

Response to Questions on the FY 2018 Budget

Request By: Supervisor McKay

Question: Please provide information concerning the status of sprinkler systems in the County's fire stations.

Response: Building life-safety systems include building equipment designed to protect and evacuate the building occupants in emergencies including fires, earthquakes and other events. Fire detection systems include electronic heat and smoke detectors that can activate audible fire alarm systems which automatically notify local fire departments. For fire building suppression systems, hand-operated fire extinguishers and building sprinklers systems are provided. Smoke is as dangerous as fire, so protective measures include the automatic shutdown of ventilating systems (HVAC) and elevators. Order of magnitude cost estimates based on the recent (FY 2017) West Springfield Fire Station Life Safety System upgrade/replacement is \$100,000 to replace an existing fire alarm system at a Facilities Management Department (FMD) maintained fire station. This cost includes construction drawings, calculations, permitting, supplies and materials, construction, and return of impacted finishes. The average project would replace the fire panel, sprinklers, carbon detectors, smoke detectors, strobes, fire pump, and extend sprinklers into bays. A list of all County Fire Station with their status of building life safety system is presented in priority phases:

PHASE I
Replacement of obsolete Siemens MXL-IQ Fire Alarm Systems –
Estimated Costs of \$900,000 for 9 Systems

Although all the existing fire station fire alarm systems listed under Phase I are functioning without issue, FMD recommends replacing the systems at these stations that have Siemens MXL-IQ Systems. As of 2017 Siemens is no longer supporting these systems or manufacturing replacement parts. The MXL-IQ Siemens System is installed at 14 Fire Stations. Of the 14 stations, 5 are in pre-design or design for demolition or renovation by DPWES. Therefore, fire alarm systems for the remaining nine stations, listed below, is estimated to cost **\$900,000**. If the stations scheduled to be renovated or replaced as part of the 2018 and 2022 Bond Referendum or as part of proffer contributions are removed, the cost is estimated to be **\$400,000**.

Station	Name	Alarm	Building Sprinkler	Bay Sprinkler	System Make and Model	Date Installed	Comments
FIRE STATION 1	McLean	YES	YES	YES	Siemens MXL-IQ	6/1/2006	
FIRE STATION 20	Gunston	YES	YES	NO	Siemens MXL-IQ	6/1/2002	Fall 2018 Bond scheduled in CIP. If approved, this station is estimated to be completed within 4-5 years.
FIRE STATION 28	Seven Corners	YES	YES	NO	Siemens MXL-IQ	8/1/2001	Fall 2018 Bond scheduled in CIP. If approved, this station is estimated to be completed within 4-5 years.
FIRE STATION 29	Tyson	YES	YES	NO	Siemens MXL-IQ	6/1/2006	Proffer – anticipated to be completed by 2023.
FIRE STATION 31	Fox Mill	YES	YES	NO	Siemens MXL-IQ	10/1/2000	Fall 2018 Bond scheduled in CIP. If approved, this station is estimated to be completed within 4-5 years.
FIRE STATION 32	Fairview	YES	YES	NO	Siemens MXL-IQ	10/1/2000	Fall 2018 Bond scheduled in CIP. If approved, this station is estimated to be completed within 4-5 years.
FIRE STATION 34	Oakton	YES	YES	NO	Siemens MXL-IQ	3/1/2005	Replacement would include extension of sprinklers to the bay area
FIRE STATION 39	North Point	YES	YES	YES	Siemens MXL-IQ	3/1/2001	
FIRE STATION 40	Fairfax Center	YES	YES	YES	Siemens MXL-IQ	3/1/2006	

**PHASE II
Extension of Existing Sprinkler Systems – Estimated Costs (\$120,000)**

The following 4 fire stations have operable and up-to-date fire alarm and sprinkler systems in the administration/living quarters side of the building. The main building is separated from the bay areas by fire rated walls. FMD recommends extension of the sprinkler systems into the bay areas. It should be noted that all 4 stations are scheduled to be renovated or replaced as part of the 2018 and 2022 Bond Referendum, at which time the full fire alarm systems will be replaced. Estimated costs to extend these systems to the bay areas in advance of the scheduled Bond Referendum is **\$120,000**.

Station Number	Name	Alarm	Building Sprinkler	Bay Sprinkler	System Make and Model	Date Installed	Comments
FIRE STATION 9	Mt Vernon	YES	YES	NO	Silent Knight 5820XL	7/1/2010	Fall 2018 Bond scheduled in CIP
FIRE STATION 15	Chantilly	YES	YES	NO	Silent Knight 5820XL	12/1/2012	Fall 2022 Bond scheduled in CIP
FIRE STATION 35	Pohick	YES	YES	NO	Silent Knight 5820XL	8/1/2008	Fall 2022 Bond scheduled in CIP
FIRE STATION 36	Frying Pan	YES	YES	NO	Silent Knight 5820XL	11/1/2008	Fall 2022 Bond scheduled in CIP

**Stations Scheduled for Planned Renovation/Demolition
DPWES In Design**

FMD recommends no changes to the fire alarm systems at these stations since these fire stations are already scheduled for renovation by DPWES. The new fire stations are scheduled to have full life safety systems, i.e., fire alarms and sprinkler systems in both the administrative/living quarters and the bay areas.

Station Number	Name	Alarm	Building Sprinkler	Bay Sprinkler	System Make and Model	Date Installed	Comments
FIRE STATION 11	Penn Daw	YES	PARTIAL	NO	Siemens MXL-IQ	1/1/2004	DPWES Pre-Design
FIRE STATION 18	Jefferson	YES	YES	NO	Siemens MXL-IQ	10/1/2001	DPWES Design
FIRE STATION 19	Lorton	NO	NO	NO			DPWES Design
FIRE STATION 30	Merrifield	YES	YES	YES	Simplex 4010	6/1/2003	DPWES Pre-Design
FIRE STATION 24	Woodlawn	YES	YES	NO	Siemens MXL-IQ	8/1/2006	DPWES Pre-Design
FIRE STATION 25	Reston	YES	YES	NO	Siemens MXL-IQ	8/1/2001	DPWES Pre-Design
*FIRE STATION 26	Edsall	YES	YES	NO	Silent Knight 5820XL	8/1/2008	DPWES Pre-Design

*Reconstruction of the damaged bay area will include a sprinkler system.

Stations No Actions Required/Recommended

Based on existing conditions, FMD recommends no changes to the building life safety systems at the fire stations listed below. These listed fire stations have full life safety systems (fire alarm and sprinkler systems).

Station Number	Name	Alarm	Building Sprinkler	Bay Sprinkler	System Make and Model	Date Installed	Comments
FIRE STATION 4	Herndon	YES	YES	YES	Silent Knight EF1000	2017	
FIRE STATION 10	Bailey's	YES	YES	YES	Silent Knight 5700	2015	
FIRE STATION 12	Great Falls	YES	YES	YES	Simplex 4010	10/1/2011	
FIRE STATION 16	Clifton	YES	YES	YES	Silent Knight 5820XL	11/1/2012	
FIRE STATION 21	Fair Oaks	YES	YES	YES	Silent Knight 5129	2011	
FIRE STATION 27	West Springfield	YES	YES	YES	Silent Knight 5820XL	5/1/2017	
FIRE STATION 37	Kingstowne	YES	YES	YES	Silent Knight 5820XL	8/1/2013	
FIRE STATION 38	West Centreville	YES	YES	YES	Silent Knight 5820XL	6/1/2013	
FIRE STATION 41	Crosspointe	YES	YES	YES	Notifire NFS-640	4/1/2007	
FIRE STATION 42	Wolf Trap	YES	YES	YES	Siemens FS-250	1/1/2013	

Volunteer Stations NOT Owned by the Board of Supervisors

FMD does not operate or maintain these sites. Staff does not currently have details about the systems in place at these stations or the costs for the five stations which do not have complete systems currently in place.

Station Number	Name	Alarm	Building Sprinkler	Bay Sprinkler
FIRE STATION 2	Vienna	YES	YES	YES
FIRE STATION 5	Franconia	YES	NO	NO
FIRE STATION 8	Annandale	YES	YES	YES
FIRE STATION 13	Dunn Loring	YES	NO	NO
FIRE STATION 14	Burke	YES	YES	NO
FIRE STATION 17	Centreville	YES	NO	NO
FIRE STATION 22	Greater Springfield	YES	NO	NO
FIRE STATION 23	West Annandale	NO	YES	YES