Making the Decision Regarding Fire Sprinklers: Homebuilders Who Say Yes!

As a former Economic & Community Development Director for one of the fastest growing counties in Tennessee, I believe that an analysis of tables used by the organized Association known as the National Association of Homebuilders (NAHB) can be valuable in understanding construction costs and how fire sprinklers fit into this table.

For background purposes, let me share with you some information about our county, which many refer to as "the last frontier." Cheatham County, Tennessee adjoins Nashville/Davidson County, and is experiencing growth that the University of Tennessee projects at 64%. Those numbers hold meaning to us, and in Cheatham County we worked to identify how we would **PLAN** to ensure that those numbers did not affect our quality of life. Fire protection is part of the Quality of Life equation, and as a result of proactive fire chiefs, our Joint Economic & Community Development Board realized this.

In August of 2006, Cheatham County became the first county in the state of Tennessee to pass Sprinkler Legislation that requires all new buildings (including single family homes in subdivisions of more than 3 lots) to install fire sprinklers. The Towns of Pleasant View and Ashland City had led the way with sprinkler legislation passed in 2001. As a result of education and actual demonstration, homebuilders joined with fire officials, building officials, water purveyors and policy makers to support this legislation. Growth has continued in Cheatham County – and in Pleasant View and Ashland City. Builders are not only still in business, they are taking pride in the neighborhoods they are building. Homebuyers have embraced the concept and have peace of mind in knowing that their families are safer as a result. Policy makers realize that the benefits are multi-dimensional and will impact the county forever. This impact goes beyond lives saved, to issues such as tax rates and fire protection budget line items. Fire sprinklers are an important **PART** of our fire protection plan and this part is funded by those who are moving to our area.

Cheatham County has been glad to share information with others who are considering sprinkler legislation, and would also like to share it with homebuilders, as they are an important stakeholder in the process. The NAHB is many times quoted as saying that the installation of fire sprinklers will put them out of business and also that homebuyers will not be able to afford a home.

As a direct result of this statement, I decided it was time for me to remove myself from my current role as Project Manager for Fire Team USA, and go back to my ECD days… to "walk a mile in their shoes" so to speak….afterall, my background is one that continually stresses the importance of **ALL** stakeholders. One can not build quality communities without good homebuilders, and I wanted to listen to their passionate pleas. Perhaps the builders in our area were different and Cheatham County was an exception to the rule. Or

perhaps, their perceptions and assumptions about fire sprinklers were not accurate, and actual information might help to articulate that. So, to begin my quest for facts, I started at the NAHB website. After scanning the site, it was quickly obvious that as a whole, sprinkler legislation is one of the key items that the NAHB works **AGAINST**. While this was not a surprise, I wondered why. The main reason to oppose such legislation is identified as money. They say it costs too much to install fire sprinklers.

I found a table that opened my eyes to the cost of building a house, and I must say helped me to further rest assured that the installation of fire sprinklers **WILL NOT** keep anyone from owning a home. I have scanned the table, saved directly off of the NAHB website and sourced as such and it is posted below.

NAHB WWW.NAHB.ORG

NATIONAL ASSOCIATION OF HOME BUILDERS

BUILDING A BALANCE: CONSTRUCTION COSTS FOR SINGLE-FAMILY HOME

Normal View

Construction Costs for Single-Family Unit
2004 Final National Results
September 15, 2005
Average: 2,800 square feet

I. Sale Price Breakdown	Average	% of Total
1. Finished Lot Cost (including financing cost)	$97,029	26.0%
2. Total Construction Cost	$192,846	51.7%
3. Financing Cost	$6,773	1.8%
4. Overhead and General Expenses	$21,469	5.8%
5. Marketing Cost	$7,067	1.9%
6. Sales Commission	$11,258	3.0%
7. Profit	$36,629	9.8%
8. Total Sales Price	**$373,349**	100.0%

II. Lot Cost	Average	% of Lot Cost
A. Raw Lot Cost	$48,769	50.3%
B. Development Costs:		
a. cost of processing approvals	$5,678	5.9%
b. site preparation	$6,930	7.1%
c. site improvement	$16,132	16.6%
-paving	$3,824	3.9%
-water and sewer	$5,031	5.2%
-erosion and sediment	$749	0.8%
d. impact analysis	$515	0.5%
e. water/electric hook-up	$1,698	1.8%
f. land dedication or fee in lieu	$92	0.1%
g. bonding/escrow fee	$479	0.5%
h. financing cost	$3,127	3.2%
i. tree preservation and planting	$1,650	1.7%
j. wetland preservation and planting	$2,272	2.3%
-value of unbuilt land	$1,879	1.9%
-cost of mitigation	$231	0.2%
k. value of land left unbuilt as green space or park	$432	0.4%
l. other costs	$9,255	9.5%
Total B - Development Costs (a...l)	$48,260	49.7%

Total Finished Lot A + B	$97,029	100.0%

III. Construction Cost Breakdown	Average	% of Construction Cost
Building Permit Fees	$1,629	0.8%
Impact Fee	$2,132	1.1%
Water and Sewer Inspection	$2,226	1.2%
Excavation, Foundation, and Backfill	$19,070	9.9%
Steel	$620	0.3%
Framing and Trusses	$41,014	21.3%
Sheathing	$2,775	1.4%
Windows	$6,129	3.2%
Exterior Doors	$1,768	0.9%
Interior Doors and Hardware	$4,607	2.4%
Stairs	$1,119	0.6%
Roof Shingles	$4,256	2.2%
Siding	$6,875	3.6%
Gutters and Downspouts	$478	0.2%
Plumbing	$10,127	5.3%
Electrical Wiring	$6,591	3.4%
Lighting Fixtures	$1,690	0.9%
HVAC	$7,133	3.7%
Insulation	$2,623	1.4%
Drywall	$9,522	4.9%
Painting	$6,961	3.6%
Cabinets and Countertops	$12,670	6.6%
Appliances	$2,475	1.3%
Tiles and Carpet	$8,188	4.2%
Trim Material	$4,831	2.5%
Landscaping and Sodding	$5,038	2.6%
Wood Deck or Patio	$2,021	1.0%
Asphalt Driveway	$2,413	1.3%
Other	$15,865	8.2%
Total	**$192,846**	**100.0%**

The NAHB table prompted my mind to go a step further. I called one of our local builders and asked him to meet with me to discuss the NAHB assumption. He agreed to the meeting, and I shared the table found on the NAHB website. My question was two-fold, one – would he allow me to see those numbers for a real house built in Pleasant View and two- could I share that information. His response was yes to both questions and the tables below (following the NAHB template) show real numbers for a home constructed in Pleasant View, TN that **include** fire sprinklers. As you will note….the fire sprinklers amount to 1.3% of the construction costs of the home.

Building a Balance: Construction Costs for Single-Family Home

Construction Costs for Single-Family Unit
Lot 107 Pleasant View Village
284 Augusta Avenue
September 15, 2007
2,186 square feet
2 bedroom, 3 bath

I. Sale Price Breakdown	**Average**	**% of Total**
1. Finished Lot Cost (including financing cost)	$33,000	13.4%
2. Total Construction Cost	$176,376	71.7%
3. Financing Cost	$6,989	2.8%
4. Overhead and General Expenses	$0	0.0%
5. Marketing Cost	$1,250	0.5%
6. Sales Commission	$7,377	3.0%
7. Profit	$20,908	8.5%
8. Total Sales Price	$245,900	100.0%

II. Lot Cost	**Average**	**% of Total**
A. Raw Lot Cost	$33,000	100.0%
B. Development Costs:	$0	0.0%
a. Cost of processing approvals	$0	0.0%
b. Site preparation	$0	0.0%
c. Site improvement	$0	0.0%
- paving	$0	0.0%
- water	$0	0.0%
- erosion and sediment	$0	0.0%
d. Impact analysis	$0	0.0%
e. Water/electric hook-up	$0	0.0%
f. Land dedication or fee in lieu	$0	0.0%

g. Bonding/escrow fee	$0	0.0%
h. Financing cost	$0	0.0%
i. Tree preservation and planting	$0	0.0%
j. Wetland preservation and planting	$0	0.0%
- value of unbuilt land	$0	0.0%
- cost of mitigation	$0	0.0%
k. Value of land left unbuilt as green space or park	$0	0.0%
l. Other costs	$0	0.0%
Total B - Development Costs (a…l)	$0	0.0%
Total Finished Lot A+ B	**$35,000**	**100.0%**

III. Construction Cost Breakdown	**Average**	**% of Total**
Building Permit Fees	$4,315	2.4%
Impact fee	$3,750	2.1%
Water & Utility Fees*	$8,137	4.6%
Excavation, Foundation, and Backfill	$7,147	4.1%
Termite Shield	$184	0.1%
Framing and Trusses	$26,734	15.2%
Firewall	$0	0.0%
Windows	$8,007	4.5%
Exterior Trim	$1,919	1.1%
Roof	$5,653	3.2%
Brick, Siding & Mortar	$24,513	13.9%
Plumbing	$7,008	4.0%
Electrical Wiring & Lighting Fixtures	$8,969	5.1%
Fire Sprinklers*	$2,343	1.3%
HVAC	$12,781	7.2%
Insulation	$2,634	1.5%
Drywall	$6,553	3.7%
Painting (interior & exterior)	$9,034	5.1%
Cabinets and Countertops	$9,600	5.4%
Appliances	$2,439	1.4%
Carpet, Tile & Hardwood	$5,453	3.1%
Interior Trim	$6,952	3.9%
Hardware	$1,639	0.9%
Landscaping and Sod	$1,704	1.0%
Garage floor, Driveway & Porches	$5,191	2.9%
Garage Door	$715	0.4%
Alarm System	$532	0.3%
Other	$2,471	1.4%
Total	**$176,376**	**100.0%**

* The upsize of the residential meter from 3/4" to 1" because of the fire sprinkler is an additional cost of $200 on the water utility fees.

Building a Balance: Construction Costs for Single-Family Home

Construction Costs for Single-Family Unit
Lot 25 Pleasant View Village
159 Augusta Avenue
September 15, 2007
2,139 square feet
3 bedroom, 3.5 bath

I. Sale Price Breakdown	**Average**	**% of Total**
1. Finished Lot Cost (including financing cost)	$20,000	8.3%
2. Total Construction Cost	$176,022	73.4%
3. Financing Cost	$10,941	4.6%
4. Overhead and General Expenses	$0	0.0%
5. Marketing Cost	$1,250	0.5%
6. Sales Commission	$7,197	3.0%
7. Profit	$24,490	10.2%
8. Total Sales Price	$239,900	100.0%

II. Lot Cost	**Average**	**% of Total**
A. Raw Lot Cost	$20,000	100.0%
B. Development Costs:	$0	0.0%
a. Cost of processing approvals	$0	0.0%
b. Site preparation	$0	0.0%
c. Site improvement	$0	0.0%
- paving	$0	0.0%
- water	$0	0.0%
- erosion and sediment	$0	0.0%
d. Impact analysis	$0	0.0%
e. Water/electric hook-up	$0	0.0%

f. Land dedication or fee in lieu	$0	0.0%
g. Bonding/escrow fee	$0	0.0%
h. Financing cost	$0	0.0%
i. Tree preservation and planting	$0	0.0%
j. Wetland preservation and planting	$0	0.0%
- value of unbuilt land	$0	0.0%
- cost of mitigation	$0	0.0%
k. Value of land left unbuilt as green space or park	$0	0.0%
l. Other costs	$0	0.0%
Total B - Development Costs (a…l)	$0	0.0%
Total Finished Lot A+ B	**$20,000**	**100.0%**

III. Construction Cost Breakdown	**Average**	**% of Total**
Building Permit Fees	$3,311	1.9%
Impact fee	$3,750	2.1%
Water & Utility Fees*	$8,593	4.9%
Excavation, Foundation, and Backfill	$5,585	3.2%
Termite Shield	$127	0.1%
Framing and Trusses	$23,253	13.2%
Firewall	$4,104	2.3%
Windows	$11,802	6.7%
Exterior Trim	$1,156	0.7%
Roof	$3,011	1.7%
Brick, Siding & Mortar	$19,159	10.9%
Plumbing*	$8,920	5.1%
Electrical Wiring & Lighting Fixtures	$10,659	6.1%
Fire Sprinklers *	$2,242	1.3%
HVAC	$9,063	5.1%
Insulation	$1,945	1.1%
Drywall	$7,839	4.5%
Painting (interior & exterior)	$11,104	6.3%
Cabinets and Countertops	$7,640	4.3%
Appliances	$1,459	0.8%
Carpet, Tile & Hardwood	$10,959	6.2%
Interior Trim	$11,836	6.7%
Hardware	$1,207	0.7%
Landscaping and Sod	$394	0.2%
Garage floor, Driveway & Porches	$3,318	1.9%
Garage Door	$740	0.4%
Alarm System	$507	0.3%
Other	$2,341	1.3%
Total	**$176,022**	**100.0%**

* The upsize of the residential meter from ¾" to 1" because of the fire sprinkler is an additional cost of $200 on the water utility fees.

In addition to the Fire Sprinkler line item, another line item to note on both of our local tables as well as the one shown on the NAHB website is **PROFIT** for the homebuilder because that is where the question can be answered regarding the homebuilder being able to afford it. What conclusions should we draw? Again, I believe I am reminded by actual facts of why this argument is not an argument. Using the NAHB template, one can see profits average around 10%, while Fire Sprinklers are a consistent 1.3% . I believe that a 1.3% item is not only affordable, but one of the best deals in these homes!In conclusion, I offer the following:

- Fire sprinklers can be installed for the projected percentage offered in Home Fire Sprinkler Coalition material.
- When analyzed, it is easy to answer the question posed by NAHB regarding costs. We used their table, the facts speak for themselves.
- When asked, homeowners in these respective areas DO NOT have any idea what the fire sprinkler system cost that is functional in their homes. They also can not tell you what the HVAC, plumbing, etc. cost either.

You will note that I left the "Fire Sprinklers Save Lives" message out of my conclusion bullets. It's not that it's not always at the top of my list, it's just that I felt like for the sake of this factual quest, it did not have a place at the table. Many times I have listened as NAHB reps have stated that we (as fire sprinkler advocates) play upon the emotions and avoid the facts. I welcomed this quest that would focus on nothing but numbers, and now I look forward to sharing the facts that were found with others. This helps us complete the picture.

Some say that homebuilders can't afford fire sprinklers. I ask you this, Can your community afford **NOT** to have them? What about the families who will be your new neighbors and live in the new homes built? What about your firefighters who stand prepared to protect these homes?

Respectfully submitted,

Vickie Pritchett
Fire Team USA
Project Manager
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