have the ability for the mass to absorb that excess heat, and therefore your air conditioning will operate more frequently. Written testimony will provide some energy simulations that show that.

Joe Bowen, Mutual Materials

Good afternoon, Mr. Chairman, Council members. My name is Joe Bowen; I'm president of Mutual Materials Company, and a board member of the Northwest Concrete Masonry Association. I support the testimony given by my masonry industry colleagues. We oppose change to the mass wall provisions of the nonresidential energy code, proposed in 09-031. The proposed changes to the masonry wall requirements harmful to our industry without proper justification. Mr. Tom Young previously made the important point that requirements of the proposed amendment are not cost effective for building owners. Additionally, an economic impact study has not been completed to measure those costs. The necessary time should be taken to conduct further study on these issues. I am confident that better solutions can be developed to balance energy efficient building design with minimizing construction cost impacts. This approach to code development is especially important in a very slow construction economy such as we face today. This is a bad time to impose more restrictive construction regulations and costs in this economy. The masonry industry asks the Council to deny the mass wall provisions of this amendment and maintain the current masonry code requirements. Thank you for the opportunity to comment.

Bruce Smart

My name is Bruce Smart. I'm a representative of the Bricklayers and Allied Craft Workers Union here in Western Washington. I'm representing my boss, Dennis Becker.

There are 2,000 union members working in the masonry trades in Washington State. Our industry employs members of the labors union also. In an effort to save time, I will be brief with my comments. Our union supports the testimony of Mr. Tom Young, and he also has a letter from Ms. Tonia Sorrel-Neal from the masonry industry. The masonry industry would negatively be impacted by the proposed energy code amendments we have discussed. Bricklayer man hours of employment are down significantly. We believe this is the wrong time to change the code. Further study of the economic impact should be completed. We support maintaining the current masonry mass wall provisions. Thank you.

Jon Napier asked Mr. Bowen about the size of the masonry industry; are they mainly small companies, or mid-size? Joe answered that, from a manufacturer's prospective, it ranges from small privately held regional companies to large multinational corporations. His company did employ about 650 people at the high point; right now they employ about 550 employees.

Tom noted that the letter Mr. Smart referred to is from Ms. Tonia Sorrel-Neal, with the Washington State Conference of Mason Contractors. She mentions that the portion of the industry she represents, which is the union segment, accounted for about $100 million in business dollars in 2008, with employers ranging from two employees on up to 200.

Lee Kranz, WABO

I'm speaking to Washington State Energy Code Section 503.10.1. There are two issues contained in this single change. The first is ducts in exterior walls cannot displace required insulation. The effect is that is a wall that would need to be approximately 8 to 10 inches thick to accommodate the insulation and the duct; or to prohibit ducts in exterior assemblies entirely. Installation of ducts in exterior walls and stud spaces is common practice in residential construction. This would impact the cost of construction. Secondly is the issue of not using a building cavity as a duct. This evidently includes return air cavities. This impacts not only the heating and cooling installation, but also plumbing and electrical installations as they would be further restricted in using wall space to install new systems. The electrical code allows limited lengths of nonmetallic cable to be installed perpendicular to the return air handling space, and allows metallic electrical boxes and wiring methods in those spaces. There are requirements for placement of receptacles that would be impacted by not being able to utilize these spaces. This all adds to the cost of construction that was probably not looked at originally. Maybe a better approach would be to require all penetrations into or through the cavity to be sealed to prevent any infiltration of air. Also, I would point out that this proposal conflicts with IMC Section 602.3. I don't know if staff has looked at that yet. I think this is really a matter of proper enforcement of the codes that already in place. I did meet with a couple of mechanical inspectors in our office this morning. They are requiring sealing of penetrations into a return air duct that is not required to be metallic. You're basically using space inside a fat wall or a shaft inside the house. I am asking you to disapprove. Thank you.

Tony Usibelli, Department of Commerce Energy Policy

Good afternoon, members of the Council. My name is Tony Usibelli. I am the Assistant Director at the Washington State Department of Commerce, where I head the Energy Policy Division. I wanted to make just a few remarks with respect to the Energy Code and policy. Chuck Murray from my staff, who has been very actively involved in the code development process, will speak more specifically to some of the actual detail aspects of the code.

First off, I'd like to just commend the Council for the work that they've done on this. Washington State has had a stand-alone energy code now for several decades. This is a process that the state has gone through on a number of different occasions and many of the discussions and arguments that you're hearing today concerning technical feasibility, cost and enforceability of codes are exactly the same kinds of things that have occurred with the original adoption and other revisions to the code over the years. What we have found in those years is that the improvements to the code have been a very cost effective energy efficiency measure that helped our citizens and our businesses control their energy costs, and have been highly cost effective. I would certainly urge you to adopt the code as established.

I also wanted to make just a couple of remarks about the policy context related to this code. First and foremost, it is important for the Council to recognize that what you're doing here is very consistent with national policy trends related to energy codes, as well as state policy. On the national front, organizations such as the U.S. Department of Energy and ASHRAE have entered into agreements to improve the 90.1 code by 30 percent in the 2010 edition, compared to the 2004 edition. DOE has provided funding to the states to develop and implement codes that are 20 to 30 percent more efficient than current codes. DOE and the federal government, in the Recovery Act funding, provided provisions in there that states are to adopt and enforce strong energy codes in order to receive funding from the federal government. So, on the federal level there are a number of activities under way to encourage significant improvements in code.

On the state level, organizations such as the Climate Action Team, which met and worked over a period of two years to develop recommendations addressing issues around greenhouse gas emissions and climate, have strong recommendations on increasing the stringency of the energy code, both in the near term by 30 percent and long term approaching the zero energy/zero carbon environment. You've received a letter from the Governor's office. The Governor recognizes the cost effectiveness and value of energy codes to the citizens and to the businesses in this state, and has asked you to seriously consider it. And I would commend you for the work you have done on that so far. And finally, I would mention that the Northwest Power and Conservation Council Interstate Compact, which includes gubernatorial members from the state of Washington, has identified energy conservation as the cheapest, most cost effective resource for our region. Energy codes are a significant portion of that resource. Thank you very much for your time.

Senator Holmquist asked if Tony, representing the Department of Commerce, was in support of decreasing energy consumption 30 percent by 2010. Tony responded that was correct. However, he noted that the proposal currently under discussion does not reach that level. But they are in support of current proposal for both residential and nonresidential. Senator Holmquist stated that she worked on SB5854, and intent of the legislature through that bill was very clear, to direct the

Council to look at the energy code, and if it needed changes they be done in incremental steps, starting in 2013. The amendments currently before use are pushing for a 2010 start date. She was concerned that Tony, as a representative of the state, was not following intent of bill. She indicated she would follow up with Tony at a later date.

Chuck Murray, Department of Commerce

Basically, what I'm going to do today is introduce you to a report we just completed. It is an economic analysis of the major single family code changes. It is a revision of some testimony we gave to the Economic Committee some time ago. It isn't about the proposals Commerce put forward, but it's about the actual stuff that got through the TAG. So this report is specific to the TAG.

Some key points about the actual changes. We've always moved forward energy codes principally by improving the building envelope of our homes. We recognize that we're not going to get a lot further, particularly not cost effectively, by just focusing on building envelope improvements. That's why we created what's been called Chapter 9, you've heard about it. It's an effort to enable people to take credit for good construction practices that improve the energy efficiency, quite frankly, other than building envelope. You can take building envelope credits there, if you choose, but principally I think people are going to go elsewhere. They're going to look at advancements in water heating, advances in space heating equipment, primarily because those are the best cost efficient methodologies to follow. Chapter 9 is a menu approach, much like the green building programs that have been developed over the years. The vast majority of homes will be asked to select two items from that menu; about 90 percent of housing fits into that category. An example would be a high efficiency furnace and a high efficiency water heater; you pick those two things, you add them to the existing code requirements, and you've complied with Chapter 9.

I'd like to comment that the improvements to the building envelope—there were a few—are fairly minor, in our opinion. In climate zone 1, you change from an R-38 to an R-49 attic, you go from a 0.35 window to a 0.32. Now, the TAG's recommendation is that standard be adopted statewide. Climate zones 1 and 2 would have the same requirements. What that means is we're actually rolling back the building envelope requirements in climate zone 2. This has some advantages in being able to enforce the code easier. And also, particularly for windows, it is going to make a single market place for what the state standard is on windows.

Once again, what I've presented here is an economic analysis of those measures. I hope you take the time to read that. We do believe that we've done a good job with costs by referencing other sources, not creating our own costs. I hope you have time to look through that. Thank you.

Kim Drury, Northwest Energy Coalition

Thank you very much. My name is Kim Drury. I'm here today representing the Northwest Energy Coalition, and we strongly support the whole package of measures before the Council. We support this because the proposed changes save energy. Compared to the current energy code, the Washington State Energy Code, the full package of proposed changes will increase energy efficiency by an average of about 20 percent. This is below what Governor Gregoire had called for, but still a very strong step in the right direction. The reason why we need these energy

savings is because energy use has continued to grow in Washington State, where most of the utilities growth rate is faster than the rest of the region. Utilities have to meet that new energy demand with some sort of new resource. Energy efficiency is the least cost approach to do that. The more energy efficient our buildings, the less need they have—the utilities—to invest in expensive new power plants, which keeps energy rates down for everyone, and keeps our Washington economy strong.

The other reason why we support this package of energy code improvements is because they're good for consumers. Yes, the cost of a new home will go up, but by one percent or less. For that, homeowners will get a home that is warmer in the winter and cooler in the summer while consuming 25 percent less energy. Homeowners get an energy bill that more affordable. The analysis that we've looked at, that was done by the Department of Commerce staff, shows that the standard mortgage, the extra cost is paid for in one year. Over a decade, the energy savings amount to an extra $2,500 in the bank. Some of the builders that you're hearing from are going to oppose the change in the code based on cost. As you've also heard, this happens with every single cycle of the energy code.

I'd like you to consider several different things as you hear that complaint about the cost. First of all are the numbers. The costs the Department of Commerce has put together are based on data from the Department of Energy and Northwest Power Planning Council. So it's very reliable data. Second of all, survey research and buying trends show that homeowners prefer to buy homes that are energy efficient. This adds value to a home, and if somebody is looking for a home and they're debating an existing home or a new home, a home that is energy efficient, 25 percent more energy efficient, presents an advantage. It is an advantage for the home builders to have the code in place, because it's a cheaper home to own over the long term. In a tough market, I think that is a very important point for builders to keep in mind. Energy efficiency really helps sell the home.

It is also important to note that the energy code levels the playing field for builders. They all face the same costs at the same time, so there is no competitive disadvantage or advantage to builders.

Finally, I'd like to remind you that Washington State is already an acknowledged leader in energy efficiency, and largely that is because of the code that we've had for several decades. Just last week, Forbes magazine recognized Washington State as the second best place in the country to do business, in part because of our regulatory climate and because of the cost to business. Washington is a good place to do business, and in part that is because we have good, reasonable codes. Thank you very much.

Mark Frankel, New Buildings Institute, Cascadia Green Building Council

I'm representing the New Buildings Institute; it's a non-profit energy efficiency consulting group in Washington. I'm also the chairman of the Cascadia Green Building Council; I'm representing Cascadia Green Building Council as well. I'm primarily going to talk about the commercial context and I want to give some context for the national scene on energy codes to sort of help frame this discussion.

First of all, Washington has prided itself on being a leader in energy codes for a very long time, and I'm proud of that as a Washington citizen. But we're at a very real risk now of being overtaken by the national scene. There are national efforts underway to increase federal energy

codes by 30 percent or more. A number of states around the country have already adopted significant code increases. So the idea that this code increase is going to keep us in the lead, this is not true. Actually, we will barely keep up, if not fall behind, the national scene with this proposal. So the codes are changing very rapidly nationally, in part because of discussion around getting to net zero by 2030, which has been adopted unanimously by the U.S. Conference of Mayors, of every city with a mayor in the U.S. The Conference of Mayors has adopted a goal of having their commercial building stock be at net zero by 2030, including the cities in Washington. This is a unanimous program. And other states and cities around the country are also adopting this program. The State of California now has set up a requirement that their commercial building code achieve net zero by 2030, and their residential building stock by 2020. Very aggressive goals that they are proceeding on, and other states in the country are following their lead.

There is also language in the federal policy, including the Waxman-Markey Act that will require a 30 percent increase in energy codes immediately. If that passes, we will be undergoing this process immediately again in order to stay in compliance with federal requirements. So this proposal is not really a national leadership position anymore. We're just barely treading water, if not falling behind.

Secondly, I might point out that all of the code amendments are achievable. My firm has looked at buildings that claim to be 30 to 50 percent more efficient than standard practice all over the country. We've got a database on our website—newbuildings.org—that has about 100 examples of commercial buildings that are 30 to 50 percent more efficient than standards practice at no incremental cost. That's right. No incremental cost. In fact, a number of recent studies have come out that suggest that buildings that are more efficient are worth 15 percent more than standard practice buildings. People are starting to recognize the value in the market. It basically has to do with thinking about the problem a little differently. We hear a lot of testimony about these extreme costs of adopting these requirements. Frankly, they're going about it the wrong way. It's been demonstrated over and over again in the commercial sector that it costs half to one percent, perhaps, incremental to increase efficiency more than 20 percent. It's really just a matter of thinking about the problem differently. We can do it better and cheaper, not the same more expensively.

Finally, in the gloom and doom sector, I would point out that the risk of not taking action on energy efficiency is much greater than the risk of adopting these incremental changes. So it's really important you keep moving there.

David Cohan, Northwest Energy Efficiency Alliance

Vice chairman Napier, Council Members, my name is David Cohan. I'm with the Northwest Energy Efficiency Alliance. I'm the manager of Codes and Standards there. I'm speaking in support of you adopting the package presented to you by the Energy TAG.

I just want to give you a little information on why am I sitting here. Most of you have probably never heard of us. We call ourselves NEEA. We are, by far, the largest funder of energy code support in the State of Washington. In the past 10 year, we've put in more than $700,000 into energy code support in this state. That comprises 75 or 80 percent of the total amount that goes into this area. That supports energy code training in classrooms, field training, the development

of compliance forms and manuals, and technical support for a hotline that building officials and building professionals can call. In the last two years we've spent $150,000 each year in the state supporting energy codes.

This is an aggressive package. There is not one person in this room who's going to tell you it's not a big change from current code. But I don't want you to be at all nervous about passing it in the context of people not being able to reach there, of people being confused about it. I have $250,000 that has been budgeted to this state next year solely to support the implementation of this code. We are very serious about supporting the code in this state, and we will continue to do so. I want to make sure you realize you're not going to be stranding your building professionals and your building officials if you pass this code.

One last comment; you're hearing a lot about the gloom and doom. I just want to point out I'm heavily involved in the development process for the International Energy Conservation Code, the national model code. Everybody is on board, as Mark Frankel was just saying, with this 30 percent increase, **including** the National Association of Homebuilders, who have submitted a code change proposal that will increase that code by 30 percent over the 2006 version. You might want to consider that in the context of the Washington State builders who are unclear on whether we should jump that far. The National Association of Homebuilders is totally on board with this. Thank you.

Tom Kinsman asked for an overview of how the referenced funds would be spent. David replied that NEEA currently has contracts with WSU Energy Program and the Northwest Energy Efficiency Council to provide training. The money comes from the regional electric utilities, the Bonneville Power Administration, and the Energy Trust of Oregon. NEEA hires contractors in each state to provide training and technical assistance.

Tom stated he was looking for more of a breakdown. Is there more to it than someone answering phones and someone running around doing duct training? David, with assistance from Gary Nordeen, stated they do 25 or more classroom trainings a year on the entire Washington State Energy, both full and half-day classes, for both the building and enforcement community. WSU also provides training on the Ventilation and Indoor Air Quality Code (but that may not continue) and green building, and runs the technical assistance service.

Jeff Harris, Northwest Energy Efficiency Alliance

Mr. Chair, Council members. My name is Jeff Harris. I'm pleased to be here today in front of you. I also work for the Northwest Energy Efficiency Alliance, but my title is Director of Emerging Technologies. I'm here representing primarily the technical side of our interest in this particular code change.

I, personally, have been involved in the energy code process in Washington State for almost two decades. I've been on energy code TAGs for a long time, and have had the pleasure of being through this cycle a few times. Because of that, I just thought I would make a few comments on this particular cycle of code changes, based on the experience I've had over the years. None of these is perfect; we all recognize that the TAG process isn't perfect. But it has some significant benefits, I believe, for Washington State especially.

First, I just want to say that I support these code changes as submitted. As I mentioned, they are not perfect, but as a group they represent what I believe was a significant give and take from all parties. You've already heard today from a number of folks who felt like their interests were not served as well as they could have been by this process, but from my perspective nobody got everything they wanted. We had a very challenging goal put in front of us by the Governor's office, of 30%. And we, as a TAG, did the best we could to move in that direction, while at the same time trying to maintain some sense of practicality. I believe it has already been mentioned once today that over 170 proposals were submitted. Only 95 of them made it out of the gate. So we tossed a bunch of them, partly due to considerations for practicality, cost effectiveness, technical correctness, et cetera. The TAG process, as has been mentioned earlier, was also based on an attempt, at least, to achieve consensus wherever possible. What that meant is that all of us had to compromise at some point. Achieving the most of our interest, whether it was energy efficiency or cost effectiveness, to get proposals that worked. As an indication of that, the 95 or so proposals that are in front of you today, two-thirds of those are modified from original form. I think it's important to recognize that that modification was part of the long deliberations of all those Fridays you've heard about and the discussions that took place. There are compromises within the language that's in those proposals. In some cases, the compromises extended between proposals; we can live with this in this proposal if you all can live with that in that proposal. I realize there will be a tendency or desire to go in and pull a particular measure out of the hopper here and say we want to fix that or change that. I would just urge you to look at this as a whole package that was deliberated and carefully considered in a process that was, in fact I'll admit, imperfect, but I believe as good as it could be for this state. Thank you for your time.

Kristyn asked if this the same development process the national model code uses to vet code change proposals. Is there any process that occurs before they get to the public hearing process? Jeff answered that is a very important differentiator between the two codes, the WSEC and the IECC. Here in Washington, there is an open public forum for discourse and modification. There is not a similar process at the national level that he is aware of. There is a process to provide testimony, but items are voted up or down as submitted. Kraig Stevenson may be able to provide further clarification, if desired.

Mary Claire Frasier, Candela

Thank you for so attentively listening to all of this. This is a long day and we're not through. My name is Mary Clair Frasier. I'm speaking in opposition to the proposed revision to Section 1531 and its associated Tables 15-1A and 15-1B. I am the professional lighting representative on the Energy Code TAG. You should know that this proposal was passed by the TAG over the strong objection of the community of lighting experts and without regard to their technical expertise. The lighting power allowance reductions proposed were based on calculations using lighting equipment that is not a reasonable option in many applications. For example, the instant start ballast used for the calculations are not compatible with daylight dimming ballasts, occupancy sensors, or timer switches, all of which are good and viable energy saving technology. In fact, proposed revisions to Section 1513 require automatic daylighting controls and dimming is the best way to do that. It is the least likely system to be over-ridden by users because it works

seamlessly rather than startling users as switch systems do. These proposals to 1531 would make that provision impossible to achieve.

Lighting power reductions beyond what is reasonable with current technology will result in spaces that do not meet the visual requirements of users and will almost guarantee that supplementary lighting will be added later, thus negating any expected energy savings. The lighting community believes that real and permanent energy savings in lighting is possible and we fully support that goal. However, real savings will only result from realistic limits that allow the design of spaces that meet the visual needs of users, needs based on the way the human visual system works. The comfort and health of occupants of spaces is absolutely affected by the lighting in that space.

We are already, in my opinion, not providing sufficient lighting workspace for older workers. Additionally, owners deserve codes that allow them to comply in an economically viable manner without requiring the use of emerging technologies like LEDs that present potentially severe maintenance problems. The lighting community came together to craft a minority report addressing the issues related to this proposal. This minority report was submitted to you in July. I assume that you all have it; if you don't we can certainly get it to you. It presents alternate tables with realistic reductions to lighting power allowances based on recent real-life projects that had to meet owners' requirements and budgets. The Washington State lighting design community is recognized nationwide for its dedication to energy effective lighting design. We are respected and sometimes ridiculed for that as a bunch of tree-huggers, I guarantee you. The minority report represents many hours of discussion and research by this group. We believe in pushing the envelope of energy efficiency in ways that represent good design practice and reliable technology. Please look closely at the minority report and consider rejecting the unrealistic lighting power allowance tables included in the TAG proposal. We recommend that the Council either adopt the tables in the minority report or appoint a technically-knowledgeable committee to develop realistic lighting power allowances based on our research rather than on unworkable equipment combinations.

Finally, I want to add that lighting technology is in an odd position right now. If LEDs achieve their promise, we are close to a threshold of substantial energy savings. But they are not there and their success is not guaranteed. Assumptions based on potential energy savings inherent in emergent technology are extremely risky. Potentially substantial maintenance costs are likely to follow.

C.J. Brockway, NBBJ

My name is C.J. Brockway and I'm also a lighting designer. I work for NBBJ Architects. The main project type that we work on is health care applications.

I was also a contributor to the minority report that Mary Clair has mentioned. I would endorse the use of either the table that we put together. There is a community of lighting designers that is probably about 100 people or less in the Pacific Northwest area. We're a very small group of lighting experts. But I would endorse the use of those tables instead of the one that's been proposed, or have an additional technical group take a look at it.

I would also agree with, I'm sorry, I don't remember this gentleman's name, Jeff?, that we have been trying to make progressive steps to be able to meet that 30 percent reduction. But I disagree

that we shouldn't actually try to perfect it now. I think that small things like inserting one table for another is a very great way to try to put our state on the forefront. Not just pushing something through, but actually pushing something through that meets the standards that a group of technical experts have been able to assess. No discredit to the people who have already tried to take a stab at those tables; we've just been able to clarify it with some additional real project data.

There's one other point that I'd like to bring, which is Section 1513.3, for daylight zone control. I'd like to add an exemption, let's call it 4, point d. This would be for patient sleep rooms. This would simply not force us, for rooms that are actually larger than 300 square feet that do contain patients…sometimes we have ADA rooms where you have a patient, and if you don't have an exemption for them, they would be forced, if someone draws the blinds, that the lights might turn on and that could be a patient safety concern. That is the extent of my comments. Thank you.

Lauren MacLeod stated, in the interest of time, she would defer testimony and just support the statements made by Mary Clair Frasier and CJ Brockway.

John Hogan, City of Seattle

I've worked with the Seattle Department of Planning and Development for 28 years now on developing and implementing energy codes, working both in Seattle and at the state, regional and national levels. Thank you for the opportunity to testify today.

I wanted to start off to say, at the request of the Seattle chapter of the AIA…I spent three hours this morning provided training for 40 of their members on the 2009 Washington State Energy Code. I'd like to pass along some of the questions that I received from them when I was doing this training. Does the package that the Council published for public review achieve a 30 percent energy savings? I said no. Then why did the Council publish a package that did not achieve the 30 percent energy savings? Why does the energy code allow unlimited glazing for single family houses? This is not sustainable. Single family houses tend to be built in suburban areas that already have higher energy use for transportation. The unlimited glazing option should be deleted. Why not construct the building envelope right in the first place? Why should the energy code allow HVAC credits in lieu of constructing the building envelope efficiently in the first place? The building envelope will last much longer than the mechanical equipment.

Moving on, I wanted to offer a few general comments and then respond to some comments from others. The general comments; we commend the Council, the TAG, the staff, for their work on maintaining the Washington State Energy Code, per legislative direction. We support the proposed revisions with some additional modifications for energy savings. We strongly recommend that the Washington State Building Code Council adopt these revisions with additional modifications at this time.

For nonresidential and multi-family buildings, we support some additional increases in insulation. We've got some adjustments to the mechanical requirements, such as for economizers, and some adjustments to the lighting proposals.

For single family houses, we do not support having only climate zone for all of Washington State, thereby rolling back the requirements for climate zone 2. We recommend retaining separate criteria for climate zone 2.

In terms of general response to comments by others, I caught a nuance which perhaps Council members did not catch. I would note that a number of the proponents are speaking about the log numbers in their comments. They are speaking about the proposals submitted by March 1, not the material the Council put out for public review. They're setting up a straw man to comment on which is not germane to what the Council put out for public review. Many of the proposals were modified by the TAG. Let me give you an example. Tom Young mentioned log number 09-031. I submitted that proposal. My recommendation was for R-15 insulation for mass walls in nonresidential buildings in Western Washington. The proposal that you put out for public review was R-10 insulation. So Tom Young is suggesting eliminating any increases in insulation in mass walls even to R-10. Even the 2009 IECC requires R-11.4. So I would discount any testimony about log numbers, unless you verify that the Council put that proposal out for review without any modifications. Thank you.

Ventilation Code Testimony

Gary Nordeen, WSU Energy

Since we worked long and hard on the ventilation code, or VIAQ, I felt somebody should get up here and testify for it. I'd like to state my support for the proposed code changes to the mechanical and Ventilation and Indoor Air Quality codes. If approved, the proposed changes will incorporate VIAQ requirements into the International Mechanical Code, update ventilation rates to the standards of ASHRAE 62.2, which is a national standard, and simplify the compliance paths.

Please keep in mind that the proposal results in both the change in format and requirements. Education of building department staff and builders will be needed to ensure that code requirements are installed correctly and enforced by local jurisdictions. These are wholesale changes and you will be looking at a completely different book, so training is warranted. I'm not sure what role we can play in that. Thank you.

Don Jordan asked if by approving this proposal, it would do away with the VIAQ. Gary responded that was correct. Krista Braaksma clarified that would be under Option 1.

Historic Building Code Testimony

No one signed up to testify on the Historic Building Code.

Tim Nogler clarified that what was filed was a proposed repeal of that code, which has not been amended since 1991 and is out of step with the International Codes and causing some confusion.

There being no one further wishing to testify, the hearings were adjourned until October 5, 2009.

STAFF REPORT

Tim Nogler noted the next public hearing is scheduled for October 5, 2009, in Spokane, beginning at 9 a.m. in the City Council Chambers.

The Council has received a request from Representative Dammeier for additional economic information. I believe it was circulated to the members. He will be in attendance in Spokane, so the Council can discuss this further at that time. Tim also recommends holding another Economic Committee meeting prior to the October worksession to address some of the issues brought forward by Dammeier.

Tim also noted that the Council was called attend a Joint Administrative Rule Review Committee hearing on Thursday, October 1, at 2:30 p.m. This is a legislative body whose purpose is to review the economic impact statements that are filed with proposed rules. They have a couple of issues with the Energy Code economic impact statement. Jon Napier and Kristyn Clayton will both be in attendance at that meeting.

OTHER BUSINESS

Tom Kinsman stated he would like to receive better information on the rules of communication, clarifying the rules of communication between Council members and with outside parties. This stems from an e-mail discussion he held that was copied to all Council members, which could be construed as a closed door meeting with a quorum of the members. Tim replied that some form of training can be scheduled to address the Open Public Meetings Act.

Jon Napier announced that for the hearing in Spokane, the codes will be heard in the reverse order than they were today.

ADJOURNMENT

There being no further business, the meeting was adjourned at 4 p.m.