

**Fire Station Study Committee
Presentation of Warrant Article #16
Fall Town Meeting**

Thursday, October 24, 2024

Video of this meeting can be found at

[View Town Meeting: Fall Day Two – October 24, 2024 | Chelmsford TV](#)



**TOWN OF CHELMSFORD
FIRE STATION STUDY COMMITTEE
WARRANT ARTICLE #16
FIRE STATIONS #3 & 5
PROPOSED RECONSTRUCTION PROJECTS
OCTOBER 2024 FALL TOWN MEETING**

Web Site with Summary and Detailed information:
<https://www.chelmsfordma.gov/1057/Fire-Station-Study-Committee>

AGENDA

- ▶ **Warrant Article #16**
- ▶ **Fire Station Study Committee (FSSC) Work Summary**
- ▶ **Stations 3 and 5 renovations/rebuilds**
- ▶ **Debt Service Projections & Estimated Impact to Average Household**
- ▶ **Public Education**

▶ **Warrant Article #16**

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WARRANT ARTICLE 16

BOTTOM LINE - WHY ARTICLE 16

- **The Fire Station Study Committee recommends \$25M for the construction and renovation projects for Fire Station 3 located at 260 Old Westford Road and Fire Station 5 located at 295 Acton Road. Funding these projects requires a Proposition 2 ½ debt exclusion.**
 - Public Safety (response times, population and call increases, staffing)
 - Firefighter Health & Safety (building ages and inadequacies, OSHA compliance, staffing)
- **On June 24, 2024, the Select Board unanimously voted to place the Proposition 2 ½ debt exclusion on the November 5, 2024, Election Ballot.**
- **The Proposition 2 ½ override needs a 2/3 vote approval at Town Meeting for funding AND a majority approval at the ballot.**

WARRANT ARTICLE 16

ARTICLE 16. To see if the Town will vote to raise and appropriate, transfer from available funds, and/or borrow pursuant to Massachusetts General Laws Chapter 44, Section 7 or 8, or any other enabling authority, a certain sum of money to fund the design and reconstruction of the fire station located at 260 Old Westford Road and the design and construction of a new fire station to replace the existing fire station located at 295 Acton Road, including related survey, legal, and other costs incidental and related thereto.

SUBMITTED BY: Town Manager
Two-Thirds Vote

November 5, 2024, Approved Ballot Language

Proposition 2½ Debt Exclusion Question for November 5, 2024 State Election Ballot

Shall the town of Chelmsford be allowed to exempt from the provisions of proposition two and one-half, so called, the amounts required to pay for the bond issued in order to fund the design and reconstruction of the fire station located at 260 Old Westford Road and the design and construction of a new fire station to replace the existing fire station located at 295 Acton Road, including related survey, legal, and other costs incidental and related thereto?

Yes___No___

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FSSC STATUS: MEMBERS AND METHODOLOGY

MEMBERS			ACTIVITY
Gary Ryan		Fire Chief	<ul style="list-style-type: none"> Select Board 1st appointment November 15, 2021 Organizational meeting December 16, 2021 Station tours January 6, 2022 Over 70 meetings, typically, 1-1.5 hours each
Robert Albon		CFD Local 1839	
Gregory Segnini	Clerk	CFD Local 1839	
Sheryl O'Donnell	Vice Chair	Resident	
Robert Destrempe		Resident	
Paul Cohen		Town Manager	
Virginia Crocker Timmins	Chair	Select Board	

METHODOLOGY ELEMENTS	
<ul style="list-style-type: none"> Mission Statement Development Education & Research Critical Success Factors & Gap Analyses 	<ul style="list-style-type: none"> Scenario Options and Analyses Schedule / Timeline Investment

FSSC STATUS: STATION CONDITIONS EVALUATION



Station 1, Center Station
50 Billerica Road (2014, 9 years)

Station Conditions

Inadequacy Issues:

- Building life spans (50 years)
- Building Standards & Code Compliance
- Buildable area constraints
- Sleeping/Living Quarters & Bathrooms
- Fitness areas
- PPE/Gear decontamination and laundry facilities
- Station 5: Structural issues; Acceleration ramp too close to street



Station 2, North Station
35 Princeton Street (2021, 2 years;
Garage 1956, 66 years - renovated 2021)



Station 3, West Station
260 Old Westford Road (1970, 53 years)



Station 4, East Station
115 Riverneck Road (1976, 47 years)



Station 5, South Station
295 Action Road (1966, 57 years)

FSSC STATUS: CRITICAL SUCCESS FACTORS (CSFs)

STATION CONDITIONS



- Adequate facilities for Fire Fighters and apparatus
- Number of stations
- Renovate & Repair vs. Replace vs. Relocate
- Uses (e.g., mechanic's bay)

STAFFING / FF SAFETY



- Per apparatus staffing
- Shift strength staffing
- Span of control / officers per shift

APPARATUS



- How utilized / deployed
- Maintenance
- Purchase / Replacement
- Function (Primary, Auxiliary, Staff)

RESPONSE TIMES / PUBLIC SAFETY



- Response time gradients
- Number and location of stations tradeoffs
- Fire Fighter 1st and 2nd Due

INVESTMENT



- Stations
- Apparatus
- Staffing
- Operations \$
- Capital \$
- External/Grant \$

COMMITTEE UNANIMOUSLY RECOMMENDS MAINTAINING 5 STATIONS

- 9 scenarios analyzed consisting of 3-, 4-, and 5- Station configurations
- 3-Station configuration yields unacceptable response times
- Both 4- or 5- Station scenarios require rebuild and renovation of Stations 3 & 5 with 4-Station scenario yielding 20% increased response times in East Chelmsford
- 5-Station configuration creates operational flexibility
- Staffing flexibility
 - Each scenario allows for expansion to 13-person shift immediately with 14-person in future
 - Town Manager commits only to 13-person shift from fiduciary standpoint

STATIONS 3 & 5 CONDITIONS

Video: On-site with the Chelmsford Fire Department:

<https://www.chelmsfordtv.org/episodes/government-specials-the-future-of-our-fire-stations/>

MAJOR ISSUES

Building Integrity

- Beyond 50-year life span

Fire Fighter Safety & Operations

- Carcinogen exposure and contamination
- No decontamination capabilities
- Not built for a multi-gender workforce
- Fitness equipment in apparatus bays
- Not large enough to house modern vehicles and equipment with smooth entrance/egress

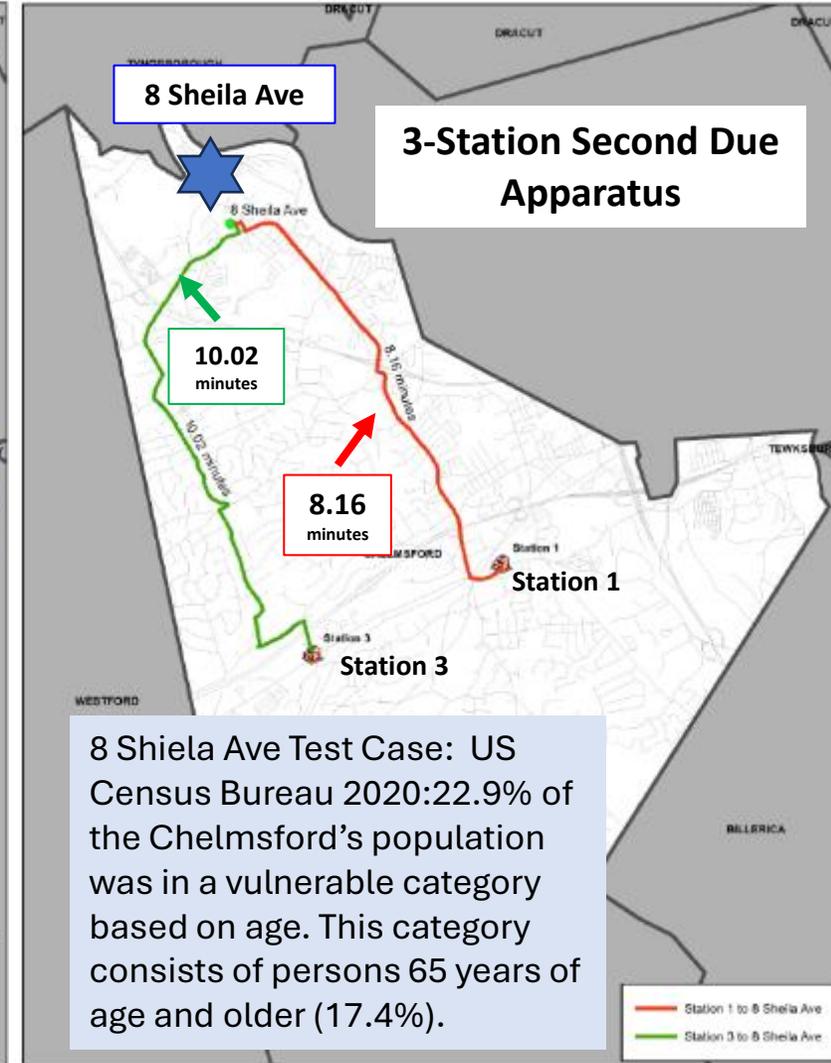
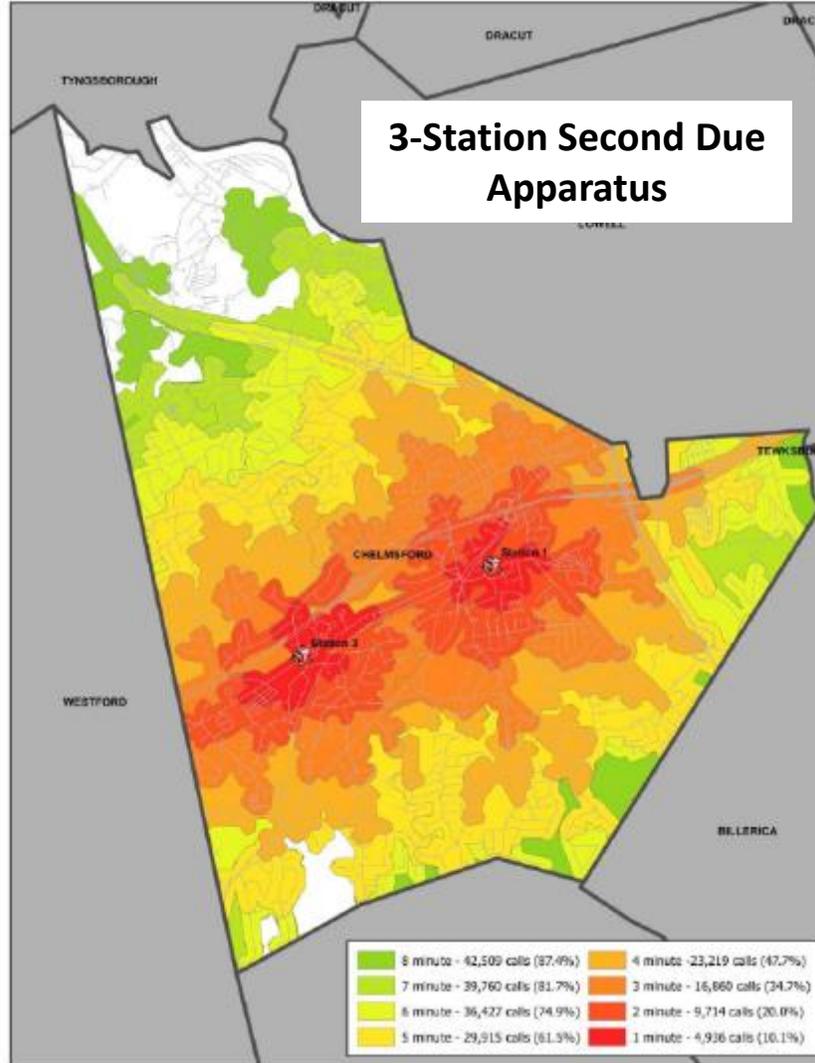
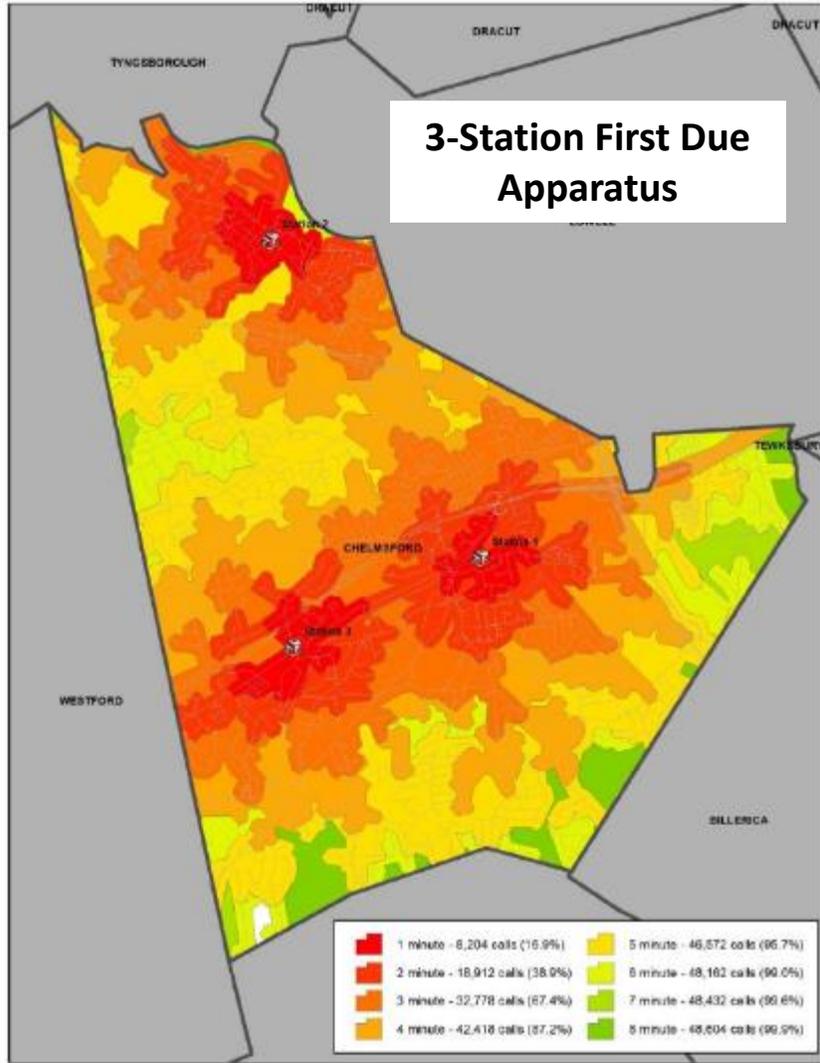
Public Safety and Fire Fighter Safety

- No capacity for increased staffing
 - Increased population and calls
 - National standards, scientific data for staffing apparatus



3- STATION RESPONSE TIME INADEQUACIES

Eliminate Stations 3 (Old Westford Road) and 5 (Acton Road) and build New Station 3 in Vicinity of Littleton and Hunt Road

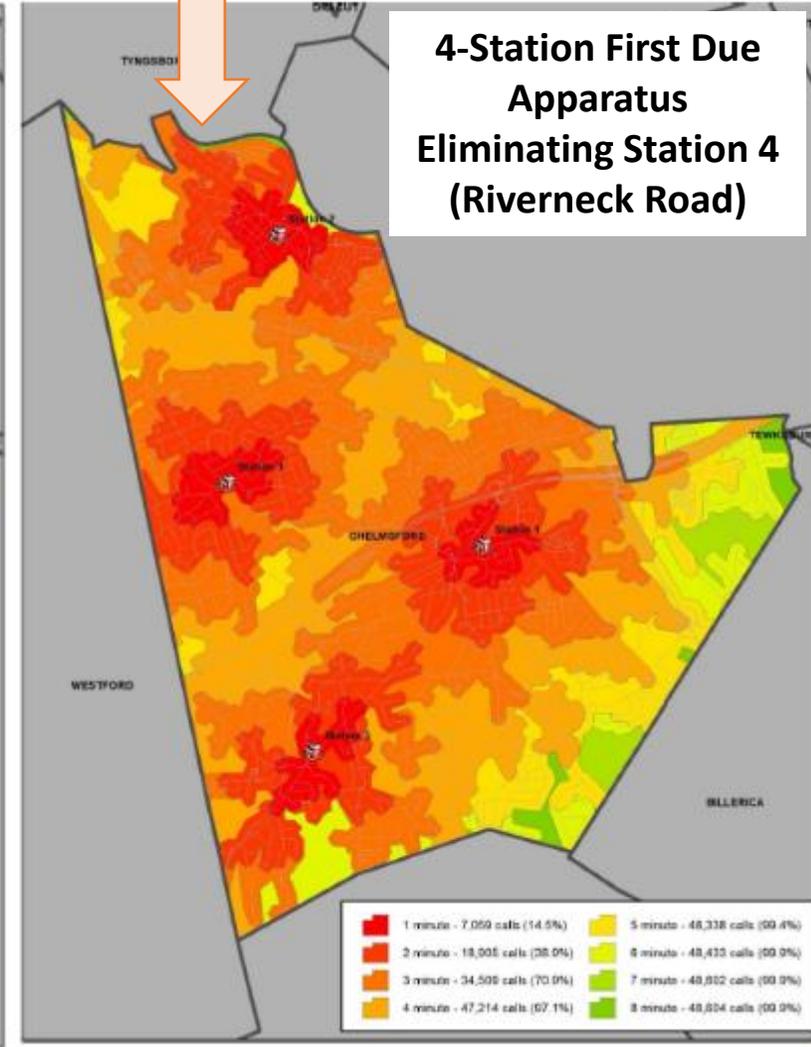
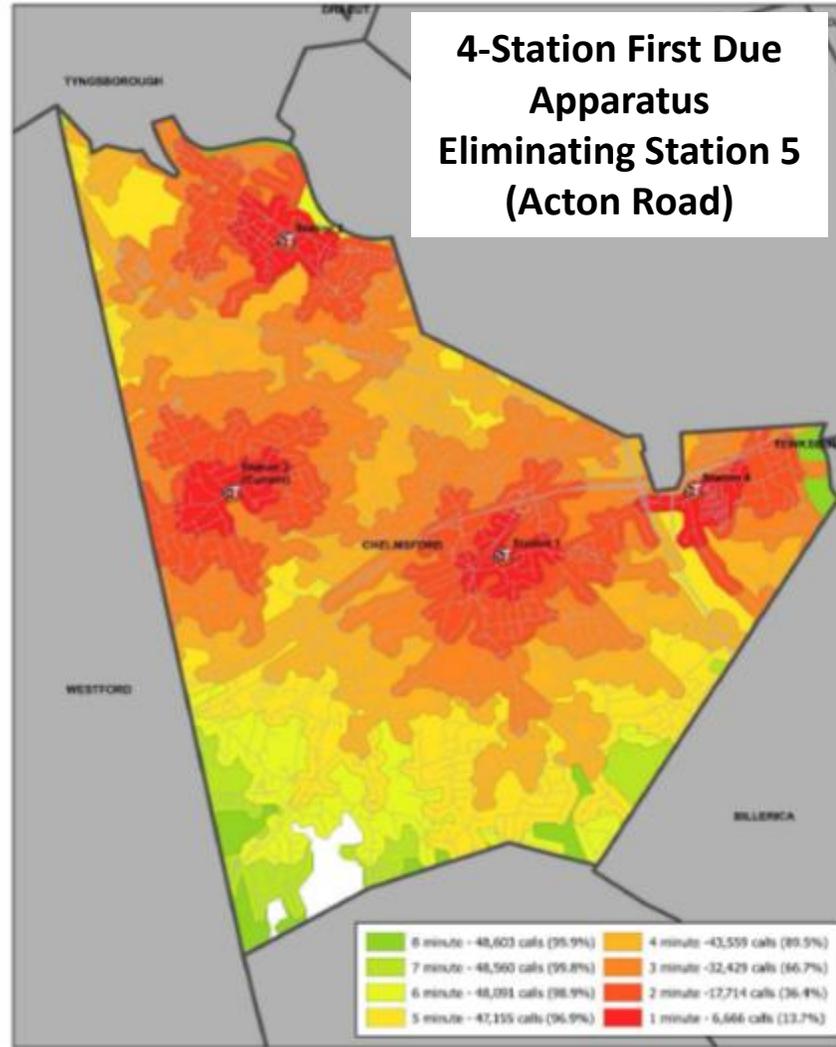
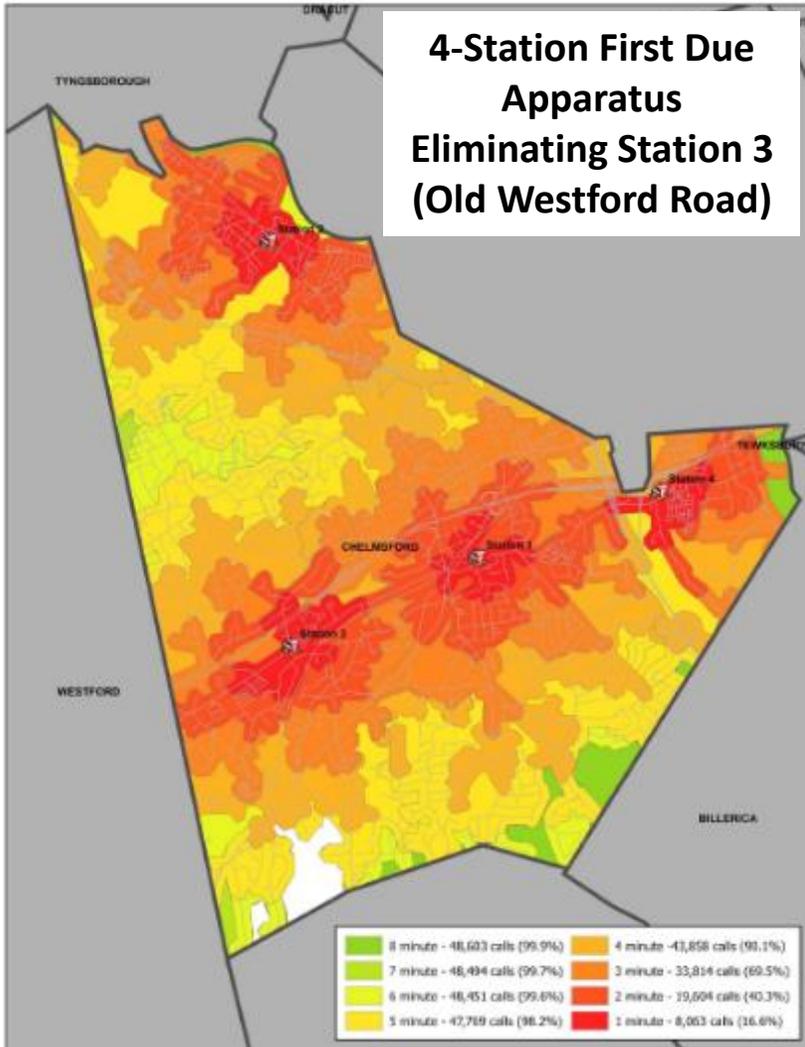


NFPA 1710 (National Fire Protection Agency Science Based Standards):
First Fire Engine within 4 minutes, and Full Alarm Assignment within 8 minutes

Chelmsford Fire Department currently responds to 84-85% of calls within 4 minutes.

4- STATION RESPONSE TIME INADEQUACIES

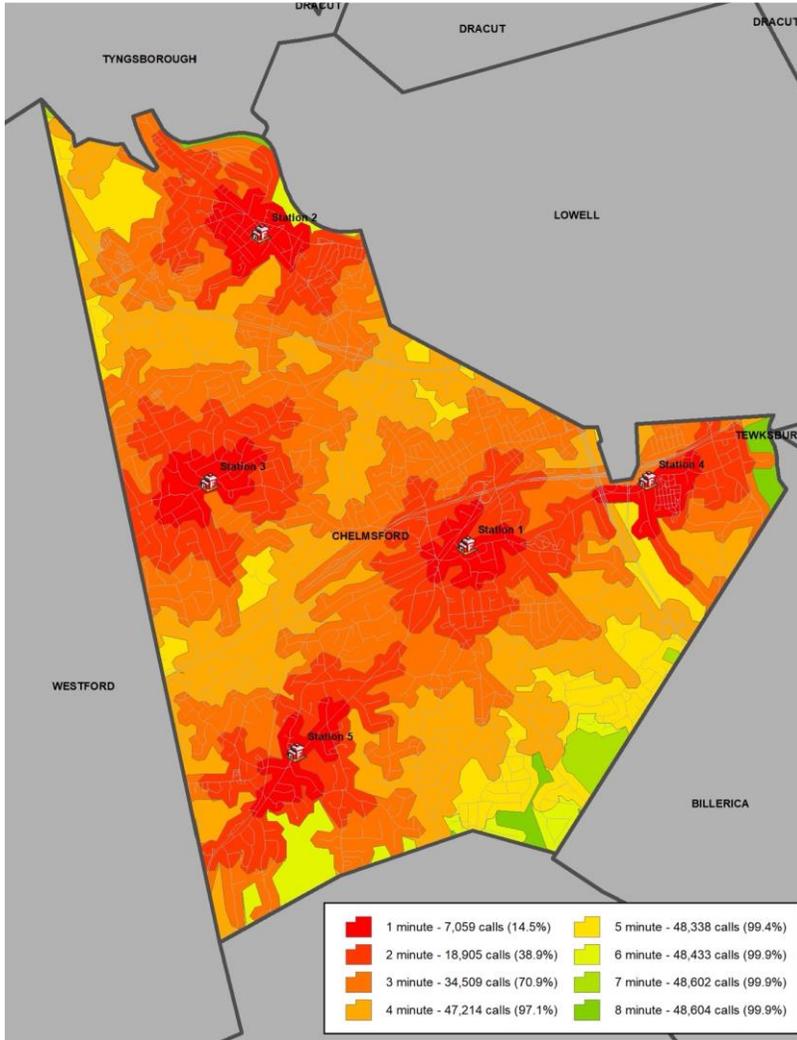
Best Case 4-Station Configuration Yields 20% Increased Response Times in East Chelmsford



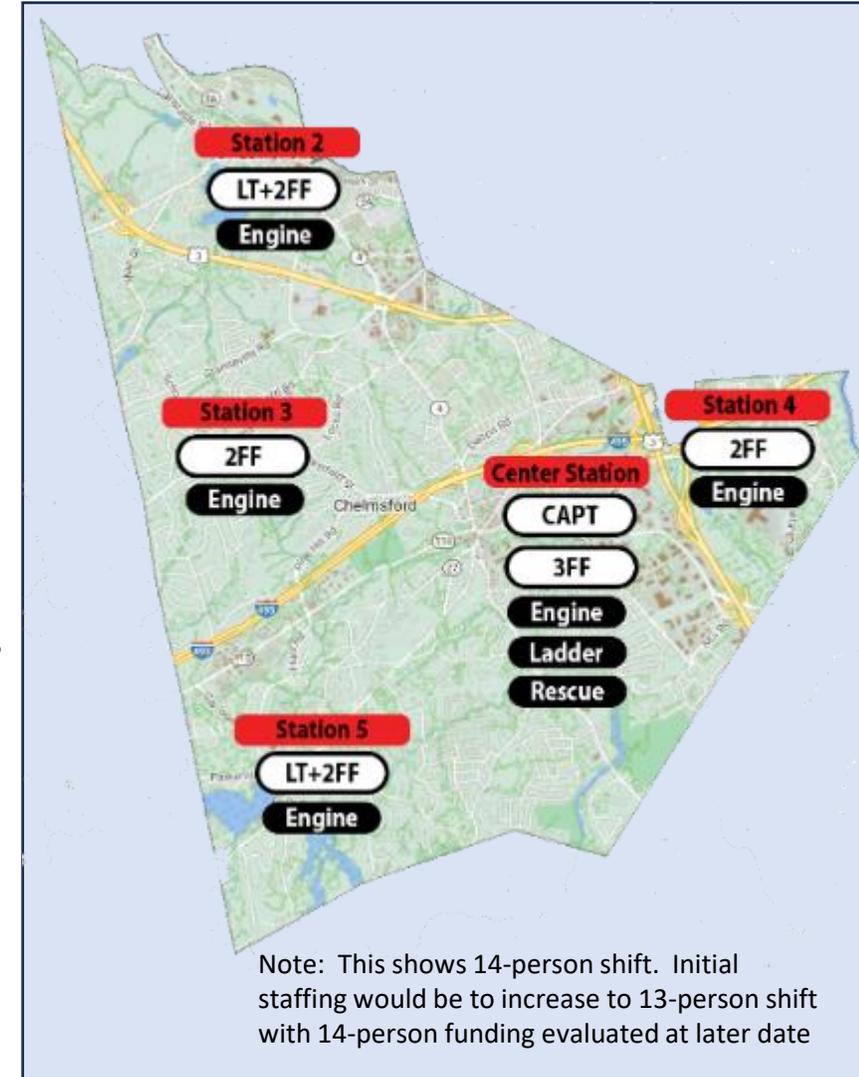
NFPA 1710 (National Fire Protection Agency Science Based Standards):
First Fire Engine within 4 minutes, and Full Alarm Assignment within 8 minutes

Chelmsford Fire Department currently responds to 84-85% of calls within 4 minutes.
Any 4-station configuration requires Stations #3 and #5 to be rebuilt.

5 STATION SCENARIO



- Improved shift strength
- Current response times in all districts maintained
- Officer at 3 of 5 Stations
- 3FF at 3 of 5 Stations
- Critical problems left unresolved
 - Cross staffing of center station apparatus
 - 2 stations staffed with only 2 FF with no officer
- Maintains flexibility to operate in a 4-station scenario if needed at Fire Chief's discretion



RESPONSE TIME CONSIDERATIONS - STATION BUILDINGS AGE, POPULATION, AND CALL DATA

US CENSUS BUREAU DATA

1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020
5,682	7,022	8,077	9,407	15,130	31,432	31,174	32,383	33,858	33,802	36,392

1966/70: 850 calls per year



Station 5
1966



Station 3
1970



Station 4
1976



Station 1
2014



Station 2
Garage 1956
Renovation 2021

CHELMSFORD FIRE DEPARTMENT RESPONSE AND CALL DATA

CALL CATEGORIES	2002			2012			2022		
	Overall Calls	4589			5844			6020	
# Medical Calls	1965 (43%)			2974 (50.1%)			3869 (64.2%)		
2002-2012 Increases	27.3% overall; 51.3% medical								
2012-2022 Increases				3% overall; 30.1% medical					
2002-2022 Increases	31% overall; 96.9% medical								

2023: 6354 calls

OTHER FACTORS

- Group Homes & Senior Housing
- Princeton Street Development
- Affordable Housing Proposals
- MA MBTA Zoning Mandates
- MA Migrant and Homeless Housing Mandates

CFD personnel per shift today is same as it was 25 years ago
 Staffing shifts is dependent on filling overtime
 CFD has no Lieutenants

RESPONSE TIME CONSIDERATIONS – PRESERVING ACCEPTABLE SECOND DUE RESPONSE TIME

KEY RESPONSIBILITIES:

- **First Due company**
 - Victim safety
 - Immediate fire suppression
 - Enough water for 3 minutes if water expended at maximum flow rate
- **Second Due company**
 - Water on scene beyond 3 minutes



RESPONSE TIME CONSIDERATIONS – EMERGENCY RESPONSE SCENARIOS



Structure Fire

- First, Second Due company arrivals on scene
- Water supplies
- Fire Fighters on scene during incipient stage vs. later
- Officer(s) on scene, roles required and span of control



Medical Emergency

- Time for Fire/EMT & EMS crews on scene
- Ability to exercise “Pit Crew” resuscitation efforts
- Having company officers on scene to prioritize tasks and work with crews



Motor Vehicle Accident

- Apparatus & Crews arrival on scene
- Having company officers on scene for task prioritization and crew support



Mutual Aid Request

- Response times from Stations to scene
- Multiple engines/apparatus typically required from multiple stations
- Remaining assets and staff re-allocated among Town stations
- Officers on scene vs officers remaining in stations for Town calls

***Life or Death, Preservation or Loss of Property ~ Both Station Locations & Staffing Dependencies
NFPA 1710 Response Time Scientific Data***

FIRE FIGHTER SAFETY – OSHA PROPOSED NEW STANDARD



February 5, 2024: OSHA issued notice to update and replace Fire Brigades Standard 26 C.F.R.1910.156 established in 1980 with new Emergency Response Standard providing essential workplace protection for emergency responder professions

Proposed Rule Changes for Emergency Service Organization (ESO)
Emergency Response Plan (ERP)
Vulnerability Assessment of Hazards
ERP Tiers, Types, and Levels
Team Involvement with the Plan
Medical and Physical Requirements
Behavioral Health & Wellness Resources
Health & Fitness Program
Training Programs
Personal Protective Equipment
Vehicle Safety
Incident Management System
Facility Safety



Proposed paragraph (j)(2)(iii)

- Carbon monoxide alarms in each sleeping and living area
- “The risk of carbon monoxide exposure may be high for responders because ESO vehicle engines are started and run inside of ESO facilities”

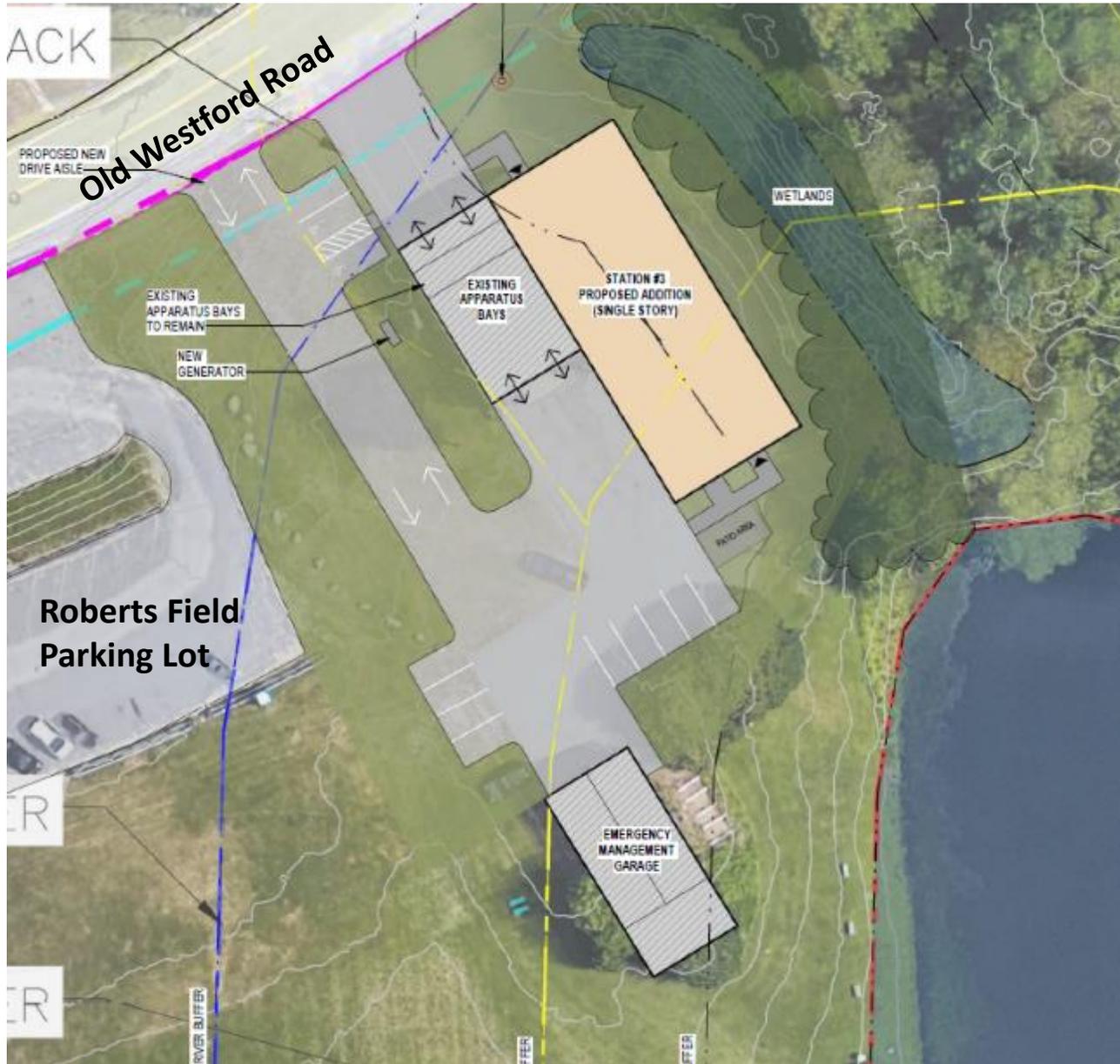
Proposed paragraph (j)(2)(iv)

- ESO prevention of responder exposure to, and contamination of sleeping and living areas by exhaust emissions
- May include
 - Direct source capture systems
 - Automatic ventilation systems
 - Positive air pressure in sleeping and living areas
 - Self-closing doors with weather seals
 - Other means

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STATION 3: WESTON & SAMPSON REPORT TO PERMANENT BUILDING COMMITTEE (REFERENCE APPENDIX C)



Floor Plan

Station 3

- Stick: \$10,440,000
- Modular: \$8,490,000

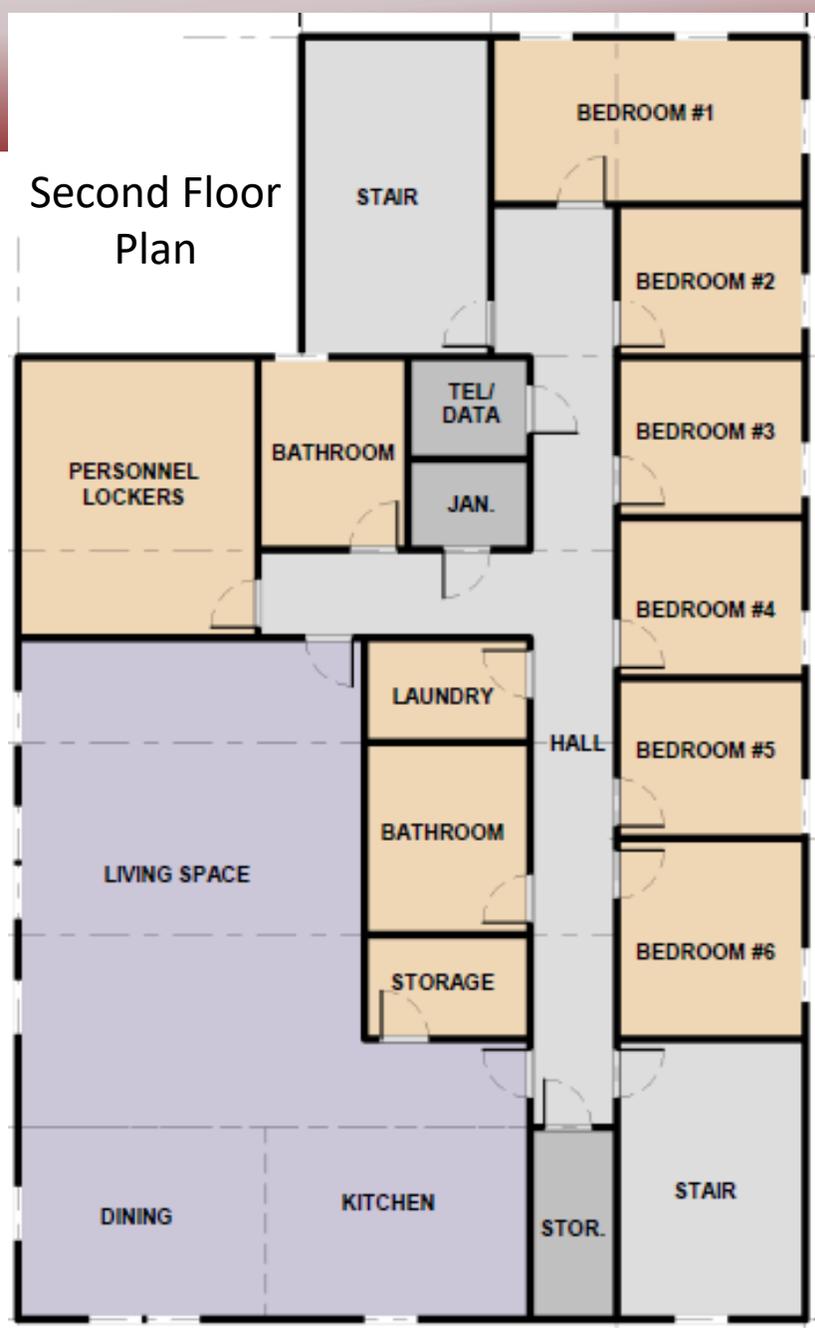
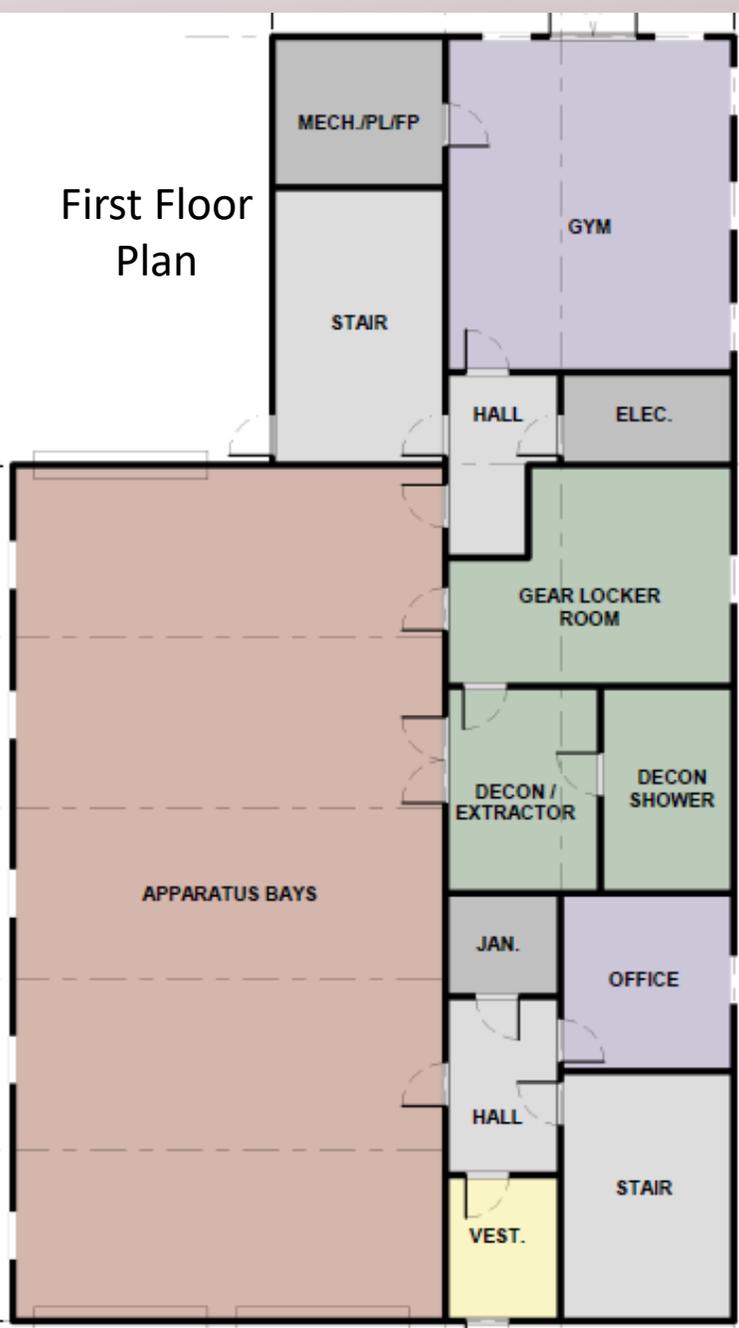
Station 3 & 5 Total Possible Range

- \$20.80M - \$24.36M

Estimates escalated to 2026



**STATION 5: WESTON & SAMPSON REPORT
TO PERMANENT BUILDING COMMITTEE
(REFERENCE APPENDIX C)**



Station 5

- Stick: \$13,920,000
- Modular: \$12,380,000

Station 3 & 5 Total Possible Range

- \$20.80M - \$24.36M

Estimates escalated to 2026

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DEBT SERVICE ESTIMATE OF IMPACT TO AVERAGE HOUSEHOLD

- **Conservative Estimate Assumptions: \$25M Debt with 4% interest rate over 20 years**
- **Property Tax bill impact for \$629K average assessed household:
Approximately \$157 in first year reducing to approximately \$90 in year 20**
 - **\$157/year = \$13.08/month or \$3.02/week**
 - **\$90/year = \$ 7.50/month or \$1.73/week**

FSSC Website provides Tax Estimate calculator for specific address:
<https://www.chelmsfordma.gov/1057/Fire-Station-Study-Committee>

- **Tracking Senate Bill #1599 Public Safety Buildings**

An Act relative to the creation of the Massachusetts Public Safety Building Authority

Includes establishment of a “separate fund to be known as the Public Safety Building Modernization and Reconstruction Trust Fund”

EXCLUDED DEBT SERVICE – HISTORICAL AND PROJECTED (AUGUST 2024)

This spreadsheet shows the Town's debt service expense for projects that residents have previously voted to exclude from the limitations of Proposition 2 1/2. Historical debt service is included for the previous five fiscal years (FY20 - FY24) and the current year, FY25. Projected debt service for the fire station project is included for FY2026 - FY2045. Sewer Construction bonds were repaid in FY24. The Secondary School project bond will be repaid in FY25, leaving the Public Works Facility - Alpha Rd. project as the last outstanding bond.

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
Sewer Project	\$ 2,915,255	\$ 2,393,258	\$ 1,943,312	\$ 877,960	\$ 522,593							
Secondary School Building Project (\$15.5M)	\$ 1,027,650	\$ 981,150	\$ 939,900	\$ 903,650	\$ 868,750	\$ 829,150						
DPW-Alpha Rd. - Phase 1	\$ 290,100	\$ 276,500	\$ 308,100	\$ 298,100	\$ 288,100	\$ 278,100	\$ 273,100	\$ 258,100	\$ 248,300	\$ 238,600	\$ 204,000	
Total Excluded: Issued and Outstanding	\$ 4,233,005	\$ 3,650,908	\$ 3,191,312	\$ 2,079,710	\$ 1,679,443	\$ 1,107,250	\$ 273,100	\$ 258,100	\$ 248,300	\$ 238,600	\$ 204,000	
Change in Excl. Debt (from prior year)	\$ (84,177)	\$ (582,097)	\$ (459,596)	\$ (1,111,602)	\$ (400,267)	\$ (572,193)	\$ (834,150)	\$ (15,000)	\$ (9,800)	\$ (9,700)	\$ (34,600)	
Projected Debt Service												
West & So. Fire Stations Renov./ Reconstruction (20-Year Term)							\$ 2,250,000	\$ 2,200,000	\$ 2,150,000	\$ 2,100,000	\$ 2,050,000	\$ 2,000,000
Total Iss. & Projected	\$ 4,233,005	\$ 3,650,908	\$ 3,191,312	\$ 2,079,710	\$ 1,679,443	\$ 1,107,250	\$ 2,523,100	\$ 2,458,100	\$ 2,398,300	\$ 2,338,600	\$ 2,254,000	\$ 2,000,000
Change Over Pr. Year	\$ (84,177)	\$ (582,097)	\$ (459,596)	\$ (1,111,602)	\$ (400,267)	\$ (572,193)	\$ 1,415,850	\$ (65,000)	\$ (59,800)	\$ (59,700)	\$ (84,600)	\$ (254,000)



Sewer debt was retired in FY 2024



Secondary school building project debt will be paid off in FY 2025



Gross increase in Excluded Debt Service in FY 2026 is \$2.25M



Net increase in Excluded Debt Service in FY 2026 will be approximately \$1.42M = (\$2,250,000 - \$829,150)
(Less than \$157 per year net for the average assessed household)

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Public Education Opportunities & Events

- Detailed list
- Community Events
- October 5th – Station Tours
- October 10th – Public Information Session
- October 29th – Public Open Q&A

Educational Videos

- On site at Stations 3 & 5 with CFD
- Roundtable Discussion with FSSC
- Motor Vehicle Extrication Video

Overview Information

Debt Exclusion Estimated Tax Calculator for Individual Home Address

Debt Exclusion Details

Operational Scenarios

- Medical
- Fire Fighting
- Motor Vehicle Accident
- Mutual Aid

Stages of a Fire

- Document

OSHA Proposed Revised Standards Feb 2024

- Summary Document

Previous Briefings and Links to CTM Videos

- Select Board Update - December 2022
- Select Board Update – December 2023
- Fire Chief Briefing to Finance Committee 2024
- Town Meeting Report – April 2024
- Select Board Update – June 2024
- Warrant Article Presentations Sep/Oct 2024
 - Finance Committee
 - Select Board
 - Town Meeting
- Public Information Session – Oct 2024

Supporting Analysis Details

- Scenarios Analysis Tables
- Comparable Communities Data

Weston & Sampson Report

- Stations 3 & 5 Rebuild/Renovation Initial Concepts and Cost Estimates

Response Time Analyses

- Criterion Analysis Data
- International Association of Fire Firefighters interactive tool

Standards/Requirements

- NFPA Standard Short Education Video
National Fire Protection Association
- NFPA Fact Sheet
- IAFF / IAFC
International Association of Fire Fighters
International Association of Fire Chiefs
- NIOSH
National Institute for Occupational Safety and Health
- NIST
National Institute of Standards & Technology
- OSHA
Occupational, Safety, and Health Administration

Past Chelmsford Studies

- MMA Consulting Group (2007, 1989)
- IAFF GIS April 2017
- Criterion Nov 2019