New Urbanism & The Fire Service

• November 2007 - CNU initiated contact with fire service personnel to request a dialog about fire code provisions impacting street design.
• Interest in dialogue concerning street design and emergency vehicle access
• Rocky Start – distrust, battle wounds, project disappointments, real or imagined slights
• Though not extensive as in 2008 and 2009, hopefully the dialogue is continuing.
New Urbanism & The Fire Service

• New Urbanism has several goals and this list is not comprehensive and is not intended to imply representation of this interest group. These points are based on the presenter’s understanding of New Urbanism and its goals.

• Reduced street widths in order to create more walkable, bike friendly, and sustainable communities.

• Reduction in the pace of urban expansion by creating greater density in urban cores.
New Urbanism & The Fire Service

• Reductions in, or limiting of the creation of new, impervious cover within existing and new developments.
• Reduced traffic speeds with improvements in traffic pattern effectiveness by the design and use of narrower street sections along with improvements in connectivity.
• Maintaining or improving fire and life safety by reducing traffic injuries and deaths along with improving in-situ fire safety features.
• Communications is essential in working with developers and planners desiring to use new urbanist community design techniques.

• Apparatus turning radii need to be accounted for in new street designs and restructuring of existing streets.

• Mixing new urbanist approaches with that used in traditional neighborhood development can cause problems – narrow streets without adequate turning radii and/or connectivity.
Increased Development Density

- Private streets and coordination with land planners and transportation engineers.
- Condominium style use of land, multiple single-family residences on large lots, infill development, driveways versus streets, decreased side-yard setbacks.
- Podium or Pedestal Construction, Vertical Mixed Use.
- Increasing use of high-rise construction for greater density, views, common amenities.
- Changing the landscape and the skyline for FDs accustomed to wide streets, single-family homes, open land, cul-de-sacs, and automobile centered transportation.
Driveways And Streets
Narrow implies difficult access to almost all firefighters. AFD Engine 21 is one of our most maneuverable apparatus.
Quint Apparatus
Podium/Pedestal Construction
And Fire & Life Safety

25th Street at Pearl Street, Austin
Podium/Pedestal Construction
And Fire & Life Safety

3807 S. Congress Avenue, Austin
Downtown Austin
High Rise Issues
Downtown Austin
High Rise Issues
Downtown Austin High Rise Issues

- Small floor plate buildings on small blocks or portions of blocks. Impacts smoke control and separation of exits per NIST recommendations.
- Some designs require hardening of exit enclosures.
- Firefighter access elevators – design intent and impact on floor layout, usefulness of elevator arrangement during fire operations.
- Possible occupant egress (occupant-controlled evacuation) elevator in an high rise in preliminary design.
High Rise Issues
FF Access Elevators
High Rise Issues
FF Access Elevators
Graphic By Carl Wren, Austin Fire Department

39' 1/4"
Graphic By Carl Wren, Austin Fire Department
Phased Development, Street Continuity
Phased Development,
Street Continuity
Sometimes there are valid topological or environmental reasons to change plans for connectivity. Sometimes plans are changed to appease local or neighborhood concerns at the expense of the overall mobility of the city.
Ridgeline complex is >2700' long.
Near downtown block lengths ~300’

~1200 feet
In Contrast to Increased Density of Development, Concurrent and Contrasting Issues Related to the Wildland Urban Interface
Wildfires are inevitable throughout most of California. But the losses to life and property from these fires can be minimized by using building construction methods that reduce the likelihood of building ignition in conjunction with, maintaining defensible space to reduce the severity of potential wildfire exposure.
California State
FM WUIC Issues
(Ref. 1)

The three primary components required to reduce interface fire losses are: 1) building construction methods that reduce the hazard of building ignition, 2) “Defensible Space” to reduce hazardous vegetation around houses and reduce the potential severity of wildfire exposure, and 3) identification of areas where there is a significant risk of interface fires and a history of such disastrous losses.
The most important step in mitigating interface fire hazards is building construction that reduces the risk of building ignition. This is especially true for existing buildings with old shake or shingle wood roof covering that is not fire-retardant-treated by the manufacturer and doesn’t have at least the “Class C” fire classification....

The second most important step in mitigating interface fire hazards is maintaining the “Defensible Space” that has been required by law in areas protected by CALFIRE since the 1960’s.
Wild Fire Realities

• Approximately 10 years of persistent draught with occasional reprieves, sometimes in the form of flooding (as experienced 10/31/2013).

• A populace accustomed to easy availability of water for irrigation.

• Limited understanding of the hazards by the public and by some structural firefighters.

• Major wildfire seasons throughout the West and Southwest in recent years.

• Six or more significant regional fires with structure losses in 2011.
Challenges to Adoption of a Wildland Urban Interface Code

• Concerns from other City of Austin staff
  – Do not see how the code could be applied as a “one size fits all”
  – Wildlife issues (habitat)
  – Erosion and sediment control require some dead organic material to remain on the ground
  – Water quality processes require some dead material to remain
  – Multiple boards and commissions need to have input (see the next slide)
  – Each of the affected boards has stakeholder meeting prerequisites and posting requirements that will likely impact the timeframe for adoption
Additional Adoption Challenges

- Impacted Boards and Commissions identified by members of the City staff
  - The Planning Commission will need to agree/approve any urban design impacts from the application of the code
  - The Environmental Board will need to review the code and amendments for environmental impacts including impacts related to drainage
  - The Parks Board will need to look at the impacts from any vegetation management on lands managed by the Parks and Recreation Department
  - The Urban Forestry Board will need to review the impact on public trees along rights-of-way and in parks
  - The Scientific Advisory Board will need to review the code and amendments for impacts to preserve lands (a county level board related to preserve lands programs including BCP Lands)
  - The Building and Fire Code Board of Appeals will need to review the code and amendments for impacts to building and occupant safety and coordination with the building code and fire code
  - The Public Safety Commission will need to look at the impact of the code and amendments on AFD and public safety
References