Fire/EMS System Capacity & Service Delivery

CITY COUNCIL PRESENTATION

MAY 18, 2026

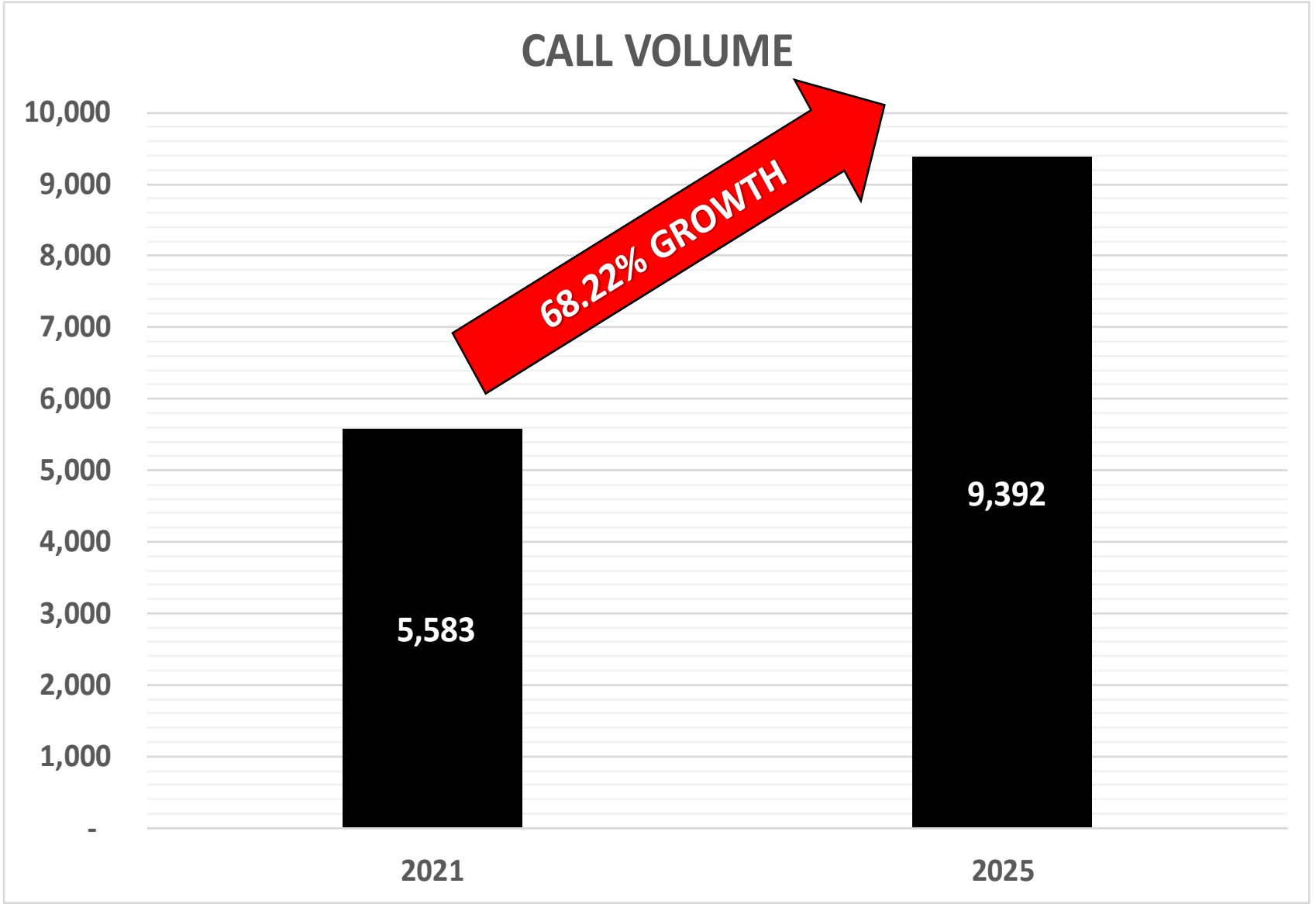
Presentation Objectives

The operational need for an additional fire company exists today independent of the Station 4 timeline.

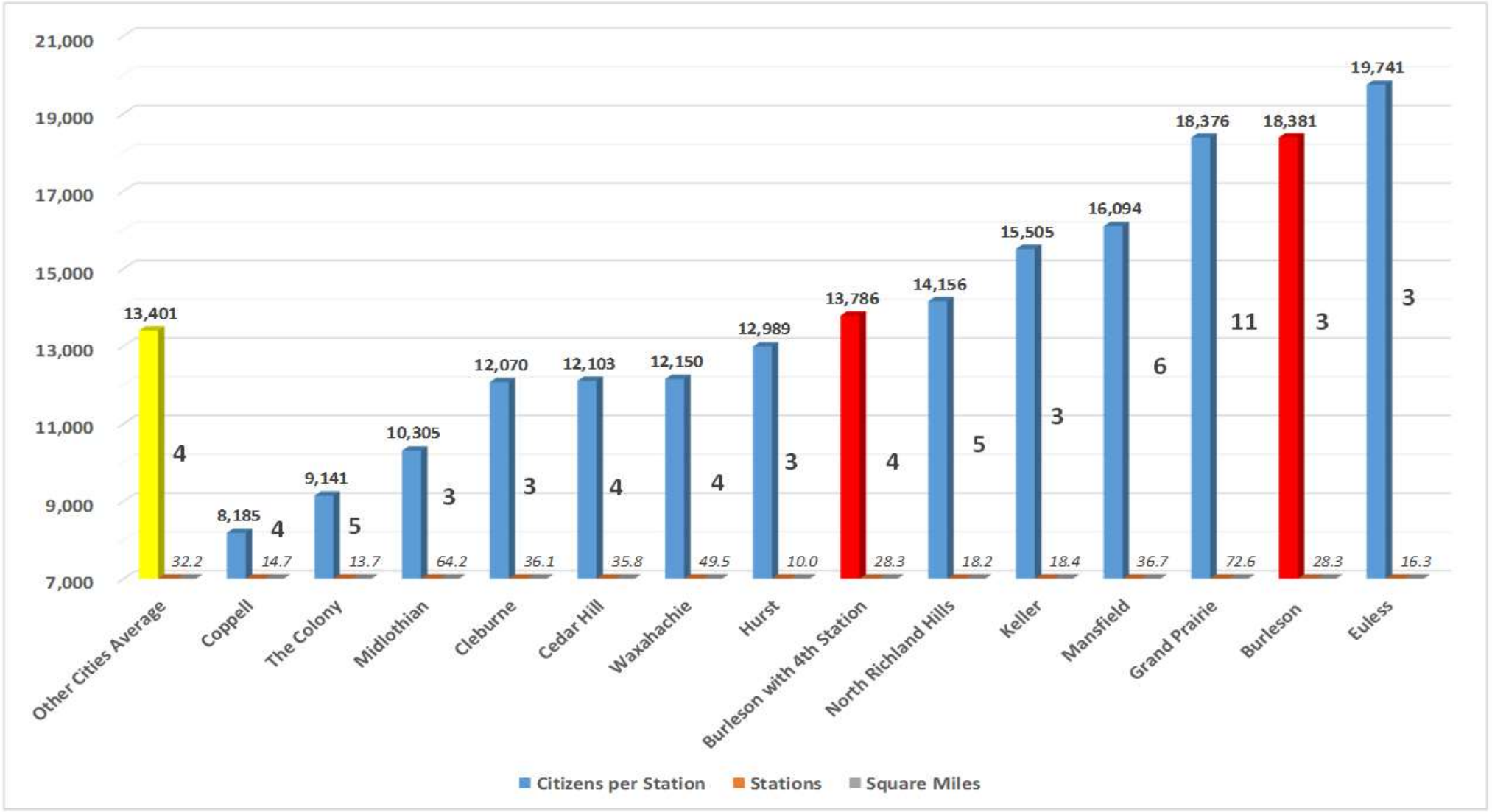
- Burleson's current staffing model is operating at or below the minimum personnel needed to assemble an effective response force for residential fires under NFPA 1710, with insufficient capacity for larger commercial or multi-family incidents.
- Provide an overview of current Fire/EMS system capacity
- Review NFPA 1710 standards and how they relate to our operations
- Discuss the recently implemented peak-time ambulance model and evaluate the transition to 24-hour coverage in the upcoming budget cycle
- Present considerations for enhancing system reliability through additional fire resources
- Distinguish immediate operational needs from long-term planning efforts, including Station 4

Call Volume

All Types

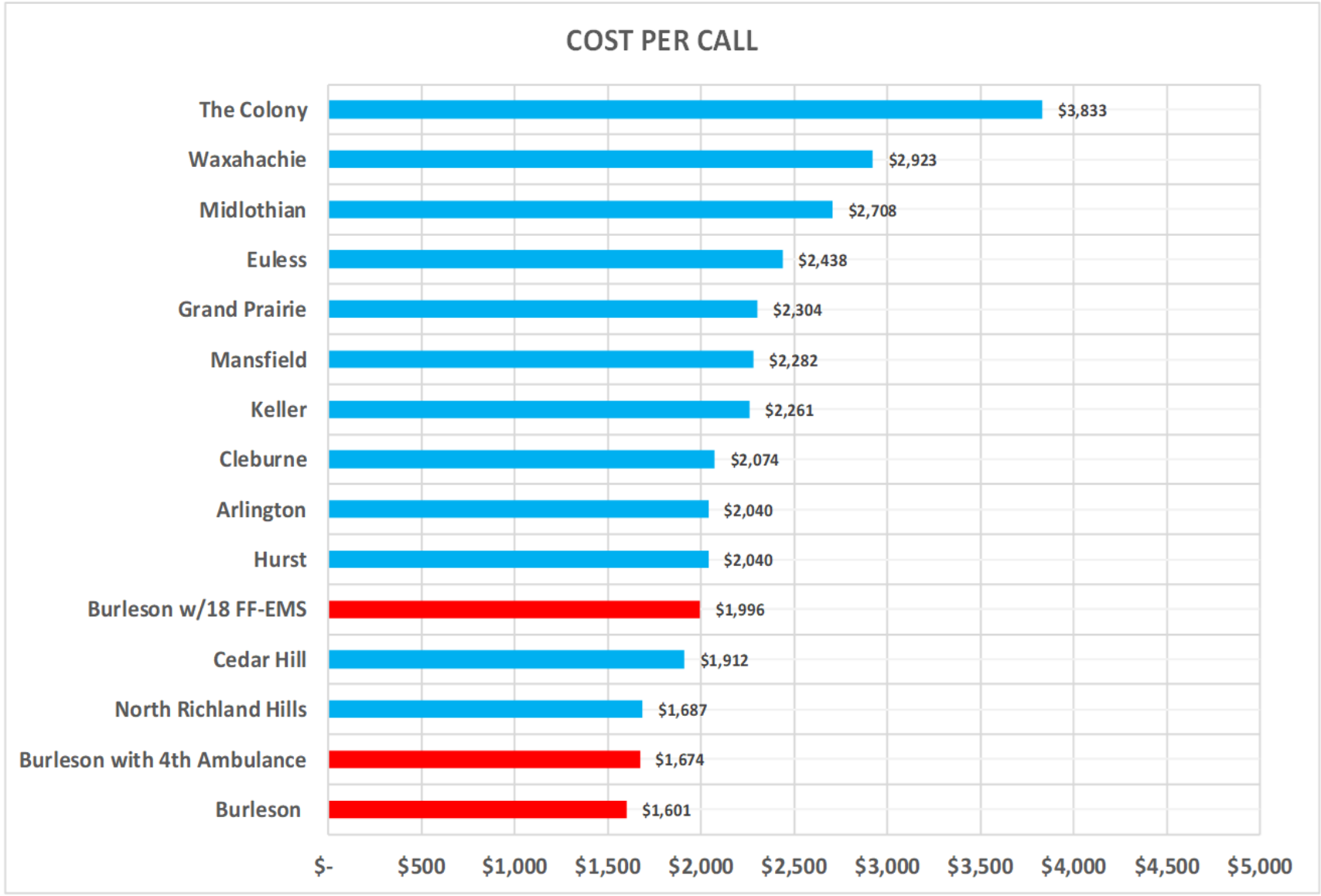


Comparative Cities – Citizens per Station



Comparative Cities

Cost per Call



Resource Growth vs. Operational Demand

Strategic Improvements

- Added Battalion Chief in operations to strengthen incident command and fireground safety
- Expanded ambulance resources staffed with firefighters to support system demand and response assembly for fires

Current Status and Plan

- Last frontline fire apparatus added: 2009 (Engine 3)
- Next planned addition: ~2030 (Station 4)
- 21+ years between adding frontline fire units

Current Operational Reality

- Current best case assembly response force (ERF) capability:
  - Minum Daily Staffing 17 – 19 /Peak Ambulance
  - Structure Fire Response 15 personnel available vs. 17 needed within 8 minutes (NFPA 1710 benchmark)
- 1 Medic is held back to addresses the next incoming call
- Reliance is on mutual aid for assembly but we are unable to meet assembly time frame

Cost Containment & Revenue Optimization Efforts

EMS Revenue Optimization

- Updated fee schedule

Fire Incident Cost Recovery

- Implemented EmergiFire for incident-based cost recovery
- Captures eligible revenue from billable fire-related responses
- Offsets operational costs without impacting residents directly

Annual Fire Inspections Program

- Strengthened inspection program and fee collection
- Supports community risk reduction
- Generates cost recovery for prevention services

TODAY (Operational Reality)

- Minimum staffing: 17–19 personnel
- Best-case assembly: 15 personnel
- NFPA 1710 target: 17 personnel in ~8 minutes
- Requires perfect conditions (all units available) — rare in real operations
- One ambulance held back → reduces available fireground staffing
- Cannot assemble for:
  - Apartment fires
  - Strip centers
  - Commercial incidents
- Heavy reliance on mutual aid
- Does not meet 8–10 minute assembly window

RISK (Why This Matters)

- Fire doubles in size every minute
- 10-minute window = survivability threshold
- If we don't assemble quickly:
  - Rescue opportunities are lost
  - Fires grow from room & contents → structure loss
  - Risk to firefighters increases significantly
- Mutual aid arriving late = sequential operations instead of simultaneous
  - Slower fire attack
  - Delayed search & rescue

The need for an additional fire company is driven by NFPA 1710 assembly requirements, not the Station 4 timeline.

Burleson Minimum On-Duty Fire Response

If all units are available for initial structure fire response:

Battalion 1: 1

Engine 1: 3

Truck 16: 4

Engine 3: 3

Medic 1: 2

Medic 16: 2

Peak Ambulance : 2

Total: 15 – 17 Assembly if all crews are avaliable

Medic 3: 2 - Remains available for next call

2025 UHU	
M1	25%
M16	19%
M3	17%
E1	9%
T16	8%
E3	5%

Unit Hour Utalization Goals

EMS (Ambulance UHU)

- ≤ 25% — Reliable
- 25–30% — Action Threshold
- ● > 30% — System Strain

Fire (Engine/Truck UHU)

- ≤ 8% — Reliable
- 8–10% — Action Threshold
- ● > 10% — Increased Risk

Fireground Assembly

It's not just about the first unit arriving unit it's about assembling enough personnel to perform critical tasks at the same time.

Fireground Reality

- A structure fire requires multiple critical objectives to occur simultaneously:
- Incident command and accountability
- Water Supply (securing a hydrant)
- Forcible entry and access
- Fire attack (getting water on the fire)
- Search and rescue (locating and removing victims)
- Laddering and egress
- Ventilation (improving interior conditions)

What the Research Shows

- National Institute of Standards and Technology (NIST):
  - Larger, properly staffed crews complete tasks faster and simultaneously
  - Smaller crews are forced into sequential operations, creating delays

NFPA 1710 – *What It Takes to Fight a Structure Fire*

Burleson Fire/EMS Reality:

- Total On-Duty Staffing: **17**
- EMS Calls Reduce Available Personnel
- Multiple Incidents Prevent Full Assembly

Minimum: 16–17 *Firefighters (Single Family Residential Fire)*

EMS Response

Every firefighter in our system is EMS-certified and capable of delivering care. Paramedics provide advanced interventions, while EMTs are essential to delivering high-quality patient care there care is BLS in skill level. Fire apparatus response to EMS incidents ensures sufficient personnel are on scene to perform multiple life-saving tasks at the same time, especially during critical events like cardiac arrest.

Cardiac Arrest Reality

A cardiac arrest requires multiple critical interventions simultaneously:

- Incident command and accountability
- High-quality chest compressions
- Airway management and ventilations
- Defibrillation (AED/monitor)
- Medication administration (ALS care)
- Rhythm analysis and decision-making
- Scene coordination and transport preparation

What the Research Shows

- American Heart Association (AHA) guidelines emphasize:
  - Minimizing interruptions in compressions
  - Early defibrillation and coordinated team-based care
- High-performing resuscitations rely on:
  - Team-based, simultaneous interventions
  - Not sequential, one-person task completion

The Critical 10-Minute Life or Death Window

Structure Fire Growth (Time vs. Fire Spread)

- 🔥 A room igniting and fully engulfed over 10 minutes.
- **0-2 minutes:** A fire starts, small and controllable.
- **3-4 minutes:** Flashover potential begins.
- **5-7 minutes:** Fire spreads rapidly, escape becomes difficult.
- **8-10 minutes:** Flashover occurs, entire room is engulfed, survivability is **near zero**.
- 💡 **Fact: After 10 minutes, survivability in a structure fire is almost nonexistent due to heat, smoke, and oxygen depletion.**

Cardiac Arrest (Time vs. Survival Rate)

- 📊 A timeline showing survival rates decreasing over time.
- **0-4 minutes: 50-70% survival** with CPR & defibrillation.
- **5-6 minutes: 25-30% survival** if no CPR is started.
- **7-10 minutes: Less than 10% survival** without immediate medical intervention.
- 💡 **Fact: After 10 minutes without defibrillation, survival is nearly zero**

NFPA 1710: Response Time Objectives

NIST Study

4-Person Crews Complete Critical Tasks Faster

25–30% faster overall task completion vs. 3-person crews

Key tasks completed significantly faster:

- Fire attack
- Search and rescue
- Ventilation
- Laddering

Time = Life Safety

Faster task completion leads to:

- Earlier water on the fire
- Faster victim search
- Improved survival outcomes

Current CIP Timeline for Station 4 & Equipment

Fiscal Year	Projects
2028	• Station 4 Design Budget - $2,500,000
2029	• Ladder Tower - 30 – 36 Month Lead Time / Budget - $2,438,197
2029	• Brush Truck - 24 Month Lead Time / Budget - $367,332
2030	• Construction of Fire Station 4 /18 Month Build Time / Budget $13,443,000

Additional Concurrent Needs

Captain for Training

- The training office is overwhelmed with no dedicated support. A Training Captain is essential to deliver training to crews, maintain operational readiness, and ensure compliance with evolving fire and EMS standards.

Captain for Admin Logistics

- We are currently managing permanent, mission-critical responsibilities with temporary staffing solutions. When administrative functions like hiring, equipment deployment, and compliance are not properly staffed, it creates operational risk. A dedicated Administrative Captain is necessary to reduce that risk, ensure system reliability, and sustain accountability.

Deputy Emergency Manager

- The Emergency Management Office lacks redundancy and additional staff to handle increasing workload demands.
- A Deputy Emergency Manager is needed to support disaster preparedness, emergency response coordination, and continuity of operations as the city's risk profile grows.

Staff Recommendations & Considerations

EMS System Capacity (Peak → 24-Hour)

- Transition peak ambulance to 24-hour service
- Supports:
  - Managing UHU within target range (≤25–30%)
  - Reducing system strain and overtime
- Staffing Impact: +4 FTE (*$632,431)*

Fire Company Deployment (Priority)

- Need: Additional frontline fire company to support response and assembly
- Required regardless of Station 4 construction timeline
- Supports:
  - Fireground staffing (NFPA 1710 assembly)
  - Staffing Impact: +14 FTE (*$2,213,510*)
  - CIP – Ladder Tower and Brush Truck Purchase

Station 4 – Preferred Delivery Model

- Staff recommendation: Maintain current Station 4 timeline
- Provides:
  - Permanent west-side coverage
  - Long-term system alignment with growth
  - Deployment of the additional fire company in its intended location

Minimum Daily Staffing

Current Staffing & Coverage

- Minimum daily staffing 17 - 19 with peak ambualnce
- Structure fire assembly is challenging
- Response coverage gap on the west side of the city
- Longer response times to incidents in growing areas

Deploying a 4th Ambulance

- Minimum Daily Staffing 19 personnel
- Rising EMS call volume and UHU will strain resources and impact response times before

Deploying a 4th Fire Apparatus

- Minimum daily staffing 23 personnel
- Balanced coverage across the city, including the west side
- Faster response times for Fire & EMS
- Better resource allocation for simultaneous incidents

Questions & Comment

Requested Council Feedback

- 24- Ambulance Staffing
- Timing of additional fire company deployment
- Station 4 construction timeline
- Phased hiring approach (18 total positions)
- CIP timing (Ladder Tower & Brush Truck)