Select Board

21 State Line Road, West Stockbridge, Mass. 01266

Tel. (413) 232-0300 x319
Fax. (413) 232-7195
E-mail: admin@weststockbridge-ma.gov

Select Board Hybrid Meeting
21 State Line Rd., West Stockbridge, MA

Tuesday, May 14, 2024

6:00 PM

Open Meeting

1. Reorganization of the Board
2. Approve minutes - Rent Control Board from February 28, May 8, 2024
3. Approve minutes - Select Board from April 24, 2024
4. Citizen Speak
5. Town Administrator Update
6. Discussion/Business/Action items:

   -Endorsement of Open Space and Recreation Plan-Marie
   Citizen Speak
   -Shared Fire and Ambulance Discussion on Next Steps
   Citizen Speak
   -Wiseacre Farm Tech Environmental Report Results Discussion
   Citizen Speak

7. Select Board Speak
8. Adjourn

You are invited to a Zoom webinar.
When: May 14, 2024 06:00 PM Eastern Time (US and Canada)
Topic: SB Meeting

Please click the link below to join the webinar:
https://us06web.zoom.us/j/84751659622?pwd=LtX-tAVyC4h7JO8xA0AdHzrxrS0OiA.80_F7-3TG8i2gvs6

Telephone: +1 646 558 8656 US (New York)
Webinar ID: 847 5165 9622
Passcode: 172133

Towns of West Stockbridge, MA
&
Stockbridge, MA

Photos used with permission from Massfiretrucks.com

Shared Fire and Emergency Medical Services: Predicted Impact on Response Times

May 1, 2024

JB Consulting Group LLC, P.O. Box 5, Hanover, MA 02339 - (781) 706-2366 - jeff.jbconsulting@gmail.com

1. Table of Contents

2. Introduction

2.1 Scope of Work

JB Consulting Group, LLC (Blanchard) has been engaged by the Town of West Stockbridge, Massachusetts to predict response times for a shared fire and emergency medical services (EMS) deployment model with the Town of Stockbridge, Massachusetts.

Currently, the Town of West Stockbridge is working under an expired shared services agreement for fire and EMS with the Town of Richmond, Massachusetts.

Stockbridge has two shared services agreements for EMS only. One with the Town of Lenox, to provide primary EMS for the Stockbridge Bowl area located in the northern portion of Stockbridge. The second agreement is with the Town of Lee to provide primary EMS services for the remainder of Stockbridge. Stockbridge provides their own fire protection.

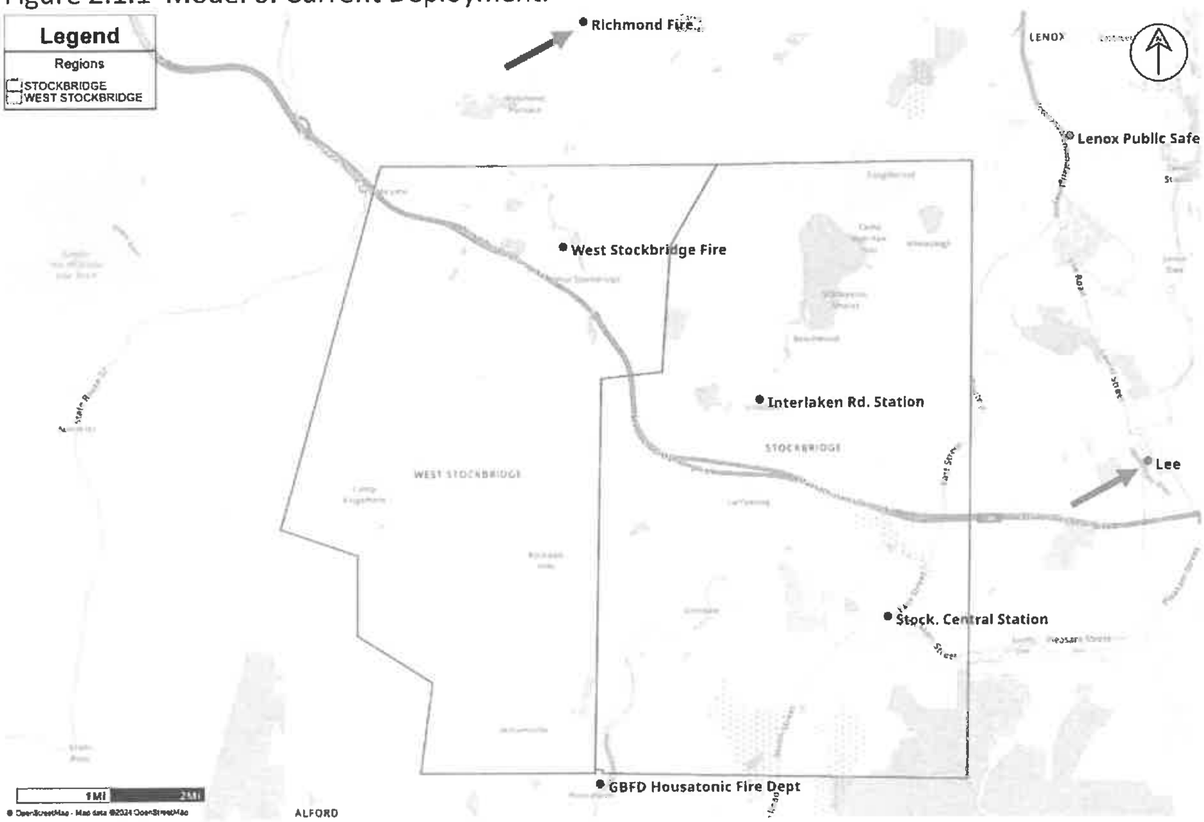
JB Consulting will utilize Levrum Code3 Strategist software to create models to predict how changing shared services between West Stockbridge and Richmond, to shared services between West Stockbridge and Stockbridge, will affect fire and EMS response times for West Stockbridge and Stockbridge.

2.1.1 Models to be Considered

This report will compare the following three service delivery models. Model 0 simulates current deployment. Model 1 simulates a new shared services agreement between West Stockbridge and Stockbridge, utilizing the existing Stockbridge Central Station as a base for a new ambulance, staffed by full-time firefighters certified at the emergency medical technician (EMT) level. Model 2 is the same as Model 1, with the exception that the ambulance and full-time staff are located at a new fire substation on West Stockbridge Road in Stockbridge.

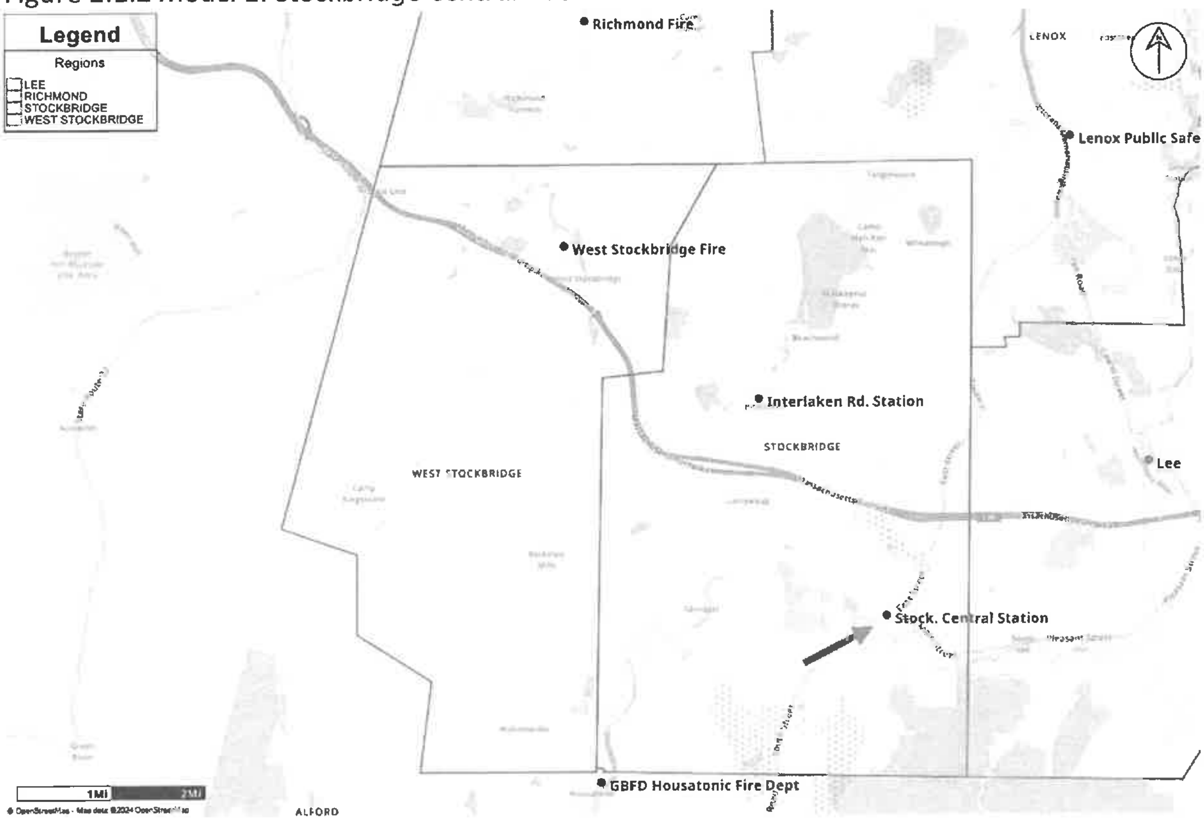
Model 0: Current deployment. Shared fire and Emergency Medical Service (EMS) between Richmond and West Stockbridge. The Richmond Fire Department operates an ambulance or fire truck, from their fire station with two full-time personnel Monday through Friday, between the hours of 8 am and 4 pm. After hours and on weekends, the ambulance and fire apparatus from this station are staffed by on-call personnel. The fire stations in West Stockbridge, and Stockbridge are staffed by on-call personnel. Emergency Medical Service for Stockbridge is provided by the Town of Lee (Figure 2.2.1).

Figure 2.1.1 Model 0: Current Deployment.



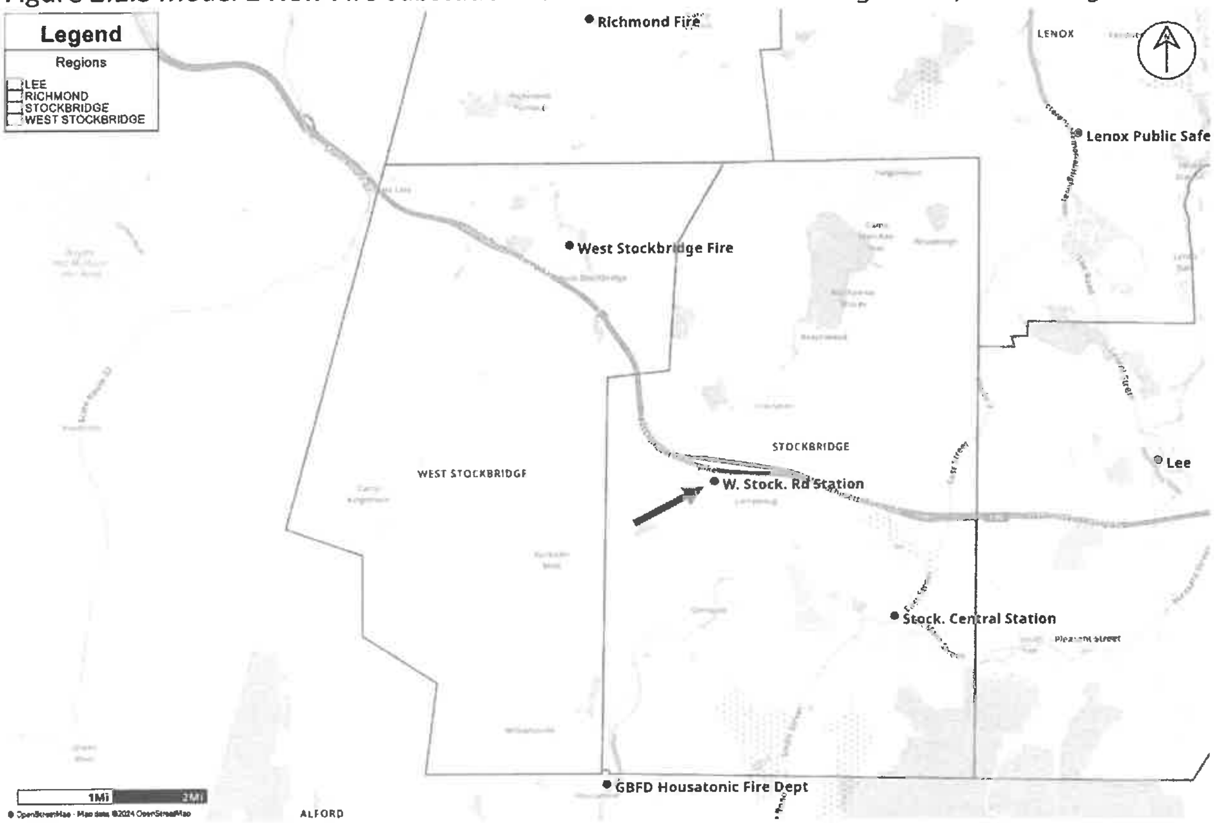
Model 1: Shared services between West Stockbridge and Stockbridge with two full-time staff and an ambulance are added and located at Stockbridge Central Station. The shared services agreement with Richmond is terminated. Two full-time staff are on duty 24 hours each day, 365 days a year operating out of Stockbridge Central Station. No changes are made to the location of any apparatus or the on-call staff that operate out of West Stockbridge Station, Interlaken Road Station, and Stockbridge Central Station (Figure 2.2.1).

Figure 2.1.2 *Model 1: Stockbridge Central Fire Station*



Model 2: Shared services between West Stockbridge and Stockbridge with two full-time staff, an ambulance and two pumping engines are housed in a new fire substation located on West Stockbridge Road, near West Dale Road, in Stockbridge. The Interlaken Road station is closed, and on-call personnel are assigned to the new station. Stockbridge Central Station remains open and staffed with on-call personnel. In this model, the Stockbridge Fire Chief's office remains at Stockbridge Central Station, the chief to responds from here Monday through Friday between the hours of 8 am and 4 pm (Figure 2.2.3).

Figure 2.1.3 *Model 2 New Fire Substation Located on West Stockbridge Road, Stockbridge*



2.2 Objectives:

The objective of this analysis is to utilize historic call data, and Levrum Code3 Strategist software, to develop response times for each deployment model for comparison. All calls, fire based, and Emergency Medical Service (EMS) based, are analyzed. Fire based calls that require the response of fire apparatus and include structure fires, fire alarms, car fires, brush fires, hazardous material spills, and outside utility calls. EMS based calls include medical emergencies and motor vehicle crashes. While it is recognized that response times to both fire based and medical are critical, there is additional focus on EMS.

2.3 Participants / Acknowledgements

The JB Consulting Group would like to acknowledge the following individuals, for their time and cooperation, which made this analysis possible. Stockbridge Fire Chief Vincent Jan Garofoli and Richmond EMS Director Austin White. Both met with Blanchard in person, on Zoom webinars, and by telephone on multiple occasions.

3. Model Development.

A base model (Model 0) depicting the current staff, apparatus deployment and running cards for West Stockbridge, Richmond and Stockbridge was created. Each of the 2583 emergency calls were then processed by this model to generate response time data. Validation of the model was completed in conjucntion with EMS Director White and Chief Garofoli. Randomly selected calls were compared to actual response response times to ensure accuracy. The model was confirmed to be dispatching the correct unit(s) and utilizing the appropriate street routing. Average unit on scene times , and hospital turnaround times (for EMS calls) were also confirmed.

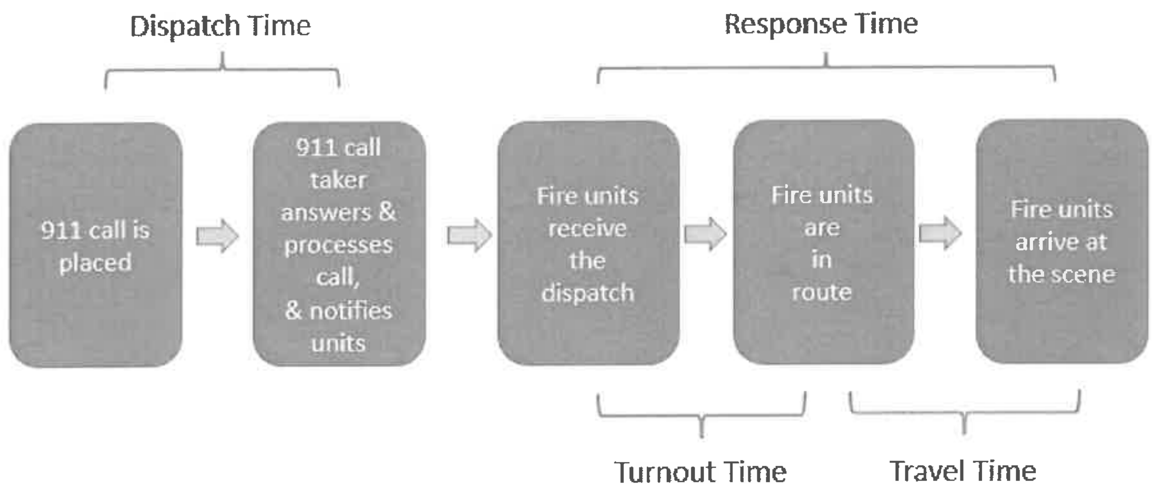
The two additional models were created from the base model. Model 1 no longer recognizes a shared services agreement with Richmond. Fire services for West Stockbridge and Stockbridge are provided by on-call firefighters who are assigned to, and respond from the West Stockbridge Fire Station, the Interlaken Road Station in Stockbridge, and the Stockbridge Central Station.

Since historic call data from Richmond and Lee were included in this study, the availability of their ambulances as the closest mutual aid partner is accurate. The models assume that the closest available mutual aid partner is available to provide the requested resource. In reality, the closest resource may already be committed to an emergency, resulting in a longer response time from a more distant mutual aid partner.

4. Time Measurement

Time is crucial when measuring the effectiveness of emergency services. In emergency situations, every second counts, and the ability of emergency services to respond quickly can significantly impact outcomes such as saving lives, minimizing property damage, and reducing suffering (Figure 4.1).

Figure 4.1 *Time Measurement*



4.1 Dispatch Time

Dispatch time, also referred to as call processing time, includes the time from when the 911 dispatcher answers the phone until the dispatcher obtains information from the caller and passes it along to the firefighters in the fire station. The NFPA has established two response time objectives for dispatching in their Standard 1710. The 911 phone call must be answered (alarm answer) within 15 seconds, 95% of the time, and responders must be notified (alarm processing) within 64 seconds, 95% of the time. Dispatch time was not included in this study, as fire station location and/or staffing does not impact either of the two response time objectives. Dispatching for both communities is provided by the Berkshire County Sheriff's 9-1-1 Regional Dispatch Center.

4.2 Response Time

Response time is critically important for emergency service providers as it can directly impact the outcome of emergencies and the safety of individuals in need. The faster emergency services can arrive at the scene, the better the chances of mitigating damage, saving lives, and preventing further harm. Response time includes Turnout Time and Travel Time. Both of these times are within the responders' control.

4.2.1 Turnout Time

Turnout time begins once the firefighters are notified that there is a call. Turnout time includes moving to the fire apparatus or ambulance, donning the appropriate protective gear, taking a seated position within the vehicle, starting it up, and opening the overhead doors. NFPA 1710 sets a response turnout time of 80 seconds for fire units and a turnout time of 60 seconds for EMS units. For this study a turnout time of 90 seconds was applied for EMS calls and a turnout time of 120 seconds for fire-based calls. The selected turnout times are a bit longer than what NFPA 1710 sets, as it considers that the full-time staff provide a dual service, each requiring the donning of a different specific set of personal protective equipment.

Turnout Time for on-call personnel includes the time required to drive to the fire station. EMS and fire reports from West Stockbridge, Richmond and Stockbridge were reviewed to obtain an average turnout time for each fire station. After consulting with EMS Director Austin White, a turnout time of twelve-minutes was applied to both the West Stockbridge and Richmond fire stations. Chief Jan Vincent Garofoli provided recent data showing an average turnout time of six minutes for on-call personnel responding to Stockbridge's Central and Interlaken Rd. Stations.

4.2.2 Travel Time

Travel times for this study were calculated by using Open Street Map™ (OS) data. For each responding apparatus, simulation of response starts with the computed current location. If the responding unit has completed its previous assignment and returned to quarters, this location will be the unit's assigned station. If the unit is in service on-scene of a prior incident, the new response will start from that location. If the unit is returning from a prior incident, its position on the travel route from its last known location to its home station will be computed by estimating the total travel time and pro-rating the fraction of travel time represented by the dispatch date/time of the new incident. With the starting location computed, the street route to the new incident is computed using the OSM routing engine. Ideally, a simulated average travel speed is calculated from historical response data. In the case of this study, reliable response data with timestamps precise to seconds were not available, so travel speeds were estimated based on distance traveled from general industry figures. Simulated travel times were calculated from the street route and estimated travel speed.

4.2.3 On-Scene Time

In addition to response times, the average amount of time spent on-scene was established for both fire and EMS based calls. After the examination of historic call data, and consultation with Chiefs Brown and Garofoli, the average on-scene time for both fire apparatus and ambulances are established to be twenty minutes.

4.3 Turnaround time

Both chiefs agreed on an average turn-around time of twenty minutes. Turnaround time is the time an ambulance crew spends at the hospital transferring patient care, restocking medications and supplies, and placing the ambulance back in service. Turnaround time is important as it impacts how quickly ambulances are able to be back in their community, ready to respond to the next emergency.

5. Area of Coverage (AOC)

In this study, the area of coverage refers to the portions of the Towns of West Stockbridge and Stockbridge that are able to receive timely assistance from emergency responders who arrive by ambulance or fire apparatus.

5.1 Area of Coverage Standards

There are three commonly used standards that define an area of coverage, the Insuruance Services Office (ISO), the National Fire Protection Assocation (NFPA) Standard 1710, NFPA Standard 1720, and the American Heart Association / American Stroke Association Guidelines for Dispatch.

A fourth coverage standard exists for EMS in Massachusetts. The State of Massachusetts Department of Public Health, Office of Emergency Medical Services, requires each community to develop a Service Zone Plan. An acceptable ambulance response time limit must be identified and included in each plan before it is approved.

5.1.1 ISO

The Insurance Services Office (ISO) Fire Suppression Rating Schedule (FSRS) examines each fire department in the United States and assigns a Public Protection Classification or PPC. The PPC score ranges between 1 and 10, with the lower number being the better score. When assessing fire department deployment, ISO considers an area within a city or town "covered" by an engine company if it is properly staffed and within 1.5 miles. Ladder companies are credited for covering 2.5 miles from their fire station. Neither West Stockbridge or Stockbridge have ladder companies. The two closest mutual aid ladder trucks are available from Lenox and Great Barrington. The Stockbridge Fire Department received an ISO PPC rating of 4 / 4Y, in their most recent evaluation dated 2015. An ISO PPC rating for West Stockbridge (or West Stockbridge and Richmond) is not provided, as it was not available prior to the printing of this document.

5.1.2 NFPA Standard 1710

NFPA Standard 1710, The Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Services, and Special Operations to the Public by Career Fire Departments, identifies the area of coverage as the distance that fire apparatus can travel from their stations within four minutes.

5.1.3 NFPA Standard 1720

NFPA Standard 1720, The Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Services, and Special Operations by Volunteer and Combination

Fire Departments. Both West Stockbridge and Stockbridge, each community having a population density of less than 500 people per square mile, fall under the Rural Demand Zone (Table 4.3.1).

Table 5.1.3 *NFPA 1720 Response Objectives by Demand Zone*

NFPA 1720				
Demand Zone	**Demographics**	**Min Staff**	**Response Time**	**Meets Objective**
Urban	>1000 People Sq. Mile	15	9	90%
Suburban	500 - 1000 People Sq. Mile	10	10	80%
Rural	<500 People Sq. Mile	6	14	80%
Remote	>8 Mile Travel Distance	4	Dir Dep on Trvl Dist	90%
Special Risk	Determined by AHJ	D by AHJ		90%

5.1.4 American Heart Association / American Stroke Association

The American Heart Association / American Stroke Association, in their guidelines for dispatch, recommends a response time of nine minutes or less. (<1 minute), response (<8 minutes) Cardiac Arrest - Am J Emerg Med. 2019 Nov;37(11):1999-2003. It was determined that shorter EMS response times could lead to favorable neurologic outcome in patients with out of hospital cardiac arrest (OHCA) of presumed cardiac origin. EMS response time threshold associated with improved favorable outcome was ≤7.5 min.

5.1.5 Massachusetts Department of Public Health, Office of Emergency Medical Services

The Massachusetts Department of Public Health, Office of Emergency Medical Services, requires that each community create an Emergency Medical Service Zone Plan. Each community is asked to identify an acceptable response time for all emergency medical calls, that can be met 80% of the time. Both West Stockbridge and Stockbridge are included in the Southern Berkshire Plan, approved in 2010, and have set 20-minutes as the acceptable response time. Other towns included in this plan are Alford, Egremont, Great Barrington, Mount Washington, Monterey, New Marlborough, Otis, Sandisfield, and Tyringham.

5.2 Model 0 – Area of Coverage

Figure 5.2 shows the 10-minute AOC for Model 0, Monday through Friday between the hours of 8 a.m. and 4 p.m. During these hours, the Richmond ambulance is staffed by full-time personnel and provides primary coverage for West Stockbridge. Stockbridge, covered by an EMS only shared services agreement with the Town of Lee, has an AOC for a portion of their town.

Figure 5.2.1 *Model 0: 10-Min. AOC Monday through Friday 8 a.m. to 4 p.m.*

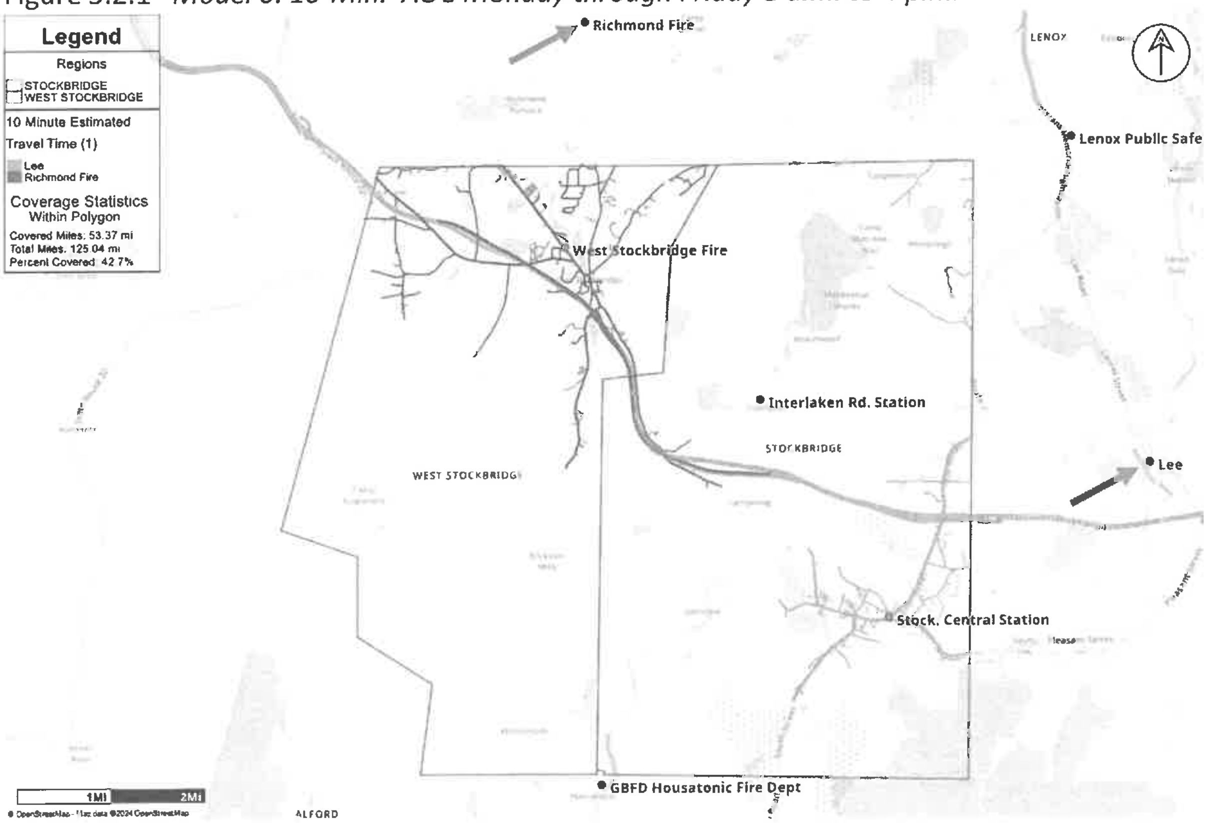
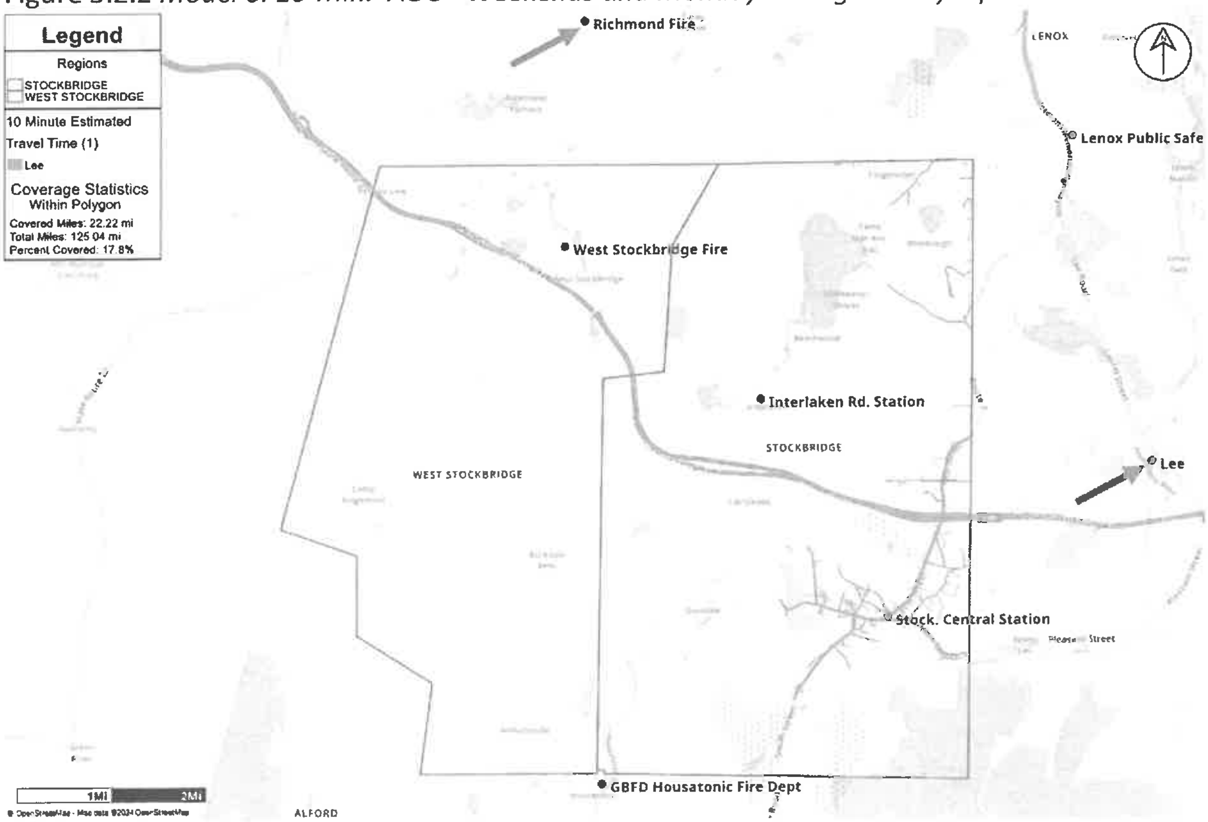


Figure 5.2.2 identifies the 10-minute AOC for Model 0 on Weekends and Monday through Friday between the hours of 4 p.m. and 8 a.m., when the Richmond Ambulance is staffed by on-call personnel. Due to the associated 12-minute delay that occurs with the on-call system, Richmond Fire cannot provide coverage to West Stockbridge (or even their own town) within a 10-minute timeframe. Only a portion of Stockbridge, receiving ambulance coverage from the full-time staff from the Lee Fire Department, can be reached within 10-minutes.

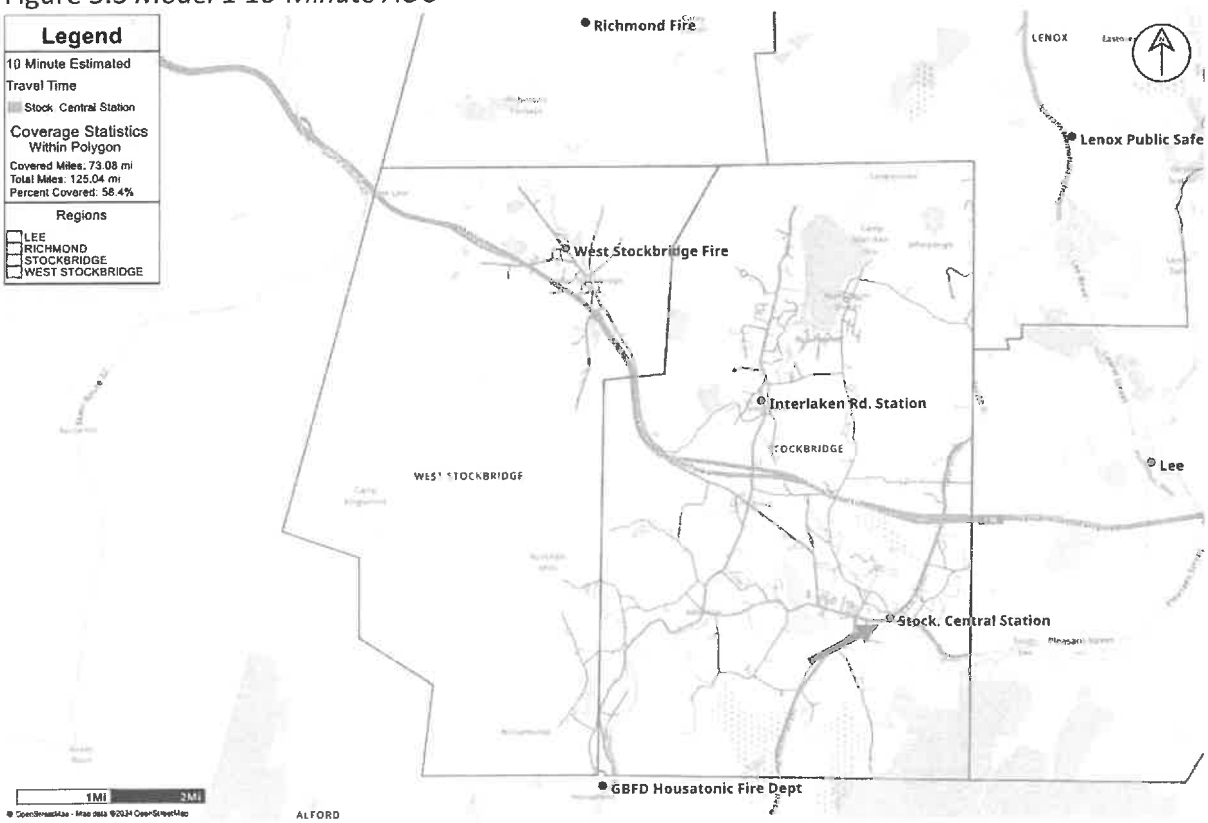
Figure 5.2.2 *Model 0: 10-Min. AOC - Weekends and Monday through Friday 4 p.m. to 8 a.m.*



5.3 Model 1 Area of Coverage

Figure 5.3 identifies the 10-minute AOC for Model 1. An ambulance, staffed by full-time firefighter/EMTs, can reach most of Stockbridge and the downtown area of West Stockbridge.

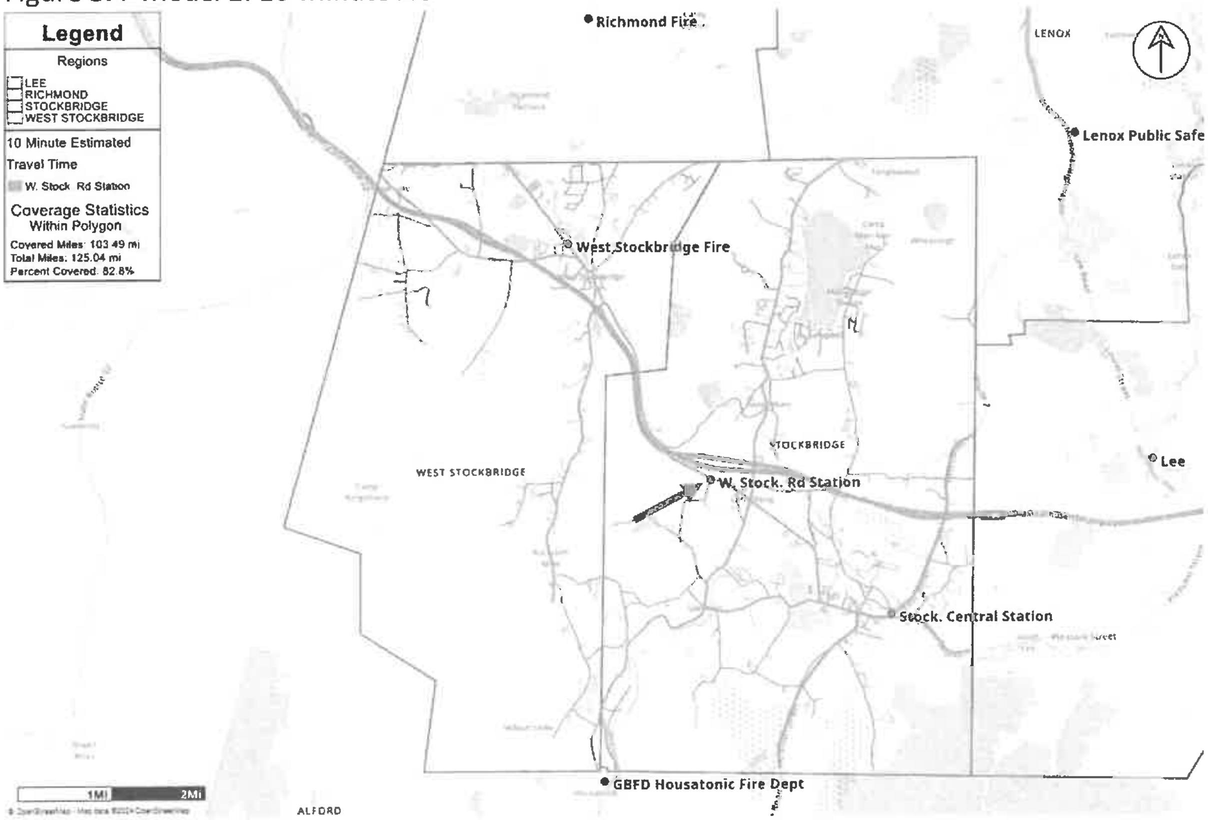
Figure 5.3 *Model 1 10-Minute AOC*



5.4 Model 2 Area of Coverage

In this model, full-time firefighter / EMTs are based out of a new fire substation on West Stockbridge Road in Stockbridge. Of the three models compared, Model 2 provides the greatest AOC for West Stockbridge and Stockbridge (Figure 5.4).

Figure 5.4 *Model 2: 10-Minute AOC*



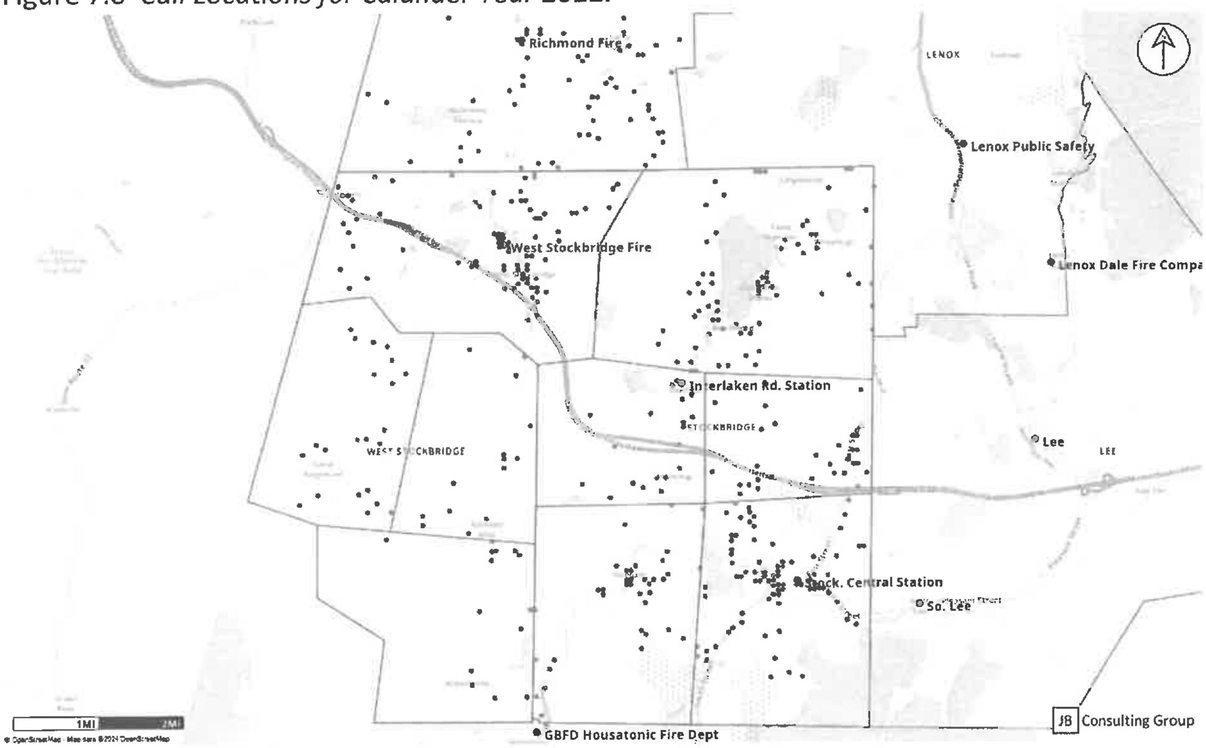
6. Data Import:

Data from the calendar year 2022 was obtained for West Stockbridge and Richmond. This data was merged with 2022 data from a previous study for Stockbridge and Lee. Including data from Richmond and Lee allowed the analysis to determine the availability of two of the closest mutual aid partners, providing a better understanding of how an additional ambulance, staffed by full-time firefighter / EMTs, will impact response times in the Central Berkshire area.

7. Historic Call Data Analysis

Historical call data for 2583 emergency calls occurring in the towns of Lee, Richmond, Stockbridge and West Stockbridge between January 1, 2022, and December 31, 2022, was obtained for analysis (Figure 7.0). During 2022 there were 220 emergency calls in West Stockbridge, 561 in Stockbridge, 209 in Richmond, and 1400 in Lee. Additionally, there were 193 emergency calls where mutual aid was provided to other communities. Lee and Richmond call data was included in the analysis to provide insight into how an additional ambulance in the region will impact mutual aid utilization.

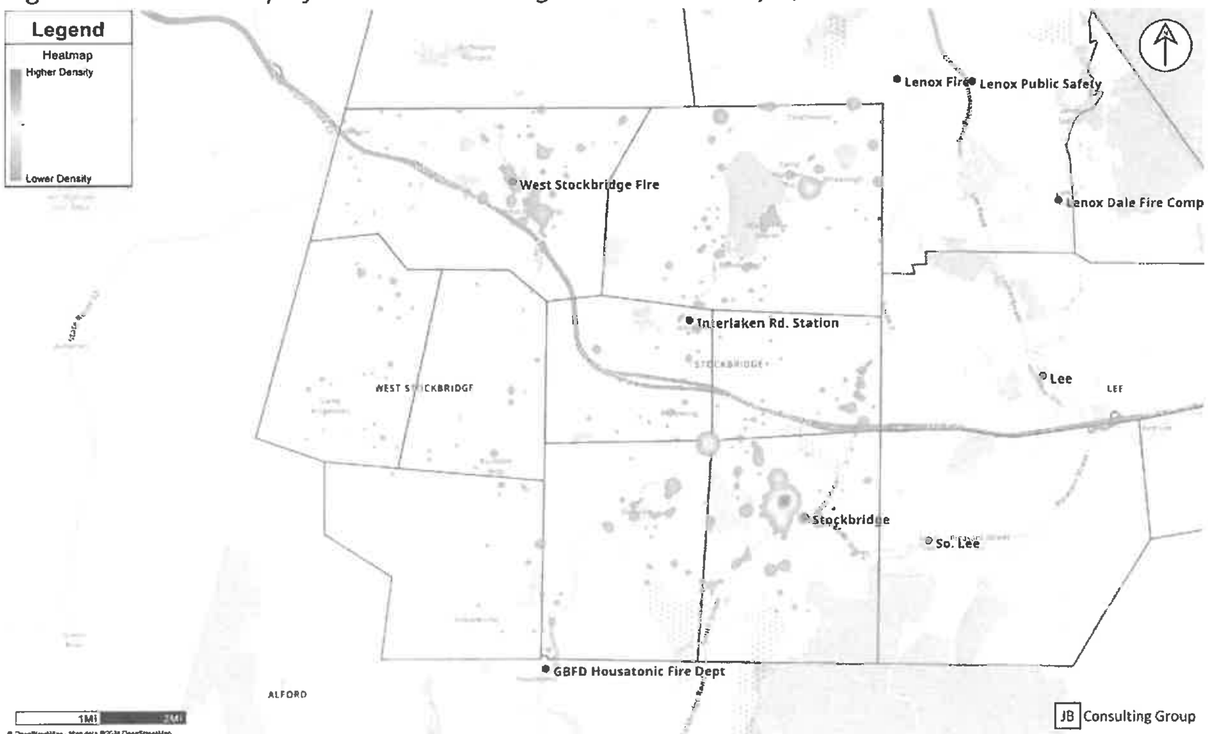
Figure 7.0 *Call Locations for Calander Year 2022.*



7.1 Heat Map

A heat map shows where the highest concentration of calls occurred in West Stockbridge and Stockbridge during calander year 2022 (Figure 5.1.1).

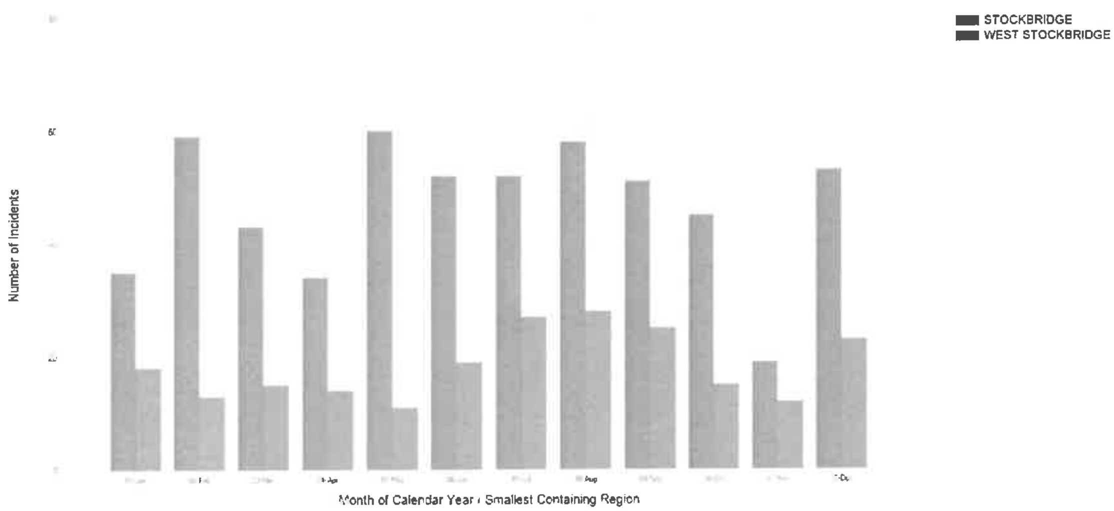
Figure 7.1: *Heat Map of 781 Calls Occuring Between January 1, 2022 and December 31, 2022*



7.2 Call Activity by Month

Figure 7.2 shows that Stockbridge handeled more calls during 2022 than West Stockbridge. The busiest two months for Stockbridge were February and May, followed closely by August and December. West Stockbridge's busiest time of the year is July, August and September. December came ranked as the forth busiest month.

Figure 7.2 *Total Number of Calls by Town and Month During 2022.*

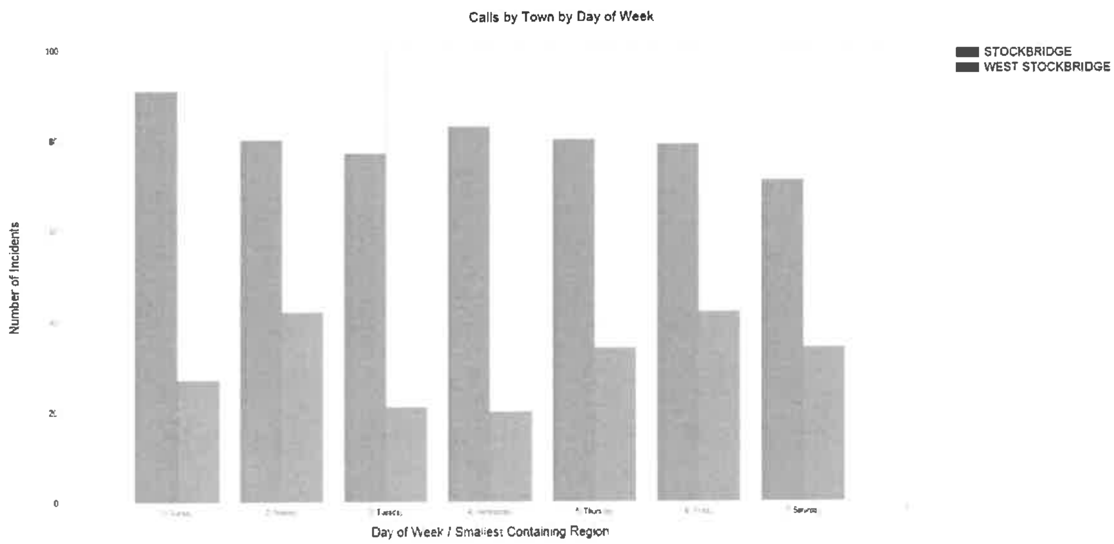


Town	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
West Stockbridge	18	13	15	14	11	19	27	28	25	15	12	23
Stockbridge	35	59	43	34	60	52	52	58	51	45	19	53

7.3 Call Activity by Day of Week

Sunday was the busiest day of the week in the Town of Stockbridge, though call volume remained fairly constant for all days. West Stockbridge saw the most calls on Mondays and Fridays (Figure 7.3).

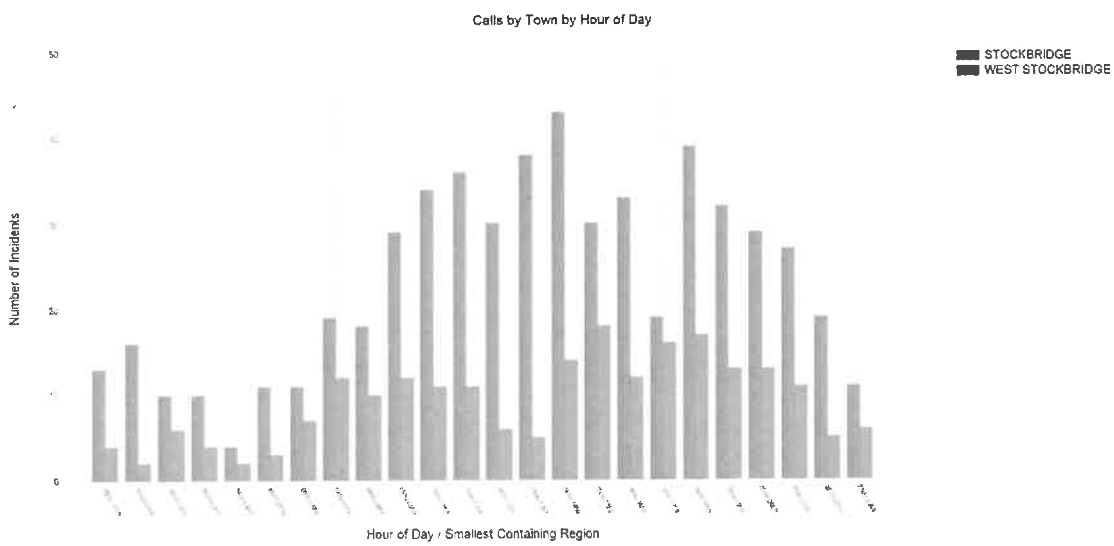
Figure 7.3 *Call Activity during 2022 by Day of the Week*



7.4 Call Activity by Time of Day

Call activity for both towns increases between the hours of 8 A.M. and 8 P.M. (Figure 7.4)

Figure 7.4 *Call Activity by Time of Day During 2022*



8. Predictive Modeling

8.1 Simulations and Mapping

Models depicting fire station location, the apparatus they house, the assigned staff, and dispatch protocols were created. Each model then simulated a proper response to each of the 2583 emergency calls occuring between January 1, 2022 and December 31, 2022. Proper responses ranged from a single unit, to low aquity fire based and EMS calls, to a full compliment of 4 engines and a tanker to structure fires. Time spent on scene, traveling to the hospital, transferring patient care, and returning from the hospital were calculated, if applicable.

Maps, identifiying the the location of, and predicted response time for each call, were created. Call locations are placed on the map to the nearest 100 block for each street address. For example, a call to 128 Main Street is located at 100 Main Street on the map. A call to 175 Main Street would be located at 200 Main Street. This provides a measure of anonymity for utilizers of emergency services.

Dark green dots represent responses equal to, or less than six, minutes. Calls represented by dot colors ranging from green, to greenish yellow meet a response time of 10 minutes or less. Dots that range in color from yellow, to orange, to red, represent a response times greater than 10 minutes, with dark red representing times equal to or greater than 16 minutes.

Dots are placed on the map in chronological order, with the last call assigned to the nearest 100 block on top. As you look at the maps you will notice that there are areas that have predominatley green dots with a sprinkling of red dots. In most instances the red dots represent a delayed response due to multiple calls and the additional travel time required for mutual aid to arrive. Conversely there are instances where there are predominantly red dots with some green dots sprinkled in. Usually is the result of a unit being nearby, after clearing a previous call, allowing for a shorter response time.

8.2 Town Borders and Regions

To bettern analyze response time differences between models, regions were created within each town.

West Stockbridge was divided into four regions. The northern region includes the downtown area and the area just over one mile south of the Massachusetts Turnpike on the western border with New York, to an area just under one-half mile to the eastern border with Stockbridge.
The Housatonic Region encompasses the southern portion of West Stockbridge. It depicts the current first due district for Souther Berkshire Volunteer Ambulance Service. The Centeral West and Centeral East Regions are divided by a line running north to south on the west side of Map Hill.

Stockbridge was divided into five regions. The Northern Region includes the Stockbridge Bowl area from the border with Richmond and Lenox, south to an east to west line just to the north of the Interlaken Road Fire Station. The Centeral West and Centeral East Regions include the area to the south of the Northern Region and all of the Massachusetts Turnpike that crosses the town. The South West Region includes Glendale and the South East Region includes the downtown area of Stockbridge.

Figure 8.2.1 identifies the boundries of each town, and Figure 7.2.2 identifies the regions that were created.

Figure 8.2.1 *West Stockbridge and Stockbridge Town Bounderies*

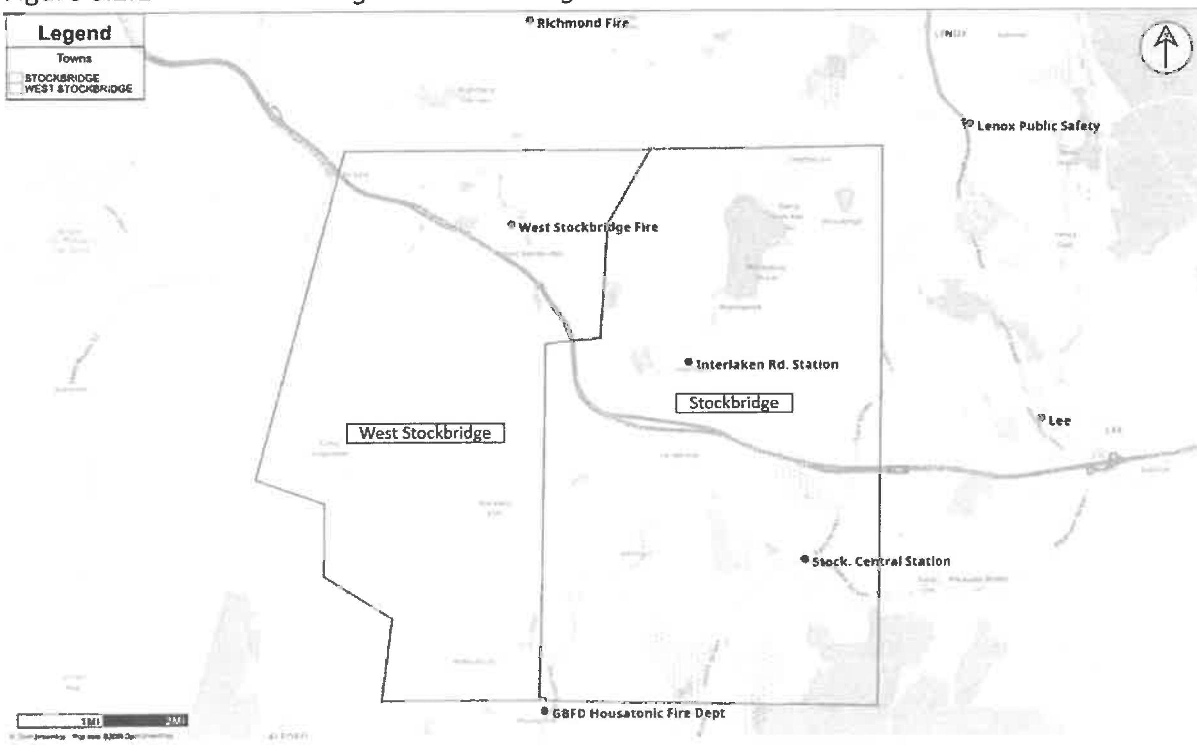
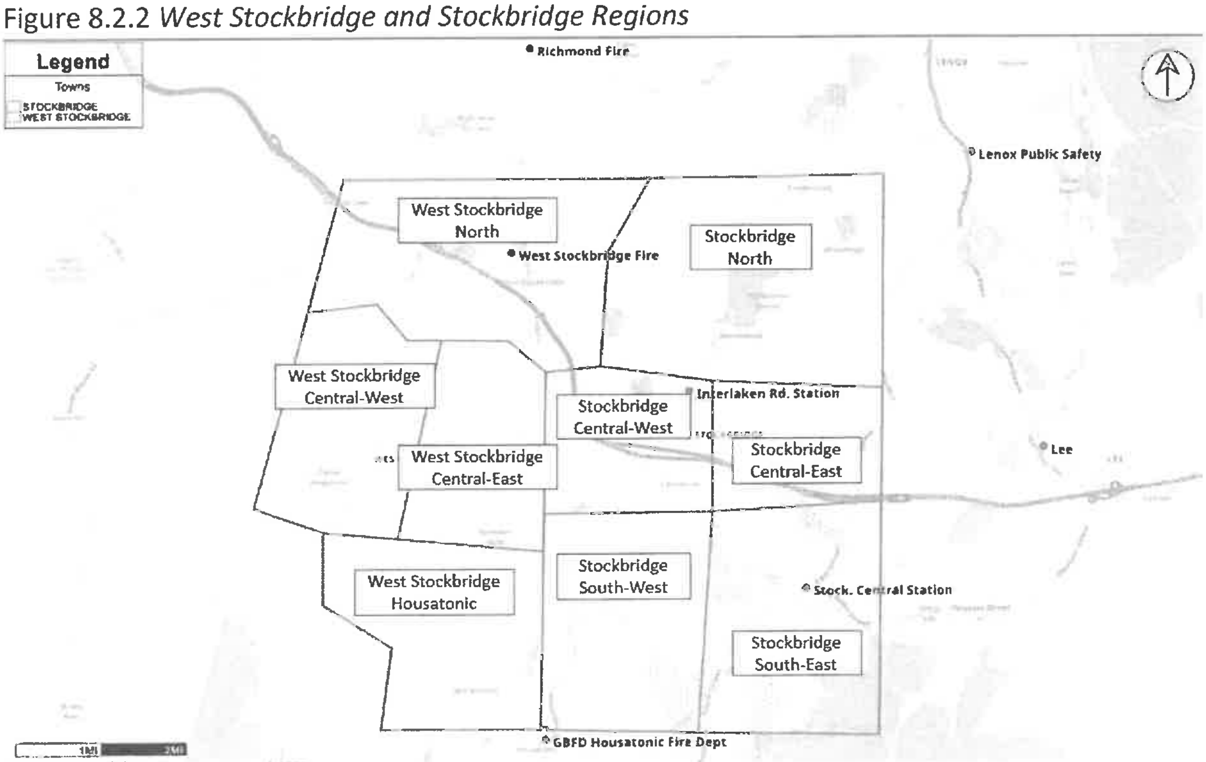


Figure 8.2.2 *West Stockbridge and Stockbridge Regions*

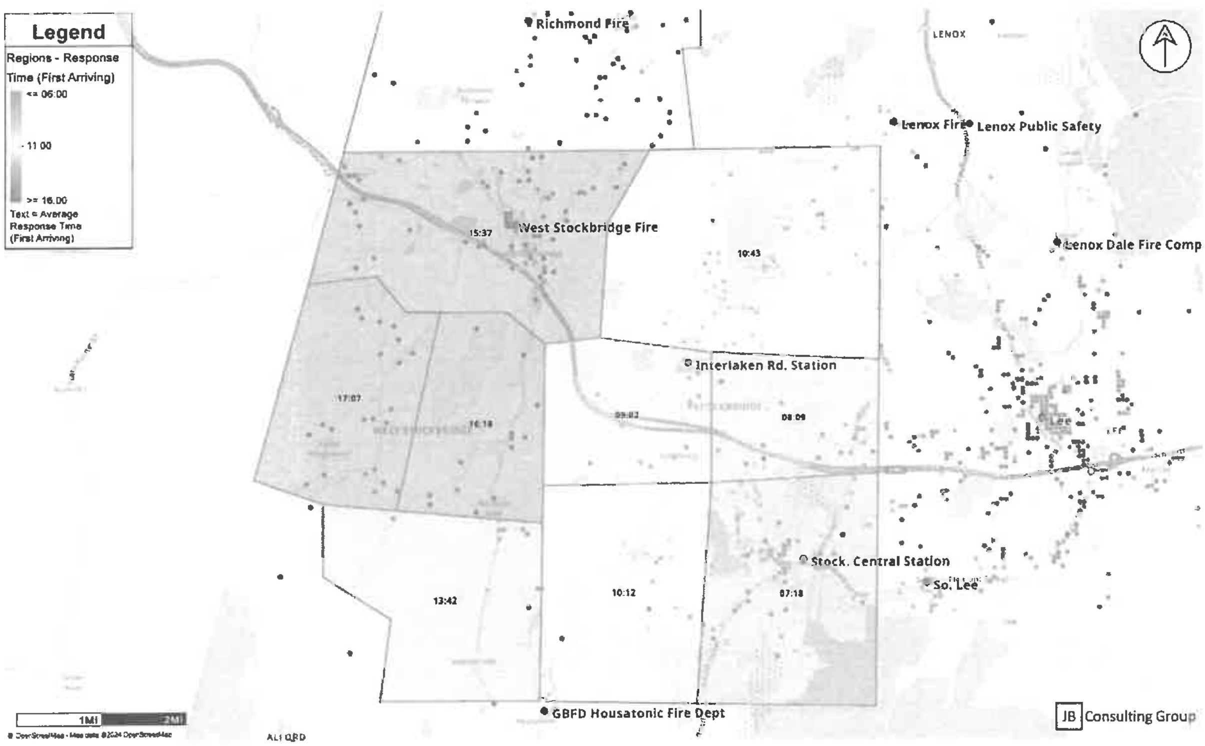


8.3 Simulation Results

Response times for calls that occurred within the borders of West Stockbridge and Stockbridge, are plotted and summarized for each model. Response data appears in Table 8.6. located on Page 26.

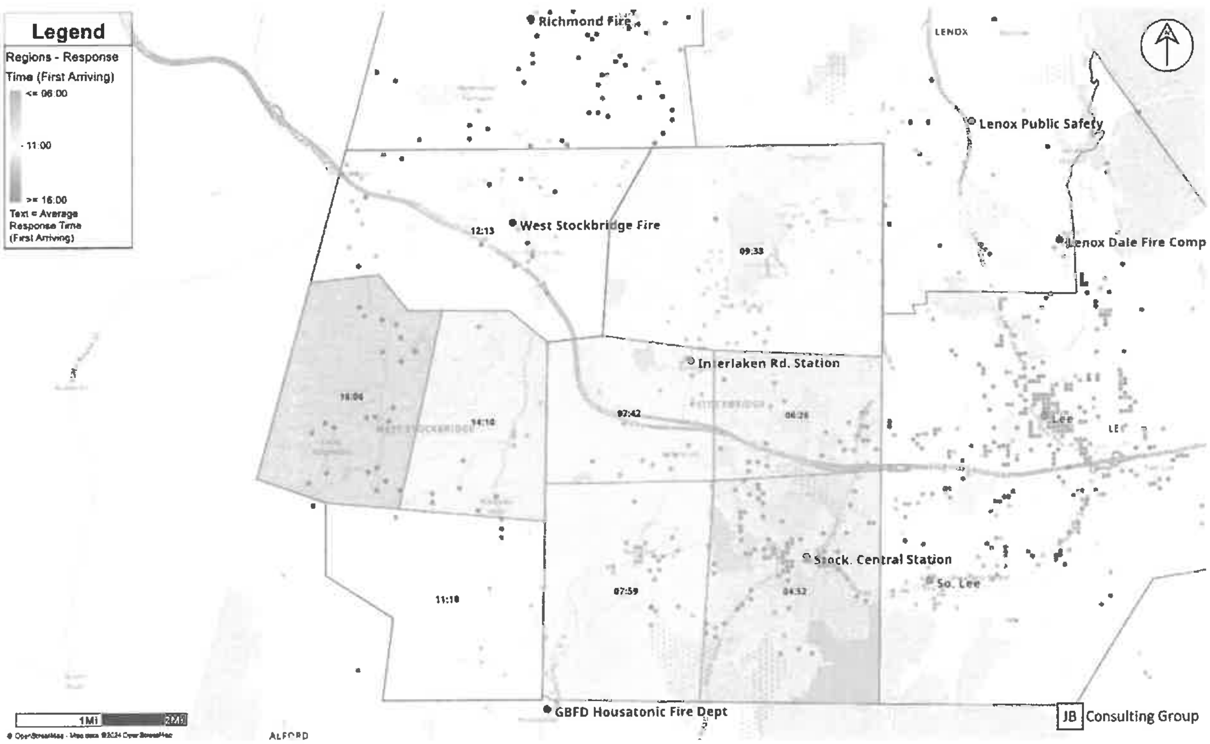
8.3.1 Model 0 Predicted Response Times for Model 0

Figure 8.3.1 *Model 0: Predicted Response Times – <u>Fire and EMS Calls</u>*



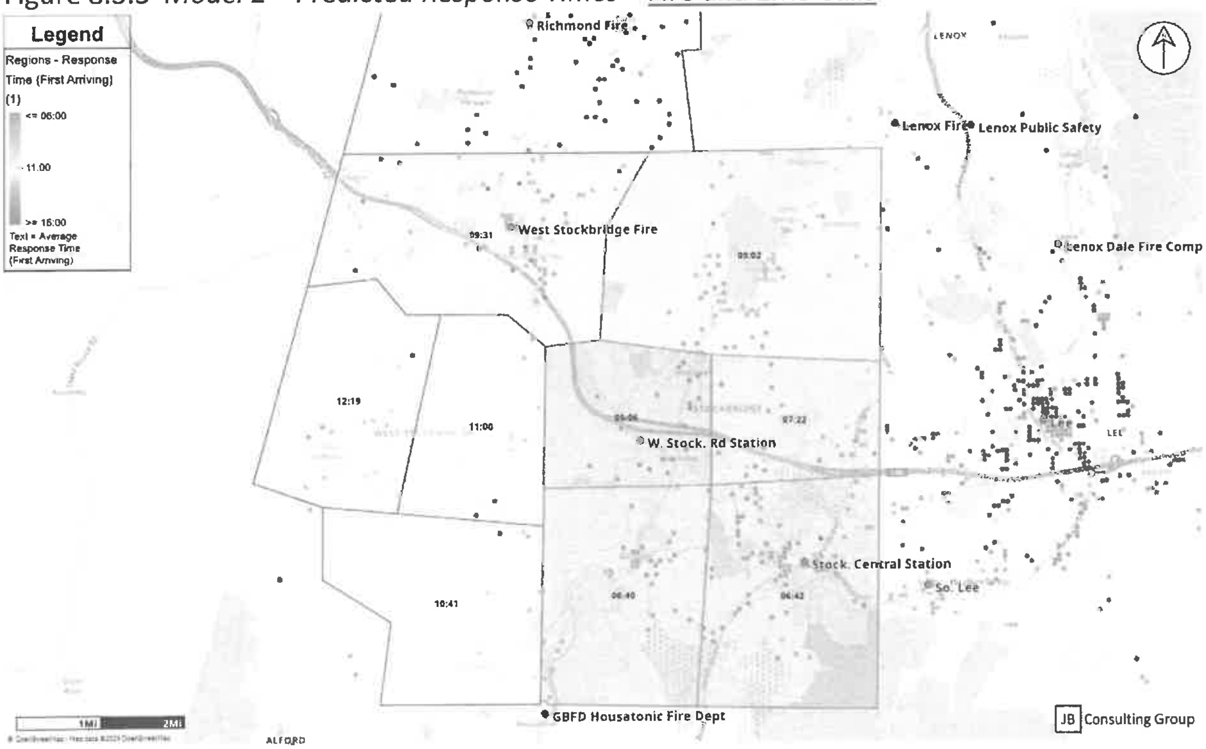
8.3.2 Model 1 Predicted Response Times for Model 1

Figure 7.3.2 *Model 1 – Predicted Response Times – Fire and EMS Calls*



8.3.3 Predicted Response Times for Model 2

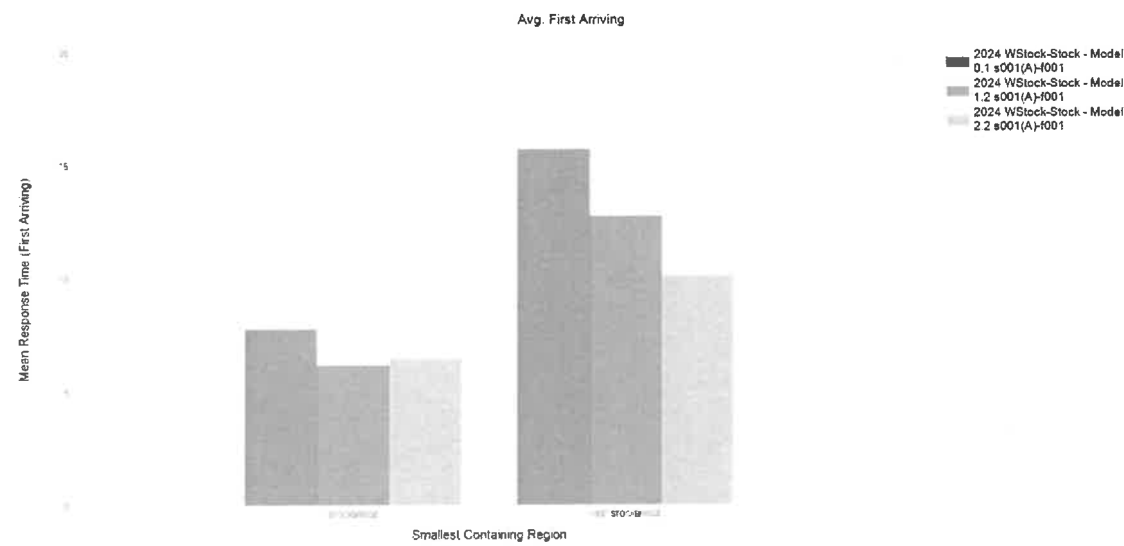
Figure 8.3.3 *Model 2 – Predicted Response Times –* *<u>Fire and EMS Calls</u>*



8.4 Predicted First Arriving Unit Times – Fire and EMS Calls by Town

The average predicted response times for each model are presented by town in Figure 8.4 Models 1 and 2 will improve on Model 0's current predicted response times.

Figure 8.4 *First Arriving Unit by Town – Fire and EMS Calls*



Town	# Calls	Model 0	Model 1	Model 2
West Stockbridge	220	15:44	12:53	10:10
Stockbridge	561	8:52	6:56	7:16

8.5 Predicted Arrival Times for the First Arriving Unit – Fire and EMS Calls by Town Regions

An analysis of first arriving unit times is further broken down by regions within both towns (Figure 8.5 and Table 8.5).

Figure 8.5 *First Arriving Unit by Region – Average Response Time –* *<u>Fire and EMS Calls</u>*

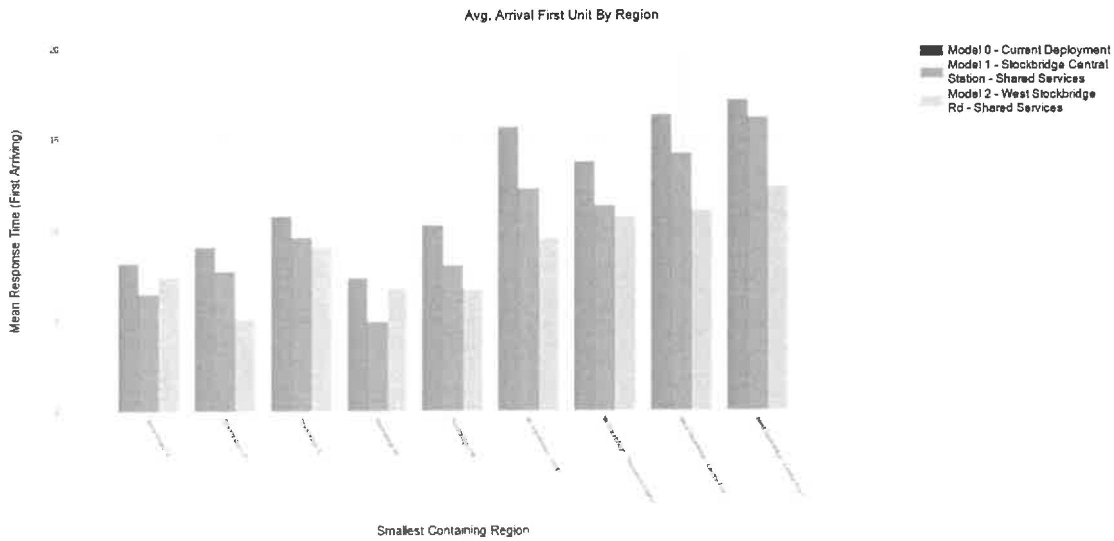


Table 8.5 *First Arriving Unit by Region – Average Response Time –* *<u>Fire and EMS Calls</u>*

Region	# Calls	Model 0	Model 1	Model 2
West Stockbridge: North	148	15:37	12:13	9:31
West Stockbridge: Central-East	19	16:18	14:10	11:00
West Stockbridge: Central-West	33	17:07	16:06	12:19
West Stockbridge: Housatonic Region	20	13:42	11:18	10:41
Stockbridge: North	149	10:43	9:33	9:02
Stockbridge: Central-East	47	8:09	6:26	7:22
Stockbridge: Central-West	36	9:02	7:42	5:06
Stockbridge: South-East	238	7:18	4:52	6:42
Stockbridge: South-West	91	10:12	7:59	6:40

8.6 Predicted Arrival Times for EMS Calls

Calls were filtered so response times for to emergencies requiring an ambulance (medical calls and motor vehicle accidents) could be examined for each model. West Stockbridge had 220 total calls, 148 required the response of an ambulance. Stockbrige had 561 calls, 292 required an ambulance.

The current approved Massachusetts Department of Public Health, Office of Emergency Medical Services Service Zone Plan for Southern Berkshire, which includes the Town of Stockbridge, requires that 80% of all EMS calls are reached within 20-minutes. While twenty minutes is a long wait for an ambulance, the benchmark is consistent with the time established for other rural and remote areas. In addtion to the percentage of calls reached within 20-minutes (Figure 8.6.1), the percentage of calls reached within 15-minutes (Figure 8.6.2), 10-minutes (Figure 8.6.3), and 8-minutes (Figure 8.6.4) are also included. Table 8.6. provides a summary of the data included in each figure.

Figure 8.6.1 *Percentage of <u>EMS Calls</u> Reached in 20-Minutes or Less*

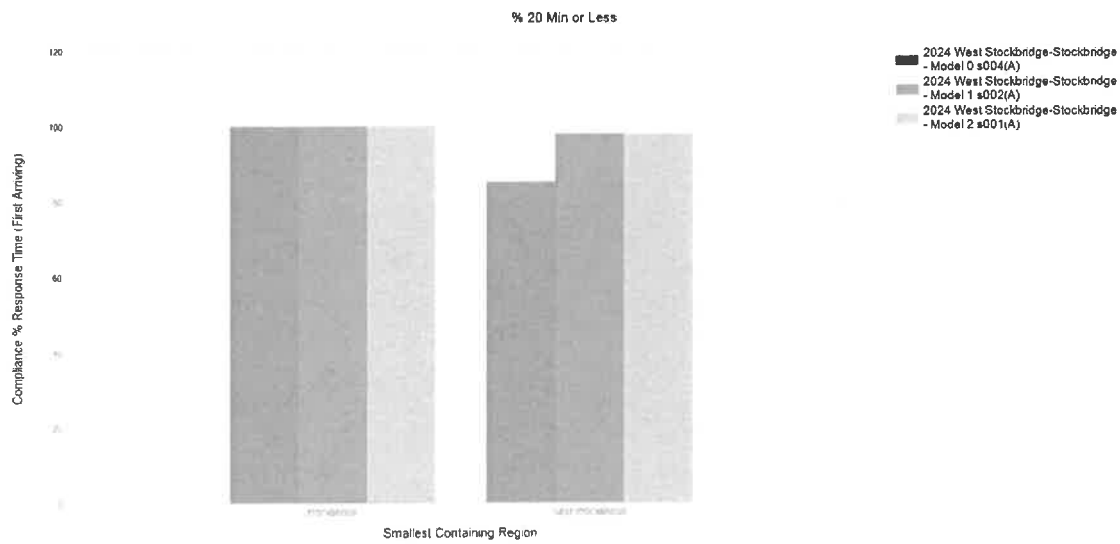


Figure 8.6.2 *Percentage of <u>EMS Calls</u> Reached in 15-Minutes or Less*

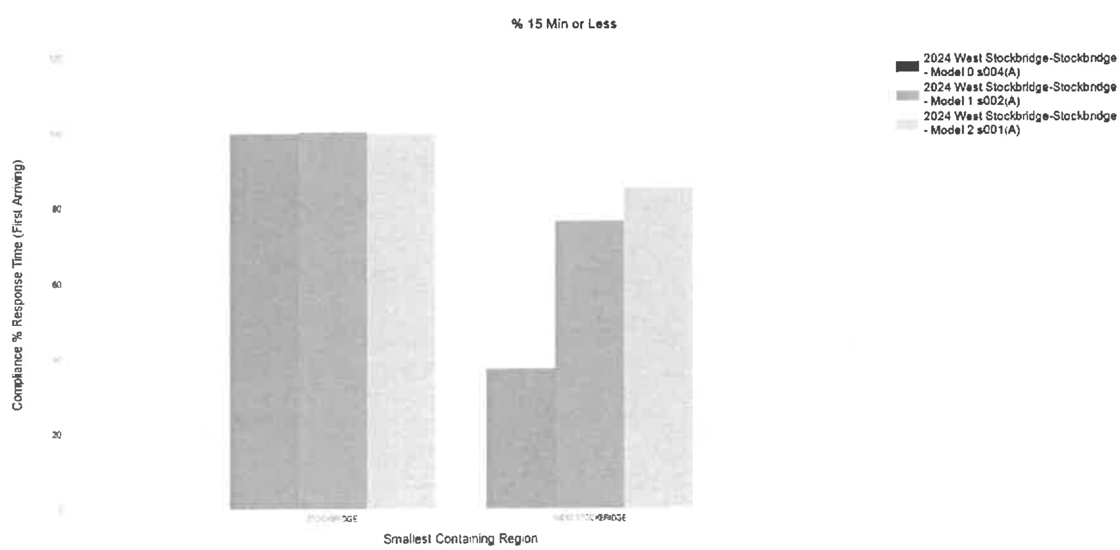


Figure 8.6.3 *Percentage of EMS Calls Reached in 10-Minutes or Less*

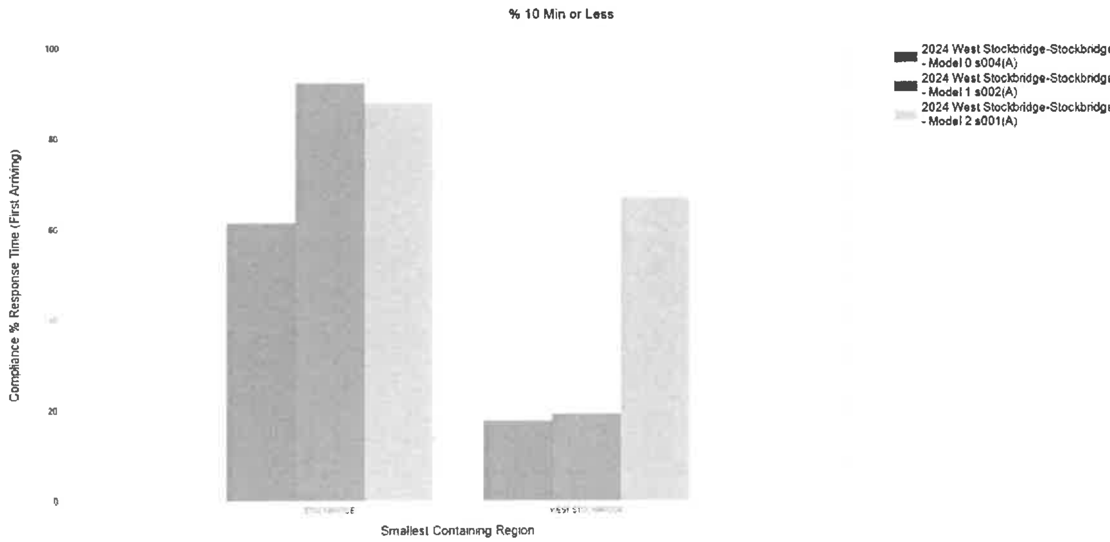


Figure 8.6.4 *Percentage of EMS Calls Reached in 8-Minutes or Less*

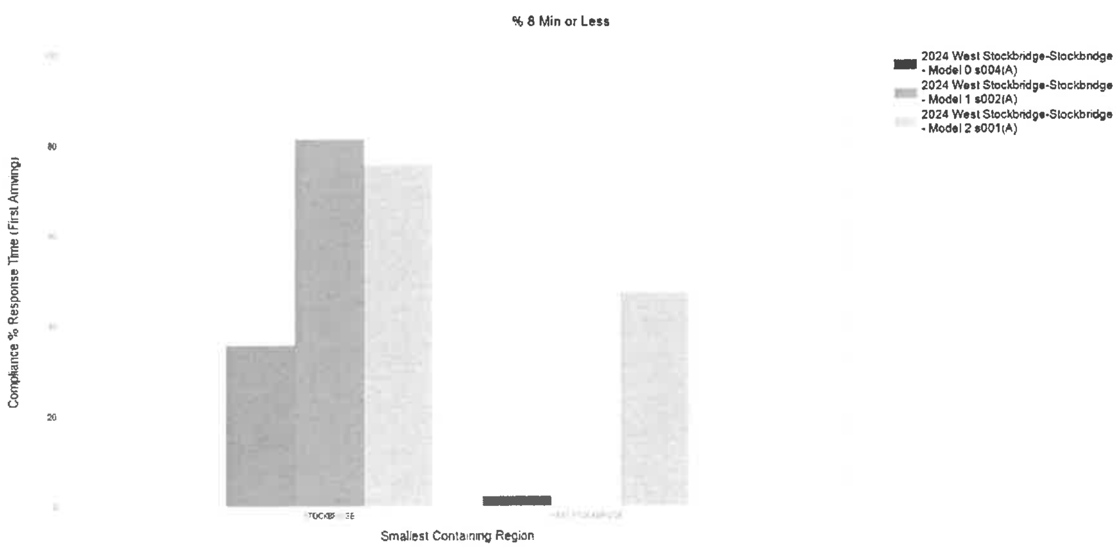


Table 8.6 *Percentage of EMS Calls Reached in, Equal to, or Less Than 20, 15, 10 & 8-Min.*

20 Min or Less				
Town	**# Calls**	**Model 0**	**Model 1**	**Model 2**
WEST STOCKBRIDGE	148	91.2%	96.6%	96.6%
STOCKBRIDGE	292	100.0%	99.3%	100.0%

15 Min or Less				
Town	**# Calls**	**Model 0**	**Model 1**	**Model 2**
WEST STOCKBRIDGE	148	40.5%	76.4%	83.8%
STOCKBRIDGE	292	100.0%	98.6%	100.0%

10 Min or Less				
Town	**# Calls**	**Model 0**	**Model 1**	**Model 2**
WEST STOCKBRIDGE	148	17.6%	19.6%	65.5%
STOCKBRIDGE	292	80.1%	85.6%	94.2%

8 Min or Less				
Town	**# Calls**	Model 0	Model 1	Model 2
WEST STOCKBRIDGE	148	2.0%	0.0%	48.7%
STOCKBRIDGE	292	58.6%	76.4%	83.9%

8.7 Ambulance Workload

The addition of an ambulance based in Stockbridge, providing primary ambulance services to Stockbridge and West Stockbridge, goes beyond improving response times to both communities. The surrounding ambulance services will be freed up to improve their availability to provide services in their primary service zones (Figure 8.7). Table 8.7 includes data from Figure 8, and an estimation of the amount of mileage each ambulance would have accrued responding to emergency calls occuring in Richmond, West Stockbridge, Stockbrdige, and Lee during the Year 2022.

Figure 8.7 *Ambulance Workload Comparison*

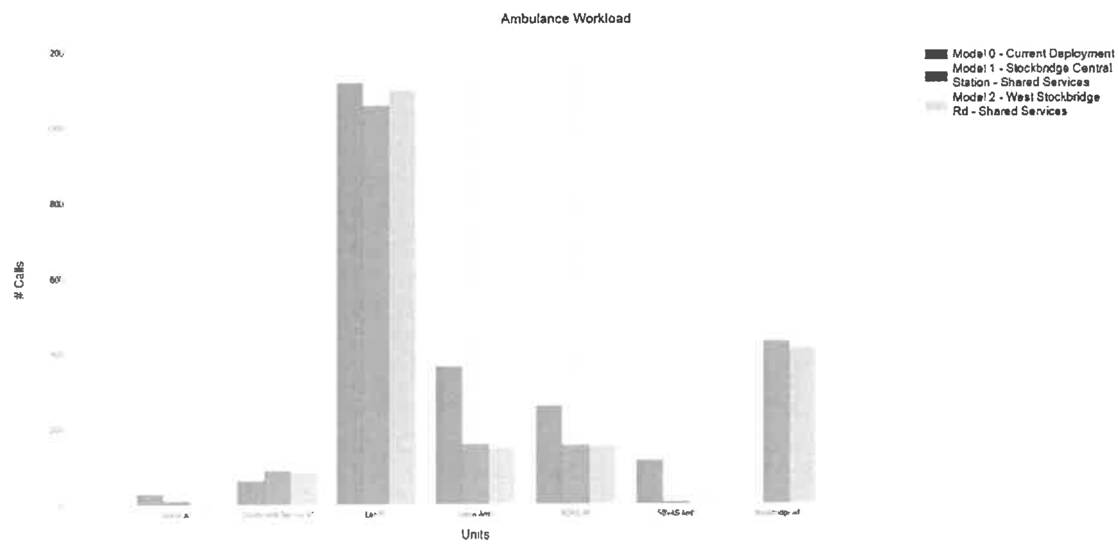


Table 8.7 *Ambulance Workload – Expanded Data (Number of Calls and Estimated Mileage)*

Dataset	Unit	Calls	Est. Mileage
Model 0 - Current Deployment	Action A1	27	758
Model 1 - Stockbridge Central Station - Shared Services	Action A1	10	242
Model 2 - West Stockbridge Rd - Shared Services	Action A1	6	180
Model 0 - Current Deployment	County Amb Service A1	63	1286
Model 1 - Stockbridge Central Station - Shared Services	County Amb Service A1	90	1606
Model 2 - West Stockbridge Rd - Shared Services	County Amb Service A1	86	1531
Model 0 - Current Deployment	Lee R1	1117	26782
Model 1 - Stockbridge Central Station - Shared Services	Lee R1	1057	25374
Model 2 - West Stockbridge Rd - Shared Services	Lee R1	1099	26417
Model 0 - Current Deployment	Lenox Amb	365	9627
Model 1 - Stockbridge Central Station - Shared Services	Lenox Amb	160	3899
Model 2 - West Stockbridge Rd - Shared Services	Lenox Amb	147	3643
Model 0 - Current Deployment	RDFD-R5	260	6639
Model 1 - Stockbridge Central Station - Shared Services	RDFD-R5	156	3507
Model 2 - West Stockbridge Rd - Shared Services	RDFD-R5	156	3506
Model 0 - Current Deployment	SBVAS Amb	116	2840
Model 1 - Stockbridge Central Station - Shared Services	SBVAS Amb	4	69
Model 2 - West Stockbridge Rd - Shared Services	SBVAS Amb	5	91
Model 0 - Current Deployment	No Ambulance	0	0
Model 1 - Stockbridge Central Station - Shared Services	Stockbridge A4	431	9519
Model 2 - West Stockbridge Rd - Shared Services	Stockbridge A4	412	9683

9. Conclusions

The addition of an ambulance, located in the Town of Stockbridge, staffed by two firefighter / EMTs 24-hours a day, 365 days a year, will improve response times to emergency calls in West Stockbridge and Stockbridge.

The townwide improvement to response times will be significant. West Stockbridge can expect to see a 2% improvement in the percentage of calls reached in 10 minutes or less with Model 1, and a 47.9% improvement with Model 2 (Page 30, Table 8.6). Stockbridge can expect to see a 5.5% improvement with Model 1, and a 14.1% improvement with Model 2.

Model 1 provides improved average fire and EMS response times for both West Stockbridge and Stockbridge. This deployment model can be put in place utilizing the existing Stockbridge Central Fire Station.

Model 2 provides the best average EMS response times for both towns, but requires a new substation located on West Stockbridge Road in Stockbridge. The predicted average response time improvement is best illustrated (Figure 8.3.3 located on page 24).

The area receiving the best average response time improvement depends upon the proximity to full-time staff. Should a new fire station(s) be built, site selection will be crucial to ensure that the best possible response times will be achieved for the population being served.

Average EMS response times in Lee and Richmond improve in Models 1 and 2. Richmond and Lee will not rely on mutual aid as frequently as they will only need to provide mutual aid to West Stockbridge and Stockbridge when the Stockbridge ambulance is unavailable. When Richmond or Lee requests a mutual aid ambulance, they will have a new, reliable option located nearby.

10. About Levrum Code3 Strategist

The Code3 Strategist 2.10.0.7489-beta software system was used to perform the majority of the analyses in this study. Code3 Strategist is a discrete event simulation system that models the behavior of staff, apparatus, and dispatching systems, given operational models defined by the planners. Code3 Strategist "pretends" to be each staff member assigned to each piece of apparatus on each call, according to the definitions supplied with the model being evaluated to include, personnel qualifications, apparatus capabilities and roles, incident classifications, dispatch policies, geographical variations, and street networks. The model accounts for cross-staffing of units, unavailability due to concurrent calls, part-time staffing, alternate turnout times for career vs. on-call staff and other "real-world" factors that influence system performance. Response times, turnout times and scene times are typically calculated from statistical profiles of historical data, although limitations of the historical data presented challenges in this case, as described in Section 3.5.1. Integrated analytics enable planners to evaluate effects of proposed changes in response times (initial unit response, full complement, or effective response force), unit workload, apparatus mileage, incident delays and other metrics.

TECH environmental

FOCUSED KNOWLEDGE. REAL SOLUTIONS.

MEMORANDUM

To: Marie Y. Ryan, Town Administrator
From: Michael Lannan & Stephen Durham, Tech Environmental
Date: May 2, 2024
Subject: Wiseacre Potential and Odor Management Plan Review Ref. 4928

Tech Environmental has completed our third-party evaluation of the facility, its enhanced odor control plans, and the potential benefits and/or pitfalls with the approach.

We think you will find this review and solution meets the best intentions of town, neighbors, and facility. The initial conclusion from this assessment is that the facility, in its current form, has a potential for immediately or easily recognizable cannabis odor for a period of time that varies somewhere from essentially continuous to continuous when downwind for likely no more than two to three weeks in total duration, and a period of readily recognizable intermittent odor for a period of time that is somewhere between one to two months in duration.

The proposed solution is that town acknowledge that the pilot study proposed (and modified with our recommendation) will not fully address the odor issue this season, but it is a necessary and valuable step towards the final solution that should be installed by the 2025 season. It is unclear at this time the true extent of influence that the fan and nozzle array proposed will have given the complex terrain in the area without some trial-and-error piloting.

At the same time, it is very clear that the permitter misting system proposed at the public meeting is inadequate. It would only cover approximately 10% of the circumference of wind directions and would provide minimal control during calm conditions.

The newest proposal from the vendor, which is inserted on the last page herein. It is better, but it is still inadequate based upon the topography and weather concerns described herein. It is now about 20% of the circumference. Any pilot program approval should have 100% circumference coverage based upon the valley dynamics discussed herein and agreement from the facility with the other three items listed in this report.

Odor Introduction

To begin this review, as we like to do with any odor control project, Tech first attempted to understand the odor potential, the tolerance for odor, and any weak links in odor emission assumptions or mitigation efforts.

When examining odor potential and tolerance, we typically consider more than just what is commonly referred to as "odor". Odor is in quotes because it is often thought of as the Old-English definition that was mostly used for body odor which is "a distinctive smell, especially an unpleasant one" (i.e. a scent), but in reality today, with a better understanding of our sense of smell through modern science, Webster's definition of odor is either (a) "a quality of something that stimulates the olfactory organ, (i.e. scent), or (b) a sensation resulting from adequate stimulation of the olfactory organ (i.e. smell). So, when someone says that they "smell an odor", they are essentially saying that they had "adequate stimulation of the olfactory organ". Why does this distinction matter? Because odor potential is everywhere, from everything, but what we commonly refer to as odor is really a negative olfactory reaction. As human beings our senses are constantly bombarded with stimulations to our eyes, ears, nose, tongue, and skin. If we reacted to every single sensory stimulation, we would literary have no time for anything else. So, while our body's senses are constantly working, they are doing so in the background, almost on autopilot, until something becomes elevated to a level of concern. Once this happens, the "tolerance for stimulation", or in the case of smell an adverse olfactory stimulation, the "odor tolerance" has been exceeded. When that occurs, we react. The "odor potential" is simply the potential for olfactory stimulation.

As we develop an understanding of the "odor potential" and the "odor tolerance" for odor, with respect to nuisance potential, we consider four related factors. To help us remember them, we often refer to them as "our dog FIDO", which stands for Frequency, Intensity, Duration, and Offensiveness. These four factors considered together help us determine the tolerance and odor potential. One component of FIDO, frequency, specifically seasonal limitations to frequency, is key to the recommendations in this report.

The Odor Potential

The odor potential can be best managed through the four steps employed in an odor control assessment. The four steps are capture, ventilation, control, and dispersion. To find the maximum odor potential one often looks for the weakest link within these four necessary steps. For indoor facilities, capture is high and is related to the degree of covering. For indoor facilities, ventilation is linked to the air movement and air balancing within the structure.

For outdoor facilities there is obviously no traditional capture since the process is always open to the influences of wind and weather, but there can be a combination of capture and ventilation where the odorous off-gas is either directed towards a control system or the control system is mounted in such as way that the natural wind patterns provide the directional flow across the odor control system. An example of the former would be a larger blower or fogger that will have a significant cone of influence on the inlet side fan related to the massive volume of air pulled into the fan. An example of the latter would be a perimeter, or fenceline, spray system where the emissions would naturally be blown across a line of nozzles for contact with the mixture of water and an odor counteractant or masking agent (i.e. the control step). Please note that masking agents and counteractants are not the same thing, even though they are packed, shipped, and applied the same way.

Counteractants are considered odor control (i.e., odor reduction), while adding a masking agent is not considered odor control (i.e., odor addition). A masking agent is typically added to overwhelm the malodorous compounds with a more enjoyable or pleasant aroma, so that the mixture of compounds experienced has a more favorable hedonic tone, or relative pleasantness.

The downside of masking agents is that there is a fatigue factor with time. If, for example, a pine, citrus, or floral masking agent is used, it can be quite effective initially at shifting the offensiveness to a more positive experience. Unfortunately, over time the "new" mixture of odorous compounds becomes too much of a good thing and the original pleasant odor shifts more and more towards unpleasant. When the hedonic tone crosses from neutral to unpleasant, the overall odor is actually worse because the total odor experienced from both the original air emissions and the masking agent, is more intense than the original malodorous emissions alone.

For this project there is a proposal to plant flowers that will bloom concurrently with the product, as a masking agent. This proposal is an interesting application of a natural masking agent. Masking is only needed for a limited period of time and the floral scent will go through a normal progression of its odor cycle during blooming, and then be gone. It is very possible that used in this limited capacity the exposure time needed for fatigue to set in would be suppressed. Therefore, the tolerance for the pleasant floral odor would remain high, or most likely even reset every year between grow seasons. It is important to remember that all "odor" is a mixture of compounds that have different chemical properties and persistence in the air. So, while fatigue may be overcome by the natural intermittent flowering cycle, there is still the potential of the cannabis odor and the masking floral odor to drift offsite in pockets so that one experiences a whiff of one and then the other, which again is an additive experience.

For odor control itself, a counteractant is proposed. Typically, counteractant manufacturers claim to neutralize odorant via chemical or biological oxidation, or by combining with the molecules that we typically associated with malodor so that the new compounds are perceived as less offensive. The facility is proposing an EcoSorb product for this facility.

In general, most new counteractant manufacturer's sales associates, (not Byer's odor control company that employs many different odor technologies, but new "essential oils" salespersons) are akin to the old-fashion snake oil salesman. They might as well be standing on a box shouting "step right up, this new elixir will cure anything". Why does this general comparison fit this industry? The answer is simple. There is an unbelievably low capital investment threshold to get started, and someone that is creative and good and marketing can make a splash in a short period of time, even with a marginally effective counteract product, or a product that essentially acts like a masking agent. Ultimately, we at Tech Environmental, as well as the general public know very little about what is or isn't in these products, and also whether they will work well or not. As a result, we often require outside safety studies, and ask for a controlled pilot study at the facility of concern before we commit to any idea that involves a full-scale system.

Many, many masking and counteractant manufacturers have come and gone over the last 20-30 years, as a result of over promising or underperforming during piloting or full-scale operations. Luckily for West Stockbridge, EcoSorb is not a "fly-by-night" counteractant manufacturer, and neither is Byers Scientific a new odor control system provider. Ecosorb has been around in one form or another since 1989 and has provided many pilot and full-scale projects that have been successful in different applications.

At the public meeting there were a lot of questions about safety and public exposure to the misting agent proposal. But it is important to remember before public exposure can occur, there are worker exposure concerns that must be considered and evaluated. I worked on a large-scale pilot study of many different counteractants at the wastewater treatment plant that served most of Pittsburgh in the 1990s. All potential products were screened for toxicity, and only those that had outside studies that demonstrated that the products safe were allowed to set up a pilot program. The eight or so companies that were selected to pilot, had to pilot their products in an area where the workers would be exposed to the misting spray directly. Ultimately, some that were considered "safe" also began to cause an irritation. Any products tested that started to cause eye or throat irritation during the Pittsburgh pilot project were stopped immediately. So it is important that not only the product be safe but also not trade one potential nuisance for another.

Recently, Byers piloted this Ecosorb product at a cannabis facility in Massachusetts and there was little to no irritation reported by any of the facility workers, or the crew testing the air emissions, so that is a positive as well. Tech did conclude that there was some odor removal in the project discussed from the counteractant, but does not agree specifically with the Ecosorb removal efficiencies as presented in their slides, as confirmed. While Tech does agree that those were the results that were measured, there is some dilution from the fan to the outside monitoring location that was not quantified, so it is unclear where exactly the line of removal efficiency is between odor reduction and dilution. The positive takeaway however is that regardless the ratio of dilution air to control, the odor was 80 to 90 percent less with their product at a sampling area downwind near the fan outlet.

Given the positive results with this product elsewhere and other factors, Tech recommends that the Town consider the approval of a pilot study for this summer. Unfortunately, Tech cannot recommend a full-scale pilot study, unless the town is willing to accept that the odor potential will likely well exceed the ability to fully control it with the odor control tools proposed for this pilot study. This conclusion was heavily influenced by the dispersion characteristics of the area.

Dispersion Potential

As noted above dispersion is the last step in any odor control effort. Just as there is no such thing as "no odor", there is also no such thing as fully treated air. Generally, all emission sources can be categorized as point, area, or volume sources, each with different dispersion properties. For this project, the outside grow area, is an area source. Area sourced do not use the same Gaussian plume calculation for stacks, since their emissions simply travel along the ground and disperse predominately horizontally, and also vertically to some extent, depending on the weather. As a result, weather and terrain can play a big factor in the determination of whether dispersion is the weakest link in the odor control system. Given that there is no true capture in this use, any odor control solution will need to rely heavily on ventilation, odor control, and dispersion factors.

In examining dispersion, we often start with the complaint logs as they typically mark points in time where the baseline odor likely exceeded the tolerance for odor. We can then examine the meteorological conditions at the time of complaint such as wind direction and wind speed. Figure 1 shows the dominant wind direction and local terrain. Please note that the dominant wind direction is the direction that the wind comes from, not where it is going.

For evaluating the impacts of wind on the region, the wind direction and speed at the nearest climatological site of Pittsfield Municipal airport has been observed. Weather data began being archived at Pittsfield Municipal airport in 1948, with hourly weather data being recorded, so there is plenty of data that demonstrates historical trends. For days of light winds, i.e., times with less than 5 mph), the dominant wind direction is out of the west/southwest directions.

Also in Figure 1, please note the terrain height. The red shading corresponds to an elevation of about 1,800 feet, with the yellow area around 1200 feet, and with the green area, where Wiseacre Farms is located at only about 900 feet in the foothills of a valley, the impact of the valley location on exposure potential must be considered.

In Figure 2 (essentially Figure 1 zoomed in a little further) we have a similar basemap with the odor complaints shown spatially. Please note that Tech did not verify any of these complaints directly. Some were reported to us as confirmed, but some of them were well after the day of exposure, and they could not be confirmed. They are all included here to show the extent of the complaints with respect to terrain and proximity to the facility. Lastly, we'd like to acknowledge the letters of support that were also provided.

As of April of 2024, there has been sixteen (16) complaints submitted from the Town of Richmond and the Town of West Stockbridge, Massachusetts, regarding cannabis odors presumably from Wiseacres farm. Of the sixteen (16) complaints submitted, thirteen (13) within 1 mile of the Wiseacre Farm property, located to the west/northwest, and to the north of the property. The three (3) complaints beyond the 1 mile radius, were from locations east/southeast of Wiseacres Farm.

At first glance it suggests that based upon wind direction alone most of these complaints were not related to the facility, as they were not directly downwind at the time. But localized mesoscale meteorology related to inversions and weak fronts moving across the region likely influence how the odors are transported through the low levels of the atmosphere. This becomes specifically important during the peak months when the cannabis is blooming and being harvested.

Inversions of the lower atmosphere from the surface up through the first several thousand feet of the atmosphere are common across New England. These inversions are created from clear skies and light winds over an area as high pressure is overhead, or with weaker fronts that are moving through an area, which leads to an increase of clouds and precipitation. Temperature inversions are very common especially in valley locations, where the cooler air settles to the valley floor during the overnight hours. When these inversions develop, and especially with increased cloud coverage and light winds, this can trap odors and pollutants near the surface underneath the inversion.

The location of Wiseacre Farm at 42 Baker Street is near the base of the valley, situated within the Berkshire mountains, with higher elevations located around in all directions, specifically, the terrain increases as well to the west/northwest of the Wiseacre property, where most of the complaints originated.

With this terrain, if the wind speed is lighter, the wind flow can become blocked, trapping the movement of the flow within the valley. This can be determined by the Froude Number, where it represents the relationship between wind speed and atmospheric stability, with the height to a barrier. When this occurs an inversion is created as frontal passages move over the area. With low-level clouds that develop, and light or calm winds, this inversion traps the odors closer to the surface. This calm or light airflow around the Wiseacre farm can keep odors within the valley blocked in, so in calm conditions the odors simply waft around in the area, regardless of the true wind direction. Locations especially closer to the farm become more likely to have an impact from the odors, as there would be very little air movement to transport the odors farther away or mix the odors into the upper atmosphere. So instead of the valley being in a line of sight, we can think of it as insulated and shielded at times.

Odor Control Solution Proposed

Through discussions with the odor control vendor selected for this project, and by listening to the public meeting that was held, it is clear that Wiseacre Farms understands the need for adequate odor control.

During the meeting the facility representative acknowledged that their odor control approach didn't work last year, and that they are going to try to do better this year. Clearly, they are passionate about this facility, and there was a strong desire displayed to improve their operations with respect to odor. Furthermore, the facility acknowledged that it was possible that they could consider more fans for the next year, but they don't want to commit to purchasing more fans/fenceline spray systems, if they do not yet know if it will work well as specified.

As the public presentation reinforced, for any counteractant to work, it must come in contact with the odorants of concern. To initiate that contact, the facility is proposing a single, very large fan and a partial fenceline mist fence. The vendor provided the last updated figure included in this memorandum to us over the last few days. It varies some from the figure available during the public presentation. Specifically, it placed the fan in its desired location on the drawing. Another change was that it extends the perimeter misting system coverage from about 10% of the circumference of the grow area that was in the presentation to about 20% of the circumference in the new attached figure. This coverage is simply insufficient to match the worst-case weather conditions. In low speed or still conditions, only 100% perimeter coverage can ensure at least some potential for odor control contact. Tech recommends 100% perimeter coverages as it assures that wind in any direction steady moving air will cross the field twice, on the upwind side and the downwind side, and in more still conditions it will provide the best blanketed coverage.

The next question then is: Would a 100% perimeter system be enough control for the whole facility. Well, obviously if the grow area was as small as 50 feet by 50 feet, we could be confident that a perimeter mist system could be applied with a misting rate that would be effective. In larger facilities there is more odor potential, and therefore more coverage is needed rs.

We often think of wind as flowing in a straight line from one point to another at any given time period, but in reality, it is three dimensional movement in many directions. Wind patterns are being influenced by objects, changes in temperature and changes in pressure. Again, in our example of a 50 foot by 50 foot area, there is little space and time for outside influences to overcome the average weather trends. In a larger area, such as this site, that is not the case. It is very possible that at times odors emitted in the center of this site will never pass near a permitter misting system, or they could be whisked past it quickly without much contact timet.

To address the center of the grow area the facility is proposing a fogging/atomizing misting system shown on the last figure as a blue cylinder. As discussed with the vendor, the fan will have a very robust spray nozzle array that will ensure that odorants that pass through the fan shroud will have the best opportunity for contact with the atomized counteractant mist. This activity should have a favorable effect with respect to odor control for the air within its influence. Unfortunately the fan as specified cannot possibly provide adequate coverage for the whole area.

We could go over whether the nozzle array design, the spray patterns, the dilution factor, etc. are maximized for this fan but that is not the primary concern with this odor control strategy for this summer. The real concern is the section of the outdoor grow area that is outside of the area of influence, or the "capture range", of the fan. There is essentially a cone of influence on the inlet side of the fan that gets weaker and weaker the further away the plants are located from the fan, and likewise there is a cone of influence on the outlet side as well, but the potential for contact on the inlet side, where air actually passes through the fan, has orders of magnitiude of more probable collisions than on the positive side of the fan where the outlet concentration is dropping at an exponential rate as it disperses in the forced direction of the fan.

It is Tech's experience that a single fan or fogger like this one can drastically reduce the peak emissions onsite and possibly right off-site through mixing, but that the actual odor control reduction is limited to predominately the air that started on the inlet side of the fan.

During the meeting there was discussions of oscillating or moving the fan but in the end if the fan is oscillating or moved to a new location, the primary cone of influence on the inlet and secondary cone on the outlet remain the same with respect to total odor emitted from the site into the neighborhood. Essentially any odorants that will not be directly within the cones of influence can be mixed some from the fan but are essentially not treated or reduced. That does not mean that there is no benefit to mixing, as often the solution can include dilution, but if a majority of the area is not directly treated the odor will be emitted off-site at high levels.

Summary

As we began the discussion above, we noted that the facility needed to understand their odor potential and the neighborhoods tolerance for odor. The odor potential is often described in terms of an odor baseline, or in this case a "before" mitigation odor potential and then an "after" mitigation odor potential. While we do not fully know the extent of influence of the fan, it is safe to say that the area of influence is likely a small fraction of the grow area so the change this summer should be noticeable at times, but predominately unchanged at others.

During the meeting there was a lot of discussion about optimizing the fan placement and operations, etc, and while all that is a great topic for discussion, the real question is not if the fan can be optimized this year to do better than last year, the question is does the facility have enough odor control tools in place/proposed to even get to an optimization phase What has been proposed is essentially a small pilot program for an area that is the full grow build out. As a result, it is Tech's opinion that the facility is not proposing the proper level of tools necessary.

But given that this source is a seasonal source, the next question is: Can the town/neighbors tolerate the period of time that this facility will be operating a pilot project on just part of their facility with the rest of the facility virtually untreated or only in contact with the fenceline system? Or can the town not tolerate anything other than full treatment? Or is the tolerance for odor somewhere in between?

While the town is completely within their rights to demand odor control/treatment on some or all of their outdoor grow facility that operates this year, it is important to put this next crop season exposure into context. As proposed, the facility will be gathering data this summer with the intent to further improve odor control the next season. Again, for perspective this facility creates:

1. a very seasonal exposure,
2. no harmful emissions, and
3. essentially a farming odor, which is common to the area

Approving or accepting an expected and known elevated odor level, even for a short period of time, is not an easy one. It is really a community decision. I believe the owner of this facility when he said at the meeting that he'd love to buy as many fans as potentially needed today, but he can't justify the added expense without some good data to justify it, so that puts the town and the facility at a fork in the road.

The decision process should consider the rights of the neighbors to enjoy their property, the rights of the owner to use their land, the seasonality of the exposure, and the long-term commitment being made to improving odor control. The town and neighbors should acknowledge that farms in the area have historically produced readily recognizable odors from fertilizers, manure, animals and plants intermittently at levels that are clearly recognizable.

Tech proposes that all agree to full operation this year with an expectation that it may be odorous at times during the piloting program, and so long as the facility agrees to four items below to ensure that the data collected this fall with result in firm recommendations for the final system to be installed by the following fall flowering season.

(1) a full perimeter fenceline counteractant system installed this year, by July 4th and prior to the outdoor flowering season, to insure full coverage in any wind direction and more important at the edge of grow operations during still and inversion conditions, and a minimum of one large fan as proposed,
(2) a 2024 season odor sampling and monitoring plan submitted to the town for third party review and comment,
(3) a written commitment to install the recommended solutions as a result of the odor sampling and monitoring report with an option to reduce the size of the grow facility if the facility decides that it is cost prohibitive or undesirable to initiate the recommendations, and,
(4) submit an Odor Management Plan developed by the facility and submitted to the town for third party review sometime after next fall and with sufficient time for it to be approved by Memorial Day and prior to the 2025 grow season.

Tech believes that the plan above is in the best interests of all parties. The town could request that the facility limit its grow operations this year, but that is likely not feasible without substantial lost revenue from efforts made to date for this season's crop. I would assume that it would be a non-starter from my discussions to date. To determine the optimal reduced area, Tech would propose that the facility undertake a smoke test with the fan prior to any outdoor grow activity so the extent of the fan's influence can be determined.

Of course, the town is within their right to begin the CCC notification process in order to pull the facility permit if they do not agree to limit their grow area this season or to provide full fan coverage of the grow area. And while, this is possible, we do not recommend it. Personally, I am no lawyer, but I have seen this litigation pathway attempted before. Unfortunately, it will likely drag out the number of seasons that it will take to get this concerned addressed. At a minimum it would limit the facility's cash flow and desire to do much more of anything for odor control, and at worst, it would result in legal action where the town would be required to defend itself. I've seen this play out enough to predict that if the facility starts the required 60-day notification, the facility would likely get an injunction to keep operating, and then the town would need to launch a detailed odor monitoring program this summer to defend the action. It would simply add conflict, cost, and time. That is why I hope everyone can agree with the four items above and the facility can start to procure the odor control components needed for this grow season, and next.

Wind Data/Month	Dominant<5mph Dir	% Calm
August	W/SW	43%
September	W/SW	42.4%
October	W/SW	33.1%
November	W/SW	28.6%

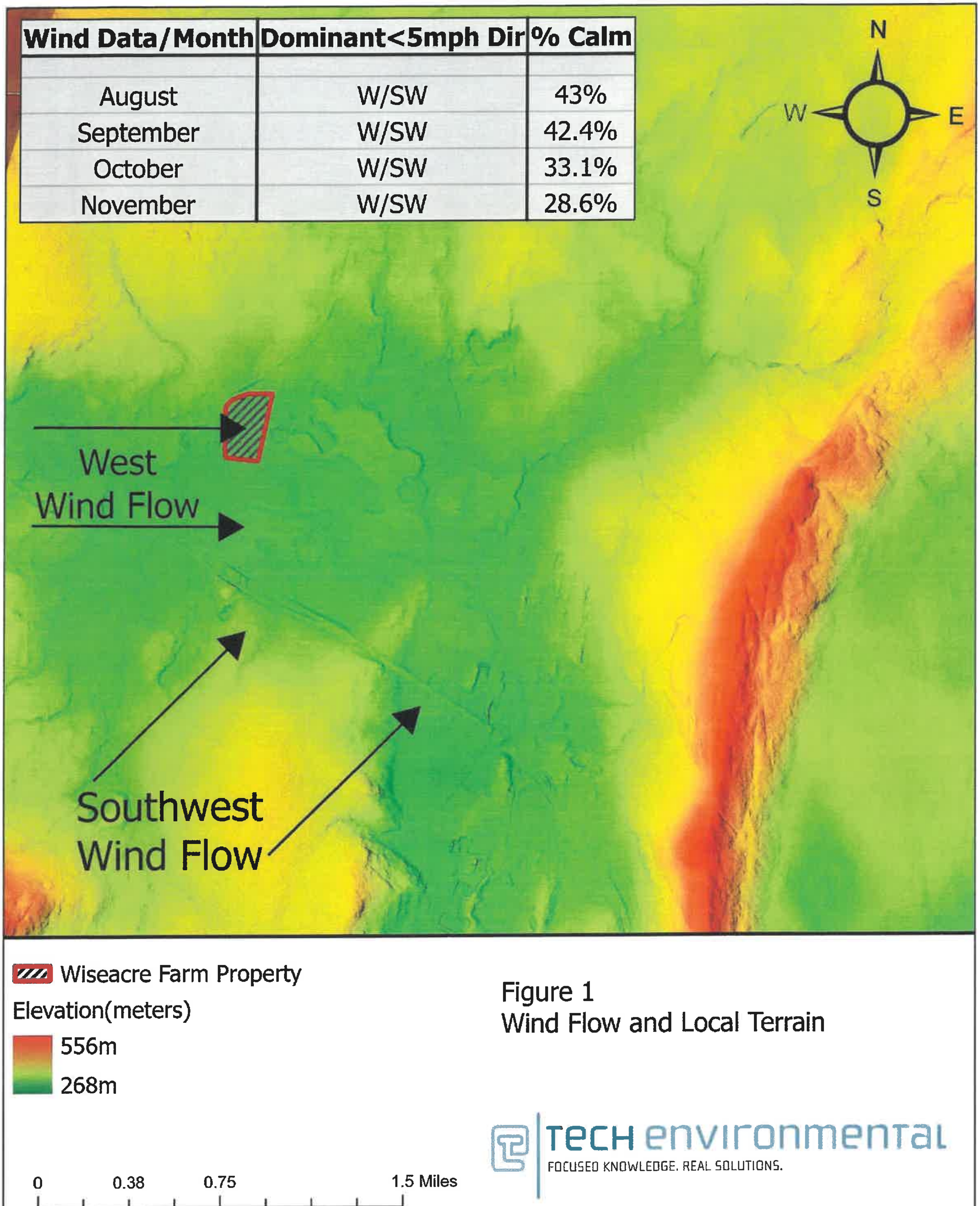


Figure 1
Wind Flow and Local Terrain

TECH environmental
FOCUSED KNOWLEDGE. REAL SOLUTIONS.

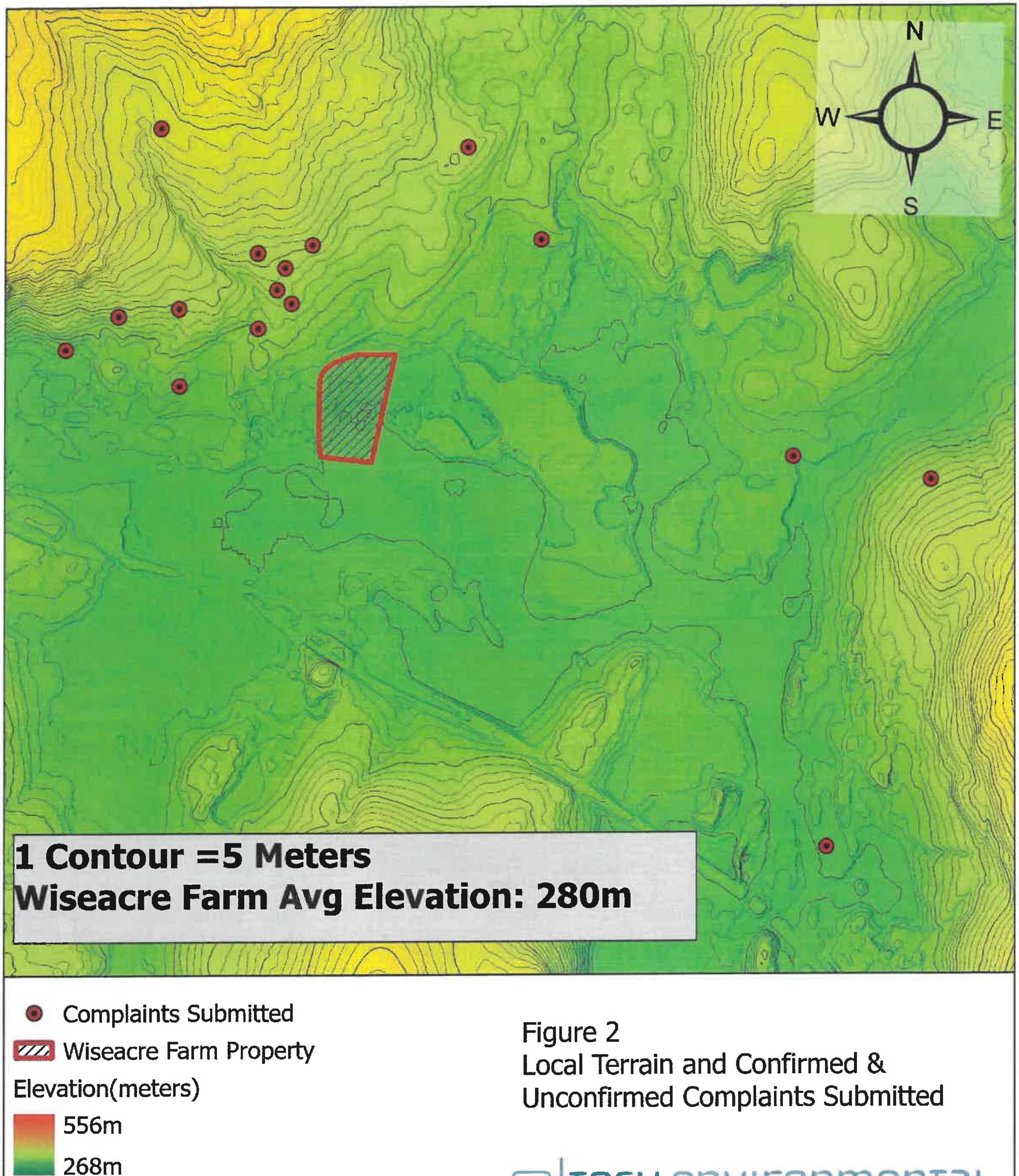
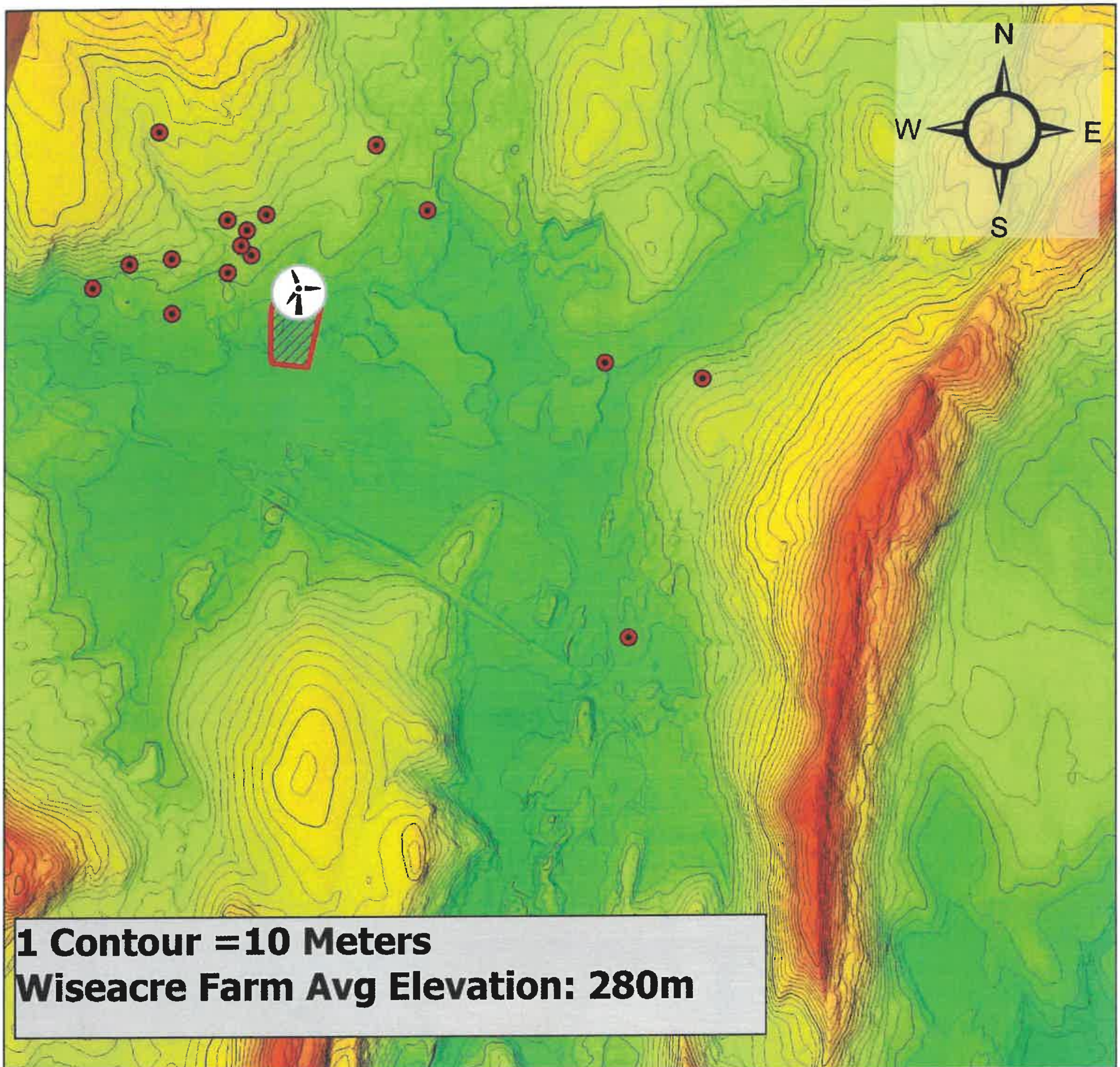


Figure 2
Local Terrain and Confirmed & Unconfirmed Complaints Submitted

TECH environmental
FOCUSED KNOWLEDGE. REAL SOLUTIONS.



Complaints Submitted

Wiseacre Farm Property

Dispersion Fan

Elevation(meters)

556m

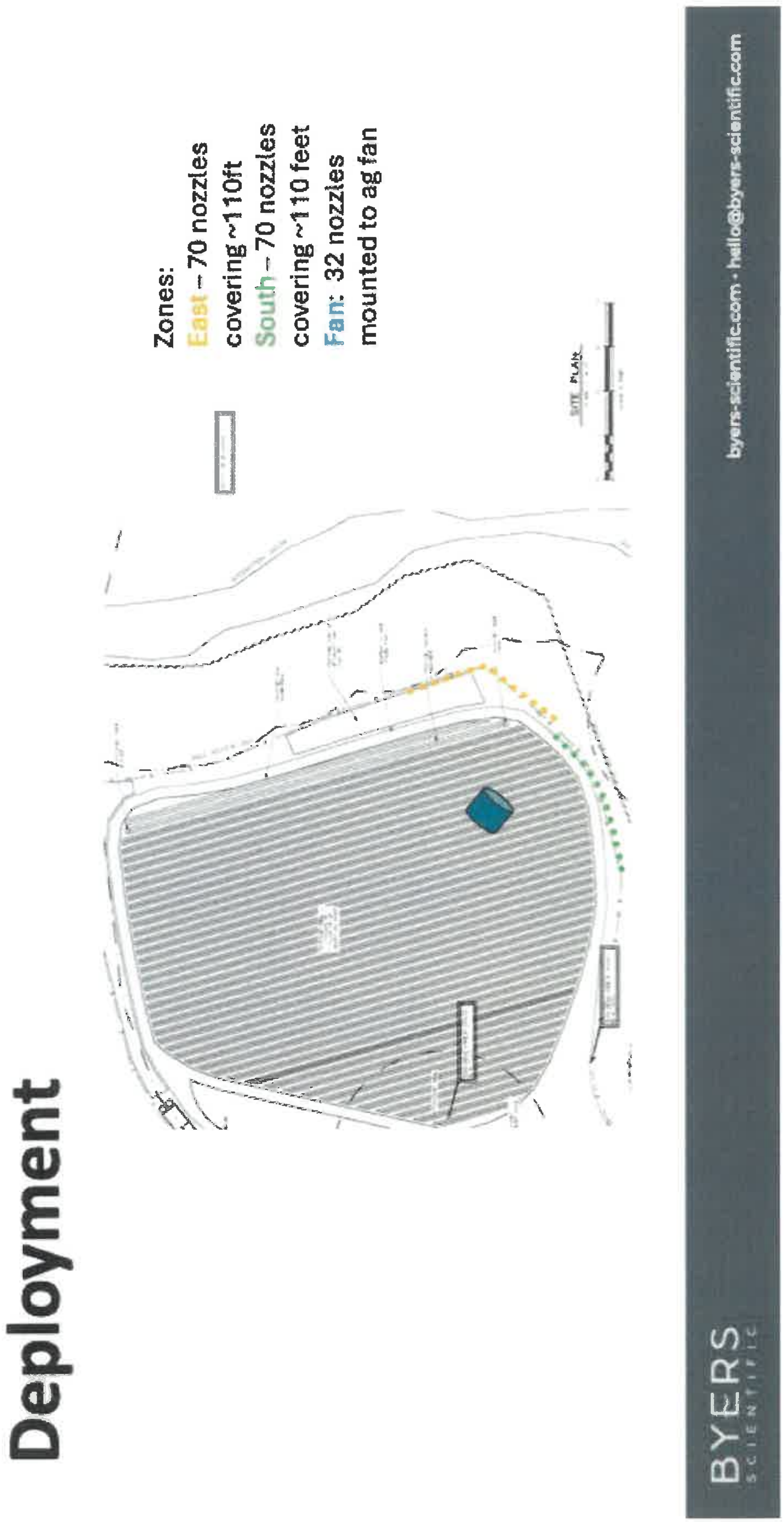
268m

0 0.38 0.75 1.5 Miles

Figure 3
Terrain and Location of Mitigation

TECH environmental

FOCUSED KNOWLEDGE. REAL SOLUTIONS.


Deployment
Zones:
East – 70 nozzles
covering ~110ft
South – 70 nozzles
covering ~110 feet
Fan: 32 nozzles
mounted to ag fan
SITE PLAN
byers-scientific.com • hello@byers-scientific.com
BYERS
SCIENTIFIC