



# COMMUNITY RISK ASSESSMENT AND STANDARDS OF COVER

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*City of Sierra Vista, AZ - Council Briefing*

November 12, 2024

A background image showing a person in a blue blazer writing on a tablet with a white stylus. The image is overlaid with a semi-transparent dark blue filter.

# Today's Agenda

- 1** About Fitch & Associates

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- 2** Top Seven Priorities

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- 3** Executive Summary

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- 4** Findings and Recommendations

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- 5** Questions

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# About Fitch & Associates

We've designed, developed, and managed some of the world's most innovative Fire/EMS systems, and we bring the energy, focus, and experience that drive decision-making and action.



We seek to partner with communities willing to ask the tough questions, that seek transparency and public input, and are interested in planning for the future in a sustainable manner aligned with community expectations.



Forty years of experience implementing innovative, customized solutions in the public safety and healthcare arenas, providing consulting services in thousands of communities in all 50 states, every Canadian province, and 12 other countries.

# Top Seven Priorities

Improving Dispatch Time, Turnout Time, and Total Response Time

Add an additional dedicated EMS transport unit to the daily deployment

Add an additional fire suppression unit to the daily deployment

Continue risk-based planning efforts to meet changes in community demand for services and risk

Introducing outcome measures to performance management strategies

Adopting a system of measures for future action planning and decision making

Adopt a strategic plan to help the department implement actionable items

# Project Deliverables

Phase 1  
Quantitative Data  
Analyses

Phase 2  
Comprehensive GIS  
and Station  
Location Analyses

Phase 3  
Community Risk  
Assessment

Phase 4  
Standards of Cover  
and Findings and  
Recommendations

## 2023 90th Percentile Response Time Performance

Jurisdiction	CAD Program	Dispatch Time (Minutes)	Turnout Time (Minutes)	Travel Time (Minutes)	Response Time (Minutes)	Sample Size <sup>1</sup>
SVFMS	EMS	2.9	2.2	9.1	12.2	6,707
	Fire	2.9	2.6	9.8	13.2	855
	Hazmat	3.0	2.7	8.5	12.6	98
	Rescue	--	--	--	--	4
	CAD Record Not Identified <sup>2</sup>	4.1	2.3	9.4	13.5	527
	<b>Total</b>	<b>2.9</b>	<b>2.2</b>	<b>9.3</b>	<b>12.4</b>	<b>8,191</b>
SVFMS 201-204	EMS	2.9	2.2	9.1	12.2	6,706
	Fire	2.9	2.6	9.8	13.2	854
	Hazmat	3.0	2.7	8.5	12.6	98
	Rescue	--	--	--	--	4
	CAD Record Not Identified <sup>2</sup>	4.1	2.4	9.7	12.9	260
	<b>Total</b>	<b>2.9</b>	<b>2.2</b>	<b>9.3</b>	<b>12.4</b>	<b>7,922</b>
SVFMS Contract	EMS	--	--	--	--	1
	Fire	--	--	--	--	1
	Hazmat	--	--	--	--	0
	Rescue	--	--	--	--	0
	CAD Record Not Identified <sup>2</sup>	4.1	2.1	8.9	14.1	267
	<b>Total</b>	<b>4.1</b>	<b>2.1</b>	<b>9.0</b>	<b>14.7</b>	<b>269</b>

# Improving Response Time

### Best Practices

Dispatch ~2 minutes

Turnout ~ 1.5 minutes

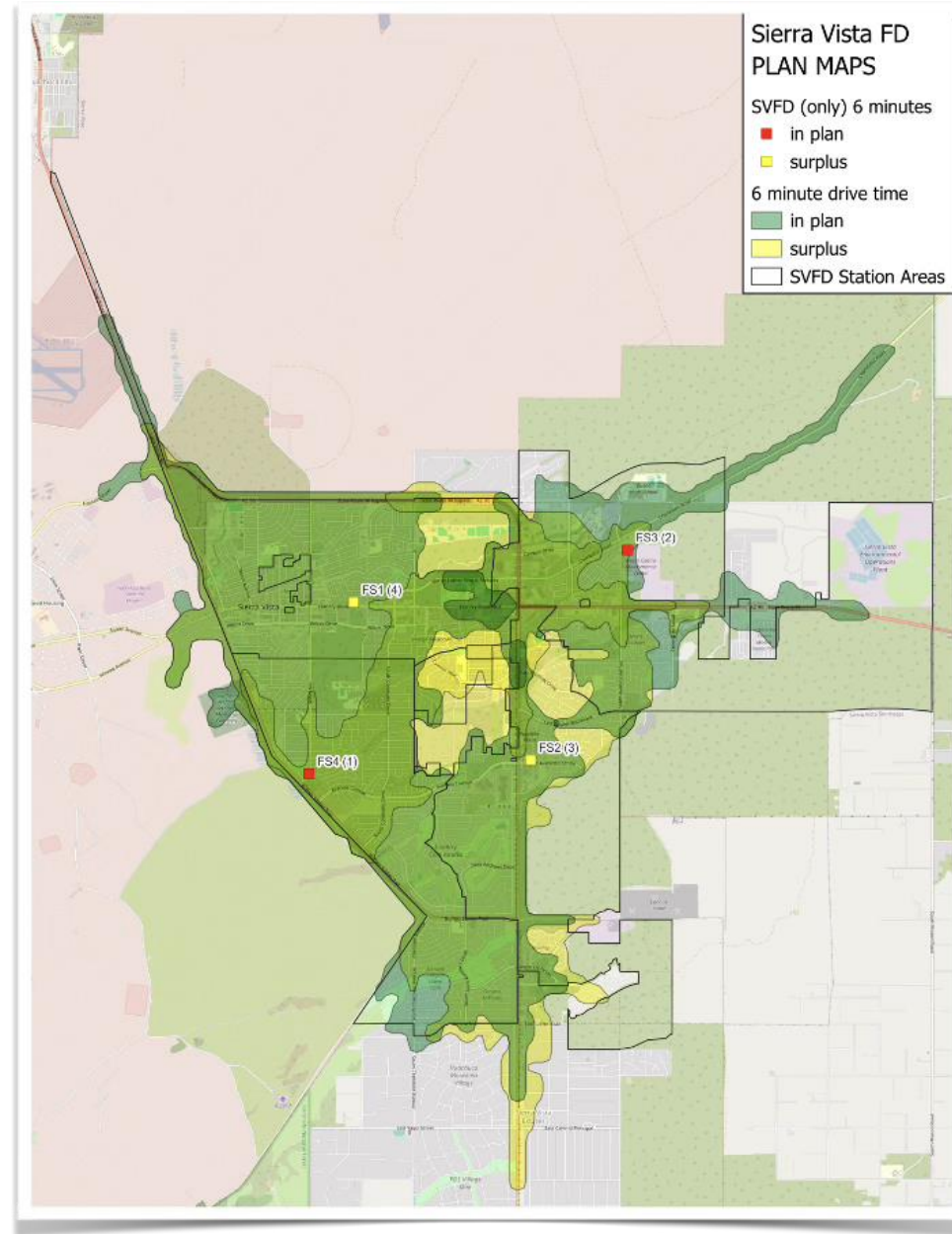
Travel ~ 4 minutes

### Recommendations

The department should better align Dispatch and Turnout Times with best practices.

Improving the Dispatch and Turnout Times has an excellent return on investment for improving the citizen's total response time experience.

# Fire Station Locations and Response Time Capabilities



Analyses confirmed that there are insufficient resources to maintain the availability to meet the 6-minute travel time.

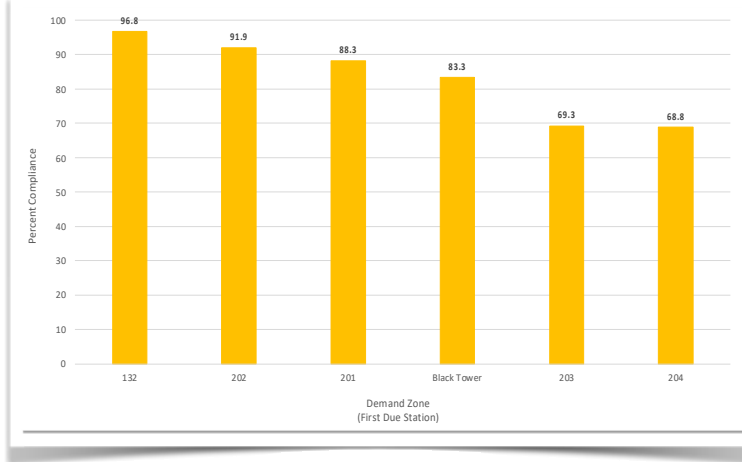
In other words, the current resource allocation limits the return on investment in the number and locations of fire stations.

If 6 minutes is the adopted goal, additional resources within the existing stations are the most efficient solution, as opposed to building additional fire stations.

# Evaluation of the Multi-Purpose PTE at Station 203

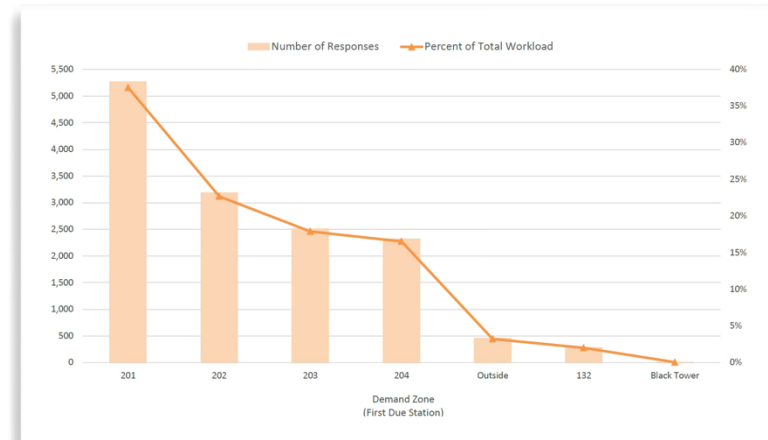
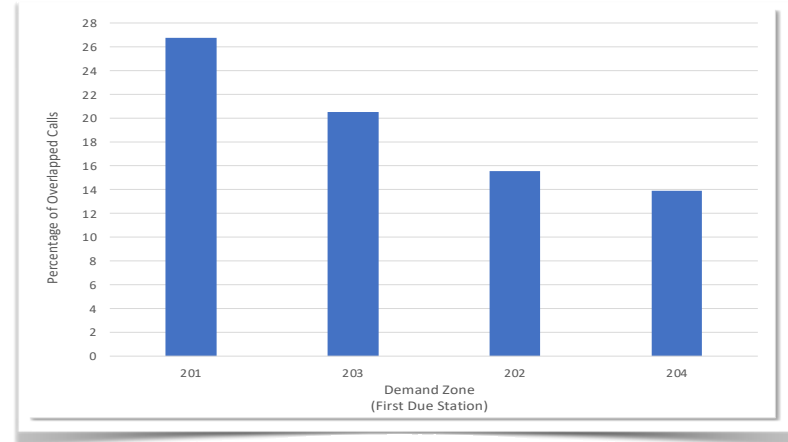
The department should consider adding a dedicated EMS transport unit to Station 203.

The recommendation is that cross-staffed and multi-purpose resources should not exceed 1,500 calls per year and 15% call concurrency.



Station 203 had the second-highest rate of simultaneous events at 20.5%. In other words, nearly 21% of the time, when a unit responded to the first incident, a second or greater incident occurred at the same time.

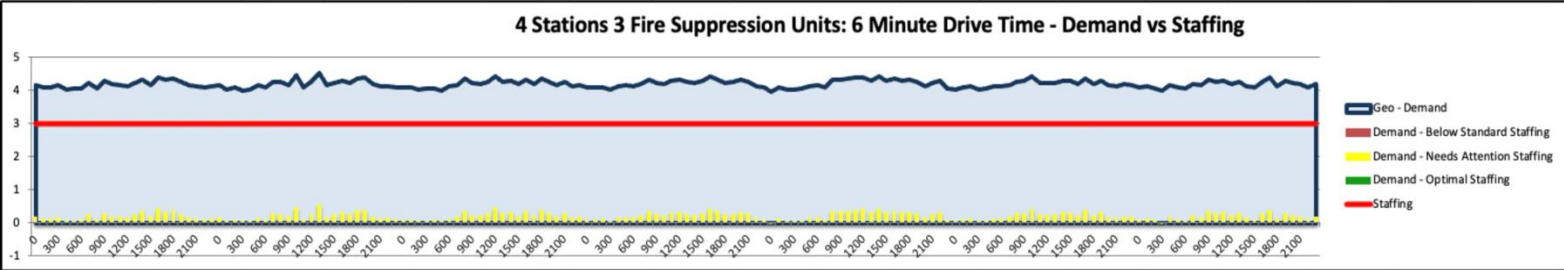
Station 203 has the second lowest reliability percentage. Less than 70% of the time, a unit assigned to Station 203 was available to respond when an incident occurred.



Station 203 had 2,512 responses in 2023, which exceeds the recommended planning threshold of 1,500 calls per year.



**Fire Suppression** - The current allocation of three suppression units is insufficient to meet community demands for a 6-minute travel time.



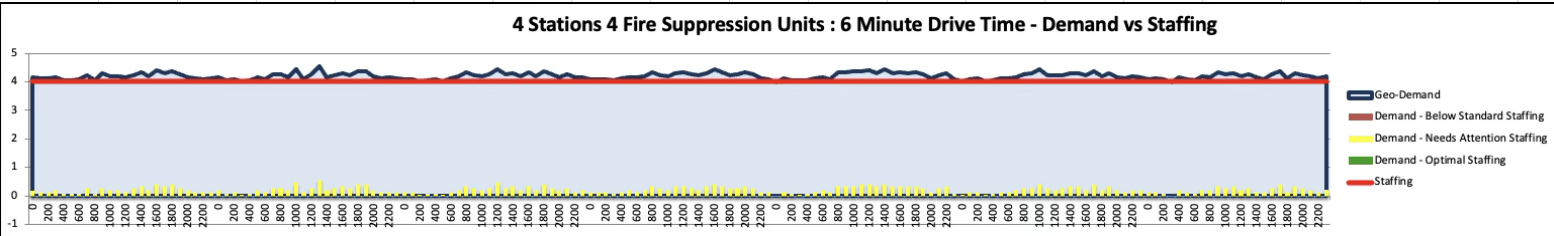
**EMS** – The current allocation of three dedicated EMS transport units is insufficient to meet community demands for a 6-minute travel time. Understanding that the department runs one call an hour throughout the peak of the day results in a reduced capacity to two.



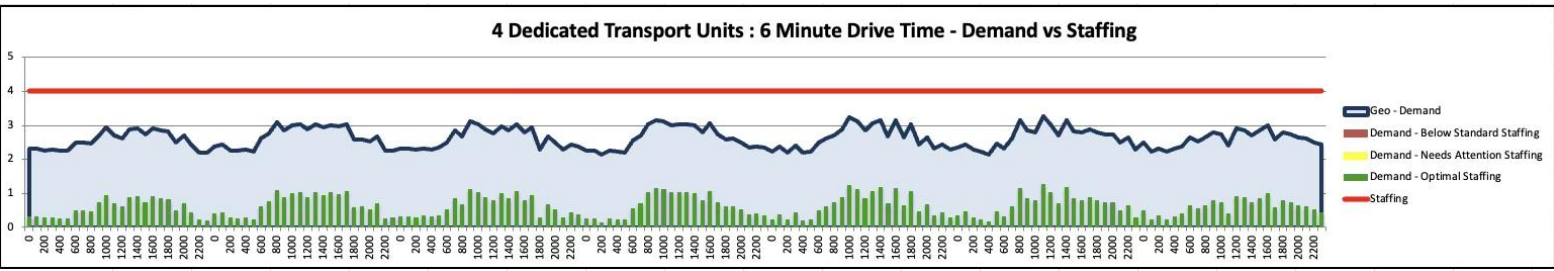
# Resource Allocation to Meet Community Demands

# Recommended Resource Allocation to Meet Community Demands

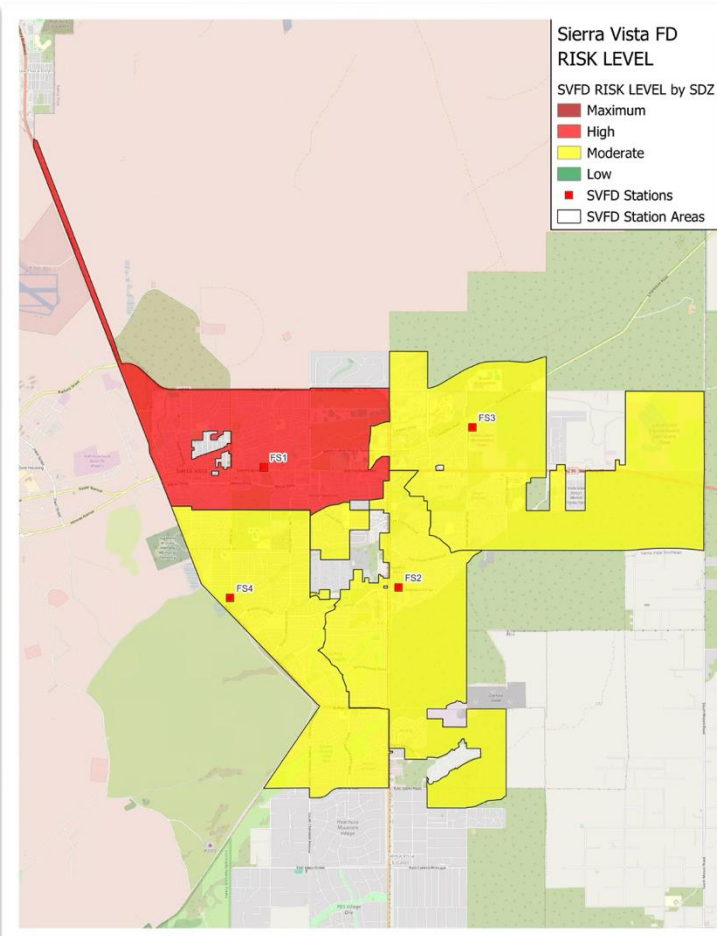
**Fire Suppression** – This assessment was to add the minimum solution to improve the availability of fire suppression resources to realize an improved response time. This would require 4 staffed resources per day.



**EMS** – This assessment was to add the minimum solution to improve the availability of EMS resources to realize an improved response time. This would require four dedicated and staffed resources per day. If desired, the department could consider utilizing a 12-hour unit during the peak of the day to reduce costs.



# Aligning Resource Allocation to Risk



## Recommendations

Considering a 6-minute travel time, the department is encouraged to add resources to Stations 203 and 204.

Station 203 should add a dedicated Medic unit.

Station 204 should receive a staffed fire suppression resource.

Station #	Risk Rating	Peak Hourly Demand	UHU	Reliability	Call Concurrency	Travel Time	Num. Apparatus Assigned	Additional Fire Suppression Resources	Additional EMS Resources
1	High	0.6	11	88.3	26.8	7.1	2		
2	Moderate	0.4	9	91.9	15.6	8.2	2		
3	Moderate	0.4	7	69.3	20.5	12.8	1		1
4	Moderate	0.3	12	68.8	13.9	10.1	1	1	

# Introducing Outcome Measures to Performance Management Strategies

Fire Suppression		
Measure	Benchmark Performance	Current Performance
<b>Structure Fire Incident Rates</b>		
Number of Structure Fire Fatalities per 100,000 residents	≤ 1.11	#
Number of Structure Fire Rescues per 100,000 residents	#	#
<b>Fire Spread - Degree of Confinement - All Building Fires with Fire Spread</b>		
Fire Confined to Building of Origin	%	%
Fire Confined to Floor of Origin	%	%
Fire Confined to Room of Origin	%	%
Time to Fire Confined (from FD arrival)	10:00	mm:ss
<b>Fire Spread - Degree of Confinement - Residential Structures with Fire Spread</b>		
Fire Confined to Room of Origin		
<b>Fires Controlled by Fire Suppression Systems</b>		
Percentage of Fires Extinguished by Fire Suppression Systems in Protected Buildings	90%	%
<b>Preventable Fire Incidents</b>		
Percentage of Fires Unpreventable	%	%
<b>Building Fires in Commercial Occupancies</b>		
Fire Confined to Room of Origin	%	%
Fire Loss as a Percentage of Total Protected Property Value <u>with</u> Fire Protection System	%	%
Fire Loss as a Percentage of Total Protected Property Value <u>without</u> Fire Protection System	%	%
<b>Property Saved in Buildings with Fires</b>		
Value of Property Saved in Dollars	\$	\$
Fire Loss as a Percentage of Total Protected Property Value	0.05%	%
<b>Emergency Medical Services</b>		
Percentage of cardiac arrest patients receiving resuscitative efforts where return on spontaneous circulation is achieved	≥ 50%	%
Percentage of overall cardiac arrest patients with survival to discharge from hospital	≥ 33%	%
Percentage of EMS responses where treatment is indicated, and condition is improved or stabilized	≥ 90%	%

# Utilizing a System of Measures for Decision Making and Action Planning

Type of Measure	Performance Metric	Recommended Performance	Priority	Review Period
Station/Unit Performance	Turnout Time – EMS	≤1.0 Min at 90%	Emergent	Quarterly
	Turnout Time – All Other	≤1.5 Min at 90%	Emergent	Quarterly
	Travel Time	≤6 Min at 90%	Emergent	Quarterly
	Minimum Engine/Quint Staffing	≥3 Firefighters	All Responses	Daily
	Minimum Medic Staffing	≥1 FF/PM ≥1 FF/EMT	All Responses	Daily
System Design and Performance	Dispatch Time	≤2 Min at 90%	Emergent	Monthly
	Station Risk Rating	Increases in Risk		Annually
	Reliability	≥70%		Quarterly
	Call Concurrency	≤30% Per Unit		Quarterly
	Call Volume	3,000 – Initial 1,000 – Ongoing		Annually
	Unit Hour Utilization	≤0.25 on 24-hour on EMS Units ≤0.15 on 24-hour on Engines and Aerials ≤0.50 on 12-hour units		Quarterly
	Cross-Staffing at Unit Level	<1,500 annual calls and <15% Call Concurrency		Annually

# Develop and adopt a Strategic Plan for the Fire & Medical Department





# Questions?

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Steven Knight, PhD