South King Fire and Rescue
Fire Alarm Requirements

- **Where required**

  Federal Way City Code and Des Moines Municipal Code require a fire detection system in all new construction exceeding 3,000 square feet gross floor area. Fire walls as noted in the International Building Code shall not be considered to separate a building to enable deletion of the required fire detection system.

  Exception: 1. Group R, Division 3 occupancies

  Fire Detection System shall mean a heat and/or smoke detection system monitored by a central and/or remote station conforming to the current requirements of the National Fire Protection Association standard and/or the fire chief or designee.

  Total (Complete) Coverage is required. Complete Coverage of the fire alarm system may be achieved by sprinkler protection in certain applications.

- **Supervision**

  Alarm systems shall be supervised by an approved central, proprietary or remote (U.L. or F.M. listed) station (International Fire Code chapter 9). The dispatch center for South King Fire and Rescue is Valley Communications Center; the phone number is (253)852-2121.

  Alarm, supervisory, water flow and trouble signals shall be distinctly different and shall be automatically transmitted.

- **Fire Alarm Control Units.**

  One fire alarm control unit is required per building. The control unit shall be mounted in an approved location, mounted at eye level and meet all electrical code requirements.

  Any fire alarm control unit that uses a combination to reset after alarm shall use the following combination: Two digit fire district followed by 123 (39123 for South King Fire).

- **Fire Alarm Zones/Remote Annunciation**

  Addressable systems are not required but desirable.

  All fire alarm systems shall be divided into zones. All buildings having area separation walls shall be zoned for each separate area. Strip mall type buildings shall be zoned for each tenant in the building.

  Specific zoning is required for other functions supervised by the fire alarm system such as, but not limited to, sprinkler systems, elevator controls, duct detection, water supply tanks and valve supervision. See the specific function for requirement for zones.

  Approved annunciator panels shall be provided on all systems when two or more zones are required or on all systems having more than 12 actuating devices. The actuating devices shall be the sum total of all manual fire alarm devices, smoke detectors, heat detectors and/or monitoring devices for sprinkler systems.

  The location of an operated initiating device shall be visually indicated by building, floor, fire zone or other approved building subdivision. The visible indication shall not be cancelled by operation of an audible alarm-silencing switch.

  Visible annunciation shall be provided at the main entrance to the building or in a location approved by the Fire Marshal's Office.

- **Manual Fire Alarm Boxes**

  Manual fire alarm boxes shall be located as required by the IFC. At least one manual fire alarm box will be required at an approved location.

- **Smoke Detectors**

  Smoke detectors shall be installed in corridors, interior exit ways, exit passage ways, halls, lobbies, foyers, offices,

meeting rooms, assembly rooms, sitting rooms, classrooms, electrical rooms, communication rooms, display rooms and rooms used for sleeping purposes.

Exception: Smoke detectors, where not otherwise required by the IFC or IBC, may be omitted in rooms or areas protected throughout by an approved and monitored sprinkler system.

- **Heat Detectors**

  System type heat detectors shall be installed in recreation rooms, laundry rooms, kitchens, dining rooms, furnace rooms, toilet rooms, storage rooms, concealed spaces provided with access ways, storage areas, basements, attics, lofts, spaces above suspended ceilings, accessible spaces, closets, enclosed stairways, dumbwaiter shafts and chutes. Detectors may also be required underneath open loading docks or platforms and their covers and for accessible under floor spaces of buildings without basements**. Heat detectors may be deleted from any room or space that is fully protected with a monitored sprinkler system.**

  Heat detectors installed in interstitial spaces shall have either a latching L.E.D. indicator on the detector or a remote L.E.D. plate mounted on the ceiling. Interstitial detectors shall be zoned by floor and firewall. Interstitial zones shall not be combined with other zones. Addressable heat detectors may not require remote annunciation.

  Heat detectors are not required above suspended ceilings or other concealed spaces in fully sprinklered buildings when sprinklers are omitted from that area because of non-combustible construction.

- **Audible and Visible Alarm Devices.**

  All fire alarm systems shall include both audible and visible alarm devices (horn/strobes).

  Horn/strobes shall be installed in all common-use rooms/areas. These rooms/areas include, but are not limited to, corridors, conference rooms, meeting rooms, parking garages, warehouses, waiting rooms, lunch rooms, training rooms, classrooms and open plan offices. Visible alarms are not required in Group R, Division 1 or Group R, Division 3 Occupancies. Alarm systems in Group I, Divisions 1, 1.1 and 1.2 may be modified to suit standard health care practices.

  Audible alarm devices shall produce a sound that exceeds the prevailing equivalent sound level in the room or space by 15 decibels minimum, or exceeds any maximum sound level with duration of 30 seconds minimum by 5 decibels minimum, whichever is louder. Sound levels for alarm signals shall not exceed 110 decibels.

  The American National Standard evacuation signal shall be used. The signal shall be synchronized with a notification zone.

  Wall-mounted appliances shall have their bottoms at heights above the finished floor of not less than 80 in. and no greater than 96 in. Ceiling-mounted appliances shall be installed per NFPA 72.

  All visible alarm devices shall comply with UL 1971, *Standard for Safety Signaling Devices for the Hearing Impaired* and be installed per NFPA 72.

  A local alarm consisting of an exterior mounted horn/strobe (or bell/strobe) unit shall be provided for all fire alarm systems. Devices shall be listed for outdoor use and installed on the outside of the building facing the fire department access roadway. Exterior mounted devices shall be mounted high enough so as to be visible from the access roadway and maintained free and clear of all visual obstructions of any kind.

- **Elevators**

  There shall be one smoke detector installed in all elevator equipment rooms. These detectors are for Fire Alarm activation only and are not part of the elevator recall.

- **Duct detection**

  When required, shall be on a separate zone. Zones that have more than one duct detector shall be four-wired. Duct detectors shall have remote test and L.E.D. indicators, which are visible from a normally occupied room/area. Addressable duct detectors may be exempt from remote test and L.E.D.

  Duct detectors shall have one set of alarm contacts connected to the fire alarm system and the second set of contacts connected to the air handling system to facilitate shutdown. Energy management systems shall not be the primary means of automatic shutdown unless listed for fire control and/or approved by the Fire Marshal's Office.

- When automatic sprinkler systems are installed, such systems shall be connected to the building fire alarm system.

- All fire pumps and controllers shall be supervised in accordance with the provisions of NFPA 20.
- The fire suppression system shall be connected to the fire alarm system so that the actuation of the extinguishing system will sound the fire alarm as well as provide the function of the extinguishing system.