

MEMORANDUM

March 2, 2009

TO: Public Safety Committee
Transportation, Infrastructure, Energy and Environment Committee

FROM: Minna K. Davidson, ^{MKD} Legislative Analyst

SUBJECT: Executive Regulation 29-08, *Fire Safety Code – Fire Department Apparatus Access and Water Supply*, continued

The following individuals are expected to attend:

Richard Bowers, Interim Fire Chief, Montgomery County Fire and Rescue Service (MCFRS)
Michael Love, Chief, Division of Community Risk Reduction Services, MCFRS
Assistant Chief Michael Donahue, Deputy Fire Marshal, MCFRS
Dr. Royce Hanson, Chairman, Montgomery County Planning Board,
Maryland National-Capital Park and Planning Commission (M-NCPPC)
Lawrence Cole, Highway Coordinator, Transportation Division, M-NCPPC
Catherine Conlon, Supervisor, Development Review Division, M-NCPPC
Gene von Gunten, Acting Manager, Well and Septic Section, Department of Permitting Services (DPS)

January 29 PS/T&E Committee Review

The Committees began their review of proposed Regulation 29-08 on January 29. The Committees were concerned that the road requirements in the proposed regulation had been separated from the Road Code, and that the Council was being asked to review the proposed regulation after the Council's action on the Road Code. The Committees were especially concerned that the clear width requirements in the proposed regulation would conflict with narrower road widths that were approved as options in the Road Code.

The Committees were also concerned about the impacts of the requirements for residential development in non-hydranted areas to include easements for underground cisterns, and asked for a more detailed discussion of the easement requirements. In particular, the Committees felt that the proposed requirement for an easement for residential development of more than one dwelling unit was excessive, and asked MCFRS to consider whether the threshold number of units could be increased.

When asked whether they would recommend approval of the proposed regulation, M-NCPPC staff said that they did not object to the regulation because the performance-based standards for fire apparatus access allow for alternatives to prescriptive road requirements, but that since the Fire Marshal will have discretion in approving alternatives to prescriptive requirements, only experience will show whether the regulation will work at counter purposes to the Road Code.

The Committees requested that after the Council acts on the regulation, the Council be advised periodically about MCFRS' discretion in the use of performance-based design, including a candid discussion about any conflicts between fire safety and other standards during development review of projects, and how those conflicts are resolved.

Additional Information

Following the January 29 worksession, Council staff asked staff from MCFRS, M-NCPPC, and DPS to respond to several questions to clarify the requirements in the proposed regulation. Council staff directed each question to the agency (or agencies) most appropriate to respond, but also invited the agencies to comment on any questions not specifically directed to them. The combined responses are attached on © 1-8.

March 4 Worksession

For the March 4 worksession, MCFRS staff will present additional background and more detail about the proposed regulations. A briefing outline is attached on © 9-37. Following the MCFRS presentation, the Committees will review the responses from the three agencies, and discuss the Council staff recommendations and issues raised below.

Road Code Issues

Council staff recommends the following amendments to the regulation to minimize the possibility that the regulation will work in opposition to the Road Code.

1. In their response to Question 3 (© 2), M-NCPPC says that MCFRS encouraged the County to adopt NFPA 1 because it would enable MCFRS to be more flexible than the State in handling waivers from the Fire Safety Code. In M-NCPPC's view the proposed regulation would permit, but not require this flexibility.

Council staff agrees that this is a key issue. Section 11 of the proposed regulation says that the alternative application of performance-based design applies to any fire department apparatus access requirement identified in the regulation, but Council staff remains concerned that this section does not rule out the possibility that the Fire Marshal could "veto" a development with proposed narrow roads even if the 20-foot clear width could be achieved through performance-based design alternatives.

Council staff recommends adding the following language (shown with underlines) to Section 11 to address this issue:

Section 11. Alternative Application. The alternative application of performance-based design, as specified in Chapter 5 of NFPA 1, Uniform Fire Code, applies to any fire department apparatus access requirement identified in this Regulation. Performance-based design is the preferred application in all cases. It is the intent of this regulation to administer in a manner consistent with Chapter 49 of the Montgomery County Code and its executive regulations.

2. To clarify that the minimum interior and exterior turning radii for fire department apparatus access only apply **at turning points** on fire department apparatus access routes, **Council staff recommends the following addition to Section 5 of the regulation.**

Section 5. Minimum and Maximum Turning Radii. The minimum interior turning radius for fire department apparatus access is 25 feet. The minimum exterior turning radius for fire department apparatus access is 50 feet. This is only required at turning points on fire department apparatus access routes. Performance-based approval of alternative turning radii may be allowed if apparatus movement into opposing lanes of traffic is minimized and unrestricted fire department apparatus access is maintained.

The following issues were raised in M-NCPPC's responses to the Council staff questions. Discussion of these issues may result in requests for additional amendments to the proposed regulation.

3. Council staff is concerned that the performance-based approach leaves so much to the discretion of the Fire Marshal that a development applicant may have little guidance about what may be expected before the actual development review, and that the need for so much case-by-case review may increase the length and complexity of the development review.

In the responses to Questions 2 and 3 (© 1-2), M-NCPPC staff said that they asked MCFRS to incorporate alternatives for certain standard situations and a list of standard waivers into the regulation, but MCFRS was not willing to do so. While the proposed regulation states, in Section 12, that the Fire Marshal will issue administrative interpretations to clarify recurrent design issues that are not specifically addressed in the regulation, it is unclear how soon those interpretations would be available or how helpful they would be.

Which standard situations or waivers did M-NCPPC think should be addressed in the regulation? Why is MCFRS reluctant to include them? Would Fire Marshal interpretations address these issues in a timely and thorough manner?

4. In their response to Question 6 (© 3), M-NCPPC staff said that while the proposed regulations do not require additional pavement for public roads, they could be revised to promote having less pavement. **What kinds of pavement reduction measures could be added? What would be MCFRS' position on adding them?**

Water Supply Issues

The Committees were concerned about the impacts of the requirements for underground cistern easements on in the Agricultural Reserve. The response from MCFRS staff to Question 15 (© 5) says that they will try to avoid easements in the Agricultural Reserve as much as possible.

Council staff would note that in view of the Council's general policies to encourage farming in the Agricultural Reserve, a requirement that would make it more difficult to develop land there would not be inconsistent with the Council's overall goal. At the same time, however, requiring a developer to provide an easement that might possibly increase lot size but may not ultimately be used is problematic, even if MCFRS intends to abandon unused easements at a later date.

The proposed regulation is intended to require that all development in non-hydranted areas must be not more than one mile travel distance on a fire department apparatus access route from an NFPA compliant static water source. If a new residential subdivision of more than one dwelling unit is not within that distance, it must provide an easement for an underground cistern. The cistern, if needed, would be purchased and installed through a County CIP project. New non-residential development that is not within the one mile distance must install a new, or upgrade an existing water supply. A map provided by MCFRS shows the areas with static or municipal (including WSSC) water supplies, and the areas where additional water supplies are needed (© 36.)

1. Council staff recommends the following amendments to the water supply section of the regulation to clarify that the water supply requirements for non-hydranted areas apply only if new development is more than one mile from an existing water supply or easement. (Additions are shown with underlines. Deletions are shown with brackets.)

Section 10(b)

In non-municipally supplied areas, static water sources compliant with NFPA 1142, Water supplies for Suburban and Rural Firefighting, must be sited not more than one mile travel distance along fire department apparatus access routes. If an acceptable water supply [is not available] or easement for an underground cistern does not exist within one mile travel distance from the furthest part of the subdivision at the time of development:

1. Any [R.]residential [development] subdivision of more than one dwelling unit must dedicate an easement along the fire department apparatus access

route to MCFRS that is appropriate in size for the grading and installation of an underground cistern.

2. Non-residential development must install a new, or upgrade an existing water supply, that is acceptable to the Fire Marshal.
2. The Committees asked MCFRS to reconsider the threshold of more than one dwelling unit for the easement requirement for residential subdivision. The MCFRS response to Question 25 (© 8) indicates that MCFRS and M-NCPPC are currently discussing this issue.

Council staff's recommended amendments to Section 10 would limit the burden of the easement requirement to sites where an easement would be needed to meet the one mile standard.

Overall Council staff recommendation: Request that MCFRS amend the regulation as recommended above, and with any additional changes identified by the Committees, and that the Executive re-issue the regulation and re-number it as 29-08AM to indicate that it was amended after transmittal to the Council. Recommend approval with the requested amendments. A draft approval resolution is on © 55.

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QUESTIONS

Regulation 29-08, Fire Safety Code – Fire Department Apparatus Access and Water Supply

General

1. **MCFRS:** How does Regulation 29-08 relate to the current State Fire Safety Code? The current County Fire Safety Code? Which provisions of the regulation are the same as in the current State and County Fire Codes? Which are different?

MCFRS response: Regulation 29-08 is intended to be a consolidation of current State Fire Safety Code, County Fire Safety Code and the regulations adopted there under as they apply to fire department vehicular access and firefighting water supply. The provisions that differ from strict interpretation of code provide better defined parameters of performance based design for both road design and water supply.

2. **M-NCPPC:** If the requirements in Regulation 29-08 conflict with development design standards, which rules take precedence?

M-NCPPC response: We would generally expect the requirements in the proposed regulations to take precedence over any development design standards that are not specifically required by another law or regulation.

If a conflict occurs between requirements of law, they must be worked out between the agencies who have the authority to implement the specific laws using any waiver provisions available to either one. As part of the Development Review Committee process, other agencies can give input but have no authority over the resolution of the conflict.

If the conflict is between the requirements of these regulations and a non-regulatory design standard, the NFPA-1 requirements and these regulations take precedent. These regulations would give the Fire Marshall or designee authority to approve non-prescriptive designs for fire department apparatus access (Section 11). Other agencies can give input, but have no authority over their decision. The Planning Board requested that FRS incorporate alternatives for certain situations into the regulations rather than handling everything case by case, but FRS feels there are too many variables involved in the ultimate decisions to allow this.

The Alternative Application provisions do not apply to the requirements for cisterns under Section 10. The Planning Board stated that waivers of this requirement should be possible in certain smaller residential lot situations, but FRS does not support this.

Road Code

3. **M-NCPPC & MCFRS:** How does the 20' clear path requirement in the proposed regulation square with the following guidance, in the Smart Transportation Guidebook published late last year jointly by the Pennsylvania and New Jersey Departments of Transportation, (<http://www.dvrpc.org/asp/pubs/reports/08030A.pdf>) which states:

9.4.2 Context Sensitive Streets and the Fire Code

An obstacle to the construction of context sensitive streets has been the adoption of the National Fire Code (NFC) in its entirety by municipalities. The NFC recommends a 20 ft. clear path on all streets. While this width is virtually always achievable on arterial and collector streets, on local streets this provision contradicts the AASHTO Green Book, ITE *Neighborhood Street Design Guidelines*, and other planning and engineering best practices. If literally applied, it would consign to obsolescence one of the most popular local street types, the 24 to 26 ft. local street with parking on both sides. There is no indication that traditionally narrow local streets have contributed to deaths or injuries from impeding emergency responses. Particularly since narrow streets enhance safety and community life by reducing the incidence of speeding, the language on 20 ft. clear paths on local streets should not be adopted by municipalities. Instead, municipalities should rely on guidance from AASHTO or ITE. [pp.80-81]

M-NCPPC Response: The NJDOT PennDOT Smart Transportation Guidebook recommends that municipalities not adopt the National Fire Code, however Montgomery County has already done this. To promote adoption of NFPA-1, FRS stated that this action would make them the party responsible for waivers from the Code, rather than the State Fire Marshall. They said that they would be more flexible than the State had been.

The proposed regulations would permit, but not require this flexibility. As the aforementioned Guidebook states, the greatest impact would be on the most common, low-volume residential streets. The Planning Board requested that FRS provide a list of standard waivers from the Code, which FRS calls exceptions, but FRS does not want to do this.

MCFRS Response: MCFRS' representation at the national level with the Congress for New Urbanism indicates that the current design guidelines were achieved without any fire department input. While there is no indication that traditionally narrow local streets have contributed to deaths or injuries from impeding emergency responses, neither is there evidence to the contrary. While the referenced standards may address planning and engineering best practices, they ignore fire department best practices.

4. **M-NCPPC & MCFRS:** How does the 25' minimum inside curb radius requirement in the proposed regulation square with the following guidance in the Smart Transportation Guidebook, which states:

In the urban core and town center contexts, where pedestrian activity is often intense, the smallest possible curb radii should be used. As indicated in the AASHTO Green Book, a curb return radius of 10 to 15 feet is used at most urban intersections, partly to minimize pedestrian crossing distances. This range is recommended here for use on most local streets, as well as collector and arterial roadways in urban areas with moderate volumes and a large percentage of passenger vehicles. Passenger vehicles can navigate curbs of this radius with little encroachment into other lanes. The relative infrequency of single unit trucks, school buses and possibly transit buses would not usually warrant construction of a larger curb radius. Curb radii of 15 to 25 ft. are recommended for these roadway types where encroachment is unacceptable. [p. 57]

MCFRS response: The problem becomes designing shared pedestrian and vehicular space. The Smart Transportation Guidebook states "the relative infrequency of single unit trucks, school buses and possibly transit buses would not usually warrant

construction of a larger curb radius.” Montgomery County is a public service oriented community that relies heavily on public transportation to support transit oriented development and possesses population demographics that create a high demand for emergency services. These factors among others increase the potential frequency of vehicle/pedestrian conflicts in shared spaces such as intersection corners constructed with insufficient turning radii.

5. **M-NCPPC:** How do the prescriptive road widths and turning radii in Regulation 29-08 differ from the required road widths and turning radii in the Road Code?

M-NCPPC response to Questions 4 and 5: Section 5 of the proposed regulations actually require a 25’ minimum interior *turning* radius rather than a 25’ inside curb radius. It would be possible to have a 10’ or 15’ curb radius and accommodate a 25’ interior turning radius if there is a parking lane and/or if there is more than one receiving lane. This section allows performance-based criteria to be used if fire apparatus movement into opposing lanes of traffic is minimized.

This is normally not a concern on Secondary and Tertiary residential streets because there is no centerline stripe. However, because this section also requires a minimum *exterior* turning radius of 50’ and the normal width of these streets is 26’, a 25’ radius curb would be the minimum allowed unless the apparatus moves to the left side of the street before making the turn. (This would require that parking be restricted in this area.) Note that these requirements would apply for the fire department apparatus access routes, not every street, so the minimum 25’ curb radius could be limited to the turning points on these routes.

6. **M-NCPPC:** How much additional pavement would be required if the prescriptive road widths from Regulation 29-08 are applied?

M-NCPPC response: There is nothing in 29-08 that would definitively require additional pavement for public roads. In terms of a County action, that was the result of adopting NFPA-1, although at least on paper, the County’s adoption would have been no different than the State’s earlier adoption. It’s the application that counts. Whereas 29-08 would not require additional pavement for public roads, the regulations could be revised to promote having less pavement.

As a result of adopting NFPA-1, there are additional pavement requirements for private driveways. When private driveways are shared, they must be a minimum of 20 feet in width for the distance that they are shared. And if that distance is greater than 150’ from the public street access point, a paved fire department turnaround must also be provided.

7. **MCFRS:** If the prescriptive road widths and turning radii in Regulation 29-08 conflict with development design standards, how would performance-based design be used to address the conflicts? Please give examples of performance-based alternatives to the prescriptive requirements.

MCFRS response: Performance based design is currently accepted by code and has been reviewed and enforced by MCFRS staff since 2005 in order to eliminate conflicts with development design standards. Performance based alternatives can include rolled curbs in low speed, low pedestrian traffic areas, non-pavement load bearing alternative surfaces such as grass pavers, and operational bays.

M-NCPPC response: The fire access routes could be laid out in such a way to minimize having excessively large intersections. The block length in a grid pattern development can be kept short so that the fire access route stays on the main (wider) roads. As shown in Figure 1 in Section 4, operating bays can be designated to minimize widening of whole streets; a similar technique can be used to provide such bays in the median of divided streets to accommodate fire routes. For private driveways, the minimum 20 foot width requirement could be reduced when crossing environmentally sensitive areas and for the middle sections of longer driveways.

8. **MCFRS & M-NCPPC:** Will the use of performance-based design lengthen the development review process? Will the Fire Marshal or developers need additional resources to complete a performance-based development review?

MCFRS response: The development review process will take no longer than it has in the past. Performance based design has been reviewed by the Office of the Fire Marshal since 2005. Staffing was increased in 2006 to accommodate the needs of the developers. There are no additional resources required.

M-NCPPC response: Performance-based design does lengthen the development review process. When there is no specific rule to follow, there is always going to be more time spent in the back and forth review of alternatives. As currently applied, an alternative review by FRS (and by other agencies who have authority to grant variations of other sections of the Code) requires a separate review after the Development Review Committee meets.

9. **MCFRS:** What assurance is there that performance-based design will be implemented in a consistent and fair manner from one project to the next?

MCFRS response: Prescriptive code set forth the minimum standard. Performance based design provides the developer options to meet that standard. At no time can a reviewer require measures in excess of prescriptive code which is in accordance with state and county law.

10. **MCFRS:** What assurance is there that performance-based requirements will be applied consistently throughout a project, and not change mid-way through the project?

MCFRS response: Approved performance based measures are designed to meet the intent of prescriptive code and will never become more restrictive through the course of a project. However, performance based design review are also no different than any other review. A reviewer's oversight does not exempt a developer from building according to code.

11. **MCFRS:** How will a development applicant know that they must choose either a prescriptive or a performance-based review at the beginning of the review, and that the selection cannot be changed once the review begins?

MCFRS Response: Performance based design is presented as an option in NFPA 1, adopted in 2006, Regulation 29-08 and Regulation 7-06AM. The selection can be changed at any time during the review process.

M-NCPPC response: Since conflicts are sometimes not fully identified until the Development Review Committee meets, there should be some flexibility in applying these regulations that allows an applicant to decide to go to performance based review at any time.

Water Supply

12. **MCFRS:** What is MCFRS' overall plan for water supply in non-hydranted areas? How will water on wheels be coordinated with the installation of underground water tanks?

MCFRS response: The overall plan for water supply in non-hydranted areas is to provide sufficient static water supply to meet fire flow requirements for all developed areas of the county. Water-on-wheels is the delivery method; cisterns and other static water sources provide the water.

M-NCPPC response: According to the regulations, all new development must either provide a cistern easement or install and dedicate a cistern regardless of the limitations on the developing site that may conflict with this requirement. It would be better to have an overall plan that targets particular sites. At a minimum, consideration should be given to having an expiration date for easements on residential property. That way, better sites can be targeted as the opportunities arise and there won't be easements on property that will never be used.

13. **MCFRS:** How much fire damage would be prevented by underground water tanks versus using water on wheels?

MCFRS response: Level of fire damage is highly dependent on the fire department's ability to deliver sufficient water flow in a timely fashion. Currently static water supplies are spaced widely enough apart that the number of tankers required to produce that flow exceeds MCFRS' fleet capabilities. Mutual aide from neighboring counties is required for every tanker task force dispatched. MCFRS has never had the opportunity to operate with static water sources close enough to reduce the number of tankers and determine a saving in fire damage.

14. **MCFRS:** When will the Fire Marshal determine where underground tanks should be located? What criteria will be used?

MCFRS response: It is part of an ongoing effort to improve our ISO rating. Underground tanks will be strategically located to maximize use of natural water sources. Tank locations will be a function of existing sources (including natural water supplies) and surrounding development type and size.

15. **MCFRS:** Would easements for underground tanks be required in the Agricultural Reserve?

MCFRS response: Easements for underground tanks in the Agricultural Reserve will be avoided to the greatest extent possible. We are exploring opportunities to locate tanks on existing county property or on outlots in order to avoid increasing residential lot size in the Agricultural Reserve areas.

16. **MCFRS:** Is it reasonable to require residential developers to provide easements for underground water tanks if it is unclear whether a tank will be needed on their property?

MCFRS response: Yes. The alternatives are to lose opportunity for tank placement where it is most advantageous or to resort to condemnation at a later time. Easements that are not needed will be abandoned at a later date.

17. **MCFRS:** What would be the exterior dimensions of a 30,000 gallon underground water tank? Would tanks with more capacity be required for higher density development? If so, how much larger would they be?

MCFRS response: The exterior dimensions of a 30,000 gallon tank vary with the manufacturer. They are typically in the range of 55 ft x 10 ft. A 30,000 gallon tank is the largest required by the Office of the Fire Marshal for residential development.

18. **MCFRS:** What is the cost for an underground tank system? How and when would the County develop an estimated cost for an underground tank CIP project?

MCFRS response: The average cost for an underground storage tank is \$100,000. The estimated cost for a CIP project would be based on development costs that could be shifted to the private sector. We currently anticipate the total CIP project cost to range anywhere from \$1.5M to \$4.5M and the cost would be spread out over multiple years as development progresses.

19. **MCFRS & M-NCPPC:** How far below the surface would an underground water tank be buried? Would it interfere with drainage or nutrient management plans in agricultural areas?

MCFRS response: The underground storage tank should be placed such that there is no less than 3 ft of cover.

M-NCPPC response: Given the Planning Board's desire to limit the size of residential lots in the agricultural reserve to the smallest size necessary to provide wells and septic, any necessary cistern easements will have to be located in the farm remainder portion of the site. However, impacts on drainage or nutrient management plans should be minimal given the desire to locate the easements along public roads rather than within the farm.

20. **MCFRS & M-NCPPC:** How would the installation of an underground water tank affect above-ground uses of land, such as farming, houses, parking?

MCFRS response: Soil disturbance that would interfere with the tank would not be permitted, but shallow uses are not problematic.

M-NCPPC response: On-lot cistern easements for smaller septic lots may affect the location of houses and driveways. If a cistern easement cannot be accessed from the public street, there would be a need for an access driveway and vehicle turnaround that will also limit the possible locations for the house and yard area.

21. **DPS:** How would the installation of an underground water tank affect underground uses, such as septic systems? (See DPS response to Question 22.)

22. **M-NCPPC & DPS:** How would the easement for an underground water tank be coordinated with other easements and elements in addition to buildings that must be sited on a lot, for example, septic fields, utilities/utility easements, wells?

M-NCPPC response: It is our understanding that septic, ingress/egress and utility easements will not be permitted to overlap with cistern easements. When cistern easements are located adjacent to a public road right-of-way, the required 10' public utility easement will have to be routed around the cistern easement and further into the lot. Given the competition for space that is likely to occur on smaller lots with septic and wells, a conceptual grading plan is probably going to be required of the applicants for some cisterns to determine how much area outside the actual tank needs to be preserved for future installation.

DPS response: DPS (Well & Septic) would require a setback of 20 feet (min) between and septic system and a buried water tank. The same setback would pertain to individual water wells.

Other jurisdictions that require such measures typically place these tanks off the lots either in an easement dedicated to DFRS or in a "public" area.

23. **M-NCPPC:** Would the requirement for an easement for an underground water tank lead to the need for a larger lot?

M-NCPPC response: It seems likely that additional acreage will be needed within the smaller well and septic lots to avoid conflicts between cisterns and the driveway, septic and well locations. If the onsite topography is not favorable, these impacts will be greater because of the grading that will be needed to install a cistern.

24. **MCFRS & M-NCPPC:** When did the Fire Marshall begin enforcing the requirement for an easement for an underground water tank? What is the legal basis for requiring these easements? How many easements have been incorporated into new development to date? What has been the experience for the developers so far?

MCFRS response: The Fire Marshal began enforcing the requirements for an easement on July 23, 2007 due to consensus meeting that included design professionals, developers, MNCBIA, and the Office of the Fire Marshal. It was determined at that time that requiring actual cistern installation for small development as required by code presented undue hardship to the developer and significant additional dwelling unit cost to the buyer. Accepting easements with the intention of later installing cisterns through a county CIP project was determined to be a more viable option. NFPA 1, as adopted by the county in 2006 requires that adequate fire protection water be provided at time of development. To date 4 easements have been approved and accepted.

M-NCPPC response: To date, two subdivision plans have been approved that include cistern easements: Burton Woods, a 106-acre site in the RE-2 zone with 21 lots approved so far and the potential for 5 additional lots; and Oak Grove, a 6.6-acre site in the RE-2 zone with 2 lots. There are several other pending subdivision plans that would need to provide easements per the regulations, and one pending commercial site that would have to install a cistern. There were no issues raised by the applicant for Burton Woods, but

the Oak Grove applicant was strongly opposed to granting an easement and there was some delay in the review while an acceptable location was worked out.

25. **MCFRS:** What is the basis for requiring that residential development of more than one dwelling unit must dedicate an easement for an underground water tank? Could the number of units be increased for each tank?

MCFRS response: The basis for requiring residential development of more than one dwelling unit to dedicate an easement for an underground storage tank originated with the NFPA 1 requirement that firefighting water supply be provided at time of development regardless of development size. Yes. We are currently in discussions with MC-MNCPPC to explore this option.

26. **MCFRS:** Which other jurisdictions require that developers provide either easements or underground water tanks for residential development? What do they require?

MCFRS response: No other jurisdiction requires easements. Carroll and Baltimore counties have required the installation of cisterns for residential development.

27. **MCFRS:** For non-residential development, when did the Fire Marshal begin enforcing the requirement for the developer to install a new or upgrade an existing water supply? What is the legal basis for these requirements?

MCFRS response: We are unsure when the Fire Marshal began enforcing the requirement for a developer to install a new or upgrade an existing water supply for non-residential development. It has been a requirement in NFPA 1 since 2001.

28. **M-NCPPC:** How many non-residential developers have been required to meet new/expanded water supply requirements to date? What has been their experience?

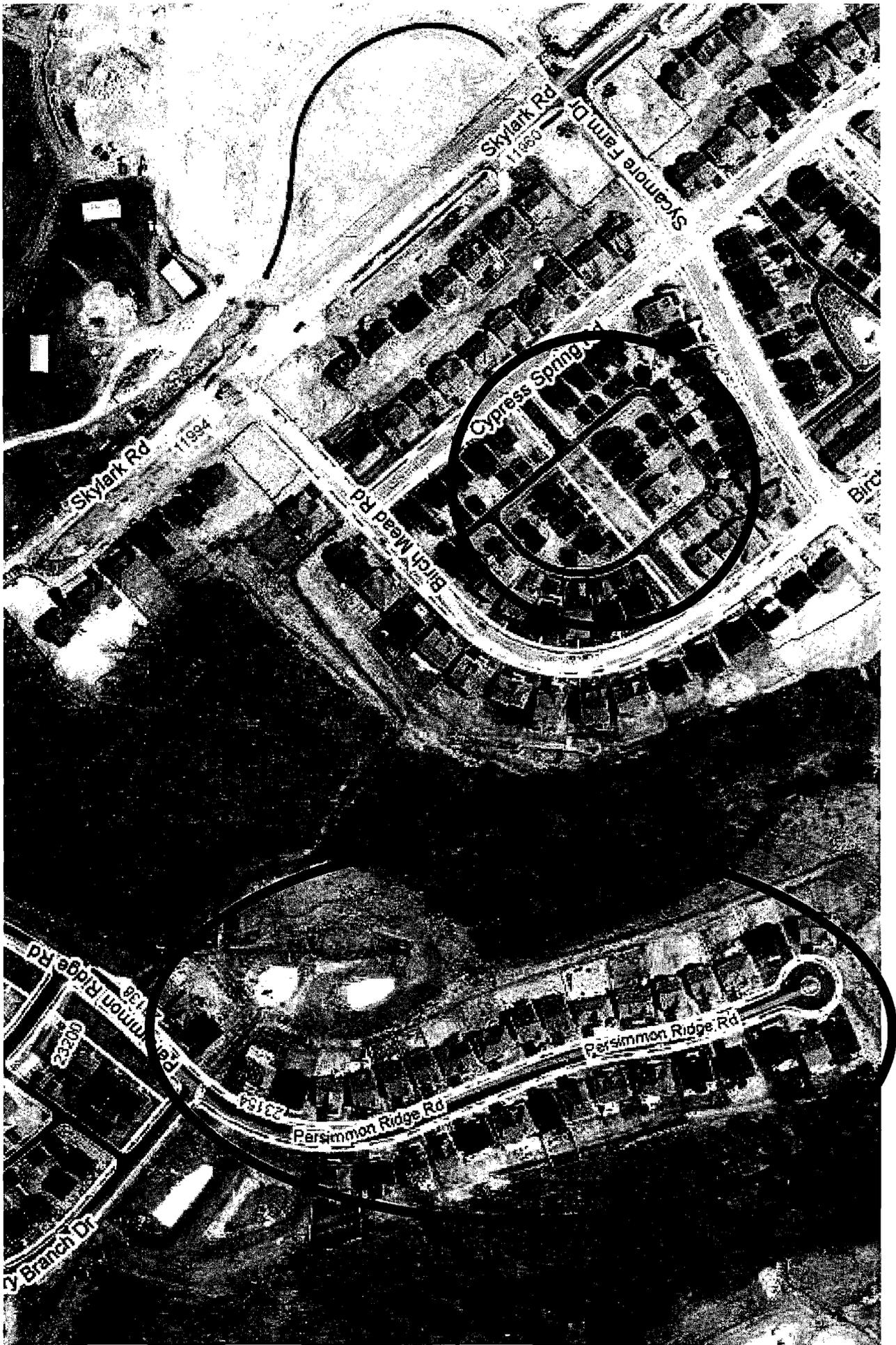
M-NCPPC response: It is our understanding from the applicant that the financial impact of actually installing a cistern could lead to a withdrawal of the only pending commercial application that is affected by the regulations (a small fence company).

29. **M-NCPPC:** Are these non-residential water supply requirements substantially increasing the cost of new projects, the amount of land needed, or the time needed for project approval?

M-NCPPC response: Yes, in the one non-residential project currently pending.

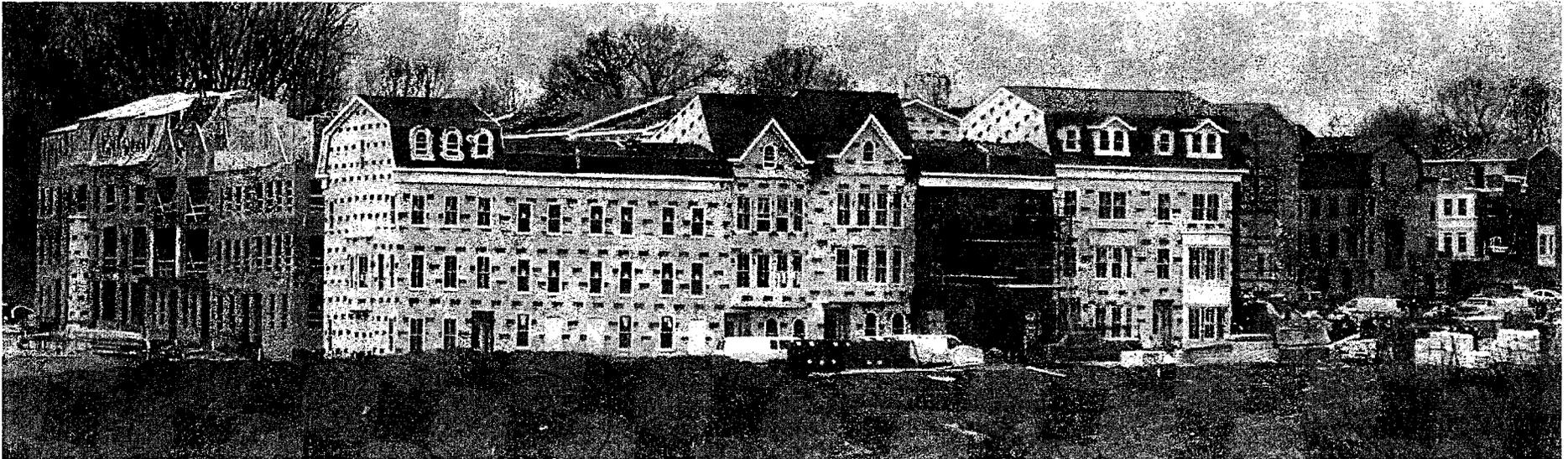
Montgomery County
Fire & Rescue
Executive Regulation 29-08

Fire Department Apparatus Access
and Water Supply



The Problem

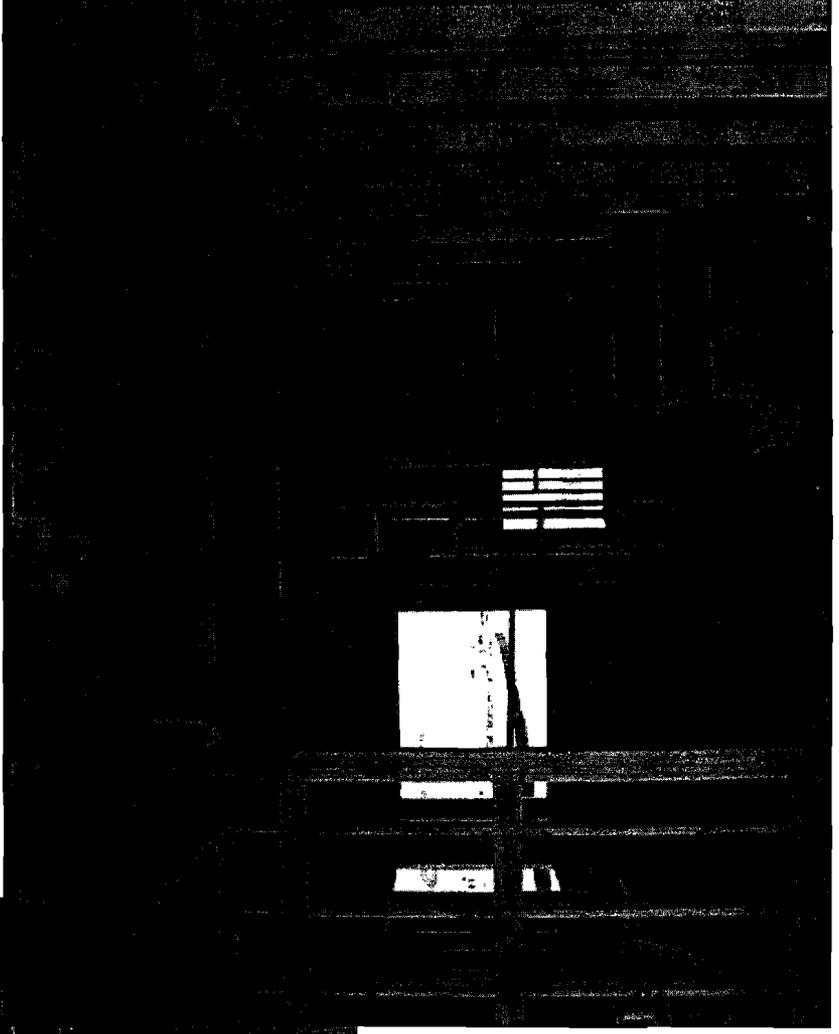
What We Are Building



Light Weight Construction is the prevailing method

Lacks any inherent fire resistance

What We Are Building



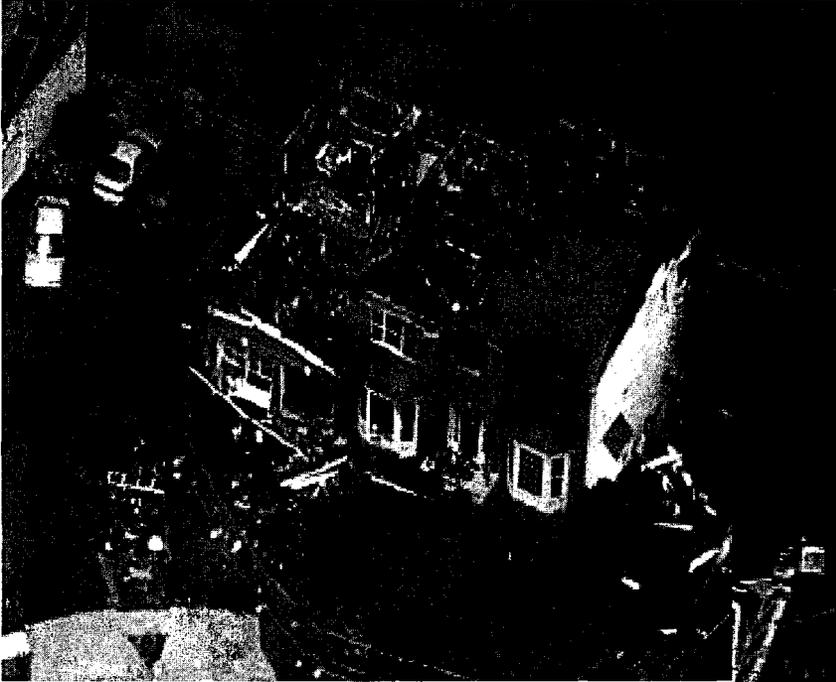
Light weight
construction

How Big We are Building

Area of Single-Family Houses in Montgomery County, 1994

Size (in square feet) of Single-Family Houses Completed in 1994 Montgomery County, MD				
	Range			
	Mean	Median	Low	High
Single-Family Detached, including basement	4,733	4,298	1,628	14,868
Single-Family Detached, excluding basement	3,209	2,920	840	9,744
Single-Family Attached, including basement	2,074	2,032	1,186	5,088
Single-Family Attached, excluding basement	1,419	1,401	636	3,344
All Single-Family, including basement	3,715	3,379	1,186	14,868
All Single-Family, excluding basement	2,523	2,380	636	9,744
Source: Montgomery County Department of Park and Planning, Research and Technology Center, analysis of Maryland State Tax Assessor's data, February 1995.				

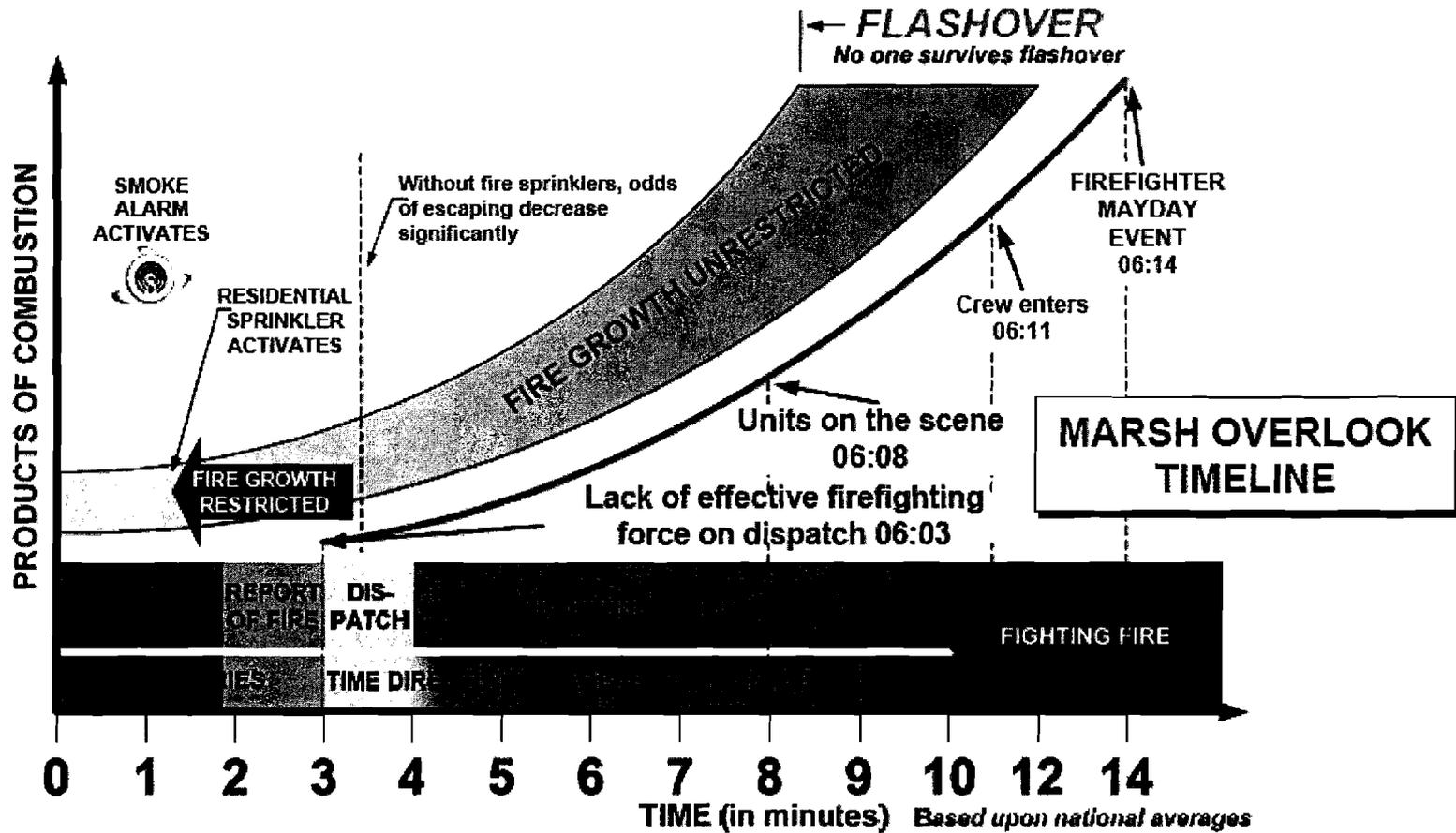
What We are Burning



Light weight construction and materials burn quickly and requires rapid intervention by fire and rescue forces to achieve a positive outcome.



Time vs. Products of Combustion



Date: 2/5/2008

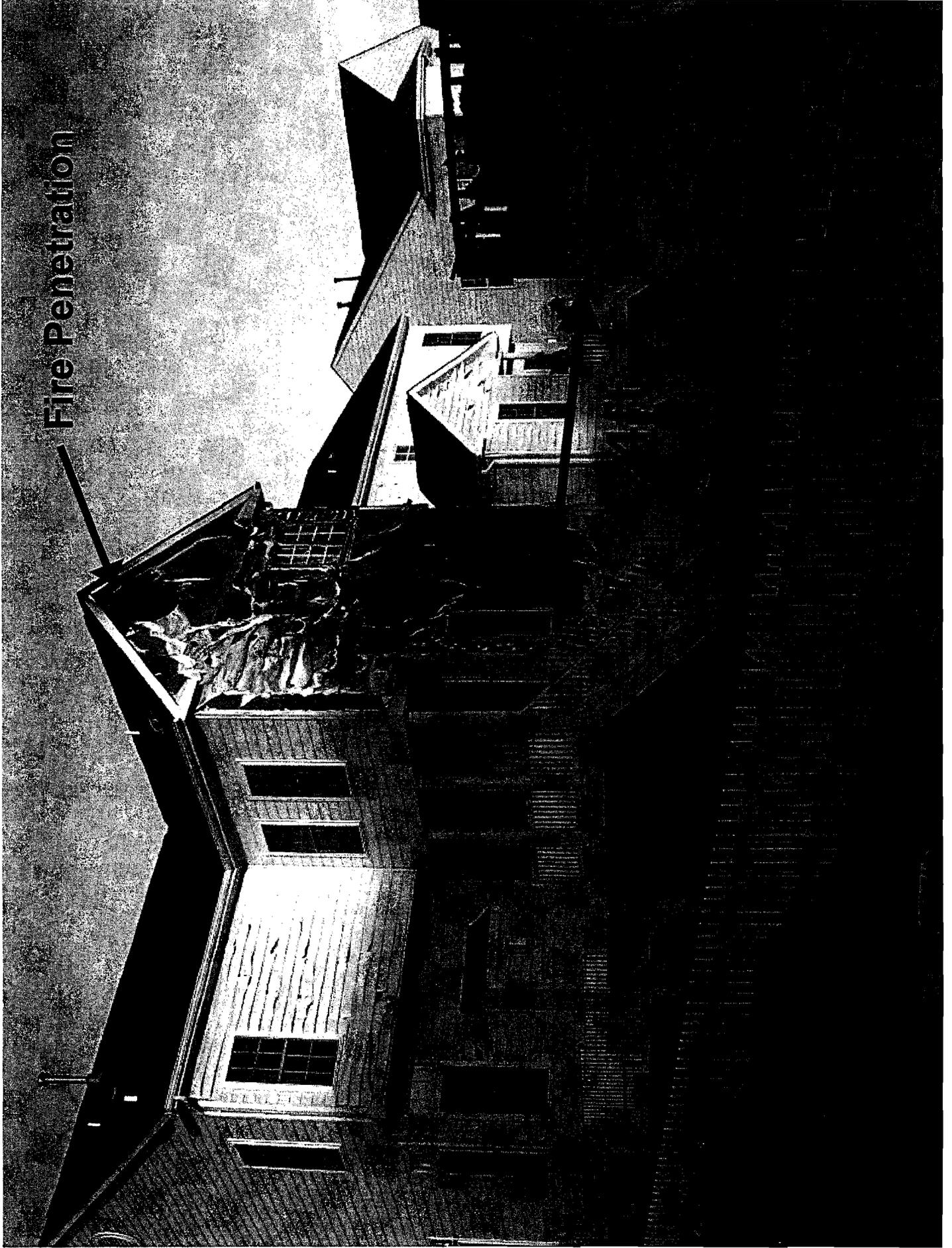


March 10, 2006
Clarksburg: Tall Poplar Rd (400SF) -
7 minutes 12 seconds from time of first 911 call to
arrival of first unit

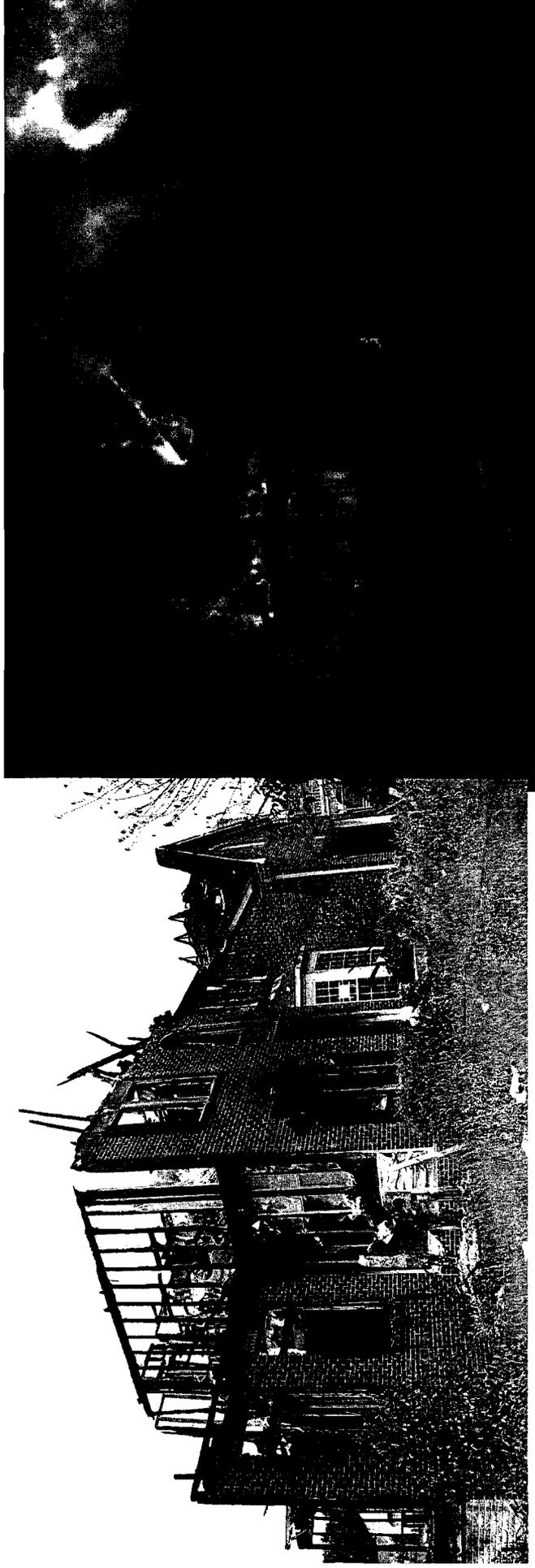


20MW energy output from fire

Fire Penetration



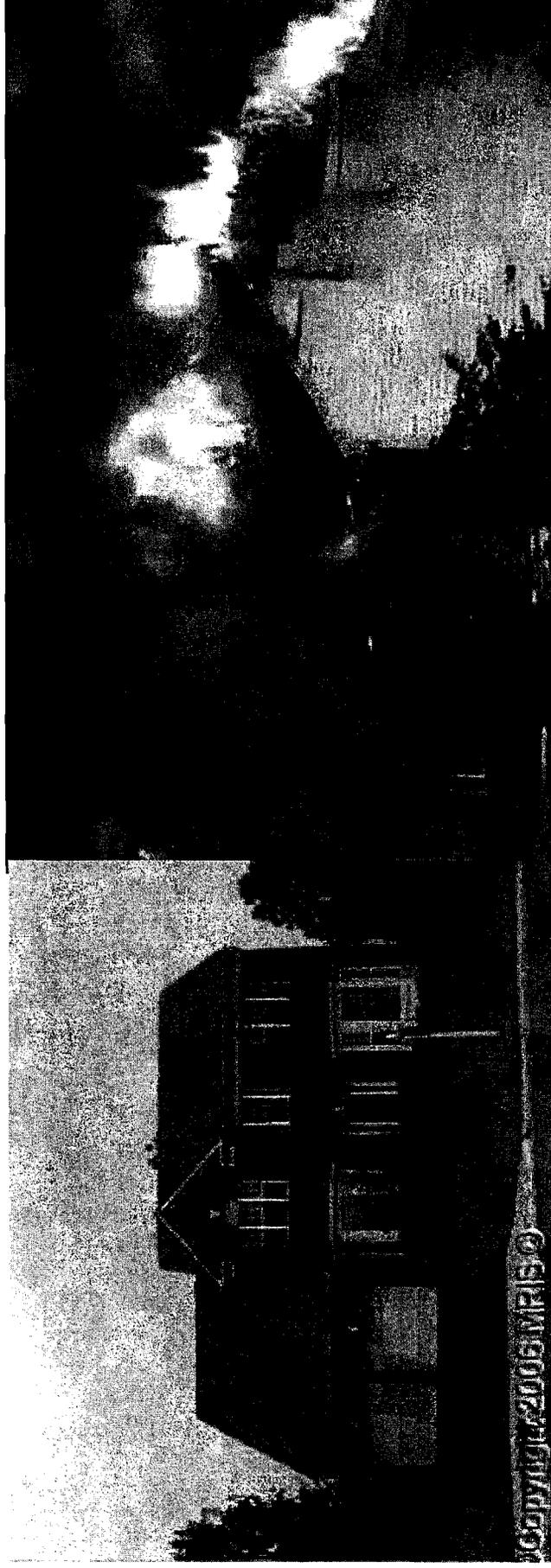
April 16, 2007
Prince William (6,120SF) – 14 minutes from
initial 911 call to full involvement



150MW energy output from fire

May 28, 2008

Loudon (3,704SF) – 16 minutes from initial 911
call to full involvement



90MW energy output from fire

Apparatus Size

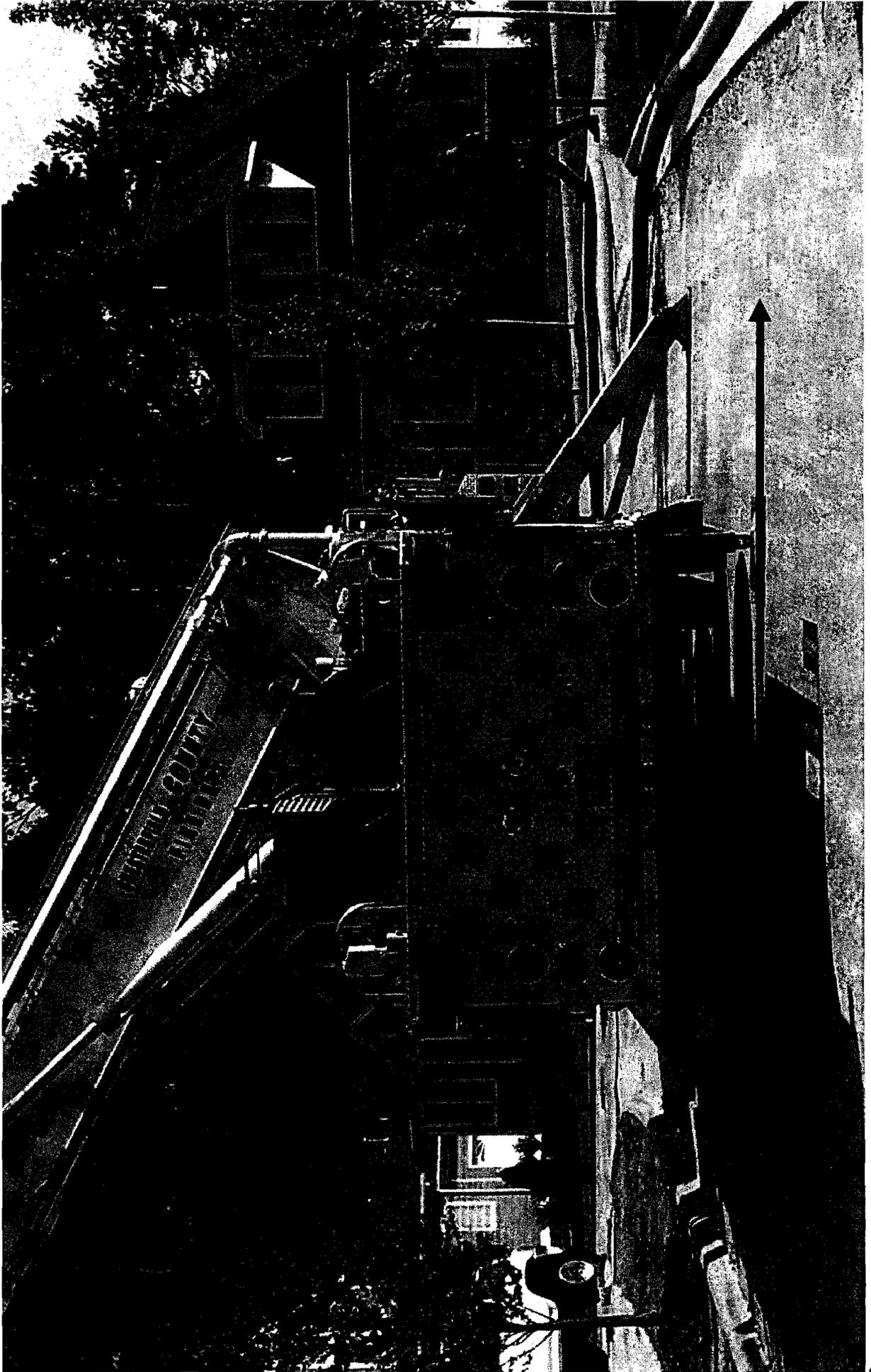


- Tractor drawn aerial apparatus purchased in Montgomery County during the 1980s and 1990s was on average 57ft long and 10ft wide, mirror to mirror
- Tractor drawn aerial apparatus purchased by Montgomery County in 2006 is 59.5ft long by 10ft wide, mirror to mirror

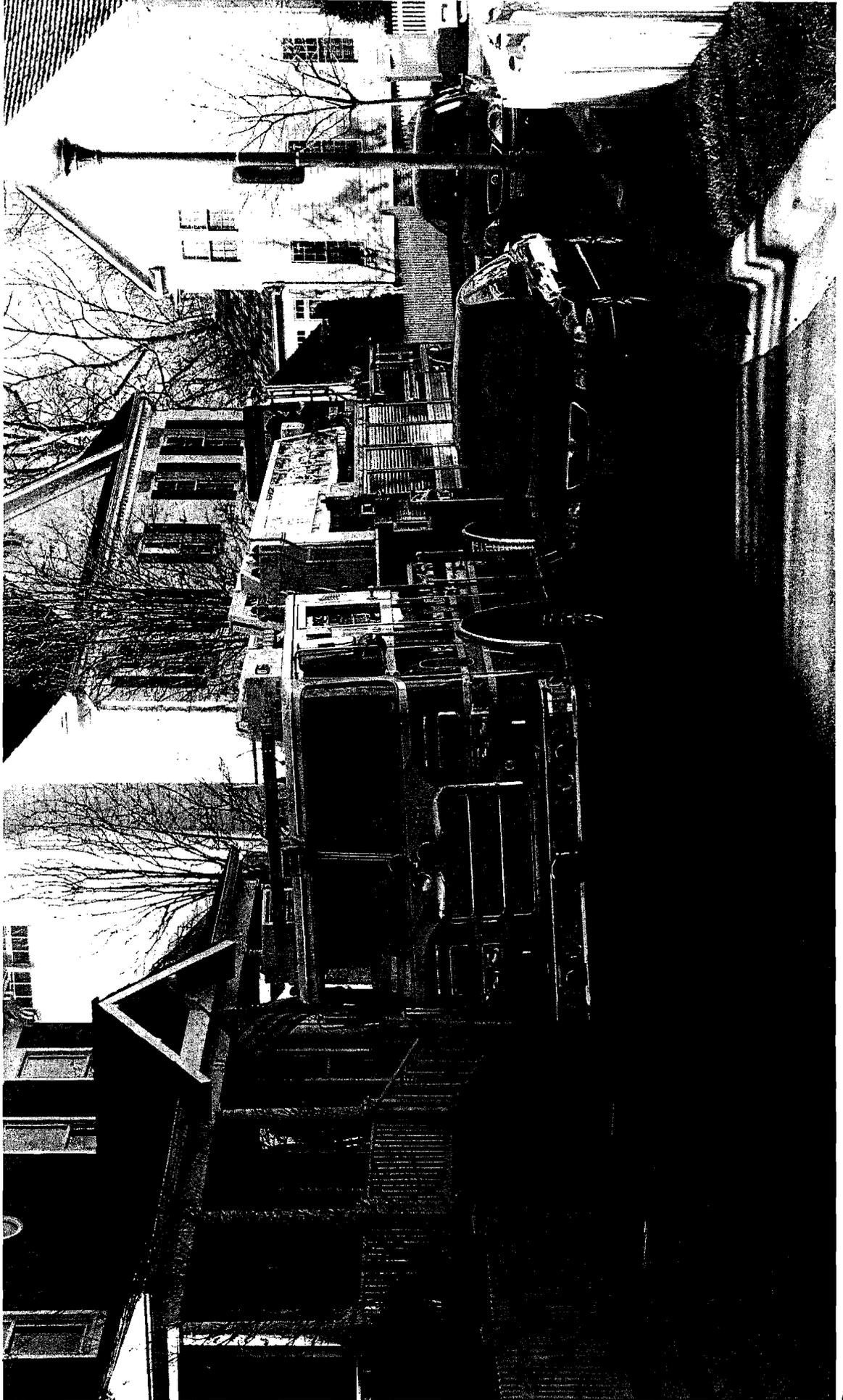
Operating Footprint

- A standard tower (ladder truck) requires an operating footprint 19.5ft wide by the length of the apparatus (47ft – 59.5ft) plus 8ft
- A standard engine company requires an operating footprint 18ft wide by the length of the apparatus (approximately 35ft) plus 8ft
- Recent process recognizes fire department operational requirements

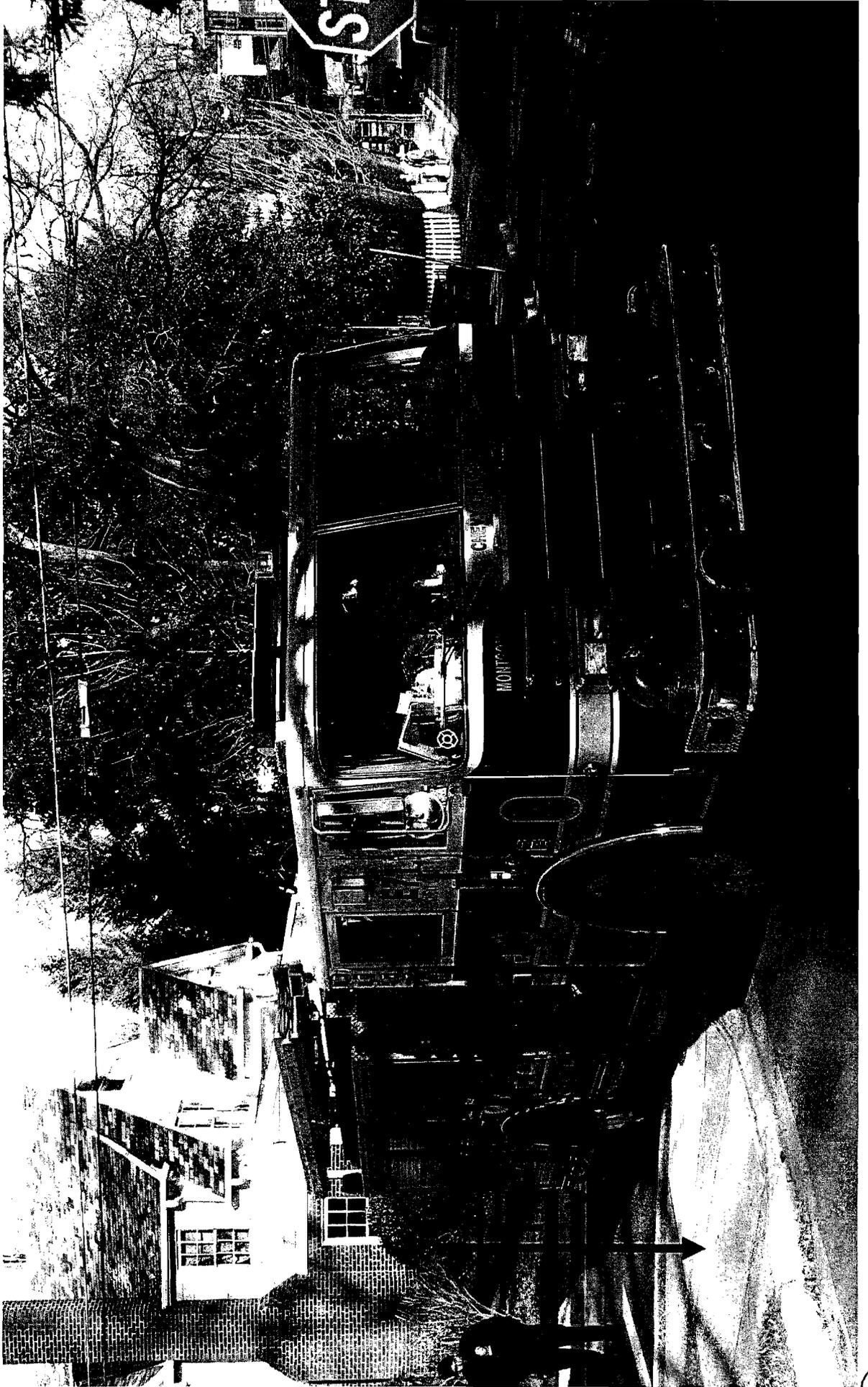
Illustrative Example



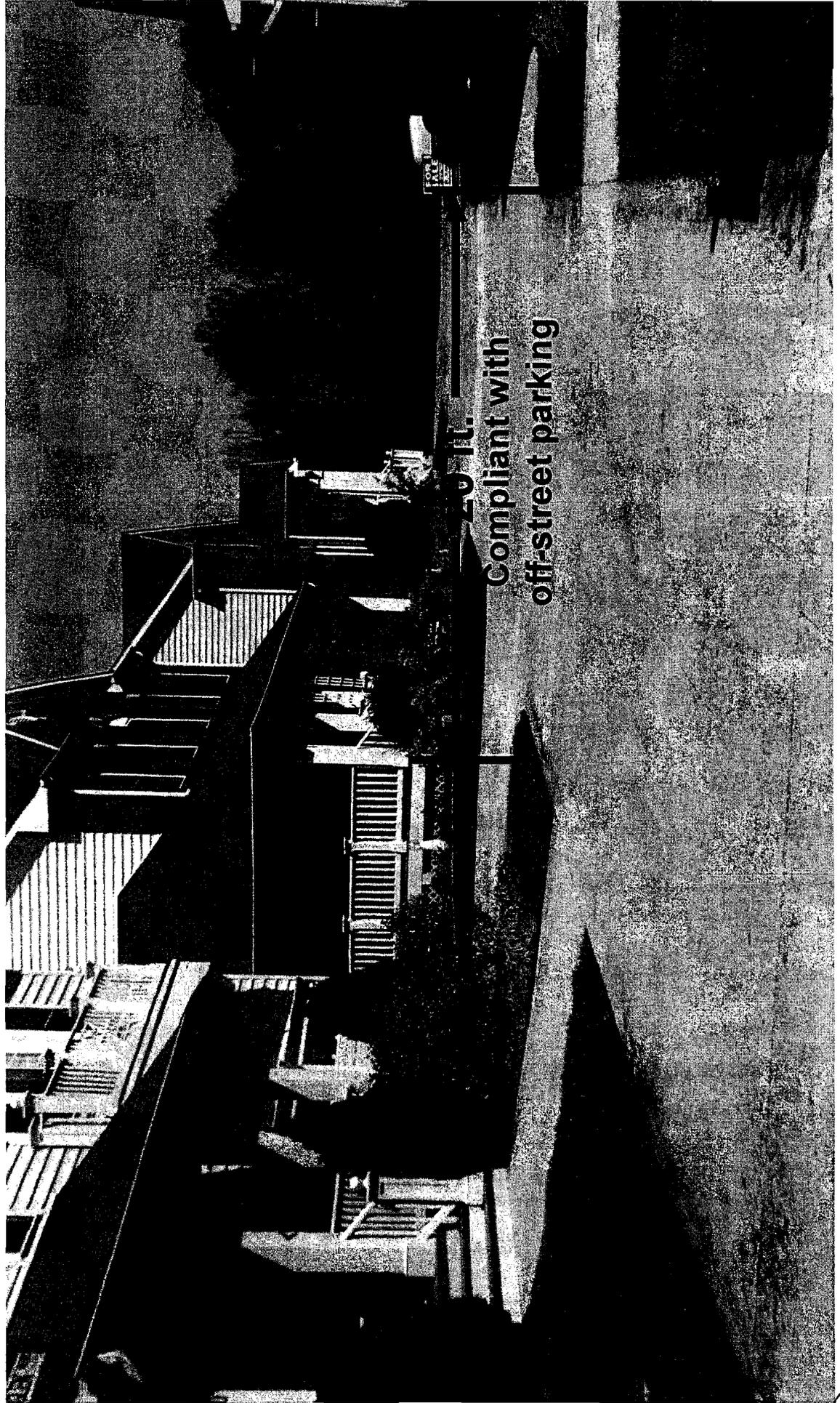
Access Examples

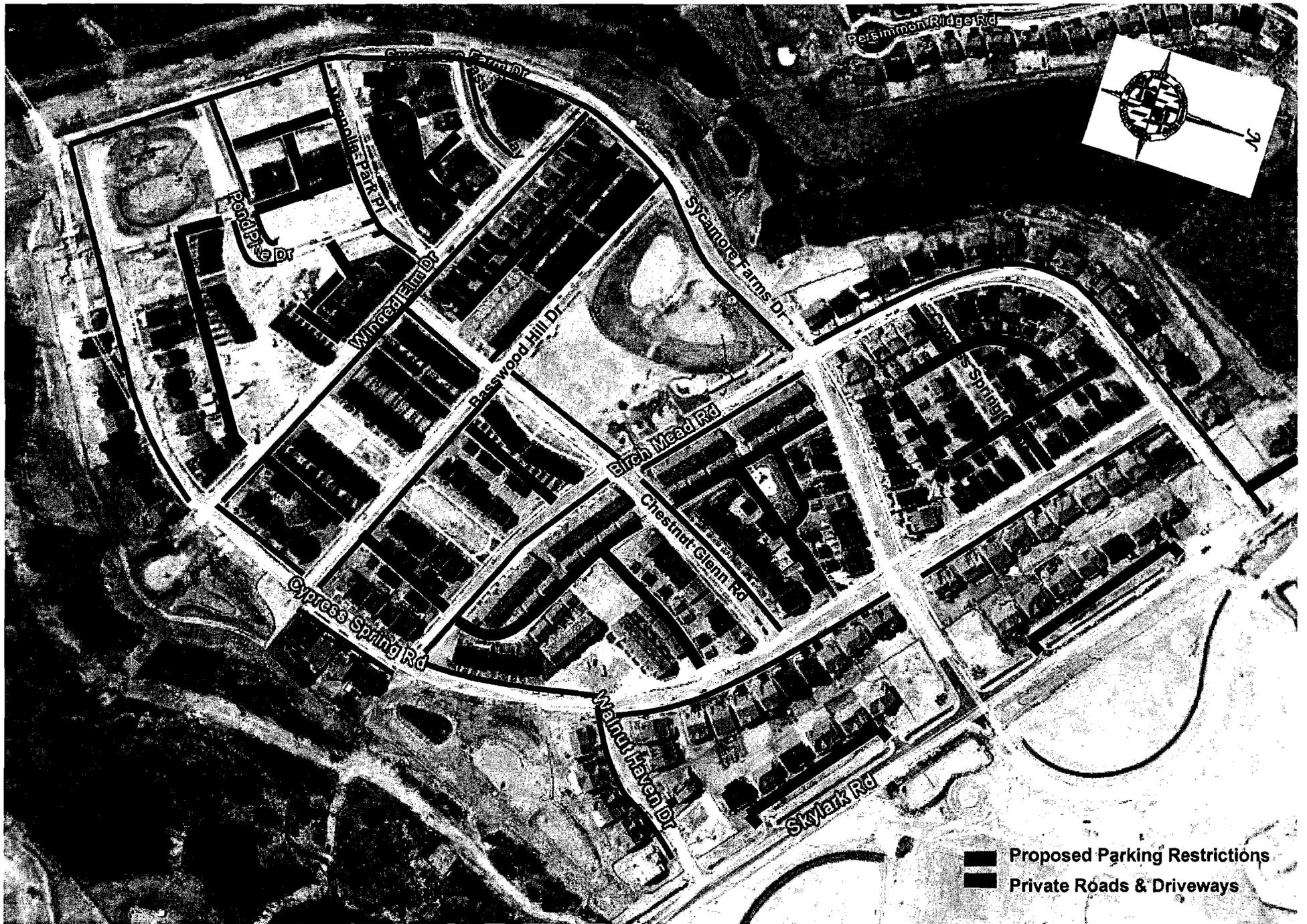


Access Examples



Access Examples





Arora Hills – Not every street is fire department access

Fire Laws of Maryland (2004 edition)

Public Safety Article 9-701 Authority of counties and municipal corporations to adopt fire prevention codes

- (a) "The local governing body of each county and legislative body of each municipal corporation in the State may adopt by ordinance or resolution a fire prevention code"
- (b) "A fire prevention code of a county or municipal corporation adopted under this section may incorporate by reference a code or part of a code prepared by a governmental unit or a trade or professional association"

Public Safety Article 6-206 Regulations

- (d) (1) "The State Fire Prevention Code establishes the minimum requirements to protect life and property from the hazards of fire and explosion"

Recent Process

- Our requirements have been publicly clarified since Clarksburg development issues came to light
- Fire department access was an integral part of the road code discussion over the last year
 - the road code discussion included bicyclist, pedestrian and environmental constituents
- Our proposed regulation was distributed to the road code stakeholders prior to publication
- We met with MNCPPC staff on Aug 13, prior to publication, and their comments were incorporated

Performance Based Requirements

- Chapter 5 of NFPA 1 (2003 edition), adopted in by the state in 2004, allows for performance based design of any requirement within NFPA 1
 - requires management at the state level
 - state is not staffed to evaluate performance based design
- Montgomery County adopted the 2003 edition for NFPA 1 in November 2006
 - allow for management at the local level
 - Montgomery County Office of the Fire Marshal is staffed to evaluate performance based design
 - MCFRS OFM has a better understanding of local conditions (context sensitive design)
- Detailing the universe of options creates a larger prescriptive code that defeats the purpose of performance based design

Applicability

- NFPA 1 Uniform Fire Code (2006 edition)
 - 18.2.3.1.1 Approved fire department access roads shall be provided for every facility, building, or portion of a building hereafter constructed or relocated
- NFPA 1 Uniform Fire Code Handbook (2006 edition)
 - “It is important to note that 18.2.3.1.1 requires fire department access only for newly constructed or relocated buildings. The Code does not requires previously approved access to existing buildings be modified to meet the current Code requirements of 18.2.3.1.1”

Proposed Regulation

- What does the proposed regulation do:
 - consolidates requirements already in place
 - permits design flexibility
 - considers fire department operations in the context of community needs and firefighter safety
 - promotes public safety
 - incorporates environmental impacts

Current Trends

- Development trends are moving away from adequate fire department access
- Building trends are moving toward lightweight, highly combustible construction and construction materials
- Apparatus size is influenced by USDOT, OSHA and service demands
- Response time is critical to effective emergency mitigation

Response Time

- Average time for units to arrive on scene in Montgomery County after the first 911 call is 9.4 minutes.

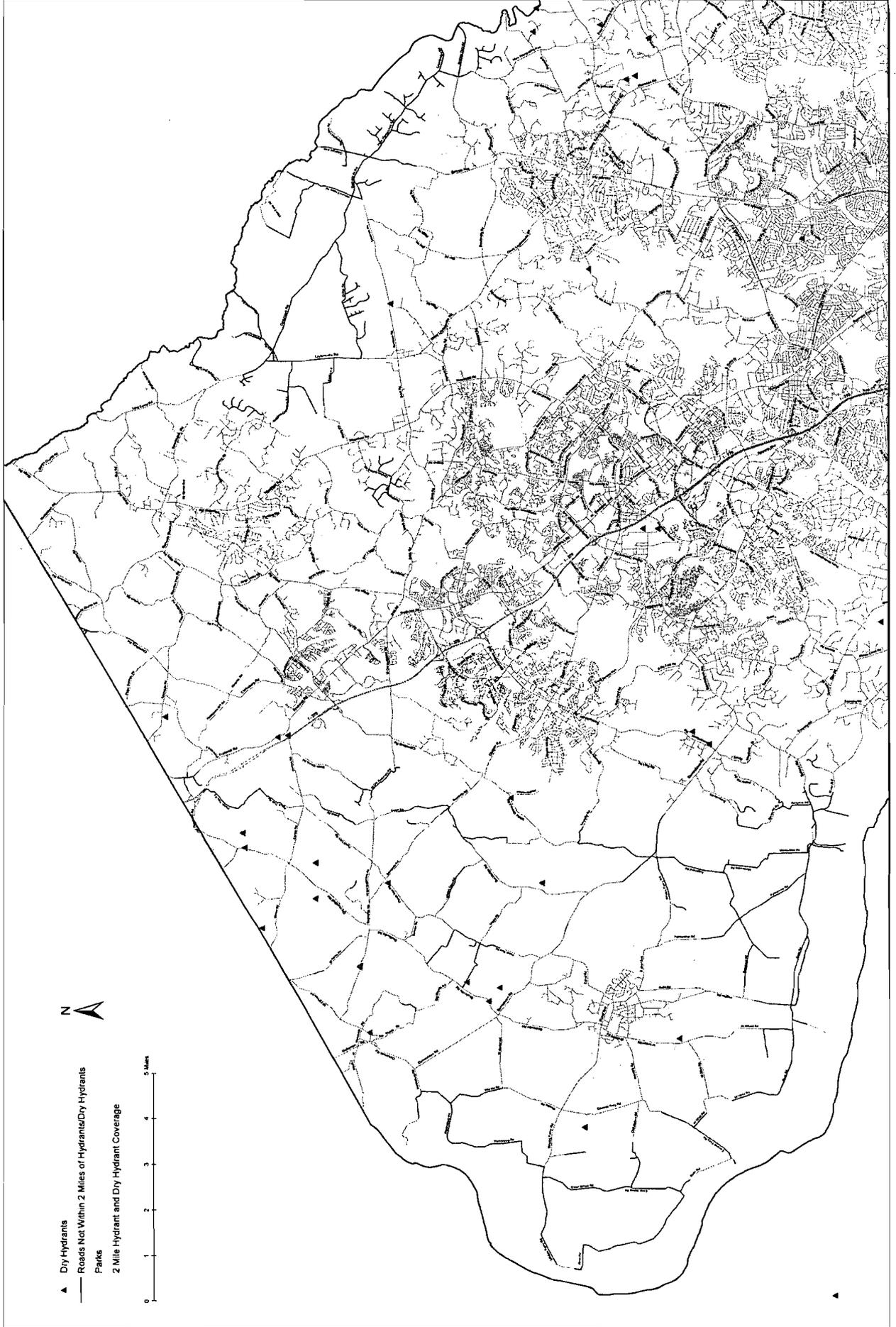
Water Supply

- Water on wheels is a delivery method
- Municipal hydrants, underground tanks and natural supplies are water sources
- Without enough sources, additional water on wheels resources are required to develop the same fire flow

Water Supply

- Montgomery County currently has 6 tankers stationed around the county edge
 - They are NOT positioned to support a single incident within a reasonable response time
 - With existing water supplies, working incidents require out of county resources

Where We Need Supplies



Non Municipal Water Supply

- Underground tanks required:
 - 15 minimum for current level of development
 - 45 maximum to cover the county if completely developed
- Cost spread over multiple years:
 - \$1.5M minimum
 - \$4.5M maximum
- Per unit cost for installation:
 - \$100,000
 - 30 year warranty

PS



MONTGOMERY COUNTY
2008 DEC 11 PM 2:37

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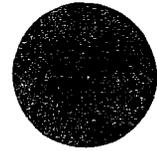
OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

039366

Isiah Leggett
County Executive

MEMORANDUM

December 10, 2008



TO: Phil Andrews, President
Montgomery County Council

FROM: Isiah Leggett, County Executive 

SUBJECT: MCER NO. 29-08, proposed Fire and Rescue Service Regulation – Fire Safety Code – Fire Department Apparatus Access and Water Supply

I am recommending approval of Montgomery County Executive Regulation Number 29-08, Proposed Fire and Rescue Service Regulation – Fire Safety Code – Fire Department Apparatus Access and Water Supply. Notice of the proposed regulation was published in the Montgomery County Register on September 1, 2008, Volume 25, Issue 9. Notice of a Public Hearing for the proposed regulation was also published in the Montgomery County Register on September 1, 2008. The Hearing was held on October 3, 2008.

The proposed regulation clarifies several requirements that already exist in the Maryland State Fire Prevention Code; specifically permits the use of performance-based design to meet the intent of the code as originally identified before the Montgomery County Council in October, 2006; and adopts into the Montgomery County Fire Safety Code the National Fire Protection Association (NFPA) 1141, *Standard for Fire Protection in Planned Building Groups, 2006 Edition* and NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting, 2006 Edition*.

Prior to publication in the Montgomery County Register, the proposed regulation was distributed to the entire Road Code Stakeholders Work Group. Pre- and post-publication comments were received from the Department of Transportation (DOT), the Department of Permitting Services (DPS) and the Maryland National Capital Park and Planning Commission (MNCPPC), Montgomery County Planning Board. DOT and

Phil Andrews, President
December 10, 2008
Page Two

DPS comments were mostly procedural and coordination of requirements. The Planning Board requested that the County Executive convene a multi-agency work group to study and make recommendations on the regulation's impacts, add specific language regarding exceptions and Fire Marshal discretion, clarify driveway requirements, consider parking on 26-foot wide roadways, application to in-fill development, define all-weather surfaces, define easement sizes for water supply cisterns and require MNCPPC notification when purchasing larger vehicles. No comments were received regarding the water supply requirements.

MCFRS staff met DOT, DPS and MNCPPC staff on several occasions during September and October and reached mutually acceptable and enforceable language. As a result of these meetings, definitions were added for One and Two-Family Dwellings and Operating Bays. Fire department apparatus access plans will be required as part of the development submittal process, a performance-based option was included to allow for narrower streets in certain circumstances, an allowance was made for street trees, and a section was added that provides for administrative interpretation for recurrent problems that are not specifically addressed in the regulation language.

The proposed regulation, MCER No. 29-08, Fire Safety Code – Fire Department Apparatus Access and Water Supply, will provide a flexible framework that can be applied to ensure adequate fire department apparatus access and water supply while considering other Montgomery County priorities, such as community design, historic preservation, environmental impact and preserving rural character.

I appreciate your prompt consideration of this action.

Attachments



MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject Fire Safety Code – Fire Department Apparatus Access and Water Supply	Number 29-08
Originating Department Montgomery County Fire & Rescue Service	Effective Date January 1, 2009

MONTGOMERY COUNTY EXECUTIVE REGULATION

FIRE SAFETY CODE – FIRE DEPARTMENT APPARATUS ACCESS AND WATER SUPPLY

MONTGOMERY COUNTY FIRE AND RESCUE SERVICE

Issued by: County Executive
 Executive Regulation No: 29-08
 COMCOR: Division 06

Authority: Montgomery County Code Section 22-13
 Council Review: Method (2) under Code Section 2A-15
 Register: Vol. 25, No. 9
 Effective Date: January 1, 2009

SUMMARY: Expedient fire department apparatus access and adequate water supply are essential to the efficient and timely delivery of emergency assistance and fire suppression services. This proposed Regulation establishes the requirements for effective fire department apparatus access and water supply in urban, suburban and rural settings in Montgomery County.

ADDRESS: Division Chief Michael Love, Fire Marshal, Montgomery County Fire and Rescue Service, Executive Office Building, 101 Monroe Street, 12th Floor, Rockville, Maryland 20850

STAFF: For additional information, contact Assistant Chief Michael Donahue, Office of the Fire Marshal, Montgomery County Fire and Rescue Service, 255 Rockville Pike, 2nd Floor, Rockville, MD 20850. (240) 777-2457. e-mail: Mike.Donahue@montgomerycountymd.gov



MONTGOMERY COUNTY EXECUTIVE REGULATION

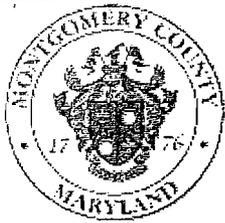
Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject Fire Safety Code – Fire Department Apparatus Access and Water Supply	Number 29-08
Originating Department Montgomery County Fire & Rescue Service	Effective Date January 1, 2009

Section 1. Applicability. In accordance with the procedures authorized in Chapter 22, "Fire Safety Code," of the Montgomery County Code (1994), as amended, this Executive Regulation applies to safeguarding life, property and the public welfare from the risks of fire and explosion arising from the improper storage, handling, or use of materials or devices, and from conditions hazardous to life, property and the public welfare in the use or occupancy of structures or lots and adopts, except as amended in this Regulation, the National Fire Protection Association (NFPA) 1141, Standard for Fire Protection in Planned Building Groups, 2006 Edition, and NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting, 2006 Edition.

Section 2. Definitions.

- a. **Fire Department Apparatus Access.** Any approved load-bearing, all-weather surfaces, including public, private, or access roads, driveways, parking lots, shoulders, and buffers, whose use is required to access more than one residential dwelling unit or any non-residential occupied building. Not all roadways are required for fire department apparatus access. In addition to these access surfaces, the Fire Marshal may require, and must approve, all suitable gates, access boxes, and fire lanes to ensure adequate fire department apparatus access.
- b. **Fire Lane.** A road or path developed or reserved to allow fire apparatus to pass through congested areas. The Fire Marshal must require and approve all fire lanes on new or existing roads to be clearly marked to prohibit vehicles or obstructions from impeding fire department apparatus access.
- c. **Fire Marshal.** For purposes of this Regulation, the Fire Marshal of the Montgomery County Fire and Rescue Service (MCFRS) includes the Fire Marshal's designees.
- d. **One- and Two-Family Dwellings.** Detached one- and two-family dwellings and attached single-family dwellings (townhomes) not more than three stories in height with a separate means of egress.



MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject Fire Safety Code – Fire Department Apparatus Access and Water Supply	Number 29-08
Originating Department Montgomery County Fire & Rescue Service	Effective Date January 1, 2009

- e. **Operating Bay.** Clear and unobstructed fire department apparatus load bearing surface along **fire department apparatus access** that increases operating width to a minimum of 26 feet wide. It may be defined by bollards and accessed via 3 inch mountable curb. The minimum length of an operating bay is 50 feet.

Section 3. Fire Department Apparatus Access.

The **Fire Marshal** must review and approve **fire department apparatus access** for all new development, and any changes made to **fire department apparatus access**. A **fire department apparatus access** plan is required as part of any development plan. Fire department access improvements may be required at the time of road reconstruction, surrounding new development, or redevelopment. The **Fire Marshal** may require at least two **fire department apparatus access** roads into new developments when, in the **Fire Marshal's** opinion, there is substantial risk that a single fire department access road into a community may become impassable.

Section 4. Width of Fire Department Apparatus Access.

Fire department apparatus access must be at least 20 feet wide, unless specifically excepted in this Regulation, or as approved by the **Fire Marshal**. Clear width may include, but is not limited, to multiple features of the cross-section, such as travel lanes, bike lanes, and load-bearing shoulders. Clear width excludes obstructive features such as, but not limited, to parking lanes and non-mountable curbs.

- a. On-street parking is allowed on one side only if the load-bearing **fire department apparatus access** is at least 28-feet wide.
- b. On-street parking is allowed on both sides if the load-bearing **fire department apparatus access** is at least 36-feet wide. The required width may increase with additional roadway features, such as pedestrian refuges.
- c. **Fire department apparatus access** serving one- and two-family dwellings of three stories or less, with no superimposed dwelling units or portions of dwelling units, and having no window sill greater than 27 feet from grade on



MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject Fire Safety Code – Fire Department Apparatus Access and Water Supply	Number 29-08
Originating Department Montgomery County Fire & Rescue Service	Effective Date January 1, 2009

the same side of the structure as **fire department apparatus access**, may be 26-feet wide and allow parking on one side, if there are 50-foot long **operating bays** at 300-foot intervals. See Figure 1.

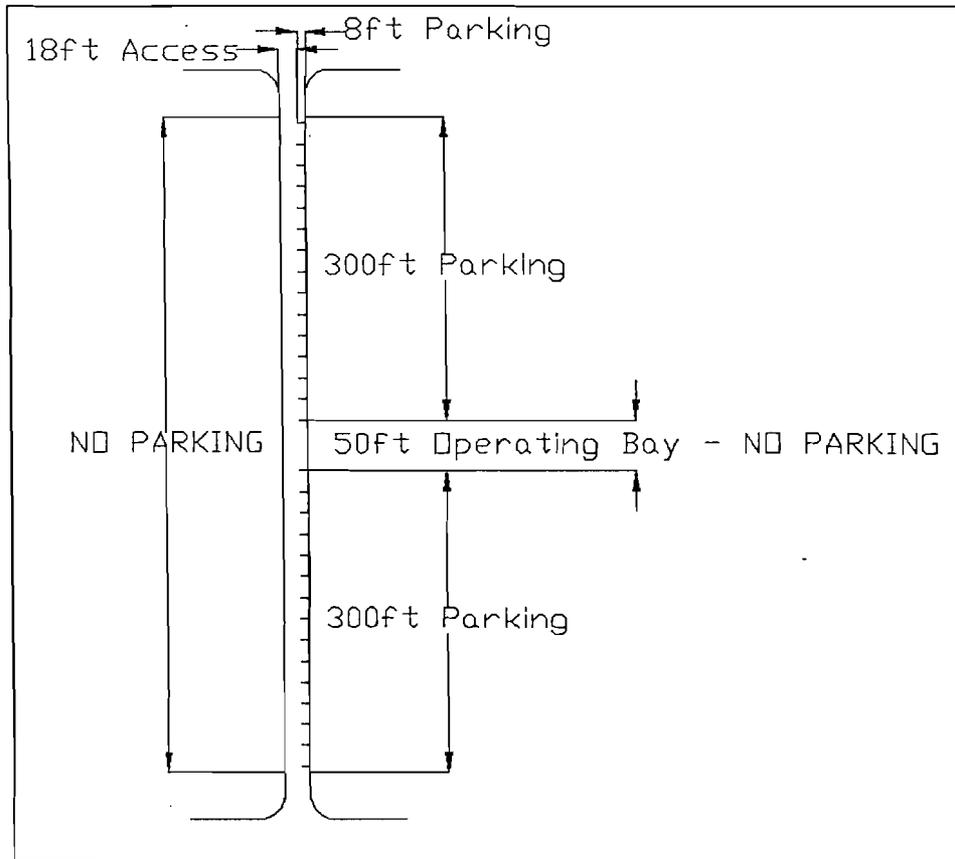


Figure 1. Operating bay application sketch

Section 5. Minimum and Maximum Turning Radii. The minimum interior turning radius for **fire department apparatus access** is 25 feet. The minimum exterior turning radius for **fire department apparatus access** is 50 feet. Performance-based approval of alternative turning radii may be allowed if apparatus movement into opposing lanes of traffic is minimized and unrestricted **fire department apparatus access** is maintained.



MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject	Fire Safety Code – Fire Department Apparatus Access and Water Supply	Number	29-08
Originating Department	Montgomery County Fire & Rescue Service	Effective Date	January 1, 2009

Section 6. Provision of Dead-End Apparatus Turn-Around. Dead-end fire department apparatus access greater than 150-feet long must provide an approved apparatus turnaround. Approved designs include a cul-de-sac at the closed end at least 90-feet in diameter, or a T-turnaround, with each leg of the tee at least 60-feet long and 20-feet wide.

Section 7. When a Building Requires an Automatic Sprinkler System.

- a. A building must be protected throughout by an approved automatic sprinkler system if any portion of its footprint is more than 150 feet of clear and unobstructed walkable grade from a **fire department apparatus access** point.
- b. No portion of a building footprint in a building protected throughout by an approved automatic sprinkler system can be more than 450 feet of clear and unobstructed walkable grade from a **fire department apparatus access** point.

Section 8. Access Requirements for Occupied Structures.

- a. One- and two-family dwellings of three stories or less, with no superimposed dwelling unit or portion of a dwelling unit, must provide access to the occupied interior through a main, side-hinged door, via a clear and unobstructed walkable grade, within 150 feet of **fire department apparatus access**.
- b. One- and two-family dwellings more than three stories, or dwellings with superimposed dwelling units or a portion of a dwelling unit, must provide access to the occupied interior through a main, side-hinged door, via a clear and unobstructed walkable grade, within 50 feet of **fire department apparatus access**.
- c. A non-residential occupied structure must provide access to the occupied interior through a main, side-hinged door, via a clear and unobstructed walkable grade, within 50 feet of **fire department apparatus access**.



MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject Fire Safety Code – Fire Department Apparatus Access and Water Supply	Number 29-08
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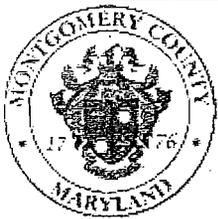
- d. When **fire department apparatus access** to a new building cannot be provided, the **Fire Marshal** may require compensatory actions in the form of additional fire protection features. Compensatory action may include, but is not limited, to upgraded sprinkler protection, onsite water supply, and early notification fire alarm systems.

Section 9. Fire Department Apparatus Access Requirements: Surface, Load-Bearing, Clearance.

- a. At-grade **fire department apparatus access** must have all-weather surface, and must be capable of bearing the heaviest piece of apparatus in the MCFRS fleet at the time of **Fire Marshal** review and approval.
- b. Elevated decks designated as “**fire department apparatus access**” must have all-weather surface, and be load-bearing up to 75 pounds per square inch, or as specified in Chapter 20 of NFPA Standard 1901, Automotive Fire Apparatus, whichever is greater, or as approved by the **Fire Marshal**.
- c. All buildings, parts of buildings, or other obstructions extending over apparatus access must have a minimum of 13.5 feet vertical clearance from the finished driveway surface. Vertical clearance for any overhead obstruction over arterial roadways must be at least 16 feet from the finished surface. This requirement does not preclude the planting of street trees if maintained appropriately for **fire department apparatus access**.

Section 10. Water Supply Requirements along Fire Department Apparatus Access Routes.

- a. In municipally-supplied areas, hydrants must be spaced not more than 500 feet apart, and within 400 feet from any dead- ends in apparatus travel.
- b. In non-municipally supplied areas, static water sources compliant with NFPA 1142, Water Supplies for Suburban and Rural Firefighting, must be



MONTGOMERY COUNTY EXECUTIVE REGULATION

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Subject Fire Safety Code – Fire Department Apparatus Access and Water Supply	Number 29-08
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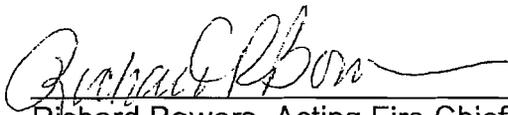
sited not more than one mile travel distance along **fire department apparatus access** routes. If an acceptable water supply is not available at the time of development:

1. residential development of more than one dwelling unit must dedicate an easement along the **fire department apparatus access** route to MCFRS that is appropriate in size for the grading and installation of an underground cistern.
2. Non-residential development must install a new, or upgrade an existing water supply, that is acceptable to the **Fire Marshal**.

Section 11. Alternative Application. The alternative application of performance-based design, as specified in Chapter 5 of NFPA 1, Uniform Fire Code, applies to any **fire department apparatus access** requirement identified in this Regulation.

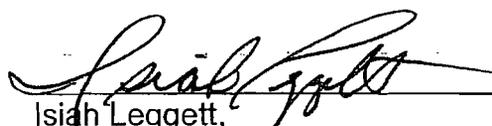
Section 12. Administrative Interpretations. The Fire Marshal will issue administrative interpretations as needed to clarify **fire department apparatus access** requirements for recurrent design issues that are not specifically addressed in this regulation.

Recommended:


 Richard Bowers, Acting Fire Chief
 Montgomery County Fire and Rescue Service

12/1/08
 Date

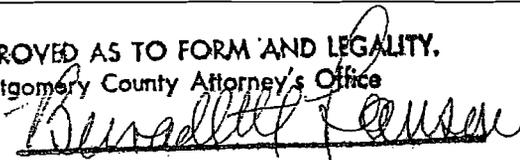
Approved:


 Isiah Leggett,
 County Executive

Dec 10/2008
 Date

APPROVED AS TO FORM AND LEGALITY.
Montgomery County Attorney's Office

By:





MONTGOMERY COUNTY FIRE AND RESCUE SERVICE

Isiah Leggett
County Executive

Thomas W. Carr, Jr.
Fire Chief

MEMORANDUM

August 21, 2008

TO: Isiah Leggett, County Executive

VIA: Joseph Beach, Director *B. Feenberg for*
Office of Management and Budget

FROM: Thomas W. Carr, Jr., Fire Chief *TWC*

SUBJECT: Request Approval of Executive Regulation No. 29-08, *Fire Safety Code – Fire Department Apparatus Access and Water Supply*

Attached for your signature and publication in the Montgomery County Register is Executive Regulation No. 29-08, *Fire Safety Code – Fire Department Apparatus Access and Water Supply*.

This new regulation amends the Fire Safety Code by establishing public and private roadway and water supply requirements that ensure efficient and timely delivery of emergency assistance and fire suppression services in urban, suburban and rural settings. Critically important to the regulation and development community is the allowance for performance-based design. This provides the development community with the latitude to find the most cost-effective means of achieving adequate fire department access while meeting the fire service need to arrive as expeditiously as possible.

The regulation does not require any additional resources from the Montgomery County Government. Resources are in place and already perform the associated review function. The same applies to the private sector. In fact, this regulation will ease the burden on the private sector by clarifying the expectations for fire department apparatus access and water supply, at the same time permitting flexibility.

If additional information is needed, please call Assistant Chief Mike Donahue
Ext. 7-2470.

TWC:md

Attachments

Office of the Fire Chief

Issuing Department Fire and Rescue

Contact Person Michael Donahue, 7-2470

Executive Regulation No. 29-08

FISCAL IMPACT STATEMENT
Fire Safety Code – Fire Department Apparatus Access and Water Supply
Title of Regulation

FISCAL SUMMARY: No fiscal impact is anticipated on county personnel or operating costs. Functions associated with regulation are already performed and no additional resources are required.

	<u>Current Fiscal</u> <u>Year FY 09</u>	<u>Next Fiscal</u> <u>Year FY 10</u>
<i>1. Revenues: General Fund</i>	\$ 0	\$ 0
<i>Technology Fund</i>	<u>\$ 0</u>	<u>\$ 0</u>
Total Revenues	\$ 0	\$ 0
<i>2. Personnel Costs: All uniformed positions</i>		
Salaries and Wages (including OT):	\$ 0	\$ 0
Fringe Benefits:	<u>\$ 0</u>	<u>\$ 0</u>
Total Personnel Costs:	\$ 0	\$ 0
<i>3. Operating Expenses:</i>		
List Items:		
Total Operating Expenses:	\$ 0	\$ 0
Capital Outlay:	\$ 0	\$ 0
<i>Technology Fund</i>	<u>\$ 0</u>	<u>\$ 0</u>
Total Expenses (2 + 3):	\$ 0	\$ 0
<i>4. Positions Affected:</i>		
Positions:		
Full-time:	0	0
Part-Time:	0	0
Workyears:		
Full-time:	0	0
Part-Time:	0	0

5. Assumptions and Explanations: See attached memo.

6. Economic Effect on Private Sector: New developments are currently reviewed for adequate fire department apparatus access against the standard adopted in NFPA 1, *Uniform Fire Code*. The proposed regulation is not anticipated to have negative economic effect on the private sector in new development. The proposed regulation may have a positive economic effect through the allowance for performance-based design which may provide for narrower streets. The proposed regulation applies standards for fire department apparatus access to existing roadways at the time of redevelopment or reconstruction. Review in such cases already occurs and will not add to existing work-load.

If additional space is needed, please attach.

OMB REVIEW

Fiscal Impact Statement approved Beryl L. Feuerberg for Joseph F. Beach
OMB Director

Fiscal Impact Statement not approved, OMB will contact department to remedy.

Questions

Regulation 29-08, Fire Safety Code – Fire Department Apparatus Access and Water Supply

Fire Department Apparatus Access

1. Section 3, Fire Department Apparatus Access, requires that the Fire Marshal review and approve fire department apparatus access for all new development and any changes made to fire department apparatus access. It says further that “Fire department access improvements may be required at the time of road reconstruction, surrounding new development, or redevelopment.”

Please explain in more detail when fire department apparatus access reviews would be triggered for existing roads or development.

Fire department apparatus access reviews are triggered by the Montgomery County’s MNCPPC Development Review Committee process. Alterations to existing roads are implemented on a case by case basis depending on extent of redevelopment.

2. When would the Fire Marshal have discretion to use performance-based alternatives to meet fire department apparatus access requirements?

All designs originate with a design professional. At the request of design professionals and in response to context sensitive community needs the Fire Marshal has the discretion to review performance-based options to meet fire department apparatus access requirements based on 2003 NFPA 1 (adopted by Montgomery County in November 2006) Chapter 5 Performance-Based Option.

3. What standards or guidelines serve as the basis for the Fire Marshal to adopt performance-based alternatives for clear width or turning radii?

Performance-based alternatives for clear width or turning radii are adopted by Montgomery County through Chapters 5 of NFPA 1 and NFPA 101. The Office of the Fire Marshal is staffed and conducts performance-based modeling to evaluate turning radii, widths and other access variables.

4. If the fire department access standards of 20 feet clear width conflict with development goals of narrower streets to promote more walkable neighborhoods or slower local traffic, could performance-based alternatives be used to address these design issues? If so, what alternative options might be available?

The issue that presents itself is aerial ladders require 16’ – 18’ clearance to set the grounds jack’s on operations.

Yes. Alternative options are based on a risk assessment of the community, opportunities to create clear non-conflicting width, and roadway networking, among other design inputs. According to the Congress for New Urbanism (CNU), traditional neighborhood designs or interconnected neighborhood design is a performance-based design. The Montgomery County Fire Marshal sits on the CNU committee tasked with reconciling the needs of various stakeholders at the national level.

Water Supply

Hydranted

The regulation would require that in municipally-supplied areas, hydrants must be spaced no more than 500 feet apart, and within 400 feet from any dead-ends in apparatus travel.

1. What are the current standards for spacing fire hydrants in areas with municipal (including WSSC) water supplies?

Coordination with WSSC in April 2007 lead to hydrant spacing revisions published in the 2008 WSSC Pipe Design Manual. Maximum hydrant spacing is now 500ft. It was previously 800ft in single family residential areas.

2. Under the regulation, would the spacing of existing hydrants have to be modified if they do not meet the new standards?

Spacing of existing hydrants does not need to be modified. Development beyond 500ft from the nearest existing hydrant and adding some length of a private or public water main would be required to add a hydrant at the beginning of the development and every 500ft along the length of the new main.

3. Are the municipal water authorities (including WSSC) in agreement with the new standards?

Yes.

We do not have a response from the City of Rockville, and the town of Poolesville in regards to their position on the new standards.

WSSC 2008 Pipe Design Manual Section 24.d

- 1) *Single family residential areas. Provide five hundred (500) feet maximum spacing between fire hydrants, as measured along an improved roadway, and a maximum*

- fire hydrant coverage of four hundred (400) feet from the nearest fire hydrant to any dwelling as measured along an improved roadway (as a fire engine would drive).*
- 2) *Townhouses and garden apartments. Provide two hundred fifty (250) to three hundred (300) feet maximum spacing between fire hydrants, as measured along an improved roadway, and a maximum fire hydrant coverage of three hundred (300) feet from the nearest fire hydrant to any dwelling as measured along an improved roadway (as a fire engine would drive).*
 - 3) *All other areas. (commercial, industrial, high-rise, elevator type apartments, etc.). Provide two hundred fifty (250) to three hundred (300) feet maximum spacing between fire hydrants, as measured along an improved roadway. Conform to any additional requirements of the Fire Marshall for fire hydrant spacing.*

Non-hydranted

In non-hydranted areas, the regulation would require that residential development of more than one dwelling unit must dedicate an easement along the fire department apparatus access route that is appropriate in size for the grading and installation of an underground cistern.

4. How much land would be required for an easement in a residential development? Please provide a range if the size of the easement would vary with the size or scope of the development.

One important issue is to determine ownership.

Easement size varies based on topographical conditions. Developers are asked to design a location for a 30,000gal underground storage tank and access pulloff for apparatus, approximately 40ft x 75ft. The easement must include sufficient area necessary for installation and final grading.

5. Who would pay for and install the cisterns?

It is currently anticipated that a future Montgomery County Capital Improvements Project will fund the underground storage tank installations. These cisterns will serve pre-existing communities as well as new development. We are exploring alternative funding to include grants.

Water on wheels is a much better option particularly when hydranted infrastructure is down.

6. How have water supply issues in non-hydranted residential areas been handled to date? Were easements and/or cisterns required previously? If so, which existing developments currently have them? If not, how is water provided for firefighting?

Water supply was handled by the LFRDs and operational policies. There was no coordinated county-wide strategic effort. In the non-hydranted areas (ISO class 9) of the county manual firefighting water supply is provided by shuttling water in tankers.

Tank wagon units are an option that also needs to be considered particularly when hydranted infrastructure is down.

7. The regulation would require non-residential development in non-hydranted areas to install a new or upgrade an existing water supply. Presumably, the developer would have to undertake and pay for these improvements. What would be involved in making the improvements, and approximately how much would they cost?

It is incumbent upon developers to provide a code compliant patent all-season water supply of sufficient quantity for fire protection systems and manual firefighting. Cost varies depending on existing conditions and level of proposed development.

8. How have water supply issues in non-hydranted, non-residential areas been handled to date? Have water supply upgrades been required previously? If so, which existing non-residential developments have them? If not, how is water provided for firefighting?

Water supply was handled by the LFRDs and operational policies. There was no coordinated county-wide strategic effort. There were no pre-existing code compliant cisterns on record. As a result of this initiative due to adoption of NFPA 1 in 2003 there is now one code compliant tank in service.



MONTGOMERY COUNTY PLANNING BOARD
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

OFFICE OF THE CHAIRMAN

September 29, 2008

Isiah Leggett
Montgomery County Executive
Executive Office Building
101 Monroe Street
Rockville, MD 20850

RE: MCER NO. 29-08: PROPOSED DEPARTMENT OF FIRE AND
RESCUE SERVICE REGULATION, Fire Safety Code – Fire Department
Apparatus Access and Water Supply

Dear Mr. Leggett:

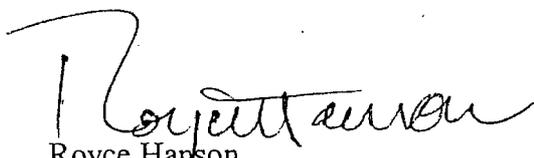
At our regularly scheduled meeting on September 25, 2008, the Planning Board reviewed the proposed Department of Fire and Rescue Service Regulation MCER No. 29-08 with your staff and made the following recommendations:

1. The Executive should convene an interagency working group to develop appropriate provisions to address issues associated with private development and environmental impacts before submitting these regulations to the County Council.
2. Add language that describes the exceptions or discretion that the Fire Marshall has so that applicants and reviewers can understand what non-standard items may be allowed. The waiver criteria should include consideration of other County goals such as preserving/protecting sensitive areas (e.g. historic settings, environmental areas, specimen/champion trees) and preserving rural character.
3. Clarify which driveways need to meet the 20-foot unobstructed width requirement.
4. Consider allowing parking on both sides of 26-foot-wide roads if the street pattern in the area would otherwise allow adequate fire access.
5. Clarify how the fire department access road requirements, including parking prohibitions on existing streets, would be applied to infill development.
6. A definition of an all-weather surface is needed. Grasscrete and other forms of more pervious pavement surfaces should be included.
7. The size of the easement needed for fire department-required cisterns needs to be specified.

8. All Executive departments should be required to identify when they are proposing to purchase larger vehicles than their current fleet and what road changes would be needed to accommodate them.

Thank you for your attention to this matter. We appreciate your staff's help in finding mutually satisfactory solutions and look forward to continuing to work with them. If you have any questions or comments concerning our review, please call Larry Cole at 301-495-4528.

Sincerely,



Royce Hanson
Chairman

cc: Mike Donahue

Resolution No.: _____
Introduced: _____
Adopted: _____

COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND

By: County Council

Subject: Approval of Executive Regulation 29-08AM, Fire Safety Code – Fire Department Apparatus Access and Water Supply

Background

1. The Council received proposed Regulation 29-08, *Fire Safety Code – Fire Department Apparatus Access and Water Supply*, on December 11, 2008.
2. The Council must review Regulation 29-08 under method (2) of Section 2A-15 of the County Code.
3. On February 3, 2009, the Council adopted Resolution 16-829, extending the deadline for Council action on Regulation 29-08 to June 30, 2009.
3. The Public Safety and Transportation, Infrastructure, Energy and Environment Committees reviewed Regulation 29-08 on January 29 and March 4, 2009, and requested certain amendments. The Committees recommended approval with the requested amendments.
4. The Executive amended Regulation 29-08 as the Committees requested, and reissued and re-numbered it Executive Regulation 29-08AM to indicate that it was amended after transmittal to the Council.

Action

The County Council for Montgomery County, Maryland approves the following resolution:

Executive Regulation 29-08AM, *Fire Safety Code - Fire Department Apparatus Access and Water Supply*, is approved.

This is a correct copy of Council action.

Linda M. Lauer, Clerk of the Council

fire&res\reg\29-08am res approval.doc