

**TO BE CONSIDERED BY THE CITY COUNCIL
CITY OF KERRVILLE, TEXAS**

SUBJECT: Discussion and Possible Action on a Report from the Planning and Zoning Commission Regarding Proposed Local Amendments to the City's Building Codes

FOR AGENDA OF: January 22, 2008 **DATE SUBMITTED:** January 15, 2008

SUBMITTED BY: Kevin Coleman  **CLEARANCES:**

EXHIBITS:

- Memo from Brian Whitton, Chief Building Official, dated October 19, 2007 - Overview of Building Code Amendments as originally presented to Council
- Memo from Brian Whitton, dated January 10, 2008 – Commentary on Proposed Building Code Amendments reviewed by Planning and Zoning Commission
- Memo from Stuart Barron, Water/Wastewater Manager, dated January 16, 2008 – Recommending the Continuation of the City's Backflow Prevention Program as currently implemented
- Overview of Building Code Amendments presented to Planning and Zoning Commission

AGENDA MAILED TO:

APPROVED FOR SUBMITTAL BY CITY MANAGER: 

Expenditure	Current Balance	Amount	Account
Required:	in Account:	Budgeted:	Number:
\$	\$	\$	

PAYMENT TO BE MADE TO:

REVIEWED BY THE FINANCE DIRECTOR:

SUMMARY STATEMENT

Council is considering the adoption of the 2006 editions of the International Building Code, the International Residential Code, the International Fire Code, the International Mechanical Code, the International Plumbing Code, and the International Energy Code. The purpose of each of these codes is to establish the minimum requirements needed to safeguard public health, welfare and safety within the building and structures in the City of Kerrville. With adoption of these codes, the City takes on the commitment to administer these codes through the permit and inspection process.

Each of these codes has a set of local amendments that tailor the code to accommodate local conditions. Typically, local amendments to the City's building codes are adopted within the ordinance adopting the base code.

These local amendments are meant to strengthen the codes where needed to match local needs and priorities. Locally adopted amendments should not be allowed to weaken the minimum standards outlined in the code. To do so would undermine the intent of the codes and the City's commitment to administer the code.

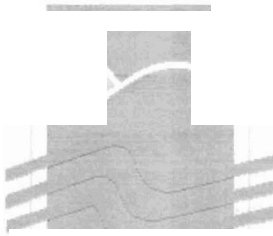
At its October 23rd, and again at its November 13th meeting, the City Council deferred action on the adoption of the updated codes and their proposed local amendments. The Council deferred action on the proposed ordinances pending a review of the applicability of those ordinances to existing buildings by the City's Planning and Zoning Commission.

The PZC has completed its review, and is scheduled to present its recommendations to the City Council. After that presentation, the Director of Development Services, the Chief Building Official and the City's Water Manager will discuss any amendment(s) recommended by the PZC, and whether those amendments meet the minimum standard provided in the base code.

RECOMMENDED ACTION

Discuss Code Amendments presented by the City's Planning and Zoning Commission, and

Direct the City Manager to present a set of ordinances, adopting the 2006 editions of the International Building Codes, and appropriate amendments, at a future Council meeting.



City of Kerrville
Department of Development Services
800 Junction Highway
Kerrville, Texas 78028-5069
830.792.8351 (O)
830.896-0517 (F)

MEMORANDUM

TO: Paul A. Hofmann, City Manager
Kevin Coleman, Director of Development Services

FROM: Brian Whitton, Chief Building Official

DATE: October 19, 2007

SUBJECT: Adoption of Building Codes

Over the past several months City staff has been working to produce ordinances to adopt the latest editions of the codes used by the Building Inspection Division and the Fire Marshal's office. The various building codes are updated and revised on three year cycles with the 2006 editions being the most current. The Code writing process involves thousands of people from across the United States representing a cross section of the entire construction industry including manufacturers, contractors, engineers, architects, building officials, testing laboratories, code writing agencies to name just a few. The latest editions incorporate the latest technology and materials along with clarifications and modifications which enhance the usability of the various codes. The codes do not necessarily become more strict with each code cycle but are revised to keep up with the ongoing changes that occur throughout the construction industry and to make them more user friendly. It is very important for the City of Kerrville to be using the most current codes as this is a factor in determining the City's ISO rating. The City's ISO rating affects everyone either positively or negatively depending on what decisions we make.

Draft ordinances, with local amendments, adopting the codes have been presented to the following groups with unanimous recommendations to Council these ordinances be adopted as written.

The Hill Country Home Builders Association: the International Residential Code, the International Building Code and the International Energy Conservation Code.

The Building Board of Adjustments and Appeals: the International Residential Code, the International Building Code, the International Fire Code, and the International Energy Conservation Code.

The Mechanical Board of Adjustments and Appeals: The International Mechanical Code and the International Energy Conservation Code.

The Plumbing Board of Adjustments and Appeals: the International Plumbing Code and the International Fuel Gas Code.

Many of the local amendments from the previous code adoption process have been deleted with the intent to simplify the ordinances as much as possible. The remaining local amendments have remained unchanged (with the exception of a few very minor changes) and have been utilized for many years.

Highlights of local amendments:

International Building Code.

- Contractor's license requirement (existing)
- Prohibition of wood shingles and shakes for roofing materials. (existing)
- Storm water drainage ordinance. (existing since 1995)

International Residential Code.

- Contractor's license requirement. (existing)
- Storm water drainage ordinance. (existing since 1995)
- Minimum requirements for concrete foundations. (existing)
- Prohibition of wood shingles and shakes for roofing materials. (existing)
- TCEQ mandated cross connection control program (existing)

International Energy Conservation Code.

- Delete reference to ICC Electrical Code and insert NEC Electrical Code.

International Mechanical Code.

- Mechanical Board rules. (existing)
- Fuel burning appliances and condensate disposal. (existing)

International Plumbing Code.

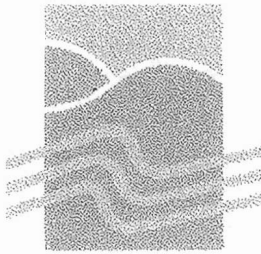
- Plumbing Board rules. (existing)
- TCEQ mandated cross connection control program (existing)

International Fuel Gas Code.

- Appeal to the Plumbing Board. (existing)
- Condensate disposal. (existing)

International Fire Code

- Establishing guidelines and specifications on the marking of fire lanes.
- Clarifying when strip centers and malls requiring key boxes.
- For propane, butane, LP-gas., the gallon amount was changed from a total of 2000 water gallons to a maximum 1000 water gallons and a total aggregate of 1000 water gallons.
- For fire apparatus access road turnarounds, gives specifics on what dimensions are required for dead end fire access roads.



City of Kerrville
Development Services
800 Junction Highway
Kerrville, Texas 78028-5069
830.792.8315 (O)
830.792.3850 (F)
brian.whitton@kerrvilletx.gov

MEMORANDUM

TO: Paul A. Hofmann, City Manager *PAH*
VIA: Kevin Coleman, Director of Development Services *KC*
FROM: Brian Whitton, Chief Building Official *BW*

DATE: January 10, 2008

SUBJECT: Analysis of additions and deletions presented to the Planning and Zoning Commission for consideration to be included in the ordinances to adopt the 2006 editions of the *International Building Code*, the *International Residential Code*, and the *International Plumbing Code*.

These proposed changes have been presented and discussed during meetings of the Planning and Zoning Commission over the past few weeks and a copy of these proposals is attached to this document.

The adoption of the most current editions of the *International Building Codes* is a process that occurs in towns and cities throughout the United States on a regular basis. In fact, the following cities have already adopted the 2006 editions of the International Building Codes: San Antonio, San Angelo, Fredericksburg, Laredo, Uvalde, and Universal City to name a few. These adoptions are done through ordinances which usually contain local amendments. Local amendments are used to add rules and regulations specifically tailored for special conditions or problems that need addressing by the "Authority Having Jurisdiction." They typically are used to increase the strength of the codes themselves when it is found that the minimum requirements of the codes are not sufficient to protect the public safety, health and welfare, which includes financial investments in building structures.

Building Codes are designed to be **minimum requirements**, which take into account economic issues, as well as safety and quality concerns. The following is from the first page of the *International Building Code*:

Section 101.3 **Intent.** The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations.

The Building Codes we use are adopted by the State of Texas as the minimum standards for all buildings in the state. Therefore, they should never be weakened with local amendments as this puts the City of Kerrville in conflict with state law. When cities do not carry out their duties to protect the public welfare in accordance with state and federal law, they become exposed to legal liability, which as we all know becomes quite expensive in certain situations.

In summation, it is important to remember the City of Kerrville will soon undergo an audit by the Insurance Services Organization (ISO). After this audit the City will receive a grade based on how well the city protects life and property through ordinances and enforcement of ordinances. The Building Codes adopted and the level of enforcement of these codes plays an important role in determining the city's grade.

Analysis of Proposed Amendments

Key:

- Code Citations are underlined.
- Proposed changes, additions, deletions under review by the Planning and Zoning Commission are in **bold**.
- Analysis of Proposed Amendments by Brian Whitton, Chief Building Official, are *italicized*.

Proposed Amendments to *the International Building Code*:

1. Section 105.2 Work exempt from permit.

Proposed change:

Add: sheetrock repairs. Add: electric water heaters.

Analysis of proposal:

*Section 105.2 **Work exempt from permit.***

This section is a list of items that do not require a permit. Item number 7 states: "Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work." Sheetrock repairs are considered finish work and as such are exempt from permits. They have never been required to be permitted and there is not a requirement for permits for sheetrock repairs to be found anywhere in any of the codes nor has there ever been a requirement in any building code. Therefore, this addition is not needed and should not be adopted.

All cities with a population of 5,000 or more are required by state law to adopt by ordinance one of the two state approved plumbing codes, either the Uniform Plumbing Code or the International Plumbing Code. These codes are the minimum standards for all plumbing throughout the State of Texas. These codes are to be enforced by state licensed plumbing inspectors who swear an oath to enforce all minimum standards of the plumbing codes and the requirements of the Plumbing License Law of the State of Texas. All water heaters are, in essence, miniature boilers and therefore are potential hazards. Many people throughout the world have been killed or maimed by improperly installed water heaters not to mention tremendous property damage to structures. Water heater explosions have leveled houses and other buildings and therefore are important items that require permits and inspections. Any city that exempts electric water heaters from permits has placed its plumbing inspectors in jeopardy of losing their licenses for not enforcing basic plumbing code requirements they swear an oath to enforce. Therefore, this proposed addition should not be adopted.

2. Section 105.2.2 Repairs.

"Application or notice to the Building Official is not required for ordinary repairs to structures, replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles. Such repairs shall not

include the cutting away of any wall, partition or portion thereof, the removal or cutting away of any structural beam or load bearing support, or the removal or change of any required means of egress, or rearrangement of parts of a structure affecting the egress requirements; nor shall ordinary repairs include addition to, alteration of, replacement or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring or mechanical or other work affecting public health or general safety." (Actual Code Language.)

Proposed change:

Delete: "the cutting away of any wall, partition or portion thereof."

Analysis of proposal:

It is important to remember state and federal asbestos laws govern demolition of commercial buildings or portions of commercial buildings including interior demolition of partitions. Asbestos surveys and asbestos abatement (if needed) are required as well as notification of the Texas Department of Health (TDH) prior to demolition. Also, it is crucial the Inspection Division verify any wall to be taken down is non-load bearing, does not effect the integrity of the structure (lateral bracing for example), and does not effect egress or fire safety issues (fire barriers, etc.) Therefore, this proposed deletion should not be adopted.

3. Section 304.1 Business Group B (occupancy type).

This section of the *International Building Code* is a listing of the types of businesses that are categorized as "B occupancies." "B" occupancies must meet code requirements that are unique to this group.

Proposed change:

Add: Small retail and wholesale (less than 5,000 sq. ft.)

Add: Small sales room (less than 5,000 sq. ft.)

Analysis of proposal:

Retail and wholesale occupancies and sales rooms are classified in the International Building Code as "M" or mercantile occupancies. They are not included in the "B" or business occupancy group. The following quote from the International Building Code Commentary explains the reasoning for this.

"The purpose of this chapter (Chapter 3: Use and Occupancy Classification) is to classify a building, structure or part thereof into a group based on the specific purpose for which it is designed or occupied. Throughout the code, group classifications are considered a fundamental principle in organizing and prescribing the appropriate features of construction and occupant safety requirements for buildings, especially general building limitations, means of egress, fire protection systems and interior finishes."

Simply stated, mercantile occupancies are regulated by a different set of rules based on use. Therefore, "M" occupancies should not be moved into the "B" group.

The previously adopted 2006 edition of the International Fire Code has the same classification categories as the International Building Code with retail and wholesale sales shown in the "M" or mercantile group.

4. Section 3406. Change of Occupancy.

This section describes the requirements for existing structures when the occupancy classification changes. If a building that is currently used as a barber shop ("B" occupancy) is sold to an investor for the purpose of opening a restaurant ("A" assembly occupancy) a change in occupancy has taken place and the new occupancy must meet the requirements for the restaurant use. This means restrooms, kitchens, dining areas, exits, and parking must meet the minimum requirements for the new occupancy type. Sizes of restrooms, number of toilet fixtures, kitchen grease hoods, sinks, floor drains, grease traps, emergency egress, fire suppression systems, fire alarm systems are a few of the mandatory requirements that must be addressed before the restaurant can open for business.

The following is one of the code sections that address changes in occupancy classification.

Section 3406.1 Conformance.

"No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancy or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancy. Subject to the approval of the building official, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use." (Actual code language.)

Proposed change:

Add Section 3406.5

Where change in occupancy does not increase the hazard level based on life and fire risk and the structure was constructed to then current codes, there shall be no requirement to upgrade the existing structure to newer or more stringent codes unless there is an existing health or safety hazard present.

Proposed change:

Add Section 3406.5.1

Minor alterations: Where a change in occupancy requires a minor alteration or interior addition to the existing structure no permit is required. Definition: A minor alteration or interior addition is herewith defined as the removal or replacement of floor coverings, painting, ceilings, and the interior non-

structural walls, not including demising or fire walls between tenant spaces, that do not require the addition of plumbing, mechanical equipment, fuel gas, or electrical components.

Proposed change:

Add Section 3406.7

Asbestos Inspections: Asbestos inspections shall not be required in buildings constructed after 1980.

Analysis of proposals:

Asbestos surveys, asbestos abatement, and the Americans with Disabilities Act (ADA) are federal and state laws that every community must comply with. Changes of occupancy and "minor alterations" as described above trigger these requirements. For example: A "B" (business occupancy) is changed into a restaurant. The new occupancy must have an asbestos survey and asbestos abatement if asbestos is found. Asbestos is found in ceiling tiles, floor coverings, the mastic used for floor coverings, sheetrock, sheetrock joint compound, attic insulation, pipe insulation and many other construction products.

It is a little known fact that asbestos is still mined by various countries of the world and asbestos is used in building products that are imported into this country. These building products are mistakenly installed in new buildings every day in the United States. It is for this reason asbestos surveys and asbestos abatement are required on buildings even if the building was just constructed. Any local amendment exempting asbestos surveys would place the City of Kerrville in the position of telling local contractors and building owners violation of state and federal law is not a problem, when in fact it would subject any contractor or owner to liability issues as well as stiff fines from state and federal agencies. All three proposed additions would fall into this problem area and should not be adopted.

Changes of occupancy are also subject to the Americans with Disabilities Act (ADA). This is federal and state law and is not open to consideration to be deleted with local amendments. All three proposed additions would be in conflict with the ADA laws and therefore should not be adopted.

The City of Kerrville has a designated fire district (the central city area-approximately 15 blocks) which places limitations on the types of materials that can be used for interior construction projects. This fact would present a problem if permitting requirements for "minor alterations and additions" were deleted by the proposed additions to the building code.

Changes in occupancy are subject to building code, fire code, mechanical code, electrical code, plumbing code, and health code requirements. (See explanation of Section 3406 Change of Occupancy above.) All three proposed additions would be in conflict with basic requirements for changes in occupancy and would be in

conflict with state law as they would weaken the building codes adopted by the state. Therefore, these three proposed additions should not be adopted.

It must be noted that a change in tenants in a building or space is not a change of occupancy classification and the building or space is not required to be brought up to all the requirements of the latest codes. Any existing space that does not undergo reconstruction of the interior is not required to meet the letter of the latest codes as long as there are no health or safety concerns.

For example: A given building has a new tenant move in. The building's electrical system was installed 40 years ago under the electrical code in effect at that time. The system is not in compliance with current electrical code requirements. However, it is determined through inspection the system is safe. Therefore, there would be no code requirement to upgrade the electrical system by installing a new system. All the codes (building code, mechanical code, fuel gas code, plumbing code, energy code, electrical code) make this point very clear. This is a long established tenet in building code history that deals with existing buildings. After all, it would make no sense to require every building in town to be "rebuilt" every time the latest editions of the building codes are adopted.

5. **Section 3409.3 Extent of Application.**

"An alteration of an existing element, space or area of a building or facility shall not impose a requirement for greater accessibility than that which would be required for new construction. Alterations shall not reduce or have the effect of reducing accessibility of a building, portion of a building or facility." (Actual code language.)

Proposed change:

Section 3409.3 Add: Nor shall a minor alteration or interior addition to an existing structure or tenant space require the upgrading of the remainder of the existing structure or tenant space to meet newer (current) codes. All work shall be confined to that specifically required for the minor alteration or interior addition to an existing structure.

Analysis of proposal:

The Americans with Disabilities Act (ADA) has requirements in conflict with the above proposed addition. For example: if an alteration or addition affects the accessibility to an area of primary function the route to the primary function area must be accessible. Accessibility requirements are state and federal law and must not be weakened by local amendments. Therefore, the proposed addition should not be adopted.

6. **Section 3410.3.2.**

Proposed change:

Delete reference-"IPMC". (International Property Maintenance Code)

Analysis of proposal:

*Chapter one, code section 101.4.5, **Property maintenance** states the following:
The provisions of the Property Maintenance Code shall apply.....*

This code section has been deleted from the International Building Code by way of a local amendment. This is in the draft ordinance to adopt the IBC. This means the Property Maintenance Code will not be in effect in the City of Kerrville and renders any reference to the IPMC in the code null and void. Therefore, the proposed addition is not needed and should not be adopted.

7. Section 3410.4.1 Structural analysis.

"The owner shall have a structural analysis of the existing building made to determine adequacy of the structural systems for the proposed alteration, addition or change of occupancy. The existing building shall be capable of supporting the minimum load requirements of chapter 16." (Actual code language.)

Proposed change:

Add: Unless the building's structure is not being changed, in which case no structural study is required.

Analysis of proposal:

There is no objection to this addition.

8. Section 3406 Change of Occupancy.

Proposed change:

Add: Section 3406.6 Public water systems. Public water system connections shall not require backflow prevention assemblies except where specifically called for by the TCEQ (Texas Commission on Environmental Quality) "rules and regulations for public water systems, 30 TAC chapter 290.47(i)". Double check valve assemblies, atmospheric vacuum breakers, or pressure vacuum breakers may be used in irrigation systems where no chemicals are applied by pump(s) in or through the irrigation system. Double check valve assemblies, atmospheric vacuum breakers, or pressure vacuum breakers shall be checked once every year by a qualified inspector and a written report prepared as directed in "30 TAC chapter 290.47(f)".

Analysis of proposal:

The International Plumbing Code (IPC) and the Uniform Plumbing Code (UPC) are the plumbing codes approved for use by the State of Texas and all plumbing in the state is required to comply with one of these codes.

The IPC and UPC consider irrigation systems to be "high hazard" installations and as such neither code allows double check valve assemblies to be used for irrigation systems. Double check valve assemblies are rated for "low hazard" installations only. Also, double check valve assemblies are notoriously unreliable and malfunction often. Irrigation systems typically have sprinkler heads housed in

depressions in the ground. Rain storms and irrigation systems provide water that washes over the ground or lawn. This water picks up contaminants such as bird droppings, feces from dogs, cats, deer and other animals, chemical and animal fertilizers, pesticides used in spraying lawns and trees, chemical weed killers, and anything else that would be on or in the ground. This contaminated water settles in the depressions that house the sprinkler heads creating a direct cross connection between potable water and toxic contaminated water. Improperly protected irrigation systems can and do allow harmful contaminants to enter the public water supply endangering the health of the citizens using the water system. This is documented fact and unfortunately occurs across the United States every day.

Atmospheric vacuum breakers (AVB's) and pressure vacuum breakers (PVB's) are rated for "high hazard" installations but are not rated for back pressure. Other constraints include mandatory requirements for heights of installation for the devices. Atmospheric vacuum breakers must be installed a minimum of 6 inches above the highest sprinkler head. Pressure vacuum breakers must be installed a minimum of 12 inches above the highest sprinkler head. In the hill country of Kerrville this creates a problem when installers do not pay proper attention to these requirements. Also, lawn service people install chemical fertilizer systems, both pump and non-pump systems, on irrigation systems without the knowledge of the Authority Having Jurisdiction thereby creating back pressure conditions that AVB's and PVB's are not rated for.

The International Plumbing Code states the following in section 608.16.5....where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer (RPZ).

Reduced Pressure Principle Backflow Prevention Assemblies (RPZ's) are the most reliable backflow device produced. RPZ's have a long track record of the highest quality of protection of public water systems throughout the world. RPZ's are rated for low and high hazard installations and are rated for back siphonage and back pressure. RPZ's are the best choice for irrigation systems and are required by the City of Kerrville's water manager for all irrigation systems in the City of Kerrville.

The City of Kerrville has a requirement for all new commercial facilities, occupancy changes in existing commercial facilities, and existing occupancies deemed actual or potential hazards to have RPZ's installed to protect the public water system even though a particular facility may not be readily identifiable as a "contamination hazard." Businesses move in and out of existing buildings and tenant spaces on a regular basis, one day a space may house a book keeping business, and the next day a photo lab or printing business. The City of Kerrville has no way to determine if an actual or potential hazard exists in these tenant changes and usually is not aware a change has taken place. For this reason RPZ's are a requirement. This

has been a requirement since the city adopted its TCEQ mandated cross-connection control program more than four years ago.

The City of Kerrville is required by state and federal law to protect the public water supply and has a great responsibility in doing so. Backflow events happen in Kerrville. For example: when a water main breaks, when fire pumps and fire hydrants are tested, when fires are fought using city water, when pump station pumps stop or malfunction backflow and/or back siphonage occurs.

There are many documented cases of backflow events where people have become ill and died from diseases such as typhoid and from chemical poisoning which have been introduced into the public water system through backflow events. The City of Kerrville cannot afford to be less than vigilant in protecting the public water system. Therefore, this proposed addition should not be adopted.

City of Kerrville Public Works Director, Charlie Hastings, and Water/Wastewater Manager, Stuart Barron, will have comments at a later date and can provide more details on Backflow problems and concerns.

Proposed changes to the *International Residential Code*.

9. Section R105.2 Work exempt from permit.

This section is similar to the same section found in the International Building Code. It is a list of items that do not require a permit. Item #6 states: Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work. Sheet rock repairs are considered finish work and there is not a requirement for permits for this type of work.

Proposed changes:

Add: "sheetrock repairs"

Add: "or electrically powered water heaters"

Analysis of proposals:

These proposed additions are identical to those proposed in Section 105.2 in the International Building Code and are not needed and should not be adopted for the same reasons as stated above. (See previous discussion.)

10. Section R105.2.2 Repairs.

Proposed change:

Delete: "the cutting away of any wall, partition or portion thereof."

Analysis of proposal:

This is identical to the addition proposed above for the International Building Code in Section 105.2.2. While the asbestos laws do not govern this type of demolition it

is still necessary for the Building Inspection Division to monitor the cutting away of walls in residences and therefore, this proposed addition should not be adopted.

11. Section R202 Definitions.

Section R202 is amended by adding the following definitions: Occupancy and occupancy classification.

Proposed change:

Section R202 Occupancy classification. Change "the occupancy classification is determined by the Building Official" to read "the occupancy classification is to be determined by the building use, zoning, city ordinances and confirmed to be in compliance by the Building Official."

Analysis of proposal:

The two definitions added to chapter two of the IRC (occupancy and occupancy classification) in the local amendments of the draft ordinance to adopt the IRC are not needed and should be removed from the ordinance. Therefore, the proposed addition is not needed and should not be adopted.

12. Section R401.3.1 Surface water diversion; prohibited activity.

This section is the City of Kerrville's 1995 storm drainage ordinance which outlines requirements for drainage for new residential construction. It is a local amendment listed in the draft ordinance to adopt the IBC and IRC.

Proposed change:

Delete entire section.

Analysis of proposal:

The Building Inspection Division does not find anything especially wrong with the existing language of the 1995 drainage ordinance. However, the language in the International Residential Code provides for the enforcement of drainage issues concerning new home construction even though the language is limited. The Building Inspection Division is not opposed to deletion of Section R401.3.1 to allow for further review at a later date if this is desired, but it is important to recognize that the City of Kerrville has significant drainage problems that have to be addressed.

13. Section R402.2 and R403.1

These sections deal with concrete foundation minimum requirements and have been deleted and substituted with the minimum requirements for residential slab foundations which have been in effect and utilized by the Building Inspection Division for at least twenty five years. These are the current requirements as adopted by ordinance and are merely being brought forward into the ordinance to adopt the 2006 International Residential Code. These requirements simplify the rules of the 2006 International Residential Code and are more user-friendly.

Proposed change:

It is recommended that this amendment be clarified and separated into foundation types. Footing design: "post tension, Monolithic." Foundation design: "post tension, Monolithic." Retaining wall. (other if applicable).

Analysis of proposal:

The language and charts included in this section in the draft ordinance to adopt the International Residential Code are understandable, user friendly and have been successfully used for many years. Therefore, there is no need to revise what is not broken. This addition should not be adopted.

14. Section M1411.3 Condensate disposal.

"Condensate from all cooling coils or evaporators shall be conveyed from the drain pan outlet to an approved place of disposal. Condensate shall not be discharged into a street, alley, or other area so as to cause a nuisance or hazard. The condensate from any heating system, air conditioning system, or any other source, shall not be discharged into the sanitary sewer. Condensate shall discharge to the exterior, an adequately sized French drain, or some other location approved by the Building Official." (Actual language from the draft ordinance to adopt the *International Residential Code*.)

Proposed change:

It is recommended that this amendment be clarified as to what an "adequately sized French drain, or some other location approved by the Building Official" would consist of. It is recommended that some sort of guideline be developed for "condensate, French drain" and or what would be considered to be an appropriate "other location" by the Building Official. Example: "X" tonnage of air conditioning discharges "X" amount of condensation therefore a "French drain" of "X" (dimension) is required. Or may discharge to "X" location with "X" amount of ground cover. The committee recommends that this amendment and section be given more time and attention so that more research may be done to provide a more informed recommendation.

Analysis of proposed recommendation:

Every building project in the City of Kerrville is unique. No two buildings have the same factors governing disposal of condensate. Sizes and numbers of air conditioning systems, amount of condensate produced, distances condensate piping must be laid, lot drainage requirements, soil types and ability of soil to lose or retain water are all factors that must be considered when disposing of condensate. The existing language of this amendment is flexible to allow the Building Inspection Division, the contractor, and the engineer in responsible charge to arrive at an appropriate solution for a project based on the individual needs of each building constructed. It is not possible to write specific requirements that would cover each and every construction project's unique condensate problems.

The existing language has been used for many years by the Building Inspection Division and has served its purpose well. Therefore, there is no need to modify this code section. The Code Section M1411.3 should remain as written in the draft ordinance to adopt the International Residential Code.

15. Section P2609.3.

This is a section from the local amendment included in the draft ordinance to adopt the IRC.

Proposed change:

Add: definition of “Atmospheric Vacuum breaker” (AVB)

Analysis of proposed addition:

The International Residential Code has a definition of atmospheric vacuum breaker in section P2902.3.2. Therefore, this addition is not needed and should not be adopted.

16. Section P2609.7(d)

This is a section included in the draft ordinance to adopt the IRC. “A customer who obtains potable public water from the public water system for use at a construction site shall install a reduced pressure principle backflow prevention assembly (RPZ).”

Proposed change:

Add: or a hose bibb with an “atmospheric vacuum breaker” (AVB) component.

Analysis of proposal:

Construction sites are high hazard uses with the potential for back pressure and back siphonage. Hose bibb AVB's are not rated for back pressure and are not suitable for protection of the city water supply at construction sites. They are easily disabled or removed. RPZ's are the only choice for this type of protection. This addition should not be adopted.

17. Section P2609.22.1 Right of entry.

This section is included in the draft ordinance to adopt the IRC. “A City employee may enter a customer’s property or facilities to inspect a cross connection, backflow prevention assembly, or piping. The right of entry is a condition of the City providing water service, directly or indirectly, to a customer’s property or facilities, whether within or outside the city limits, and is a condition of connection to the public water system.”

Proposed change:

P2609.22.1 Amend the first sentence: Right of entry. A city employee may enter a customer’s property or facilities during normal business hours or

with an appointment to inspect a cross-connection, backflow prevention assembly, or piping.

Analysis of proposal:

City employees would under almost every circumstance request entry during normal business hours. However, emergencies can happen at anytime and it could be necessary for city employees to call a customer to open a facility for inspection at other than normal business hours. There is no objection to amending the first sentence as long as an exception for emergencies is added.

Proposed changes to the *International Plumbing Code*:

18. Section 109.8(b)

This section is from the local amendments in the draft ordinance to adopt the 2006 *International Plumbing Code* and refers to the Plumbing Board of Adjustments and Appeals. "Conducting hearings on appeals. Within a period of ten (10) days from the filing of the appeal, the Board shall hear the appeal, together with the testimony of all parties concerned, and render a decision thereon within three (3) days thereafter."

Proposed change:

Add: If the Board is not convened within ten (10) business days after the city receives the written appeal, the applicant is automatically granted the appeal as requested.

Analysis of proposal:

Boards are routinely convened as soon as possible for the benefit of all concerned. However, there are circumstances when a Board might not be able to meet within the 10 day period. Members might be out of town and a proper quorum might not be possible. The Board, by law, may not waive a code requirement and there should not under any circumstance be a provision for automatic waiver or granting of an appeal. Therefore, this addition should not be adopted.

19. Section 608.13 Public water systems.

Proposed change:

Add: Public water system connections should not require backflow prevention assemblies except where specifically called for by the TCEQ "rules and regulations for public water systems, 30 TAC chapter 290.47(i)". Double check valve assemblies, atmospheric vacuum breakers, or pressure vacuum breakers, may be used in irrigation systems where no chemicals are applied by pump(s) in or through the irrigation system. Double check valve assemblies, atmospheric vacuum breakers, or pressure vacuum breakers shall be checked once every year by a qualified inspector and a written report prepared as directed in "30 TAC chapter 290.47(f)".

Analysis of proposal:

This proposed addition is identical to the one discussed in the proposed addition for Section 3406 in the IBC (see previous discussion) It is not acceptable for the same reasons and should not be adopted.

20. Section 608.18.4.

Proposed change:

Add: definition of "atmospheric vacuum breaker" (AVB)

Analysis of proposal:

The International Plumbing Code has a definition of atmospheric vacuum breaker in Section 608.13.6; therefore, this addition is not needed and should not be adopted.



City of Kerrville
Public Works
800 Junction Highway
Kerrville, Texas 78028-5069
830.792.8317 (O)
830.896.8793 (F)
stuart.barron@kerrvilletx.gov

MEMORANDUM

TO: Paul A. Hofmann, City Manager *PAH*
VIA: Charlie Hastings, Director of Public Works *CH*
FROM: Stuart Barron, Water/Wastewater Manager *SB*
DATE: January 16, 2008
SUBJECT: The City of Kerrville's Backflow Protection Program

In the past few weeks, there has been much discussion about Kerrville's backflow protection program. I am now ready to weigh-in on the topic and offer the following notes for your review.

The Texas Commission of Environmental Quality (TCEQ) mandates Public Water Systems limit their exposure to possible backflows. The way this is accomplished is to require the installation of a backflow protection device. The backflow protection device that is required is determined by the level of hazard that exists; with a double check protecting the lesser hazard and an air gap or Reduced Pressure Backflow Assembly (RPBA) protecting the highest hazard.

TCEQ has a limited list of high and low hazard connections (see attachment). The list is not inclusive, as it would be impossible to list every type of hazardous connection. Kerrville has evaluated the TCEQ potential hazards list and decided that due to man power limitations and no notice requirement when a building changes use, it would be in the best interest of Kerrville to require the most protective device to provide the best protection; thus the City of Kerrville requires an RPBA on all probable hazards.

As the Planning and Zoning Board has pointed out, Kerrville has more stringent requirements than the TCEQ minimums; but due to the protection versus the customers' cost of a new RPBA and yearly maintenance, it is in Kerrville's best interest to continue the use of RPBAs.

If Kerrville was not properly protected, contamination from backflows could occur whenever water pressure lessens in the system, or negative water pressure occurs. Kerrville's water system averages 50-60 main breaks a year (normal for a system Kerrville's size), producing negative water pressure in the system during each occurrence. I recommend Kerrville continue to maintain the highest level of protection possible by requiring RPBAs where applicable.

Figure: 30 TAC §290.47(i)

Appendix I: Assessment of Hazards and Selection of Assemblies

The following table lists many common hazards. It is not an all-inclusive list of the hazards which may be found connected to public water systems.

Premises Isolation - Description of Premises	Assessment of Hazard	Required Assembly
Aircraft and missile plants	Health	RPBA or AG
Animal feedlots	Health	RPBA or AG
Automotive plants	Health	RPBA or AG
Breweries	Health	RPBA or AG
Canneries, packing houses and rendering plants	Health	RPBA or AG
Commercial car wash facilities	Health	RPBA or AG
Commercial laundries	Health	RPBA or AG
Cold storage facilities	Health	RPBA or AG
Connection to sewer pipe	Health	RPBA or AG
Dairies	Health	RPBA or AG
Docks and dockside facilities	Health	RPBA or AG
Dye works	Health	RPBA or AG
Food and beverage processing plants	Health	RPBA or AG
Hospitals, morgues, mortuaries, medical clinics, dental clinics, veterinary clinics, autopsy facilities, sanitariums, and medical labs	Health	RPBA or AG
Metal manufacturing, cleaning, processing, and fabrication plants	Health	RPBA or AG
Microchip fabrication facilities	Health	RPBA or AG
Paper and paper products plants	Health	RPBA or AG
Petroleum processing or storage facilities	Health	RPBA or AG
Photo and film processing labs	Health	RPBA or AG
Plants using radioactive material	Health	RPBA or AG
Plating or chemical plants	Health	RPBA or AG

Pleasure-boat marinas	Health	RPBA or AG
Private/Individual/Unmonitored Wells	Health	RPBA or AG
Reclaimed water systems	Health	RPBA or AG
Restricted, classified or other closed facilities	Health	RPBA or AG
Rubber plants	Health	RPBA or AG
Sewage lift stations	Health	RPBA or AG
Sewage treatment plants	Health	RPBA or AG
Slaughter houses	Health	RPBA or AG
Steam plants	Health	RPBA or AG

Tall buildings or elevation differences where the highest outlet is 80 feet or more above the meter

Nonhealth

DCVA

Internal Protection - Description of Cross Connection

Assessment of Hazard

Required Assembly

Aspirators	Nonhealth†	AVB
Aspirator (medical)	Health	AVB or PVB
Autoclaves	Health	RPBA
Autopsy and mortuary equipment	Health	AVB or PVB
Bedpan washers	Health	AVB or PVB
Connection to industrial fluid systems	Health	RPBA
Connection to plating tanks	Health	RPBA
Connection to salt-water cooling systems	Health	RPBA
Connection to sewer pipe	Health	AG
Cooling towers with chemical additives	Health	AG
Cuspidors	Health	AVB or PVB
Degreasing equipment	Nonhealth†	DCVA
Domestic space-heating boiler	Nonhealth†	RPBA
Dye vats or machines	Health	RPBA
Fire-fighting system (toxic liquid foam concentrates)	Health	RPBA
Flexible shower heads	Nonhealth†	AVB or PVB

Heating equipment		
Commercial	Nonhealth†	RPBA
Domestic	Nonhealth†	DCVA
Hose bibbs	Nonhealth†	AVB
Irrigation systems		
with chemical additives	Health	RPBA
without chemical additives	Nonhealth†	DCVA, AVB, or PVB
Kitchen equipment - Commercial	Nonhealth†	AVB
Lab bench equipment	Health or Nonhealth†	AVB or PVB
Ornamental fountains	Health	AVB or PVB
Swimming pools		
Private	Nonhealth†	PVB or AG
Public	Nonhealth†	RPBA or AG
Sewage pump	Health	AG
Sewage ejectors	Health	AG
Shampoo basins	Nonhealth†	AVB
Specimen tanks	Health	AVB or PVB
Steam generators	Nonhealth†	RPBA
Steam tables	Nonhealth†	AVB
Sterilizers	Health	RPBA
Tank vats or other vessels containing toxic substances	Health	RPBA
Trap primers	Health	AG
Vending machines	Nonhealth†	RPBA or PVB
Watering troughs	Health	AG or PVB

NOTE: AG = air gap; AVB = atmospheric vacuum breaker; DCVA = double check valve backflow prevention assembly; PVB = pressure vacuum breaker; RPBA = reduced-pressure principle backflow prevention assembly.

*AVBs and PVBs may be used to isolate health hazards under certain conditions, that is, backsiphonage situations. Additional area of premises isolation may be required.

†Where a greater hazard exists (due to toxicity or other potential health impact) additional area protection with RPBAs is required.

INTERNATIONAL BUILDING CODE

105.2 **BUILDINGS:** *ADD: SHEETROCK REPAIRS*
ADD: IN PARAGRAPH AFTER WATER CLOSETS INSERT, "OR
ELECTRICALLY POWERED WATER HEATERS."

105.2.2 **REPAIRS:** *DELETE: "THE CUTTING AWAY OF ANY WALL, PARTITION*
OR PORTION THEREOF,"

304.1 *ADD: SMALL RETAIL & WHOLESALE (LESS THAN 5,000 SQ. FT.).*
ADD: SMALL SALES ROOM (LESS THAN 5,000 SQ. FT.).

3406.5 **CHANGE OF OCCUPANCY:** *ADD: WHERE CHANGE IN OCCUPANCY*
DOES NOT INCREASE THE HAZARD LEVEL BASED ON LIFE AND FIRE RISK AND THE
STRUCTURE WAS CONSTRUCTED TO THEN CURRENT CODES, THERE SHALL BE NO
REQUIREMENT TO UPGRADE THE EXISTING STRUCTURE TO NEWER OR MORE
STRINGENT CODES UNLESS THERE IS AN EXISTING HEALTH OR SAFETY HAZARD
PRESENT.

3406.5.1 **MINOR ALTERATIONS:** *ADD: WHERE A CHANGE IN OCCUPANCY*
REQUIRES A MINOR ALTERATION OR INTERIOR ADDITION TO THE EXISTING
STRUCTURE NO PERMIT IS REQUIRED.

ADD TO DEFINITIONS: (A MINOR ALTERATION OR INTERIOR ADDITION IS
HEREWITH DEFINED AS THE REMOVAL OR REPLACEMENT OF FLOOR COVERINGS,
PAINTING, CEILINGS, AND THE INTERIOR NON-STRUCTURAL WALLS, NOT INCLUDING
DEMISING OR FIRE WALLS BETWEEN TENANT SPACES, THAT DO NOT REQUIRE THE
ADDITION OF PLUMBING, MECHANICAL EQUIPMENT, FUEL GAS, OR ELECTRICAL
COMPONENTS.)

3406.6 **PUBLIC WATER SYSTEMS:** *ADD: PUBLIC WATER SYSTEM*
CONNECTIONS SHALL NOT REQUIRE BACKFLOW PREVENTION ASSEMBLIES EXCEPT
WHERE SPECIFICALLY CALLED FOR BY THE TCEQ "RULES AND REGULATIONS FOR
PUBLIC WATER SYSTEMS, 30 TAC CHAPTER 290.47(i)". DOUBLE CHECK VALVE
ASSEMBLIES, ATMOSPHERIC VACUUM BREAKERS, OR PRESSURE VACUUM
BREAKERS, MAY BE USED IN IRRIGATION SYSTEMS WHERE NO CHEMICALS ARE
APPLIED BY PUMP(S) IN OR THROUGH THE IRRIGATION SYSTEM. DOUBLE CHECK
VALVE ASSEMBLIES, ATMOSPHERIC VACUUM BREAKERS, OR PRESSURE VACUUM
BREAKERS SHALL BE CHECKED ONCE EVERY YEAR BY A QUALIFIED INSPECTOR
AND A WRITTEN REPORT PREPARED AS DIRECTED IN "30 TAC CHAPTER 290.47(f)".

3406.7 **ASBESTOS INSPECTIONS:** *ADD:* ASBESTOS INSPECTIONS SHALL NOT BE REQUIRED IN BUILDINGS CONSTRUCTED AFTER 1980.

3409.3 **ADD:** NOR SHALL A MINOR ALTERATION OR INTERIOR ADDITION TO AN EXISTING STRUCTURE OR TENANT SPACE REQUIRE THE UPGRADING OF THE REMAINDER OF THE EXISTING STRUCTURE OR TENANT SPACE TO MEET NEWER (CURRENT) CODES. ALL WORK SHALL BE CONFINED TO THAT SPECIFICALLY REQUIRED FOR THE MINOR ALTERATION OR INTERIOR ADDITION TO AN EXISTING STRUCTURE.

3410.3.1 SECTION 115 WAS DELETED BY THE CITY.

3410.3.2 *DELETE:* REFERENCE - "IPMC".

3410.4.1 **ADD:** UNLESS BUILDING'S LOAD BEARING STRUCTURE IS NOT BEING CHANGED, IN WHICH CASE NO STRUCTURAL STUDY IS REQUIRED.

INTERNATIONAL RESIDENTIAL CODE

105.2 **BUILDINGS:** *ADD:* SHEETROCK REPAIRS
*ADD: AFTER LAST PARAGRAPH AFTER WATER CLOSETS INSERT, "OR
ELECTRICALLY POWERED WATER HEATERS."*

105.2.2 **REPAIRS:** *DELETE:* "THE CUTTING AWAY OF ANY WALL, PARTITION
OR PORTION THEREOF,"

R401.3.1 *DELETE: ENTIRE SECTION.*

P2609.3 *ADD:* DEFINITION OF "ATMOSPHERIC VACUUM BREAKER" (AVB).

P2609.7(d) *ADD:* OR A HOSE BIBB WITH AN "ATMOSPHERIC VACUUM BREAKER"
(AVB) COMPONENT.

P2609.22.1 *AMEND FIRST SENTENCE: RIGHT OF ENTRY: A CITY EMPLOYEE MAY
ENTER A CUSTOMER'S PROPERTY OR FACILITIES DURING NORMAL BUSINESS HOURS
OR WITH AN APPOINTMENT TO INSPECT A CROSS-CONNECTION, BACKFLOW
PREVENTION ASSEMBLY, OR PIPING.*

INTERNATIONAL PLUMBING CODE

109.8.b *ADD:* IF BOARD IS NOT CONVENED WITHIN TEN (10) BUSINESS DAYS AFTER THE CITY RECEIVES THE WRITTEN APPEAL, THE APPLICANT IS AUTOMATICLY GRANTED THE APPEAL AS REQUESTED.

109.8.c *CHANGE:* SECOND PARAGRAPH 109.8.b "ADVISARY RESPONSIBILITY". THIS PARAGRAPH SHOULD BECOME **109.8.c**.

608.13 **PUBLIC WATER SYSTEMS:** *ADD:* PUBLIC WATER SYSTEM CONNECTIONS SHALL NOT REQUIRE BACKFLOW PREVENTION ASSEMBLIES EXCEPT WHERE SPECIFICALLY CALLED FOR BY THE TCEQ "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS, 30 TAC CHAPTER 290.47(i)". DOUBLE CHECK VALVE ASSEMBLIES, ATMOSPHERIC VACUUM BREAKERS, OR PRESSURE VACUUM BREAKERS, MAY BE USED IN IRRIGATION SYSTEMS WHERE NO CHEMICALS ARE APPLIED BY PUMP(S) IN OR THROUGH THE IRRIGATION SYSTEM. DOUBLE CHECK VALVE ASSEMBLIES, ATMOSPHERIC VACUUM BREAKERS, OR PRESSURE VACUUM BREAKERS SHALL BE CHECKED ONCE EVERY YEAR BY A QUALIFIED INSPECTOR AND A WRITTEN REPORT PREPARED AS DIRECTED IN "30 TAC CHAPTER 290.47(f)".

608.18.4 *ADD:* DEFINITION OF "ATMOSPHERIC VACUUM BREAKER" (AVB).