Cooper City Station Location Study – Detailed Talking Points

Slide 1 – Unit Location Analysis: Abbreviated Fire Station Location Study

Introduces the ESCI-led Station Location and Deployment Study for Cooper City. Highlights the scope: evaluating current fire and EMS system performance, comparing against national benchmarks, and examining the potential benefits of expanding or relocating fire station infrastructure.

Slide 2 – Project Scope

Outlines the five-phase project structure:
1. Project Initiation – Confirmed goals and collected foundational data.
2. Current Conditions – Analyzed staffing, response performance, and coverage.
3. Future Demand – Examined population and service growth through 2050.
4. Recommendations – Developed response and deployment options.
5. Delivery – Finalized findings and strategic action pathways.

Slide 3 – Station Location Study Background

Provides background on the 2025 Station Location Study. The study evaluates BSO Fire Rescue's single-station deployment model and explores alternatives, including a two-station model. The objective is to improve coverage, reduce response times, and support community needs through evidence-based decision-making.

Slide 4 – Station Location Study Methodology

Methodology is based on best practices from NFPA 1710 and CFAI standards. Analytical components include incident volume and type, temporal service demand, GIS-based travel time modeling, staffing alignment, and ERF capability. These elements support scenario modeling and comparative evaluation of deployment strategies.

Slide 5 – Station Location Study Data Sources

Data sources include:
- BSO Fire Rescue incident reports (2020–2024)
- NFIRS and NERIS for incident classification
- NFPA and CFAI for performance benchmarks
- GIS for population and coverage mapping
- ISO for fire suppression distribution standards
- Census/ACS data for demographic trends and projections

Slide 6 – Current System Staffing and Incidents

Cooper City is served by one fire station with 4 apparatus and 1 BC vehicle staffed by 13 personnel. Annual call volumes averaged ~2,800 from 2022–2024. EMS responses comprise nearly 64% of all calls, fire just 1%. Staffing for fire suppression units (3 per unit) falls below NFPA's 4-person minimum, while EMS units exceed national ALS standards.

Slide 7 – Current System Incident Types

NFIRS analysis from 2020–2024 reveals incident types:
- 63.95% EMS (300-series)
- 11% Canceled/Good Intent (600-series)
- 1% Fire (100-series)

The low incidence of fires emphasizes the importance of optimizing EMS resources while maintaining sufficient suppression capability for low-frequency, high-risk events.

Slide 8 – Current System Service Demand

Hourly service demand analysis (2019–2024) shows peak activity between 7:00 AM and 8:00 PM. Demand drops significantly from 10:00 PM to 6:00 AM. These patterns suggest opportunities for dynamic or peak-hour deployment models to improve resource utilization during high-demand windows.

Slide 9 – Current System Incident Map

GIS-based incident heat maps (2019–2024) show high response density in central and eastern parts of Cooper City. This aligns with population and business concentrations. Geographic analysis helps identify underserved areas and evaluate the potential benefit of alternative station placements.

Slide 10 – EMS and Fire Incidents

Maps disaggregate incidents by EMS and fire types. EMS heat maps mirror total demand maps, reinforcing their dominance in call volume. Fire incident density is low and scattered, consistent with NFIRS findings that fire responses account for only 1% of all calls.

Slide 11 – Commitment Factor Analysis

Commitment factor analysis (unit time committed to calls) shows:
- Rescue units: 6.6%–8.6%
- Engine and Quint: ~2%

These values are well below the 16–24% ideal threshold, suggesting sufficient unit availability. No units exceed the 30% 'line in the sand' threshold for burnout or system overload.

Slide 12 – Response Time: Alarm Handling and Turnout

Response performance:
- Alarm Handling (911 to dispatch): 2:23 vs. NFPA goal of 1:04
- Turnout Time (dispatch to enroute): EMS = 1:37, Fire = 2:47

Both measures exceed national benchmarks. Delays may stem from dispatch staffing, system design, and station readiness. Recommendations include dispatcher training, CAD optimization, and alerting system upgrades.

Slide 13 – Response Time: Travel Time and Total Response Time

Travel time performance:
- 25% of calls reach scene within 4 minutes

- ~66% arrive between 4–8 minutes
- ~9% exceed 8 minutes

Total response time (911 to arrival) exceeds benchmarks. These delays reflect congestion, geography, and limitations of a single-station model.

Slide 14 – 4- and 8-Minute Response Coverage

Baseline coverage from Station 28:
- 4-minute response area = 1.97 sq mi (23.58%)
- 8-minute response area = 8.05 sq mi (96.50%)

While ERF coverage is strong, rapid access to outer areas is limited. Underserved zones include parts of the northwest sector.

Slide 15 – Deployment Scenarios Overview

Three scenarios modeled:
1. Maintain current station/resources
2. Add new station with additional resources
3. Relocate some existing resources to a new site

Each was evaluated for changes in 4- and 8-minute coverage, ERF capacity, and cost implications.

Slide 16 – Effective Response Force (ERF) with 12 Firefighters

The current station with 12 firefighters provides:
- 97% of Cooper City within 8-minute ERF coverage
- Alignment with NFPA 1710 ERF staffing and time benchmarks

Maintaining this deployment ensures adequate force for low-risk structure fires and major incidents.

Slide 17 – ERF Scenario Comparisons

Scenario comparison:
- Adding a station (new staff): Increases 4-min coverage to 40.45%; maintains 8-min ERF at 96.50%
- Relocating existing resources: Also improves 4-min coverage; **reduces 8-min ERF to 78%,** risking gaps in service

Splitting resources improves speed but reduces effectiveness.

Slide 18 – Scenario Findings Summary

Key findings:
- Splitting resources saves money but cuts ERF capability and incident effectiveness
- New station with new personnel improves response and maintains coverage at high cost: $5.79M initial, $3.24M/year ongoing
- Relocation lowers 8-min coverage, increasing risk in previously protected zones

Given this cost variability, the decision to invest in a new fire station should be carefully evaluated against budgetary constraints, operational logistics, and long-term community safety benefits.

Slide 19 – Recommendations and Strategic Considerations

Recommendations:
- No staffing increases immediately needed
- Improve alarm handling via dispatcher staffing, CAD upgrades, and call-taker training
- Reduce turnout time using alerting systems and consistent policies
- Strengthen mutual/auto aid to address fringe coverage

Slide 20 – Strategic Considerations (Continued)

Before building a new station:
- Explore peak-hour EMS units or roving deployment
- Enhance dynamic staging based on demand patterns
- Monitor growth in northwest sector for future needs

While adding a new station could enhance 4-minute response coverage, it is essential to weigh this improvement against alternative strategies—such as deploying additional EMS units during peak demand periods or enhancing dynamic staging models—which may offer cost-effective solutions without the significant financial commitment of a new facility.

Slide 21 – Questions and Comments

The study recommends deferring station expansion in favor of improving system efficiency through alarm handling, turnout times, and alternative deployment strategies. Staffing for EMS meets or exceeds standards, while suppression staffing could be enhanced. If future service demand trends rise, especially in the northwest, the city should revisit the station addition. Current performance warrants cautious, data-driven investment planning.

Invite stakeholder questions. Emphasize data-driven findings and flexible recommendations that support continued evaluation of service trends, cost implications, and operational needs for Cooper City Fire/EMS.