

To: David De Angelis, Village Manager  
CC: James Gage, Police Chief  
David Kastenholz, Fire Chief  
From: Jon Robinson, EMS Chief  
Date: May 4, 2021  
Re: Mandel Project Public Safety Impacts

I have reviewed the questions and concerns of both the Fire and Police Chiefs and concur.

I have the additional following concerns and comments:

- 1) Current Building Code (2015 IBC, Chapter 30, Section 3001)
  - a. **3002.4 Elevator car to accommodate ambulance stretcher**
    - i. “Where elevators are provided in building four or more stories above, or four or more stories below, grade plane, not fewer than one elevator shall be provided for fire department emergency access to all floors. The elevator car shall be of such a size and arrangement to accommodate an ambulance stretcher 24” x 84” (610mm x 2134 mmm) with not less than 5-inch (127 mm) radius corners, in the horizontal, open position and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall be not less than 3 inches (76 mm) in height and shall be placed inside on both sides of the hoistway door frame.”
- 2) Numbers of Elevators and Elevator Locations
  - a. Current building code requires “not fewer than one” elevator. Large complexes in Elm Grove have taken this to mean that **ONLY ONE** elevator needs to meet this Code, not all passenger elevators (if there are more than one).
    - i. Having only 1 elevator being able to handle an EMS stretcher has led to significant and serious delays in accessing and removing patients from the far end of existing buildings/complexes in the Village, despite having a much closer but unusable elevator.
- 3) Elevator Size
  - a. The current codes are based on an EMS cot length **WITHOUT** any accessory attachments such as oxygen bottles, defibrillator, etc. These add up to another 8 inches of length. This has necessitated having to put critical patients or patients with hip fractures into the semi-upright (semi-sitting) position to fit into the elevator. This interferes with CPR and/or causes additional pain.
    - i. Our current stretcher dimensions with accessories are 86” x 23”.
    - ii. A backboard that is hand carried has dimensions of 72” x 16”.
  - b. The current codes also require the cot to fit **DIAGONALLY**, not lengthwise. Again, this displaces needed personnel during critical situations.
- 4) Apartment Configuration
  - a. Again, access to common call areas (e.g. Bedrooms and Bathrooms) with many of the apartment configurations **DO NOT** allow adequate access to patients in critical situations. Small width hallways and sharp 90 degree turns do not allow the patients to be removed in a horizontal position without essentially bending them and dragging them.

5) Run Volume Impact Analysis

- a. See the attached Excel spreadsheet "Stats for Run Volume Projections"
  - i. Comparisons were made to the Mandel Properties provided: Chiswick Place, Beaumont Place, and Lighthouse.
  - ii. Baseline Statistics for current EGEMS yearly runs, EG age demographics, and Location of EMS call are shown in the upper portion of the spreadsheet, and are used for comparison and validation.
  - iii. Assumptions utilized:
    1. Ages of the residents of the new Mandel development will mirror the 3 properties above.
    2. The Likely # of people per residence unit were the number provided by Mandel (1.44 for Apartments, 2.62 for SF Homes).
- b. Findings for the Current Mandel Proposal of 230 apartments and 22 Single Family Homes:
  - i. There will be an approximate **6.61% increase in population** for Elm Grove at full occupancy.
  - ii. Runs (EMS Calls for Service) generated per year:
    1. **18-43 extra EMS runs per year (6.2% to 14.8% Increase)**
    2. Lower end: 18 runs if the population ages mirror the other Mandel Properties provided.
    3. Upper end: 43 runs if the apartment population ages exceed age 59.
  - iii. This equates to 27 to 64.5 additional hours of EMS runs made.
    1. Average EMS call is 90 minutes and has 4 EMTs per call
    2. This equates to **108 hours (4x27) to 258 hours (4x64.5) of additional time commitment for the EMS volunteers.**

6) Concerns:

- a. The additional time commitments for the EMS volunteers will negatively impact those EMTs who can and do respond.
- b. Currently there are fewer and fewer EMS volunteers. As our current staff ages out there are dwindling numbers to replace them.
- c. Approximately 8 personnel (EMTs, Paramedics, Nurse, MD) total are making 90% of the current calls.
- d. As more workload is placed on the remaining EMTs more may leave the service.
- e. If that "Burnout" limit is reached we may need to consider the additional costs of either:
  - i. Supplementing the current EMS staffing with paid Full-Time employees, or
  - ii. Contracting out the entire service to another municipality. The estimate we received for this was over \$2 million/year a number of years ago.

7) Suggestions: Exceed Code and Mandate that:

- a. If 2 or more passenger elevators exist then they all need to be able to accommodate our emergency stretcher.
- b. If only a single passenger elevator exists then it must be positioned within 5 feet of the midpoint of the hallway extent on the floor (i.e. the apartments farthest from the elevator on each side should be equidistant from the elevator).
- c. The elevator car shall be of such a size and arrangement to accommodate an ambulance stretcher of 26" x 87" in the horizontal open position, AND shall also accommodate at least 2 EMTs to functionally care for the patient.
- d. Design of the apartment layout should allow access to all rooms (except the bathroom) with a backboard measuring 16" x 72" in the horizontal flat position.

- e. An elevator key for “Fire Department Elevator Control/Override” shall be easily accessible to EMS personnel.

Please let me know if you have any questions related to the information listed above.

Respectfully,

Jon Robinson, MD  
EMS Chief and Medical Director  
Elm Grove Emergency Medical Services